The Planning Inspectorate

Application by NNB Generation Company (SZC) Limited for an Order Granting Development Consent for The Sizewell C Project

The Examining Authority's written questions and requests for information (ExQ1)

ExQ1 Part 5 of 6

Chapter 19 Ma.1 Marine water quality and sediment
Chapter 20 MN.1 Marine Navigation
Chapter 21 NV.1 Noise and Vibration
Chapter 22 R.1 Radiological considerations

ExQ1	Question to:	Question:
Chapter 19 - Ma.1 Marine water quality and sediment In the following questions, unless otherwise stated, paragraph numbers are to [APP-314] with section references drawn from [AS-034] (A.b.b and so on)		
Ma.1.8	The Applicant	Para 21.6.166, Section C.d.d.b. The PNEC (Predicted No Effect Concentration) for bromoform is 5µg/l as a 95th percentile (para 21.6.160). The average concentration from 10 power stations is 16.3 µg/l, with range of 1-43 µg/l (para 21.6.164). How does the ES conclude that discharges which are on average four times the PNEC and up to almost nine times are minor adverse, not significant?
	Response by SZC Co. at Deadline 2	The values quoted in paragraph 21.6.165 of **Volume 2**, **Chapter 21** of the **ES** [AS-034] represent concentrations at the point of discharge and in discrete plume areas for other power stations. The predicted bromoform discharge at Sizewell C (reported at paragraph 21.6.161) intersects an area of 52 hectares at the surface and 0.15 hectares at the seabed based on 95th percentiles. Exceedance areas of 10s to 100s of hectares for a discharge during the spring and summer months only is judged to be of medium/low magnitude (paragraph 21.3.40). Bromoform is volatile and short-lived and the waters off Sizewell are well mixed leading to a conclusion of low sensitivity. Low sensitivity receptor experiencing a medium impact (paragraph 21.3.44) is predicted to experience a minor adverse effect that is judged as **not significant**. This judgement is made in the context of water quality which is evaluated against specific benchmark values. However, benchmark thresholds, for example Environmental Quality Standards (EQS), are applied to trigger further ecological investigation and do not necessarily infer sensitivity of all receptor groups (paragraph 21.3.36). Further assessment of the potential influence of the predicted bromoform concentration plumes upon specific receptor groups is therefore evaluated in the Marine Ecology and Fisheries ES chapter (see paragraphs 22.6.333 to 22.6.337 of **Volume 2**, **Chapter 22** of the **ES** [AS-035].
	Response by RSPB at Deadline 3	We wish to highlight our concerns raised in our Written Representations submitted at Deadline 2 around the need for greater consideration of impacts of bromoform on bird features of the Outer Thames Estuary, Minsmere-Walberswick and Alde-Ore Estuary SPAs through effects on fish prey species and potential for direct toxicity to birds. We support

ExQ1	Question to:	Question:
		Natural England's comments that further assessment of these issues is required. Please note that similar concerns also apply to the discharge of hydrazine during commissioning and operation (also noted by Natural England)
	Response by SZC Co. at Deadline 5	Indirect effects on food webs through the potential of chemical bioaccumulation were considered in Chapter 22 Marine Ecology and Fisheries Section 22.10 of the ES [APP-317]. Bioaccumulation of hydrazine was tested on freshwater guppies (0.5mg/l test concentration). Results showed a bioconcentration factor of 288l/kg observed. In Europe substances with bioconcentration factors ≥2000 are considered bioaccumulative. Hydrazine does not meet the criteria for bioaccumulation as it has a low bioconcentration factor meaning the bioaccumulation potential is low. No indirect food webs effects from hydrazine bioaccumulation are therefore predicted. Chlorination products are rapidly degraded in the marine environment and bioaccumulation is not an important consideration. Bromoform is the most abundant chlorination by-product and has a low bioconcentration factor. The log bioconcentration factor ranges from 1-4 in most species except for shrimps where values of >8 have been reported in the literature. However, studies have shown that following cessation of chlorination, depuration of bromoform was complete after two days from mussels. Food web effects are therefore not considered significant. BEEMS Scientific Advisory Report. BEEMS Expert Panel. 2011. Chlorination by-Products in Power Station Cooling Water. Scientific Advisory Report SAR009. Lowestoft, UK:2011.
Chapter 20 - MN.1 Marine Navigation		
No Interested Party responses received at Deadline 3.		
Chapter 21 - NV.1 Noise and Vibration		
NV.1.8	The Applicant	**Requirements** Do you agree the requirement suggested by ESC at 1.33 of their RR is appropriate? If not please explain your position.

ExQ1	Question to:	Question:
	Response by SZC Co. at Deadline 2	SZC Co. does not agree that such a requirement is appropriate. In particular, SZC Co. does not agree that British Standard 4142: 2014+A1: 2019[1] requires an outcome where rating levels are 5dB below the background sound level. Reference to rating levels being below the measured background was taken out of British Standard in the 2014 revision. Such an approach is not required by the National Policy Statement (NPS), nor is it SZC Co.'s understanding that a requirement to achieve rating levels 5dB below the background sound level is a policy requirement applied elsewhere by East Suffolk Council. Noise conditions or requirements based on the British Standard 4142 methodology must be capable of enforcement, and detecting whether a rating level post-development is 5dB below the background is verging on impossible. Either the rating level has to be measured closer to the source and extrapolated back, or highly complex measurement systems capable of directional/narrow band noise measurement are required. The least onerous outcome defined in British Standard 4142: 2014+A1: 2019[2] is a 'low impact', which occurs where the rating level does not exceed the background sound level. British Standard 4142: 2014+A1: 2019 sets out an assessment method for considering fixed plant noise, provides indicative outcomes based on a numerical assessment, and requires relevant contextual elements to be taken into account before reaching a conclusion on the outcome. The application of British Standard 4142: 2014+A1: 2019 is discussed in **paragraphs 1.3.33 to 1.3.39** in **Volume 1, Appendix 6G** of the **ES** [APP-171] and **paragraphs 4.21 to 4.35** in **Volume 1, Appendix 6G, Annex 6G.1** of the **ES** [APP-171].
	Response by East Suffolk Council at Deadline 3	The requirement suggested by ESC at 1.33 of the RR is our default starting point for noise of this type. ESC agree with the Applicant's explanation of the assessment method for fixed plant noise, and in particular the requisite consideration of context. However, ESC also reiterate our previous comments (including in relation to questions NV.1.4 and NV.1.7) regarding the use of absolute noise limits as part of the contextual consideration. In accordance with BS 4142:2014+A1:2019 it may be appropriate to consider absolute

[1] British Standard BS4142: 2014+A1: 2019 – Methods for rating and assessing industrial and commercial sound

[2] British Standard BS4142: 2014+A1: 2019 – Methods for rating and assessing industrial and commercial sound

ExQ1	Question to:	Question:
		noise levels where background and rating sound levels are low, but ESC consider that these should be derived in accordance with BS 4142 (and the accompanying guidance note issued by the Association of Noise Consultants in March 2020) and should consider potentially distinctive characteristics of the sound, rather than the 40 dB Lnight value adopted by the Applicant based on the WHO Night Noise Guidelines, which address noise-related effects on health but are largely based on research of health effects from transportation noise, with fewer distinguishing characteristics and which also do not consider the local context.
	Response by SZC Co. at Deadline 5	SZC Co. has nothing further to add, other than to note that this point remains under discussion between the parties.
NV.1.11	The Applicant	**Rail Noise** The assessment [APP-546] does not appear to make clear how the mitigation of speed restriction, and stopping of trains at certain points along the line will be delivered through the DCO. (i) Please clarify how this would be achieved/delivered through the DCO. (ii) A train pulling 20 trucks is suggested to be what is likely to be used. Is this due to a physical constraint on site/on the line? If not, what controls would be in place to ensure this were the maximum size of train? (iii) What would the implications be if the train were to be longer? Has this been assessed? (iv) A train travelling at 20mph with 20 trucks would take how long to pass a single point? (v) How will the restriction on the number of trains and the timetable they are to operate to be adhered to/delivered through the DCO? (vi) Please describe how you envisage a typical timetable for delivery and departure of trains to and from the site would occur, so the effect on the site and the receptors along the rail routes can be fully understood. It may be helpful to support this with a plan indicating the locations and times the trains would be expected to be at each location.
	Response by SZC Co. at Deadline 2	(i) The necessary controls over train speeds and stopping would be secured both within the DCO and contractually. Within the DCO, Requirement 25 specifies that night-time trains cannot be operated except in accordance with a **Rail Noise Mitigation Strategy** (RNMS) first submitted to

ExQ1	Question to:	Question:
		and approved by ESC. It is the night-time timing of the Sizewell C train services which generates the requirement for control. A draft of the RNMS is provided in **Volume 3, Appendix 9.3.E** of the **ES Addendum** [APP-258], submitted in January 2021. It sets out the precise nature of the controls necessary and would be enforceable against the Applicant. Contractually, the train services will be secured through the following: a. A contract between SZC Co. and a freight operating company, in which SZC Co. will align its DCO obligations with the terms on which it contracts with the supplier of rail services; b. A Freight Customer Track Access Contract entered into between SZC Co. and Network Rail. This is a standard form of agreement which sets out the terms on which the customer is entitled to have services on the specified routes. Where the customer requires to take up those services, it issues a drawdown notice to Network Rail and its appointed freight operator who then enter into a Freight Track Access Contract aligned with the terms of this customer contract. This sequence allows SZC Co. to be indirectly involved in the terms of the Track Access Contract. c. A Freight Track Access Contract entered into between Network Rail and the freight train operator. SZC Co. would not be a party. The Office of Rail and Road (ORR) – the rail regulator has published standard forms for the Track Access contracts, which allow for "special terms", including matters such as train speeds which apply to particular services. It is through these terms that the speed restrictions would be imposed, rather than a general speed limit on the line – as the restrictions are only required for the Sizewell C night-time trains. (ii) Network Rail's Freight Loads Book specifies a maximum train length of 339m for the East Suffolk Line. This would provide the necessary control. It is understood that this relates to the limitations of the signalling system, and safe operation of some types of level crossing. Assuming a train is made up of JNA or HOA wagons then it would consist of 20 wagons and one locomotive. HYA wagons are also being considered, and as these are slightly shorter, a train of the maximum permitted length would consist of 21 wagons. (iii) It would not be possible to operate a longer train so this has not been assessed.

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		(iv) A maximum length 339m train would take approx. 38 seconds to pass a single point. (v) The DCO and contractual controls described at (i) above would also specify the number of trains and their timetable. (vi) An illustrative timetable is provided in Chapter 11 of the **Consolidated Transport Assessment** (Doc Ref. 8.5 (B)).
	Response by East Suffolk Council at Deadline 3	The Applicant's response is considered to be reasonable, though we would emphasise that the Rail Noise Mitigation Scheme (RNMS), of which this specific mitigation measure is a part, is proposed as primary mitigation which is intrinsic to the current assessment of effects. Should this, or other parts of the RNMS not be deliverable, then the assessment of effects might need to be revised, and more emphasis potentially put on other means of mitigation, including noise screens/barriers and/or the Noise Mitigation Strategy (NMS) thresholds.
	Response by SZC Co. at Deadline 5	SZC Co. is confident that the **Rail Noise Mitigation Strategy**, the current draft of which appears at [AS-258], is deliverable. ESC's position is protected by Requirement 25.
NV.1.12	The Applicant, Network Rail(part iii only)	**Rail Noise** (i) The mitigation proposed appears to rely upon welds not being within a certain distance of sensitive receptors. What distance is required between receptor and the track to achieve the LOAEL and SOAEL levels? (ii) Please clarify where the measurements are taken from and to. (iii) How would this be delivered through the DCO?
	Response by SZC Co. at Deadline 2	(i) The specification and implementation of mitigation does not rely on the proximity and type of rail welds, rather, the potential effects are influenced by these factors. A range of values is set out in paragraph 4.3.26 in **Volume 3, Appendix 9.3.A** of the **ES Addendum** [AS-257], stating the distances between track and receptor at which the LOAEL and SOAEL are attained, for specific combinations of train speed, track type and rail joint type. 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** (the original version of which was set out in **Volume 2, Appendix 11H** of the **ES** [APP-210] with a revised version provided as

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		Doc Ref. 6.3 11H(A)), will apply and a sufficient reduction in noise entering the property via the airborne path is 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 rely on the proximity of specific weld types to comply with policy. (ii) The distances are measured from the track centreline to the façade of the receptor building, unless stated otherwise, for instance, some distances are quoted between the nearside rail and the receptor façade. (iii) The implementation of track renewal along sections of the line between Woodbridge and Saxmundham, which would permit the removal of aluminothermic welds, is the subject of active discussion with Network Rail. If those discussions demonstrate the benefit and deliverability of the improvements, they could be incorporated into the draft **Rail Noise Mitigation Strategy** (**Volume 3, Appendix 9.3.E** of the **ES Addendum** [APP-258]), which is secured through via Requirement 25.
	Response by Network Rail at Deadline 2	iii Network Rail are currently working with SZC on proposals for Track enhancements to SZC between Westerfield and Saxmundham Junction. In addition discussions includes status and potential alterations to sleepers, fasteners and welds to assist with noise mitigation. This work is ongoing and as such no further comments can be provided at this stage. However, we agree with the suggestion of the use of requirement 25 to secure any details agreed ahead of the close of the Examination, along with the inclusion of the Network Rail requested Protective Provisions
	Response by SZC Co. at Deadline 3	No further comments to add to SZC Co. response for Deadline 2.
	Response by East Suffolk Council at Deadline 3	ESC's main comment is as per NV.1.11. However, ESC would also query the Applicant's statement that; "As the expectation is that SOAEL will be avoided even where properties are within the distances stated, SZC Co. does not rely on the proximity of specific weld types to comply with policy". ESC consider that this statement can only be true if the

ExQ1	Question to:	Question:
		policy aims of NPS EN-1 and the Noise Policy Statement for England (NPSE) are met. If the RNMS is not deliverable (which is currently uncertain based on the Network Rail SOCG dated 2 June 2021) then this would increase the emphasis on other forms of mitigation, including possible noise screens/barriers and/or the NMS thresholds, which might need to be lowered to offset this. This would need to be fully explored and discussed.
	Response by SZC Co. at Deadline 5	SZC Co. refers to its Deadline 5 response at NV.1.11 regarding the deliverability of the draft **Rail Noise Mitigation Strategy** [AS-258]. Discussions regarding noise barriers or screens are ongoing with both Network Rail and ESC. If they are practical, useful and deliverable, they will be provided but achieving a policy consistent noise outcome does not rely on them.
NV.1.13	The Applicant, Network Rail part iii only)	**Rail Noise** (i) The placement of matting under the ballast would appear to be required for all locations where a sensitive receptor is within 20m of the centreline of the railway, and this matting should extend 10m beyond the end of the receptor building. How would this be delivered through the DCO? (ii) Does this require a specific standard of matting to be provided and method of laying of the matting and the ballast to meet the minimum noise absorption required and therefore is a specific minimum specification required? If so, how is this to be secured? (iii) Do Network Rail agree to this method of installation?
	Response by SZC Co. at Deadline 2	(i) Works to the Saxmundham to Leiston branch line are secured in the **draft DCO** (Doc Ref 3.1(C)) as Works 4C and through Requirement 18. The particular characteristics referenced in the question, however, are specified in the draft **Rail Noise Mitigation Strategy** which forms **Volume 3, Appendix 9.3.E** of the **ES Addendum** [APP-258]. Requirement 25 requires the detail of the **Rail Noise Mitigation Strategy** to be submitted to and approved by ESC before the operation of night-time trains and subsequently implemented. (ii) The under-ballast mat is required to achieve a specific standard, and an example of a product which has the required properties is included in Appendix A of the draft **Rail Noise Mitigation Strategy**, which is contained in **Volume 3, Appendix 9.3.E** of the **ES Addendum** [APP-258]. The principal requirement to be specified is the dynamic stiffness modulus. The proposed product must have achieved Network Rail "product acceptance"

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		which will specify certain performance and installation requirements. The chosen product, with those performance and installation characteristics, will be part of the Track Approval In Principle documentation (the "Form A") accepted by Network Rail at the end of the next design phase which secures their place in the design. (iii) SZC Co. is engaging with Network Rail through a Basic Asset Protection Agreement (BAPA) to achieve successful Approval in Principle which will demonstrate their acceptance of this solution.
	Response by Network Rail at Deadline 2	iii NR have an active BAPA in place which facilitates the design approval process. At present Network Rail does not have sufficient information to confirm this
	Response by SZC Co. at Deadline 3	No further comments to add to SZC Co. response for Deadline 2.
	Response by East Suffolk Council at Deadline 3	Please see response to NV.1.11.
	Response by Suffolk County Council at Deadline 3	The Applicant and Network Rail need to clarify what noise mitigation infrastructure will be provided on the East Suffolk Line. It appears that it is assumed that continuously welded track on the East Suffolk Line is enough to reduce noise on the rail line, but this has not been assessed by Network Rail. Further information is also required on what mechanism will be used to deliver these improvements as they are not currently included within the DCO.
	Response by Woodbridge Town Council at Deadline 3	WTC comment – this shows the Applicant's proposal for rail transport needs more work before it can be considered ready for DCO.
	Response by SZC Co. at Deadline 5	Any improvements to the track infrastructure on the East Suffolk line will be delivered through the **Rail Noise Mitigation Strategy**, the current draft of which appears at [AS-258], and which is itself secured through Requirement 25 of the **draft DCO** (Doc Ref. 3.1(D)).

ExQ1	Question to:	Question:
		The improvements to the East Suffolk line track infrastructure currently under discussion are the replacement of fishplate joints and aluminothermic welds with continuously-welded track and flash-butt welds. The improvements are not relied upon in the Applicant's noise assessment – please see the deadline 2 response to NV.1.12. however, they would produce benefit (including legacy benefit) for the East Suffolk line communities and SZC Co. is working closely with Network Rail to understand what may be deliverable. Under-ballast mats are not proposed on the East Suffolk line and Network Rail is not required to assess the acoustic performance of any particular proposals.
NV.1.14	The Applicant	**Rail Noise/Freight Management** (i) The information provided in support of the train noise assessment indicates [APP 545] that a typical truck has the capacity to carry 77.9t of cargo. Assuming this to be the case a train with 20 trucks would have a payload of 1,558t. Please explain why this figure exceeds the quantum of material said to be imported per train as set out in the Freight Management Strategy? (ii) Assuming trains were loaded to full capacity what implications would this have for the noise assessment?
	Response by SZC Co. at Deadline 2	(i) For the purposes of the rail bulk import capacity an import payload of 1,250t per train has been assumed. This has been derived based on the published operational parameters of the rail infrastructure. The Network Rail Sectional Appendix[3] states a Route Availability (RA) of the East Suffolk line and Saxmundham to Leiston branch line as RA7 and a trailing weight of 1,730t (rounded to 1,800t as route planning assessed in 200t increments) per train. The RA7 category limits the axle load of each wagon to 21.5t, resulting in a gross wagon load of 86t. There are several different types of rail wagons that could be used to haul bulk materials via rail, each of these has slightly differing capacities and tare weights which impact of payload available. A typical JNA open wagon has a tare weight of 23.7t,

[3] Network Rail Sectional Appendix, Anglia Route, Last Updated 15/04/2017; https://sacuksprodnrdigital0001.blob.core.windows.net/sectional-appendix/Sectional%20Appendix%20full%20PDFs/Anglia%20Sectional%20Appendix%20February%202021.pdf#page=333

ExQ1	Question to:	Question:
		therefore a maximum payload of 62.3t can be carried before the axle load limit is exceeded. This results in the wagon being only partially filled as the design capacity of a JNA wagon is 77.9t payload (101.6t gross) i.e. the total capacity would exceed the permitted axle load of the branch line. An alternative HOA hopper wagon (bottom discharge) may also be used. This has a tare weight of 24.2t allowing a max payload of 61.8t. As with the JNA wagon, this wagon is only partially full as a HOA wagon has a design capacity of 77.8t payload (102t gross). The trailing weight restriction places a maximum gross weight of the wagons hauled by the locomotive to ensure sufficient traction and breaking on the gradient of the line. The 1,800t limit on the Saxmundham to Leiston branch line results in a maximum of 20 wagons per train (20 x 86 = 1,720t). Therefore assuming 20 wagons this results in a rail import of between 1,236 and 1,246t, assumed as 1,250t per train. Considerable further rail enhancement beyond that being considered by the project, such as rail underbridge replacement and track bed renewals, would be required to permit the full capacity of the wagons to be utilised, therefore the maximum wagon payload capacity of 77.9t will not be achieved. For the purposes of noise and vibration assessment the theoretical maximum capacity of the rail wagons has been used, i.e. 77.9t payload. While this cannot be achieved due to the condition of the rail infrastructure it represents a conservative worst case for the assessment. (ii) The assessment assumed a payload of 77.9t per wagon, i.e. 1558t for a 20-wagon train, even though that total payload will not materialise in practice, as set out above. Further, the source of groundborne noise is unevenness of the surfaces of the rail head and the vehicle wheels, including both roughness (which occurs all along the rail and around the wheel tread) and discrete discontinuities such as joints and some types of weld. The magnitude of the effect caused by these features is primarily dependent on the unsprung mass of the wheelsets of the wagons and locomotives. Unsprung mass is not dependent on load. There is a small additional effect in the case of joints and welds due to the sprung mass, which includes the load, but it is dependent on the weight of individual wagon loads and not on the total payload of the full length train. Increasing the

ExQ1	Question to:	Question:
		payload of the train as a whole has no effect on groundborne noise levels over and above the effect of any increase in the load on individual axles. The assessment of airborne railway noise has taken account of the range of locomotive power settings that may be required to move fully-loaded trains. The source data on which the airborne noise assessment is based is set out in **Volume 1, Chapter 9** of the **ES Addendum** [AS-188] and its associated **Appendix 9.3.A** (**Volume 3** of the **ES Addendum** [AS-257]).
	Response by East Suffolk Council at Deadline 3	ESC's main comment is as per NV.1.11. However, ESC would also query The Applicant's statement that; "As the expectation is that SOAEL will be avoided even where properties are within the distances stated, SZC Co. does not rely on the proximity of specific weld types to comply with policy". ESC consider that this statement can only be true if the policy aims of NPS EN-1 and the Noise Policy Statement for England (NPSE) are met. If the RNMS is not deliverable (which is currently uncertain based on the Network Rail SOCG dated 2 June 2021) then this would increase the emphasis on other means of mitigation, including possible noise screens/barriers and/or the NMS thresholds, which might need to be lowered to offset this. This would need to be fully explored and discussed.
	Response by SZC Co. at Deadline 5	Please see SZC Co.'s Deadline 5 responses at NV.1.11 and NV.1.12.
NV.1.16	The Applicant	**Rail Noise** In undertaking the noise assessment, a test train was run in August 2020, it is understood this was unladen. (i) How representative of the noise of a fully loaded train would this be? (ii) Please explain what differences in acoustic terms you could expect for acceleration and breaking, relative to a fully laden train.
	Response by SZC Co. at Deadline 2	(i) In addition to the unloaded wagons that were used during the August 2020 tests, the train also included a locomotive at each end. The August 2020 tests are described in **Volume 3, Appendix 9.3.A** of the **ES Addendum** [AS-257] and its associated appendices.

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		For each traverse, the engine at the front pulled the train, while the engine at the rear was effectively a dead load. The total train weight was approximately 772 tonnes and was considered sufficiently similar to real-life conditions that the tests could be considered representative. The train operators confirmed that the operational characteristics of the leading engine in each traverse reflected the expected operation with a fully-loaded train. The source data that was used in the assessment of railway noise was collected prior to the submission of the DCO application, based on numerous measurements of freight trains. The source data and surveys were set out in **Volume 9, Appendix 4B, Annex B** of the **ES** [APP-546]. The testing in August 2020 found that lower source noise levels would be appropriate, however, the assessment retained the original, higher noise levels. (ii) As stated in answer to (i) above, the operational characteristics of the leading engine in the test runs reflected the expected operation with a fully-loaded train. Accordingly, differences between the testing undertaken, and a fully-loaded train, are not expected. The locomotive is noisiest part of a freight train, and it is at its noisiest when operating under full power. The survey work that informed the noise assessment, as illustrated in **Tables 1.4** and **1.5** in **Volume 9, Appendix 4B** of the **ES** (Doc Ref. 6.10) [APP-546] found that decelerating trains, i.e. braking trains, were found to generate lower sound levels than trains running at a steady speed, which were in turn quieter than trains running at full power.
	Response by East Suffolk Council at Deadline 3	Response noted. ESC are currently undertaking further reviews of the rail groundborne noise and vibration assessments and expect to provide further comment on this in due course.
	Response by SZC Co. at Deadline 5	SZC Co. has nothing further to add to its previous responses.
NV.1.18	The Applicant, ESC, SCC	**Rail SOAEL and LOAEL** The SOAEL and LOAEL is based at least in part on the assessment for HS2, and the justification of a higher rating appears to be based on the quantum and speed of rail traffic associated with HS2 as opposed to here.

ExQ1	Question to:	Question:
		(i) Do the Councils agree this is a reasonable position to take in setting the SOAEL and LOAEL for rail noise? (ii) In the event the Councils do not agree, what method would be considered would provide a reasonable approach in the circumstances of this case?
	Response by SZC Co. at Deadline 2	Reference is made to High Speed Two (HS2) in two contexts: • The derivation of a SOAEL for airborne railway sound in terms of L_{AFmax}; and • The derivation of SOAEL for groundborne noise. In both respects, the Sizewell C noise assessment is more stringent than the HS2 assessment. In particular, for airborne railway noise, the L_{AFmax} SOAEL references HS2, but the value adopted in the SZC noise assessment is a more stringent value than adopted for HS2. HS2 adopted two values for the L_{AFmax} SOAEL, which varied according to the number of trains per night; a value of 85dB L_{AFmax} was adopted where there were 20 trains or fewer, or 80dB L_{AFmax} where there were more than 20 trains per night. For SZC, the more stringent 80dB L_{AFmax} was adopted even though there are expected to be less than 20 trains per night. **Volume 9, Chapter 4** of the **ES** [APP-545] adopted a value for SOAEL of 50dB L_{ASmax} for groundborne noise considered in isolation; this is 5dB less stringent than HS2's equivalent figure, although it is noted that in the HS2 case there may be 20 or more groundborne noise events per hour. Groundborne noise was developed further in **Volume 1, Chapter 9** of the **ES Addendum** [AS-188] and **Volume 3, Appendix 9.3.A** of the **ES Addendum** [AS-257] where it is proposed that combined groundborne noise and airborne noise should be assessed against the LOAEL and SOAEL values for groundborne noise alone, namely 35 dB L_{ASmax} and 50 dB L_{ASmax} respectively. This approach effectively lowers the SOAEL for groundborne noise alone, by an amount dependent on the relative levels of groundborne and airborne noise as received.

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		This change in approach was considered appropriate in this instance due to the unique circumstances at Sizewell C, where airborne and groundborne noise are likely to combine in a manner not addressed in previous groundborne noise assessments.
	Response by East Suffolk Council at Deadline 2	Notwithstanding the obvious differences between a new high-speed rail line and rail traffic serving the construction of a power station, the technical basis for the adopted LOAEL and SOAEL is accepted. However, the overarching policy aims of NPS EN-1 require that all efforts are taken to mitigate adverse effects above LOAEL and to avoid significant adverse effects above SOAEL. As such, adequate consideration of mitigation is critical to the correct use of these parameters. ESC does not currently consider that the Applicant has adequately explored and exhausted all mitigation options to "mitigate and minimise" adverse impacts, or that the Rail Noise Mitigation Scheme and the Noise Mitigation Scheme provide adequate protection for residents. Specifically, we consider that the Noise Mitigation Scheme should be triggered at a level below SOAEL, which simply represents a threshold to be avoided. Discussions are ongoing on this between the Applicant and ESC and progress is expected, but this remains a key concern.
	Response by Suffolk County Council at Deadline 2	Although there are differences between the operation of a passenger railway line and a freight railway line, The Applicant has modelled and surveyed the level of rail noise anticipated to occur on the Leiston Branch Line and the East Suffolk Line and compared against the noise and vibration levels generated by HS2. Therefore, the technical basis for the adopted LOAEL and SOAEL is accepted. It is expected though that The Applicant will ensure that all efforts are taken to mitigate adverse effects above LOAEL and to avoid significant adverse effects above SOAEL, as set out in the NPS EN-1. As such, adequate consideration of mitigation is critical to the correct use of these parameters. SCC would like to see The Applicant explore all mitigation options to "mitigate and minimise" adverse impacts. This should be reflected in the Draft Rail Noise Mitigation Strategy and Noise Mitigation Strategy, which should provide adequate protection for local residents above a standard offer of double-glazing. Specifically, we believe that mitigation should be triggered at a level below SOAEL, which simply represents a threshold to be avoided. Discussions are ongoing on this between The Applicant and ESC and progress is expected, but this remains a key concern.

ExQ1	Question to:	Question:
	Response by SZC Co. at Deadline 3	SZC Co. welcomes ESC's and SCC's confirmation that the LOAEL and SOAEL values for railway noise are appropriate. Both councils requested that noise insulation be offered at a lower sound level than the SOAEL for railway noise, and the recent revision of the **Noise Mitigation Scheme** submitted at Deadline 2 [REP2-034] included this change. SZC Co. has committed to a number of practical mitigation measures in the draft **Rail Noise Mitigation Strategy** [AS-258] and discussions with Network Rail are ongoing regarding the potential for track replacement along sections of the East Suffolk line.
	Response by East Suffolk Council at Deadline 3	We agree with the Applicant's overarching point that the derivation of SOAEL for airborne and groundborne rail noise are more stringent than those adopted for HS2, although we do not consider the updated approach to assessing groundborne noise from rail to represent a lowering of the SOAEL, more that this approach is more onerous because two simultaneous sources (airborne/groundborne) are assessed against the previously nominated LOAEL and SOAEL values, rather than one. This does not however, affect our agreement that this is more onerous than previously.
	Response by Woodbridge Town Council at Deadline 3	WTC concurs with the response by ESC and SCC at Deadline 2. We are keen to see how quiet these trains can be. Based on our current experience, night-time freight trains pose an unacceptable threat to the health and well-being of people living in Woodbridge.
	Response by SZC Co. at Deadline 5	SZC Co. has nothing further to add to its previous responses.
NV.1.19	The Applicant, ESC, SCC, PHE	**Rail SOAEL and LOAEL** As currently assessed, the LOAEL would be exceeded at receptors within 42m of the line with trains travelling at 10mph and within 50m of the line for trains travelling at 20mph. In light of the need to protect human health from noise, and length of construction period should not the potential for noise mitigation be made available to all receptors where the LOAEL would be exceeded?

ExQ1	Question to:	Question:
	Response by SZC Co. at Deadline 2	It is a requirement of the Noise Policy Statement for England[4] and the Overarching National Policy Statement for Energy (NPS EN-1)[5] to mitigate and minimise noise falling between LOAEL and SOAEL, with the NPS stating that all reasonable steps should be taken in this endeavour while also taking into account the guiding principles of sustainable development (paragraph 2.24). The draft **Rail Noise Mitigation Strategy**, which is contained in **Volume 3, Appendix 9.3.E** of the **ES Addendum** [AS-258], sets out the proposed operational and physical measures to limit railway noise and vibration, which has effect at properties affected by railway noise irrespective of whether they fall above or below LOAEL or SOAEL. The measures include: • Installation of a crossover north of Saxmundham station and upgrades to the signalling system to permit trains to join or leave the Saxmundham to Leiston branch line without stopping, known as the 'change arrangements at Saxmundham'. • The Saxmundham to Leiston branch line will be upgraded with a refurbished trackbed, concrete or steel sleepers, and welded rails to provide a consistent rail cross-section consistent gauge, and smooth running surface. • The proposed rail extension route will be constructed using the same approach as the upgraded Saxmundham to Leiston branch line. • Under ballast mats will be installed where the Saxmundham to Leiston branch line or proposed rail extension route pass within 15m of a residential receptor, and will be installed for a minimum of 10m either side of the property. An alternative design may be substituted, if its effectiveness is equal and approved. • Night-time speed limits of 10mph will apply at three locations along the East Suffolk line: Woodbridge/Melton, Campsea Ashe, and Saxmundham.

[4] DEFRA (2010) Noise Policy Statement for England

[5] DECC (2011) Overarching National Policy Statement (NPS) for Energy (NPS EN-1)

ExQ1	Question to:	Question:
		• Speed on the Saxmundham to Leiston branch line will be limited to 10mph during the early years. • Pending the results of further assessment of the upgraded and mitigated Saxmundham to Leiston branch line during the early years operation, the speed limit on Saxmundham to Leiston branch line may be increased to 20mph. This further assessment work is described later in this section. • The speed limit on the proposed rail extension route will match that applied to the Saxmundham to Leiston branch line. This enables constant train speeds to be maintained, thereby avoiding accelerating locomotive noise close to the north-western corner of Leiston. • Class 66 locomotives will be used in preference to Class 68 locomotives, where there is equivalent choice. • Night-time construction trains will not travel into or out of Leiston, instead being held on the Saxmundham to Leiston branch line to the west of the Saxmundham Road level crossing, at defined locations. • Construction trains stabled overnight on the branch line will not be permitted to keep their engines idling. These measures, together with the extensive associated development proposed as part of the application which is primarily aimed at mitigating transport effects, are considered to be a reasonable and proportionate response to the potential adverse effects identified to result from the use of trains as part of the SZC project. Together with insulation where necessary, as provided by the **Noise Mitigation Scheme** (the original version of which was set out in **Volume 2, Appendix 11H** of the **ES** [APP-210] with a revised version provided as Doc Ref. 6.3 11H(A)), it provides a comprehensive mitigation package.
	Response by East Suffolk Council at Deadline 2	Ideally, setting the threshold for noise insulation mitigation at LOAEL would represent the most robust possible means of protecting amenity. However, there is no clear basis for this, and ESC recognise that other forms of mitigation exist that could negate the need for improved noise insulation, which should be a last resort. However, ESC considers that eligibility for noise insulation should be triggered at a level below SOAEL, which simply

ExQ1	Question to:	Question:
		represents a threshold to be avoided. Discussions are ongoing on this between the Applicant and ESC and progress is expected, but this remains a key concern.
	Response by Suffolk County Council at Deadline 2	Setting the threshold for noise insulation mitigation at LOAEL would represent the most robust possible means of protecting amenity. However, there is no clear basis for this and both SCC and ESC recognise that other forms of mitigation exist that could negate the need for improved noise insulation, which should be a last resort. There is a need to ensure that rail infrastructure aimed at reducing noise is delivered and maintained to the highest standard on the Branch Line and the East Suffolk Line. A clear agreement between the Applicant and Network Rail is required. Both SCC and ESC believe that eligibility for noise insulation should be triggered at a level below SOAEL, which represents a threshold to be avoided. Discussions are ongoing on this between The Applicant and ESC and progress is expected, but this remains a key concern.
	Response by Public Health England at Deadline 2	In preparing this response, PHE has assumed that this question is with reference to the LOAEL specified for the maximum noise level (LAmax). The second aim of the Noise Policy Statement for England (Defra, 2010) is to "mitigate and minimise adverse impacts on health and quality of life" through the effective management and control of environmental noise. The health effects attributable to transportation noise are associated with both the longterm averaged noise, and the maximum noise level of each passby [1]. The latter is particularly relevant to physiological sleep disturbance (sometimes know as EEG awakenings). The scientific evidence has shown that every noise event above a certain threshold has an associated probability of disrupting sleep[1]. Therefore when carrying out a risk assessment for physiological sleep disturbance above the LOAEL it is important to take into account both the maximum levels and the number of events that occur during the night [2,3]. PHE considers the dose-response relationships derived for the systematic review commissioned by the WHO [1] to be the most scientifically robust for estimating noise induced physiological sleep disturbance. Using these relationships, and assuming a conservative 10dB outdoor to indoor level difference (equivalent to windows wide open, for example to mitigate overheating), PHE has translated the levels assigned to "Low",

ExQ1	Question to:	Question:
		"Medium" and "High" magnitude of impact associated with new or altered railway lines (cf. Table 4.7 in ES_V9_Ch4).

Maximum noise level outside ($L_{Amax,outside}$)	Maximum noise level inside bedroom ($L_{Amax,inside}$)	Probability of noise-induced sleep state change	Minimum no. of train passbys required to result in one additional awakening per night*
60	50	3.8%	26
70	60	6.9%	15
77	67	9.5%	11

* Note: Whilst there is evidence that sleep fragmentation is associated with health morbidity [4] and mortality [5], it is not yet possible to directly link average number of noise-induced awakenings with chronic health outcomes. One health-based approach that has been used for controlling nigh-time movements at a German airport has three principles [2]:

• On average, there should be less than one additional awakening induced by noise.

• Awakenings recalled in the morning should be prevented as much as possible. For aircraft noise this meant avoiding noise events in the bedroom exceeding 65dB LAmax, inside.

• There should be no relevant impairment of the process of falling asleep again.

It is important to note that the noise and sleep data that informed this evidence is primarily from studies based on physically-healthy subjects free of intrinsic sleep disorders. There are non-negligible inter-individual differences in the susceptibility to noise-induced sleep disturbance even amongst this subset of the general population [6]. The effect of transportation noise on sleep in those with pre-existing medical conditions is

ExQ1	Question to:	Question:
		unknown. Therefore the results in the table above may underestimate the effect of noise on sleep in the general population[1]. Another consideration is that in practice maximum noise levels may differ significantly from what was predicted. PHE encourages the Applicant to a) be clear on the assumptions made to arrive to the numbers in Table 4.27 b) what is the expected variation around the "typical" levels reported in Table 4.28 c) how much control would the Applicant have on which rolling stock would be running on these lines – for example a single wagon on a freight train with poorly maintained wheels may give rise to significantly higher maximum noise levels [7] These uncertainties could be addressed by widening the scope of the monitoring system described in 4.5.11. PHE is not able to dictate which mitigation measures would be appropriate for the properties identified in Table 4.27. The Applicant states that these will be "mitigated and minimised through the use of the quietest trains available, strategically located speed restrictions, changes to the operational practices on the line, and the measures described in section 4.5." PHE would recommend that "the use of the quietest trains available" is clarified to mean that a system would be put in place to ensure that the levels specified in Table 4.28 will be relevant in practice. Consideration should also be given to what happens if the frequency of trains needs to be increased in the future, as this will change the risk of sleep disturbance. [1] M. Basner, S. McGuire. WHO Environmental Noise Guidelines for the European Region: A Systematic Review on Environmental Noise and Effects on Sleep. Int. J. Environ. Res. Public Health 2018, 15, 519. [2] M. Basner, A. Samel, U. Isermann. Aircraft noise effects on sleep: Application of the results of a large polysomnographic field study. J. Acoust. Soc. Am. 119 (5), May 2006. [3] M. Basner, U. Müller, B. Griefahn. Practical guidance for risk assessment of traffic noise effects on sleep. Applied Acoustics 71 (2010) 518–522. [4] WHO Regional Office for Europe. Night Noise Guidelines for Europe. 2009.

ExQ1	Question to:	Question:
		[5] S. Shahrbabaki et al. Sleep arousal burden is associated with long-term all-cause and cardiovascular mortality in 8001 community-dwelling older men and women. European Heart Journal (2021) 00, 1–12. [6] S. McGuire et al. Inter-individual Differences in the Effects of Aircraft Noise on Sleep. SLEEP, Vol. 39, No. 5, 2016. [7] D. Thompson. On the relationship between wheel and rail surface roughness and rolling noise.
	Response by SZC Co. at Deadline 3	As noted in SZC Co.'s Deadline 3 response to **Question NV.1.18**, the threshold at which noise insulation is offered for railway noise has been reduced to a threshold below the SOAEL, as a result of discussions between SZC Co. and ESC and SCC. This is reflected in the current version of the **Noise Mitigation Scheme** submitted at Deadline 2 [REP2-034]. SZC Co. also welcomes both councils' recognition that there is no clear basis for amending the **Noise Mitigation Scheme** to trigger noise insulation at the LOAEL. PHE has presented some detailed information on the relationship between noise and sleep disturbance, the key message of which concurs with SZC Co.'s understanding and approach to the assessments. In particular, PHE cites an example of an airport in Germany where night-time aircraft noise is controlled by avoiding noise levels within bedrooms of more than 65dB L_{AFmax}. This threshold forms the basis of the derivation of the SOAEL for railway noise, as SZC Co. seek to avoid the same effect. The values set out in **Table 4.27** in **Volume 9, Chapter 4** of the **ES** [APP-545] were determined by counting the number of properties in each noise level band, as explained in paragraphs 4.6.79 to 4.6.82 in **Volume 9, Chapter 4** of the **ES** [APP-545]. The values set out in Table 4.28 in **Volume 9, Chapter 4** of the **ES** [APP-545] were determined through a series of noise measurements, as reported **Volume 9, Appendix 4B, Annex B** of the **ES** [APP-546]. As stated in both SZC Co's and Network Rail's responses to **Question NV.1.20** at Deadline 2, 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

ExQ1	Question to:	Question:
		opportunity. Standard freight track access contracts impose obligations to maintain rolling stock. PHE has requested that *"Consideration should also be given to what happens if the frequency of trains needs to be increased in the future, as this will change the risk of sleep disturbance."* The assessment of railway noise presented in **Section 9.3** of **Volume 1, Chapter 9** of the **ES Addendum** [AS-188] was based on the largest practical number of freight movements to ensure a reasonable worst-case assessment was undertaken.
	Response by East Suffolk Council at Deadline 3	The Applicant emphasises the draft Rail Noise Mitigation Strategy (RNMS) as a "reasonable and proportionate response to the potential adverse effects" due to rail, and that together with the enhanced insulation to properties that would be offered "where necessary" as part of the Noise Mitigation Scheme (NMS), that this provides a comprehensive mitigation package. However, ESC remains concerned that there is uncertainty regarding the deliverability of the full package of measures forming the RNMS. We understand that the RNMS is proposed as primary mitigation and therefore the updated assessment of effects assumes that these would be adopted in their entirety. If these measures are not deliverable, then this would presumably change the assessment of effects. Furthermore, the revised NMS eligibility thresholds (in line with the EIA significance) are welcomed, but if the RNMS is not deliverable then no other physical mitigation is currently proposed between LOAEL and SOAEL. This would emphasise the policy aim to exhaust all other forms of mitigation before considering enhanced insulation, particularly in terms of noise barriers/screening. Based on the current Network Rail (NR) SOCG (2 June 2021) we understand NR have no objection in principle to acoustic fencing on their land if required, provided this was funded by the Applicant. ESC have already requested that the Applicant explore this mitigation option (as noted in the noise and vibration SOCG) and are currently awaiting a response from the Applicant on this. If it ends up the case that there are very few practical mitigation measures that could be used to "mitigate and minimise" effects above LOAEL, then ESC also consider that the NMS thresholds for airborne rail noise might need to be reduced further to offset this limitation.
	Response by Woodbridge Town Council at Deadline 3	WTC concurs with the response by ESC and SCC at Deadline 2. We are keen to see how quiet these trains can be. Based on our current experience, night-time freight trains pose an unacceptable threat to the health and well-being of people living in Woodbridge.

ExQ1	Question to:	Question:
	Response by SZC Co. at Deadline 5	Please see SZC Co.'s Deadline 5 responses at NV.1.11 and NV.1.12.
NV.1.25	The Applicant	**Rail Noise** In light of the length of time that the construction period would last, would not occupiers of properties within close proximity of the rail line need to be rehoused for the duration to avoid being subject to regular significant disturbance? (Currently the ES suggests that the SOAEL would be exceeded at a distance of 5m at 10mph but this would not yet appear to be an agreed position.) The s106 agreement [PDB-004] explains on pg 77 that the Noise Mitigation Scheme will either be secured through the DCO or the s106 agreement, but this is still under consideration please explain the latest position on how this mitigation would be secured
	Response by SZC Co. at Deadline 2	The effects of noise, vibration and groundborne noise have been fully assessed against the principles of the National Policy Statement for Energy (NPS EN-1)[6] and the Noise Policy Statement for England[7], particularly in terms of LOAEL and SOAEL. As set out in **Volume 3, Appendix 9.3.A** of the **ES Addendum** [AS-257] no receptors will experience effects greater than SOAEL, and mitigation proposed will minimise noise above LOAEL. This being the case, there is no need for rehousing. Having reflected on the nature of the steps set out in the **Noise Mitigation Scheme** (the original version of which was set out in **Volume 2, Appendix 11H** of the **ES** [APP-210] with a revised version provided as Doc Ref. 6.3 11H(A)) and discussed the matter in the Noise topic meetings with ESC and SCC, SZC Co. believes it would be sensible to secure the Scheme via Schedule 12 of the **draft Deed of Obligation** (Doc Ref. 8.17(C)). ESC and SCC have recognised that may be the most appropriate route. It is intended that the Scheme be 'de-constructed' into a series of discrete, sequential steps within the **draft Deed of Obligation** (Doc Ref. 8.17(C)) to ensure that each step is clear. The use of the **draft Deed of Obligation** (Doc Ref. 8.17(C)) will also enable the

[6] DECC (2011) Overarching National Policy Statement (NPS) for Energy (NPS EN-1)

[7] DEFRA (2010) Noise Policy Statement for England

ExQ1	Question to:	Question:
		parties to enforce against each other as some of the steps require action from ESC before the next step in the sequence can be implemented. These principles are not controversial between the parties although the precise final terms of the Scheme are the subject of discussions as part of the Statement of Common Ground and progressing the Deed of Obligation.
	Response by East Suffolk Council at Deadline 3	The Applicant's comments regarding the draft Deed of Obligation are noted. The Applicant also states in their response that "no receptors will experience effects greater than SOAEL, and mitigation proposed will minimise noise above LOAEL". ESC do not currently consider that the mitigation proposals do meet the policy aim to mitigate and minimise noise above LOAEL or to exhaust all other forms of mitigation before considering enhanced noise insulation, such as might need to be provided through the NMS. The revised NMS eligibility thresholds are welcomed, but no other physical mitigation is currently proposed between LOAEL and SOAEL, except the RNMS. The RNMS is presented as primary mitigation, but Network Rail have not yet committed to being able to deliver these measures. This further emphasises the importance of achieving the policy aim to exhaust all other forms of mitigation before considering enhanced insulation, particularly in terms of noise barriers. Based on the current Network Rail (NR) SOCG (2 June 2021) we understand NR have no objection in principle to acoustic fencing on their land if required, provided this was funded by the Applicant. ESC have already requested that the Applicant explore this mitigation option to ensure that noise above LOAEL would be minimised as far as practicable (as noted in the noise and vibration SOCG) and are currently awaiting a response from the Applicant on this. If some or all of these measures cannot be delivered, then ESC also consider that the NMS thresholds for airborne rail noise might need to be reduced further to offset this limitation.
	Response by SZC Co. at Deadline 5	Please see SZC Co.'s Deadline 5 responses at NV.1.11 and NV.1.12.
NV.1.26	The Applicant, Network Rail, ESC, SCC	**Rail Noise** In order to minimise disturbance to receptors in close proximity to the rail line, particularly at night, would a period excluding train operations be reasonable and or enforceable?

ExQ1	Question to:	Question:
	Response by SZC Co. at Deadline 2	The timing of trains would be specified in the Freight access contracts, which are explained in response to **Question NV.1.11** in this chapter and therefore enforceable. However, there is limited ability to 'choose' the timing of train operations. Night-time operations are necessary due to the absence of pathing capacity in the day. At night the scheduling of trains will be a function of the capacity available within the network timetable. The work undertaken on this has shown the ability to secure 7 train movements. The addition of timing limitations would be very likely to reduce that number – especially as the slowed speed of the trains means that each one takes a considerable time to travel from the main line at Ipswich to site. Limiting train numbers would act against the policy imperative in the NPS to prefer train-borne freight where cost effective. The Applicant's view is that the balance lies in favour of securing the available capacity at night but ensuring that impacts are appropriately mitigated. Once established, the timetable would be fixed, creating certainty about the timing of the Sizewell C freight trains. An illustrative timetable is provided in Chapter 11 of the **Consolidated Transport Assessment** (Doc Ref 8.5(B)).
	Response by East Suffolk Council at Deadline 2	Ideally, from a noise impact perspective, ESC would prefer there to be no freight train movements at night because this is a new source and there is clearly much greater potential for disturbance at night. However, ESC understands that the Applicant has engaged with Network Rail extensively on this point and that there is insufficient capacity during the day to accommodate the freight paths. Running all trains during the daytime would clearly negate any potential night-time impacts, but the Applicant has stated that this would not be practicable within the constraints on the line. We also understand that the timetable for the night rail, particularly at peak use, is relatively restricted however if a period where movements were excluded in the most sensitive part of the night could be accommodated and this did not unreasonably increase impact from movements in the more condensed periods before and after it would be worth considering but would require assessment first. In terms of enforceability, it should be a relatively simple matter as other than survey and maintenance trains we understand the only night rail traffic is as a result of the Sizewell C project, if trains were moving within any exclusion period then it would be easier to determine the source.

ExQ1	Question to:	Question:
	Response by Network Rail at Deadline 2	Network Rail could only restrict train movements based on safety or capacity issues. However, if the Examiner felt it was necessary, we understand a restriction could be included in the DCO as a requirement. However, to optimise freight train movements overnight paths are necessary. The Applicant will need to comment on their impacts as a result of excluding train operations.
	Response by Suffolk County Council at Deadline 2	SCC's wish is to maximise rail movements and to have as many trains as are operationally possible; however, this must be balanced against causing a detrimental impact on residents. There is a balance to be struck between operational practicalities and the amenity of residents. In that spirit, SCC is supportive of a period of no train operations. By our estimation, under the current proposals there will be a short window between 01:30am and 04:30am when there will be no train movements. Such a provision would need to include a clause for emergencies, but subject to that it should in principle be reasonable and enforceable. On the mechanics of enforcement, SCC defer to the expertise of ESC.
	Response by SZC Co. at Deadline 3	SZC Co. has nothing further to add to its response at Deadline 2, other than to note in reply to SCC's response that limiting the number train paths would not be practical for the reasons set out at Deadline 2, and that the potential for gaps between trains is reduced after the early years where there are two trains per day. The gaps between trains are decreased as the number of trains increases.
	Response by East Suffolk Council at Deadline 3	ESC agree with the Applicant's explanation of why a night-time exclusion period would be impractical. However, this again emphasises the importance of the RNMS and NMS (and potentially noise barriers/screens) in mitigating airborne rail noise impacts. If the RNMS cannot be delivered as currently proposed and/or noise barriers are demonstrated to be impractical/ineffective, then ESC consider that the NMS thresholds for airborne rail noise may need to be reduced further to offset this and ensure the policy aims of NPS EN-1 are met, as this would affect the balance of acceptability.
	Response by Suffolk County Council at Deadline 3	As per our original response to this question, SCC's wish is to maximise rail movements and to have as many trains as are operationally possible; however, this must be balanced against causing a detrimental impact on residents. There is a balance to be struck

ExQ1	Question to:	Question:
		between operational practicalities and the amenity of residents. If, as indicated by the Applicant in its response, timing limitations would reduce the number of train deliveries possible this would be of concern to SCC, as it would be likely to result in an increase of HGV deliveries. However, we have not seen the evidence that timing limitations necessarily lead to less trains being deliverable, so would seek further consideration of the possibility of a period during the night of no train operations, without impacting on the number of train deliveries. The Applicant should also set out how provision will be made (considering the night-time operation of freight trains, for maintenance of the railway, much of which is normally carried out at nights and weekends?
	Response by Woodbridge Town Council at Deadline 3	SCC's response at Deadline 2 supports a quiet period at night and suggests it could be between 01.30 and 04.30. WTC welcomes the intention of this suggestion, but we are unclear on the actual benefit Woodbridge would see from it. It represents only a short period of undisturbed sleep. Also, it's unclear whether the quiet period applies to the whole length of track between Felixstowe and Sizewell, or just one end, or a point in the middle. If it were at one end, this would still mean trains were passing Woodbridge (and other communities on the line) well into this supposed quiet period. ESC's response at Deadline 2 says that enforcement should not be difficult (which is welcome), but seems to prioritise the timetable of construction above the health and well-being of people living near the railway. NWR's response at Deadline 2 offers no view on this, other than saying it's not for them to impose restrictions for reasons other than safety or capacity.
	Response by SZC Co. at Deadline 5	In response to Woodbridge Town Council's Deadline 3 response, a regularly-occurring gap in rail services is not proposed as it would prevent delivery of the proposed rail freight provision. The illustrative timetable provided in Chapter 11 of the **Consolidated Transport Assessment** [REP4-005] shows the need for trains to operate through the night, particularly given the speed restrictions set out in the draft **Rail Noise Mitigation Strategy** [AS-258].
NV.1.27	ESC, SCC	**Rail Noise**

ExQ1	Question to:	Question:
		In the Additional information supplied by the Applicant in [AS 257] an assessment of sleep disturbance has been set out. Do the Councils agree the methodology of assessment and the subsequent justification for the setting of the LOAEL and SOAEL in this respect?
	Response by SZC Co. at Deadline 2	No response from SZC Co. is required.
	Response by East Suffolk Council at Deadline 2	Notwithstanding the obvious differences between a new high-speed rail line and rail traffic serving the construction of a power station, the technical basis for the adopted LOAEL and SOAEL is accepted. However, the overarching policy aims of NPS EN-1 require that all efforts are taken to mitigate adverse effects above LOAEL and to avoid significant adverse effects above SOAEL. As such, adequate consideration of mitigation is critical to the correct use of these parameters. ESC does not currently consider the Applicant has adequately explored and exhausted all mitigation options to "mitigate and minimise" adverse impacts, or that the Rail Noise Mitigation Scheme provides adequate protection for residents. Specifically, we consider that the scheme should be triggered at a level below SOAEL, which simply represents a threshold to be avoided. Discussions are ongoing on this between the Applicant and ESC and progress is expected, but this remains a key concern.
	Response by Suffolk County Council at Deadline 2	Notwithstanding the obvious differences between a new high-speed rail line and freight rail traffic serving the construction of a power station, the survey and modelling work undertaken by the Applicant makes the technical basis for the adopted LOAEL and SOAEL acceptable. However, the overarching policy aims of NPS EN-1 require that all efforts are taken to mitigate adverse effects above LOAEL and to avoid significant adverse effects above SOAEL. As such, adequate consideration of mitigation is critical to the correct use of these parameters. SCC does not currently believe that the Applicant has adequately explored and exhausted all mitigation options to "mitigate and minimise" adverse impacts, or that the Rail Noise Mitigation Scheme provides adequate protection for local residents. Specifically, we believe that the scheme should be triggered at a level below SOAEL, which simply represents a threshold to be avoided. Discussions are ongoing on this between The Applicant and ESC and progress is expected, but this remains a key concern. Further commitments are also needed between The Applicant and Network Rail to secure noise reducing rail infrastructure.

ExQ1	Question to:	Question:
	Response by SZC Co. at Deadline 3	As noted in SZC Co.'s Deadline 3 response to **Question NV.1.18**, the threshold at which noise insulation is offered for railway noise has been reduced to a threshold below the SOAEL, as a result of discussions between SZC Co. and the councils. This is reflected in the current version of the **Noise Mitigation Scheme** submitted at Deadline 2 [REP2-034]. Discussions with Network Rail, and with both councils, are ongoing regarding the potential for track replacement in key locations along the East Suffolk line.
	Response by Woodbridge Town Council at Deadline 3	WTC doesn't agree with the SCC/ESC assessment of the Applicant's methodology, as detailed in our Deadline 2 submission [REP2-198]. Public Health England has a different view which in part utilises different methodology
	Response by SZC Co. at Deadline 5	SZC Co. has nothing further to add to its previous responses, other than to note that a response to comments on Woodbridge Town Council's Deadline 2 submission submitted at Deadline 5, can be found at **SZC Co. Comments on Submissions from Earlier Deadlines (Deadlines 2-4)** (Doc Ref 9.54).
NV.1.28	ESC, SCC, PHE	**Rail Noise** It would appear that the ES recognises a significant harm to between 100 and 110 properties. Would this accord with NPS EN1 Policy to avoid harm to human health, or the aims of the Noise Policy Statement for England? Do the Councils or PHE consider the approach justified in seeking to set a SOAEL at a higher level than the significant level identified through the ES assessment?
	Response by SZC Co. at Deadline 2	While not a question for SZC Co. to respond to, it should be clear that the number of 100 to 110 properties relates to the number of properties expected to have night-time L_{AFmax} noise levels of between 70 and 77dB, which would be considered to be subject to a significant adverse effect, in an EIA context. There is no direct link between a medical 'harm' and these outcomes and it is not SZC Co.'s position that the occupants of these properties will be subject to "significant harm".
	Response by East Suffolk Council at Deadline 2	The overarching policy aims of NPS EN-1 require that all efforts be taken to mitigate adverse effects above LOAEL and to avoid significant adverse effects above SOAEL. As such, adequate consideration of mitigation is critical to the correct use of these parameters. ESC does not consider the Applicant has adequately explored and exhausted all mitigation options to "mitigate and minimise" adverse impacts, or that the Rail Noise

ExQ1	Question to:	Question:
		Mitigation Scheme provides adequate protection for local residents. Specifically, we consider that the scheme should be triggered at a level below SOAEL, which simply represents a threshold to be avoided. Discussions are ongoing on this between the Applicant and ESC and progress is expected, but this remains a key concern.
	Response by Suffolk County Council at Deadline 2	The overarching policy aims of NPS EN-1 require that all efforts be taken to mitigate adverse effects above LOAEL and to avoid significant adverse effects above SOAEL. As such, adequate consideration of mitigation is critical to the correct use of these parameters. SCC do not currently believe that The Applicant has adequately explored and exhausted all mitigation options to "mitigate and minimise" adverse impacts, or that the Rail Noise Mitigation Scheme provides adequate protection for local residents. Specifically, we believe that the scheme should be triggered at a level below SOAEL, which simply represents a threshold to be avoided. Discussions are ongoing on this between The Applicant and ESC and progress is expected, but this remains a key concern. Further commitments are also needed between The Applicant and Network Rail to secure noise reducing rail infrastructure.
	Response by Public Health England at Deadline 2	In preparing this response, PHE has assumed that this question is with reference to the SOAEL and the levels associated with "Low", "Medium" and "High" magnitude of impact expressed in terms of the maximum noise level (LAmax). PHE is not able to provide an evidence-based general recommendation for a single SOAEL that is able to achieve the aims and objectives of the Noise Policy Statement for England and the Planning Practice Guidance on noise. As noted in our response to question NV.1.19, consideration of physiological sleep disturbance from train pass-bys need to take into account both the maximum levels and number of events. For ES assessments, PHE welcomes judgements of significance that take into consideration a number of additional factors that are relevant to the noise-health association. For transportation schemes these factors can include: • The existing noise exposure of affected communities – in particular, consideration of any designated Noise Important Areas identified in proximity to the scheme; • The size of the population affected – for example an effect may be deemed significant if a large number of people are exposed to a relatively small noise change; • The relative change in number and type of vehicle pass-bys;

ExQ1	Question to:	Question:
		• Changes in the temporal distribution of noise during day/evening/night, or between weekdays and weekends; • Soundscape and tranquillity, in particular the value that communities put on the lack of environmental noise in their area, or conversely, on the lack of public areas within walking distance that are relatively free from environmental noise; • Opportunities for respite (predictable periods of relief from noise), either spatially or temporally; • Cumulative exposure to other environmental risk factors, including other sources of noise and air pollution, Local health needs, sensitivities and objectives.
	Response by SZC Co. at Deadline 3	As noted in SZC Co.'s Deadline 3 response to **Question NV.1.18**, the threshold at which noise insulation is offered for railway noise has been reduced to a threshold below the SOAEL, as a result of discussions between SZC Co. and the councils. This is reflected in the current version of the **Noise Mitigation Scheme** submitted at Deadline 2 [REP2-034]. Discussions with Network Rail, and with both councils, are ongoing regarding the potential for track replacement in key locations along the East Suffolk line. SZC Co. can confirm that no Noise Important Areas were identified as a result of railway noise between Ipswich and the site.
	Response by East Suffolk Council at Deadline 3	The Applicant's comment that there is no direct link between the threshold of significance in EIA terms and medical 'harm' is noted. However, the Applicant has not responded to the ExA's query about whether this would accord with the aims of Noise Policy Statement for England (NPSE). On this specific point ESC would emphasise our previous response to this question, in relation to the overarching policy aims of NPS EN-1 and the NPSE. Specifically, ESC does not consider the Applicant has adequately explored and exhausted all mitigation options to "mitigate and minimise" adverse impacts. Again, the revised lower NMS eligibility thresholds (in line with the EIA significance) are welcomed, but if the RNMS is not deliverable then ESC consider that the NMS thresholds for airborne rail noise might need to be reduced further to offset this and deliver an acoustically viable rail freight strategy.

ExQ1	Question to:	Question:
	Response by Woodbridge Town Council at Deadline 3	WTC doesn't agree with the SCC/ESC assessment of the Applicant's methodology, as detailed in our Deadline 2 submission [REP2-198]. Public Health England has a different view which in part utilises different methodology
	Response by SZC Co. at Deadline 5	SZC Co. has nothing further to add to its previous responses, other than to note that SZC Co response to Woodbridge Town Council's Deadline 2 Submission can be found at **SZC Co. Comments on Submissions from Earlier Deadlines (Deadlines 2-4)** (Doc Ref 9.54).
NV.1.29	ESC	**Rail Noise** The Applicant concludes [APP 545] that up to 460 properties would be subject to noise above the L_{Amax} based LOAEL. Do you agree that the secondary mitigation offered would minimise the adverse effects on health and quality of life?
	Response by SZC Co. at Deadline 2	While not a question for SZC Co. to respond to, it is noted that the number of 460 properties relates to the total number of properties expected to be subject to railway L_{AFmax} noise levels above LOAEL, but does not include those above SOAEL. The **Noise Mitigation Scheme**, the original version of which can be found in **Volume 2, Appendix 11H** of the **ES** [APP-210], has been amended following discussions with ESC so that noise insulation will be offered when maximum sound levels from trains exceeds 73dB L_{AFmax} (as a façade level, equivalent to 70dB as a free-field value). The updated version of the **Noise Mitigation Scheme** is provided as Doc Ref. 6.3 11H(A).
	Response by East Suffolk Council at Deadline 2	ESC understands that the Noise Mitigation Scheme is now referred to as "Secondary" mitigation, where it was previously referred to as "Other" mitigation in the original assessment (ES Vol 9 Ch 4). ESC does not currently consider that the Applicant has adequately explored and exhausted all mitigation options to "mitigate and minimise" adverse effects on health and quality of life (between LOAEL and SOAEL). Primary mitigation proposals are currently limited to track engineering (material upgrades and improvements) and operational restrictions, and other mitigation options exist which have not been considered and could effectively "mitigate and minimise".

ExQ1	Question to:	Question:
		NPS EN-1 clearly states that "it may be appropriate for the Planning Inspectorate to consider requiring noise mitigation through improved sound insulation to dwellings" but only in situations "when all other forms of noise mitigation have been exhausted". This is an important distinction because it suggests that offering improved sound insulation to eligible properties should be the last resort in terms of mitigation. The Planning Practice Guidance for noise (PPG) also reflects this position, stating that there are four broad types of noise mitigation: 1. Engineering (reducing noise at source) 2. Layout (using distance and good design to reduce impacts) 3. Planning conditions/obligations (e.g. restricted activities) 4. Mitigation through noise insulation (for dwellings). Clearly, there is both potential and a policy-based intention for all forms of mitigation to be considered to "mitigate and minimise" adverse effects on health and quality of life. ESC has discussed this with the Applicant, who is currently carrying out an exercise to explore other options for mitigation, including trackside screening. This process could satisfy ESC's concerns, but this is ongoing.
	Response by SZC Co. at Deadline 3	These matters remain under discussion between SZC Co. and ESC, and the potential for track replacement in key locations along the East Suffolk line also continues to be explored with Network Rail.
	Response by East Suffolk Council at Deadline 3	The Applicant's response highlights the revised NMS thresholds. Again, this is welcomed but ESC would reiterate that delivering the RNMS is fundamental to the current assessment of effects and if the RNMS is not deliverable then then ESC consider that the thresholds might need to be reduced further to offset this and deliver an acoustically viable rail strategy.
	Response by Woodbridge Town Council at Deadline 3	WTC concurs with ESC's response at Deadline 2. While it would be best if the project did not proceed at all (for numerous other reasons), the noise from construction trains - whether during the day or at night - should be as little as possible in order to preserve the tranquillity of the town and the nearby important estuary SPA, RAMSAR site and SSSI.

ExQ1	Question to:	Question:
	Response by SZC Co. at Deadline 5	Section 8.8 b iv) of the **Shadow HRA Report** [APP-145] presents a detailed analysis of the potential effects of anthropogenic noise and visual disturbance on waterbirds. On the basis of that analysis, a 70dB noise level (L_{Amax}) is considered appropriate for non-breeding waterbirds as a precautionary threshold at which the behavioural response of birds may start to become potentially costly in terms of energy expenditure. In other words, this is a threshold at which the potential for adverse effects to individual birds may start to arise and, below this level, significant effects would not be expected. A threshold of 70dB noise level (L_{Amax}) is, therefore, adopted as the threshold against which the potential effects of railway noise on the non-breeding waterbird qualifying features of the Deben Estuary SPA and Ramsar site are assessed. The predictions from the operational noise modelling indicate that the zone of predicted exceedance of the 70dB L_{Amax} noise level is restricted to a narrow corridor along the railway line, and at no point does this zone extend into the Deben Estuary SPA and Ramsar site. With the exception of a very small area (approximately 0.55ha) adjacent to Melton, where the predicted noise level is between 60 and 70dB L_{Amax}, the predicted noise level within the SPA and Ramsar site is less than 60dB L_{Amax}. Consequently, no significant disturbance effect to waterbirds within the SPA and Ramsar site would be expected.
NV.1.33	The Applicant	**Main Development Site** (i) Piling is potentially a significant noise source; please provide a schedule of piling for the development at the main development site. It would be helpful to understand which elements of the project include piling and therefore please provide the breakdown setting out the information, so this is understood? (ii) Within the schedule set out an approximate time frame for such activities for each location and over what period this anticipated to take place?
	Response by SZC Co. at Deadline 2	The current schedule of piling for the main development site is provided below:

<table>
<tr><th>ExQ1</th><th>Question to:</th><th>Question:</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><th>Piling location</th><th>Indicative duration of works (months)</th><th>Construction phase (1-5)</th></tr>
<tr><td>Platform edge to Sizewell Marshes SSSI</td><td>19</td><td>1</td></tr>
<tr><td>Cut-off Wall</td><td>10</td><td>1</td></tr>
<tr><td>SSSI Crossing</td><td>6</td><td>1</td></tr>
<tr><td>Combined Drainage Outfall</td><td>1</td><td>1</td></tr>
<tr><td>Tunnel launch shafts</td><td>3</td><td>1</td></tr>
<tr><td>Temporary Hard Coastal Defence Feature</td><td>3</td><td>1</td></tr>
<tr><td>Temporary Beach Landing Facility</td><td>8</td><td>1</td></tr>
<tr><td>Permanent Beach Landing Facility</td><td>4</td><td>1</td></tr>
<tr><td>Permanent Hard Coastal Defence Feature</td><td>7</td><td>3</td></tr>
</table>

Please refer to ES Addendum Volume 3, Appendix 2.2.B [AS-202] for further detail on the construction phases. In addition, piling may also be required in various locations across the main development site to support activities such as the construction of significant temporary structures.

Advance notice of noisy or disruptive works would be given in accordance with the Code of Construction Practice (Doc Ref. 8.11(B)). This will involve targeted communications to local residents, business occupiers and relevant authorities and will normally take place at least one week before the planned works are due to take place.</td></tr>
<tr><td></td><td>Response by Stop Sizewell C at Deadline 3</td><td>The quantity and duration of piling is a significant concern, especially their concentration during Construction Phase 1. Giving a week’s notice to residents for noise disturbance that would last months seems wholly inadequate.</td></tr>
<tr><td></td><td>Response by SZC Co. at Deadline 5</td><td>SZC Co. has nothing further to add to its previous responses.</td></tr>
<tr><td>NV.1.45</td><td>The Applicant</td><td>Two Village Bypass
In light of the above has an acoustic barrier been considered for those sections of road either at grade or elevated above ground, or either side of the proposed bridge?
In the event this has not been considered in light of the acknowledged adverse effects, please clarify why this has not been considered or it has been ruled out.</td></tr>
<tr><td></td><td>Response by SZC Co. at Deadline 2</td><td>A number of noise control measures were considered during the design process of the two village bypass, and Sizewell link road, including the use of low noise road surfaces,</td></tr>
</table>

ExQ1	Question to:	Question:
		barriers and bunds and maximising the benefit of natural ground features, such as cuttings, to increase the level of noise attenuation. The measures were fed into the design of the roads, and through a process of optimisation and balancing of various parameters, the road design emerged. It is noted, however, that the roads are designed in outline terms within certain design parameters, and the final design details are not yet fixed. There will be opportunity for further noise control measures to be incorporated into the detailed road design.
	Response by FERN at Deadline 2	This does not seem to be correct as Hill Farm is 370m away from EDF's alignment and Walk Barn Farm 485m away so neither would be adversely affected. There are more significant adverse effects, as shown in Table 1 and Table 2 in [REP3-102].
	Response by SZC Co. at Deadline 5	SZC Co.'s response at Deadline 2 remains valid.
NV.1.49	The Applicant, ESC, SCC	**Two Village Bypass** In light of the recognised significant adverse effects that would arise from the use of the two village bypass during operation, can this be regarded as sustainable development?
	Response by SZC Co. at Deadline 2	The DCO application falls to be considered primarily against the policy requirements of the NPSs. Compliance with the terms of the NPSs would provide a strong indication that a proposal accords with government policy, including policies for sustainable development which involve the need to balance economic, social and environmental considerations. The NPSs are deliberately drawn to be wide ranging and to encompass all of those matters which Government considers are most directly relevant to the assessment of proposals for nationally significant infrastructure. There is no 'other' policy test which sits outside and above the NPSs. Even if the two village bypass were a stand-alone project assessed on its own merits, it would be appropriate to also recognise the significant benefits that it brings, along with the support for the principle of the bypass apparent through successive consultations, including the consistent support for a bypass from the affected parish councils, the District Council and the County Council.

ExQ1	Question to:	Question:
		A bypass of at least the two villages is supported in the East Suffolk Local Plan (at paragraph 3.31) and in the Infrastructure Delivery Plan at Appendix B of the Plan, which describes the bypass as 'essential'. In this context, 'essential' is defined in the Plan as: "*Essential infrastructure is the infrastructure that is necessary to support and mitigate development and ensures policy objectives of the Local Plan are met. Development could take place without this infrastructure but its sustainability would be undermined*." The bypass, therefore, is recognised by the Local Plan to bring sustainability benefits. No party that supports the bypass can expect that it would not involve some adverse effects – for instance, in noise or landscape or ecology terms but the fact of some adverse effects is not such as to outweigh the benefits of the bypass or the need for it. Noise effects of the type referenced in the question also need to be considered in the context of other considerations. As the Noise Policy Statement for England explains (at paragraphs 2.17 and 2.18), noise effects need to be considered in the context of the Government's policy for sustainable development, which means that: "*This should avoid noise being treated in isolation in any particular situation, i.e. not focussing solely on the noise impact without taking into account other related factors*." Even if the noise effects were to be taken in isolation and even if the bypass was considered on its own merits without reference to its wider role and benefits, its noise effects are not such as to trigger the policy test at NPS EN-1 paragraph 5.11.9 because significant adverse effects on health and quality of life are avoided. Taken as a whole, however, and seen in its proper context, the two village bypass forms an important component of the mitigation measures necessary to ensure the delivery of nationally important infrastructure. In that context, it benefits from very strong policy support.
	Response by East Suffolk Council at Deadline 2	ESC defers to SCC as local highway authority to respond to this question as operational noise from new road schemes is under the responsibility of the local highway authority.
	Response by Suffolk County Council at Deadline 2	SCC considers that it could be sustainable development, provided that acceptable measures are put in place, such as those mentioned in the LIR [REP1-049] at para 16.68 and in Annex M (examination library reference pending).

ExQ1	Question to:	Question:
		The NPPF sets out (in paragraph 8) three objectives of sustainable development: economic, social and environmental. It notes that these are interdependent and need to be pursued in mutually supportive ways, and (in paragraph 8) that they are not criteria against which every decision can or should be judged. Notwithstanding the latter, we provide here an overview of the balance of these three strands against the adverse noise. Economic objective The Two Villages Bypass will reduce delays to traffic using the A12 and in the future support local growth in the district, as indicated by the Applicant's traffic modelling at Table 8C.15 to Table 8C.21 of the Transport Assessment Addendum Appendices 8B-9B [AS-269], which shows a reduction in journey times on Routes 2 (no SLR), A2 and A3, which all include the Two Village Bypass in the operational scenario. Historic work undertaken by SCC that supported the SCC's SEGWay scheme also indicated the benefits in travel times associated with a bypass. Social Objective Removing the majority of road traffic from the centres of Stratford St Andrew and Farnham the Two Village Bypass will have a significant positive impact on local residents and listed buildings. Set against this is the lesser but still important impact to residents close to the new alignment and the impact on users of rights of way. Environmental Objective Removal of traffic will have significant benefits with respect to reducing NOx levels in the Stratford St Andrew AQMA. However, this is balanced against the significant negative impact on the environment, particularly in the River Alde valley with loss of green space, habitat, noise, vibration and visual impact. Noise impacts SCC notes that, as a result of the Two Village Bypass, a substantial number of properties along the existing A12 in Farnham and Stratford St Andrew benefit from considerably less noise than currently. Adverse noise effects have been identified by the Applicant to impact properties in these and other villages, as demonstrated in Volume 6, Chapter 4, Table 4.18 (Predicted Operational Noise). SCC believes it is imperative that that all efforts are taken to mitigate.

ExQ1	Question to:	Question:
	Response by SZC Co. at Deadline 3	Other than to note that these matters remain under discussion with both ESC and SCC, SZC Co. has no further comments to add.
	Response by East Suffolk Council at Deadline 3	The Applicant's response is noted, although ESC's understanding is that the policy aims of NPS EN-1 and the NPS (mitigate/minimise above the LOAEL, avoid at the SOAEL) are part of the Government's policies on sustainable development. If these policy aims are not met then this part of the proposed development might arguably not be sustainable in terms of noise. It is our understanding that SCC are currently undertaking further reviews of the road traffic noise and vibration assessments and further comments may be provided by SCC in due course.
	Response by Suffolk County Council at Deadline 3	SCC considers it imperative that all efforts are taken to mitigate adverse effects above LOAEL and to avoid significant adverse effects above SOAEL, as set out in the NPS EN-1. This means mitigating noise at source through the implementation of quiet road surfacing, road noise barriers and landscaping as a first option before noise insulation is offered to residents. SCC requires that the Applicant makes a commitment to mitigate noise through engineering as a primary stage in its Draft Noise Mitigation Strategy, as well as clarify the process for monitoring and mitigating road noise.
	Response by SZC Co. at Deadline 5	SZC Co. has nothing further to add to its previous responses other than to note that there is no separate Draft Noise Mitigation Strategy for road traffic noise, as referenced by SCC in their Deadline 3 response.
NV.1.51	The Applicant	**Sizewell Link Road** (i) The ES identifies that during the first year of operation 2034 significant adverse effects would remain at Fordley Hall, Trust Farm, Theberton Grange, Oak House and Hawthorn Cottages. This significant adverse effect would appear from Table 4.23 of [APP-451] to remain following the implementation of the Noise Mitigation Scheme. Please confirm this understanding is correct. (ii) This being the case there would appear to remain a significant adverse effect in the long term. Is this understanding correct?

ExQ1	Question to:	Question:
		(iii) Please explain how this is considered to accord with the NPS EN1 and NPSE approach which aims to avoid such occurrences.
	Response by SZC Co. at Deadline 2	(i) The significant adverse effects identified in the first year of operation in 2034 are predicted to occur at Receptors 3 Fordley Hall, 12 Trust Farm, 13 Dovehouse Farm, 16 Doughty Wylie Crescent, 17 Theberton Grange, 19 Oakfield House, 20 Hawthorn Cottage, and 37 Moat House. The significant adverse effects result from the change in traffic noise level, and are significant in an EIA context. The **Noise Mitigation Scheme** (the original version of which was contained in **Volume 2, Appendix 11H** of the **ES** [APP-210] with a revised version provided as Doc Ref 6.3 11H(A)), provides for improvements in the noise insulation of properties where the eligibility thresholds are met. The **Noise Mitigation Scheme** thresholds were predicted to be exceeded at three receptors in **Volume 6, Chapter 4** of the **ES** [APP-451], although the noise levels at one of these, Receptor 24 A12 Yoxford Centre, was revised in **Volume 3, Appendix 6.3.C** of the **ES Addendum** [AS-249] and is no longer expected to be eligible. (ii) Yes, there are expected to be significant adverse effects, in an EIA context, at eight receptors, or groups of receptors, in the long-term. The implementation of the **Noise Mitigation Scheme** at two receptors, Receptors 26 B1122 Rail Crossing and 31 Laurel Farm will avoid the SOAEL being exceeded. The changes in traffic noise level that define the significant adverse effect, in an EIA context, will remain. (iii) The requirement in NPSE and NPS EN1 is to avoid significant adverse effects on health and quality of life, which is achieved through the implementation of the **Noise Mitigation Scheme** at the two locations where such outcomes are predicted. The NPSE and NPS EN-1 do not require significant adverse effects, as defined more broadly in the EIA Regulations, to be avoided. The SOAEL is not the same as a significant adverse effect in an EIA context. Please see the answer to **Question NV.1.75(i)** of this chapter for an explanation of this.
	Response by Stop Sizewell C at Deadline 3	This would appear to be the first explicit acknowledgement that significant long term adverse effects would remain for at least eight properties on the Sizewell Link Road, but

ExQ1	Question to:	Question:
		the Applicant's answer implies only two of these locations include significant adverse effects on health and quality of life. Why is the same mitigation not being applied to all these properties?
	Response by SZC Co. at Deadline 5	The extent, duration and magnitude of effects is set out in the submitted ES and ES Addendum; the information contained in SZC Co.'s response to ExQ1 NV.1.51 is not new information. The eligibility of properties for insulation under the **Noise Mitigation Scheme** [REP2-034] is subject to the qualifying tests set out in that document.
NV.1.52	The Applicant	**Sizewell Link Road** Preparation phase – significant adverse effects are identified at Fir Tree Farm, Rosetta, Dovehouse Farm, Church Farm, Rookery Farm and Keepers Cottage. Please explain how these effects would be mitigated to comply with NPS EN1 and NPSE policy.
	Response by SZC Co. at Deadline 2	Mitigation measures are described in **section 4.7** in **Volume 6, Chapter 4** of the **ES** [APP-451] and in the **Code of Construction Practice** (Doc Ref. 8.11(B)). The measures should be capable of reducing noise and vibration levels such that these effects are no longer significant.
	Response by Charles Macdowell, B1122 Action Group at Deadline 3	Sizewell Link Road Preparation phase – significant adverse effects are identified at Fir Tree Farm, Rosetta, Dovehouse Farm, Church Farm, Rookery Farm and Keepers Cottage. We believe that the applicant's mitigation measures (section 4.7 in Volume 6, Chapter 4 of the ES) are insufficient, in particular as screening vegetation will take some time to grow. The applicant should add noise screening fencing and double/triple glazing. We do not believe that sufficient weight has been given to receptors exposed simultaneously to Early Years traffic and SLR Construction noise, including Norwood House retirement home, Thatched House and other residences in Middleton Moor on the south side of the B1122, Garden House Farm, Annesons Cottage and Valley Farm. These should also be offered noise screening fencing and double/triple glazing. This also applies to receptors on the B1122 in Yoxford.
	Response by SZC Co. at Deadline 5	In response to the B1122 Action Group's Deadline 3 response, SZC Co. notes that improvements to the sound insulation of properties is offered under the **Noise Mitigation**

ExQ1	Question to:	Question:
		Scheme [REP2-034], subject to qualifying criteria and this scheme applies to noise from all aspects of the project.
NV.1.54	ESC	**Yoxford Roundabout** Are the Council satisfied with the findings in respect of this part of the scheme and that the mitigation proposed to avoid the SOAEL being exceeded at Sunnypatch, The Old Barn, Rookery Cottages and Hopton Yard would achieve appropriate levels of mitigation to avoid harm to health and comply with the requirements of the NPS EN1 and NPSE.
	Response by SZC Co. at Deadline 2	No response from SZC Co. is required.
	Response by East Suffolk Council at Deadline 2	ESC defers to SCC as local highway authority to respond to this question as operational noise from new road schemes is under the responsibility of the local highway authority.
	Response by SZC Co. at Deadline 3	No further response from SZC Co. is required.
	Response by Suffolk County Council at Deadline 3	SCC considers it imperative that that all efforts are taken to mitigate adverse effects above LOAEL and to avoid significant adverse effects above SOAEL, as set out in the NPS EN-1. This means mitigating noise at source through the implementation of quiet road surfacing, road noise barriers and landscaping as a first option before noise insulation is offered to residents. Discussions are ongoing on this between the Applicant and SCC and progress is expected, but this remains a key concern.
	Response by SZC Co. at Deadline 5	SZC Co. has nothing further to add other than to confirm that these matters remain under discussion with SCC and ESC.
NV.1.55	ESC	**Yoxford Roundabout** Delivery of screening and final working methodology is yet to be finalised. Are the Council satisfied that the method of mitigation is appropriately secured?
	Response by SZC Co. at Deadline 2	No response from SZC Co. is required.
	Response by East Suffolk Council at Deadline 2	ESC defers to SCC as local highway authority to respond to this question as operational noise from new road schemes is under the responsibility of the local highway authority.

ExQ1	Question to:	Question:
	Response by SZC Co. at Deadline 3	No further response from SZC Co. is required.
	Response by Suffolk County Council at Deadline 3	See SCC comment to NV.1.49
	Response by SZC Co. at Deadline 5	SZC Co. has nothing further to add other than to confirm that these matters remain under discussion with SCC and ESC.
NV.1.59	The Applicant, ESC	**Night Time Noise** (i) On the basis that a value of 40dB Lnight represents a level where adverse effects begin to occur in locations with a low background noise level at night on what basis has a level of 60dB been assessed to represent only a low impact? (ii) How has this figure been arrived at? (iii) Can this be reasonably argued to avoid adverse health effects when the WHO guidance recognises that adverse health effects are identified at night when levels exceed 40dB Lnight-outside.
	Response by SZC Co. at Deadline 2	(i) In responding to this question, it is assumed that the 60dB referred to is the 60dB L_{AFmax} level identified as a LOAEL in a number of the assessments. Noise assessed using the L_{night} parameter is different to noise assessed using the L_{AFmax} parameter. The L_{night} is the equivalent continuous level of noise events in the 8 night-time hours between 23:00 and 07:00 hours over a period of one year, whereas L_{AFmax} is the highest noise level that occurs in a given period. These terms are explained in the **Glossary** in **Volume 1, Appendix 6G** of the **ES** [APP-171]. There is no fixed correlation between the two, as they relate to different ways of quantifying sound. An exceedance of a 40dB L_{night} threshold does not indicate an exceedance of a 60dB L_{AFmax} threshold, and vice versa. (ii) The derivation of the 60dB L_{AFmax} value is set out in **Volume 1, Appendix 6G, Annex 6G.1** of the **ES** [APP-171], starting at **paragraph 5.78**.

ExQ1	Question to:	Question:
		(iii) For the reasons explained above, yes, it can; the two methods of quantifying cannot be directly correlated, so conclusions based on one measure of sound, will not have meaning for the other.
	Response by East Suffolk Council at Deadline 2	The question is unclear to ESC because it appears to be based on comparing a night-time LOAEL value with a daytime SOAEL value. We are unsure that the 60dB quoted is correctly quoted, we are assuming that it was intended to read 60dBLmax. If this assumption is correct, we can respond at a later deadline. However, ESC does not agree that "a value of 40dB Lnight represents a level where adverse effects begin to occur in locations with a low background noise level at night" and consider that night-time absolute noise levels from the operational power station should be assessed using an alternative criterion which considers the character of the sound. This criterion should be set in accordance with BS 4142:2014+A1:2019.
	Response by SZC Co. at Deadline 3	This matter remains under discussion between ESC and SZC Co., although SZC Co. would note that there is no mechanism for determining absolute criteria for operational noise using BS4142: 2014+A1: 2019 and that reference to other standards and guidelines is necessary, nor is it possible to definitively identify the threshold at which such an approach is appropriate from BS4142: 2014+A1: 2019, and professional judgement must be applied.
	Response by East Suffolk Council at Deadline 3	ESC remain unclear what the "60 dB" in the question relates to, and while the Applicant has attempted to respond, ESC request again that the specific parameter be clarified so that ESC can provide an appropriate response.
	Response by SZC Co. at Deadline 5	SZC Co. has nothing further to add.
NV.1.63	The Applicant, ESC Part (iii) and (iv) only)	**Noise Mitigation Scheme (NMS)** Please explain how this scheme [APP-210] would operate to protect living standards for residents such that they were not significantly affected. (i) How would the mitigation offered protect gardens? (ii) How would the noise environment within properties be protected to an acceptable degree when windows were open?

ExQ1	Question to:	Question:
		(iii) Do the Council consider the mitigation scheme as drafted sufficiently clear and enforceable such that receptors would be adequately protected? (iv) Do the Council consider this would be better secured through the DCO or S106?
	Response by SZC Co. at Deadline 2	(i) The **Noise Mitigation Scheme** (the original version of which was contained in **Volume 2, Appendix 11H** of the **ES** [APP-210] with a revised version provided as Doc Ref 6.3 11H(A), is a scheme for improving the insulating performance of properties; there will be no effect from the scheme in gardens. The principles of this approach are well-established through the Noise Insulation Regulations that apply to road and railway schemes[8, 9]. (ii) The benefits of the **Noise Mitigation Scheme** will occur when windows are closed, however, the scheme allows for the installation of an alternative means of ventilating the properties, such as the through-wall ventilation system required by the Noise Insulation Regulations that apply to road and railway schemes[10, 11]. (iii) No response from SZC Co. is required. (iv) No response from SZC Co. is required.
	Response by East Suffolk Council at Deadline 2	(iii) ESC does not consider the mitigation scheme as currently drafted to provide adequate protection to receptors. Discussions are ongoing with the Applicant in relation to the thresholds for eligibility (particularly for Main Development Site construction, and night-time rail noise), consideration of building construction(s) (particularly in relation to listed and/or protected buildings), and a process to ensure eligibility is assessed based on a refreshed noise assessment once the proposals are more developed.

[8] UK Government. The Noise Insulation Regulations 1975 (as amended 1988) (SI 1988 No 2000)

[9] UK Government. The Noise Insulation (Railways and Other Guided Transport Systems) Regulations 1996 (SI 1996 No 428)

[10] UK Government. The Noise Insulation Regulations 1975 (as amended 1988) (SI 1988 No 2000)

[11] UK Government. The Noise Insulation (Railways and Other Guided Transport Systems) Regulations 1996 (SI 1996 No 428)

ExQ1	Question to:	Question:
		(iv) ESC has no particular preference with how this would be better secured, although there are practical reasons why securing through S106 would be more efficient in terms of coordination/programme.
	Response by SZC Co. at Deadline 3	These matters remain under discussion with both ESC and SCC, and SZC Co. has no further comments to add.
	Response by East Suffolk Council at Deadline 3	In line with relevant policy, ESC reiterate that the NMS should be a last resort and the aim should be to mitigate / minimise noise via other means of mitigation where possible. This applies to road and rail noise, but also to construction noise. The Code of Construction Practice should ensure that this policy aim is met through the planning and implementation of construction works, to ensure that the NMS would only ever be required as a last resort
	Response by SZC Co. at Deadline 5	SZC Co. has nothing further to add.
NV.1.67	ESC	**Rail Noise Mitigation Strategy** The Applicant proposes a Rail Noise Mitigation Strategy [AS-258] in consultation with Network Rail and the rail freight operator. Are you satisfied this gives sufficient control over noise to safeguard health and quality of life?
	Response by SZC Co. at Deadline 2	No response from SZC Co. is required.
	Response by East Suffolk Council at Deadline 2	The assessment of noise and vibration from rail assumes that all the engineering and operational mitigation measures set out in the Rail Noise Mitigation Strategy [AS-258] are adopted in full. It is therefore ESC's view that all of these measures would need to be in place for the predictions/assessment outcomes to remain representative. The Council has raised this with the Applicant who is in ongoing discussions with Network Rail to discuss how this can be secured. Aside from this, ESC considers that a consolidated approach to mitigation is required to mitigate and minimise adverse effects on health and quality of life. NPS EN-1 states that all forms of mitigation should be considered to "mitigate and minimise" adverse effects on

ExQ1	Question to:	Question:
		health and quality of life. The Council has discussed this with the Applicant, who is currently carrying out an exercise to explore other options for mitigation, including trackside screening. This process could satisfy ESCs concerns, but this is ongoing.
	Response by SZC Co. at Deadline 3	No further comments to add to SZC Co. response for Deadline 2.
	Response by Woodbridge Town Council at Deadline 3	WTC appreciates the ESC response at Deadline 2, because it shows yet again how much work the Applicant has yet to do so that it can deliver the optimistic noise figures it claims for its FMS and how great a concern it is for the people of Woodbridge.
	Response by SZC Co. at Deadline 5	The position of ESC and WTC is understood and protected by the terms of Requirement 25.
NV.1.68	The Applicant, ESC, PHE	**Rail Noise** In the event that having the SOAEL at a higher level than the significant adverse effect level identified from the ES Assessment was not considered to be justified, do the 100-110 properties identified as being potentially subject to such noise levels need to be subject to noise mitigation for the scheme to avoid adverse health effects and be compliant with NPSE and NPS EN1 policy?
	Response by SZC Co. at Deadline 2	It is SZC Co.'s position that the SOAEL and the level at which significant adverse effects may occur in an EIA context need not align. In response to questions posed by ESC, further justification for this position was set out in a paper appended to SZC Co.'s responses to ESC's requests for information, which is itself appended to the draft Statement of Common Ground with ESC. Please also refer to the explanation in response to **Question NV.1.75** of this chapter. Nevertheless, the revised **Noise Mitigation Scheme** (the original version of which was contained in **Volume 2, Appendix 11H** of the **ES** [APP-210] with a revised version provided as Doc Ref 6.3 11H(A) now adopts a lower threshold of eligibility, aligned with the significant adverse effect level, in an EIA context. This amendment was made at ESC's request. The 100 to 110 properties identified as being potentially subject to significant adverse effects, in an EIA context, would be eligible for insulation under the revised scheme.

ExQ1	Question to:	Question:
	Response by East Suffolk Council at Deadline 2	Yes, ESC consider that properties exposed to rail noise levels above the EIA threshold for significant adverse effects (70 dB LAFmax) should be eligible to apply for enhanced sound insulation under the Noise Mitigation Scheme, rather than at the higher SOAEL value, which is just the level to be avoided.
	Response by Public Health England at Deadline 2	As noted in the response to NV 1.19 and 1.28, PHE welcomes assessments that determine significance in ES terms by taking into consideration a number of additional relevant factors, rather than comparing against a single SOAEL. Noise mitigation can consist of different options. In general control of noise at source should be the preferred form of mitigation. This can be achieved by the appropriate procurement, management and maintenance of trains and infrastructure (including wheel and rail roughness); and operational procedures and restrictions, such as speed limits. Noise mitigation at the receptor (noise insulation) should be used as a last resort. PHE expects any proposed noise insulation schemes to take a holistic approach which achieves a healthy indoor environment, taking into consideration noise, ventilation, overheating risk, indoor air quality and occupants' preference to open windows.
	Response by SZC Co. at Deadline 3	The recent revision of the **Noise Mitigation Scheme** submitted at Deadline 2 [REP2-034] now adopts a threshold of 70dB L_{AFmax} for railway noise, as requested by ESC and SCC.
	Response by East Suffolk Council at Deadline 3	The Applicant's justification for the separation of EIA significance and SOAEL is accepted by ESC. The revised lower NMS thresholds (in line with the EIA significance) are welcomed, but if the RNMS is not deliverable then ESC consider that the NMS thresholds for airborne rail noise might need to be reduced further to offset this and deliver an acoustically viable rail strategy.
	Response by SZC Co. at Deadline 5	SZC Co. refers to its Deadline 5 response at NV.1.11 and NV.1.12.
NV.1.74	The Applicant, ESC (Part (iii) only)	**Mitigation Assessment** [APP 545] para 4.7.5 (i) How will the assessment be made where a balance needs to be struck between acoustic benefit and visual harm? (ii) Who would be the decision maker?

ExQ1	Question to:	Question:
		(iii) Do you agree this is an appropriate method of assessing this planning balance?
	Response by SZC Co. at Deadline 2	(i) The screening envisaged in **paragraph 4.7.5** in **Volume 9, Chapter 4** of the **ES** [APP-545] was for the construction phase of the works only. While there will need to be a balance between acoustic benefit and adverse visual impacts, the screens would be temporary and only present for the duration of the works in that location. (ii) The mechanism for installing any such screening would fall under the **Code of Construction Practice** (Doc Ref 8.11(B)),which will be subject to agreement with ESC. (iii) No response from SZC Co. is required.
	Response by East Suffolk Council at Deadline 2	ESC is unable to answer this question at this time. We would need sight of the Applicant's responses to parts (i) and (ii) in order to respond to part (iii).
	Response by SZC Co. at Deadline 3	No further comments to add to SZC Co. response for Deadline 2, other than to clarify that the agreement of ESC to the **Code of Construction Practice (CoCP)** [REP2-056] is sought during the Examination, and that the document would be fixed at the point at which consent is granted. The detail of the monitoring, and the provision of measures to manage and mitigate the works, will be contained in the 'Noise Monitoring and Management Plans', which will be subject to agreement with ESC.
	Response by East Suffolk Council at Deadline 3	The Applicant's response to this question is noted and ESC consider this reasonable. However, ESC do note that the CoCP does not contain any discussion on the balance between acoustic benefit and visual harm and how any final decisions on the locations and of screening will be made
	Response by SZC Co. at Deadline 5	SZC Co. has nothing further to add other than to confirm that these matters remain under discussion with ESC.
NV.1.75	The Applicant ESC (part iv)	**Precedents from previous DCO and legal cases** Reference is made to two previous projects (Thames Tideway Tunnel and Heathrow) in order to justify setting a SOAEL at a different level from the level that might be regarded as having a significant adverse effect. (i) Please explain how the two cases referred to are similar to this DCO such that this approach could reasonably be justified in this case.

ExQ1	Question to:	Question:
		(ii) Please provide copies of the decisions and point out from each the explanation and justification provided in those cases. (iii) The Cranford Case would not appear to be a NSIP Case but a S78 appeal against the specific requirements of the 'Cranford Agreement'. Please explain how you consider those circumstances comparable to the current scheme. (iv) Do the Council agree that setting the SOAEL at a different level from that regarded as significant in the ES is justified?
	Response by SZC Co. at Deadline 2	(i) Since the publication of the Noise Policy Statement for England in 2010, and the introduction of the concepts of LOAEL and SOAEL into the practice of assessing schemes in the planning process, it has been necessary to reconcile different uses of the word "significant". This issue arises in the assessment of many Nationally Significant Infrastructure Projects (NSIP) and non-NSIP projects, and is not dependent on the nature of the project or its comparability to SZC. Under the NPSE and the NPS policies that incorporate its principles, the policy is to avoid significant adverse impacts on health and quality of life; below the SOAEL, other adverse impacts on health and quality of life should be mitigated and minimised. The EIA Regulations[12] are concerned with the identification of likely significant effects. The EIA Regulations further require a description of measures to 'avoid', 'prevent', 'reduce', or 'offset' significant adverse effects. Importantly, these references to 'avoid', 'prevent', 'reduce' and 'offset' are apt to include both policy responses under the NPS: i.e. avoidance of levels above the SOAEL, and mitigation and minimisation between the LOAEL and the SOAEL. The concept of significance in an EIA context is therefore broader than the SOAEL. 'Significant' effects in an EIA context include effects above and below the SOAEL. An ES is required to detail response measures in respect of both. Within that broader EIA context of significance, national policy has identified the SOAEL as the level at which the response should specifically become one of avoidance.

[12] UK Government. The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017

ExQ1	Question to:	Question:
		This difference in approach to 'significant' between noise policy and in an EIA context needs to be recognised and properly reflected in the assessment. The different approach is also seen in the fact that the policy is specifically to avoid significant adverse impacts on health and quality of life. It is sensible to consider what that term should mean. Equating such impacts with any significant effect in an EIA context would fail to recognise that noise policy adopts a tiered approach with different responses specified for impacts below the LOAEL, between the LOAEL and SOAEL, and above the SOAEL. There may be effects below SOAEL which are nevertheless significant in an EIA context, even if they do not reach a level which would have a 'significant adverse effect on health and quality of life', as that term is understood by reference to the PPG and NPSE. Furthermore, the NPSE sets its aims by reference to effects on health and quality of life, and as far as noise and vibration are concerned established practice is to correlate such effects against absolute measures of noise and or vibration. This is why, in most major projects, LOAEL and SOAEL values have been adopted using absolute values of indices. Rather than absolute levels (from which the acceptability of an environment can be understood), an EIA is concerned principally with changes or impacts. In the environmental impact assessment context, the assessment of noise and vibration effects has traditionally followed the approach adopted in many areas of environmental impact assessment in which first of all the baseline is considered, and then the effect of the proposal in the context of the baseline is evaluated. The outcome is a finding of change. An example of this is the case of road traffic noise and the procedure set out in DMRB LA111. The process of carrying out a significance assessment as part of an environmental impact assessment is not testing compliance with planning policy on the effect on the health and quality of life of individuals. For all these reasons, the criteria employed in the two processes can be different. The Thames Tideway Tunnel and Heathrow Cranford decisions expressly endorsed this approach. Crucially, the policy formulation at issue in both cases was the same as in the present case. In all three cases, the policy derives ultimately from the NPSE which provides a common policy framework on this issue across the planning regime. The three aims of the NPSE are the same as the three aims set out at NPS EN-1 paragraph 5.11.9.

ExQ1	Question to:	Question:
		For Thames Tideway Tunnel, the relevant policy was contained in the National Policy Statement for Waste Water, which at paragraph 4.9.9 adopts the NPSE policy of avoiding significant adverse effects on health and quality of life from noise and mitigating and minimising adverse effects on health and quality of life from noise. That is identical to the policy in paragraph 5.11.9 of NPS-EN1. The Examining Authority was explicit on this point, stating at paragraph 12.329: "On the first aim, the Applicant considers that the NPS relates to significant observed adverse effects as defined by NPPG and NPSE and not the definition of significant effect in the ES. We agree with this distinction."[13] The Heathrow Cranford decision was concerned with noise policy in the NPSE. As has been stated above, that policy is identical to that in NPS EN-1 at paragraph 5.11.9, which is relevant in the present case. For that reason, the fact that it was a s.78 appeal decision rather than a NSIP does not affect the support which it lends to SZC Co.'s approach to the policy. At paragraph 1064, the Heathrow Cranford Inspector confirmed: *"I do not equate the "significant adverse effects" identified in the ES with those that the NPSE seeks to avoid."* SZC's approach is also consistent with the approach in legislation to addressing noise impacts through insulation. The Noise Insulation Regulations 1975[14] and the Noise Insulation (Railways and Other Guided Transport Systems) Regulations 1996[15] specify an absolute level of noise at which a duty to insulate arises, rather than operating by reference to the measure of change as seen in the EIA context. Further confirmation of the correct approach is also found in the updated noise assessment guidance in the Design Manual for Roads and Bridges (DMRB), which was issued in November 2019 in LA111 (updated in May 2020).

[13]The Secretaries of State agreed and adopted the same approach in their decision letter at paragraphs 58 – 76.

[14] UK Government. The Noise Insulation Regulations 1975 (as amended 1988) (SI 1988 No 2000)

[15] UK Government. The Noise Insulation (Railways and Other Guided Transport Systems) Regulations 1996 (SI 1996 No 428)

ExQ1	Question to:	Question:
		LA111 separates SOAEL from significance in the EIA context. LA111 sets LOAELs and SOAELs for noise and vibration (e.g. Table 3.49.1). It does not align either with EIA significance. They are treated as different concepts. LA111 treats the SOAEL as a level of noise, whereas in LA111 EIA significance generally relates to a change in noise level. It allows for an outcome below SOAEL to be significant, in terms of the EIA Regulations. A receptor may experience a large (significant) increase in noise but if that increase comes from a low base, it may not reach a level which would justify noise insulation. LA111 expressly provides that the LOAELs and SOAELs which it identifies are to apply for the purposes of the policy test in the NPS for National Networks, i.e. to avoid significant adverse impacts on health and quality of life and to mitigate and minimise other adverse impacts on health and quality of life (England National Application Annex to LA111, E/1.3 and Table E/1.3). That is the same policy found in the NPSE and in NPS EN-1 at paragraph 5.11.9. LA111 is up to date guidance from the relevant national authorities. It should carry weight. The approach set out in LA111 accords with the planning decisions at Heathrow Cranford and Thames Tideway Tunnel. The policy regimes applicable for each (NPSE for Cranford, NPS for Waste Water for Thames Tideway Tunnel, and NPS for National Networks for road schemes and LA111) all incorporate the tests from the NPSE and are materially identical to that applicable in the present case, i.e. NPS EN-1 paragraph 5.11.9. (ii) Relevant extracts of Thames Tideway Tunnel are provided in **Appendix 21A** to this chapter and relevant extracts of Heathrow are provided in **Appendix 21B** to this chapter. The relevant passages are referred to in the answer to (i) above. (iii) The Thames Tideway Tunnel and Heathrow Cranford decisions are directly relevant because they were dealing with same policy framework from the NPSE which is applicable in the present case. Please see answer to (i) above. (iv) No response from SZC Co. is required.
	Response by East Suffolk Council at Deadline 2	(iv) We recognise the basis for this approach in some cases, but ESC does not see it as our role to decide whether it is justified in this case.

ExQ1	Question to:	Question:
		However, regardless of whether the EIA significance threshold and SOAEL are aligned, this does not detract from the overarching policy requirement to "mitigate and minimise" adverse effects and avoid significant adverse effects. In this case, considering the scale and duration of the development, if the two thresholds are not aligned then ESC consider that the threshold for eligibility for the noise mitigation scheme should be the lower of the two values, to ensure that the overarching policy requirements will be met.
	Response by SZC Co. at Deadline 3	No further comments to add to SZC Co. response for Deadline 2.
	Response by East Suffolk Council at Deadline 3	ESC note the Applicant's response but reiterate our previous response to this; regardless of whether the EIA significance threshold and SOAEL are aligned, this does not detract from the overarching policy requirement to "mitigate and minimise" adverse effects and avoid significant adverse effects, and if the two thresholds are not aligned then the threshold for eligibility for the noise mitigation scheme should be the lower of the two values.
	Response by SZC Co. at Deadline 5	SZC Co. has nothing further to add.
NV.1.76	The Applicant	**Vibration effects on Heritage Assets** (i) A number of RRs including [RR 512, 627, 822, 1138] have expressed concern that either construction activities or increased HGV traffic could damage listed buildings by way of vibration. Please respond to these concerns. (ii) Would any preconstruction surveys be undertaken, or monitoring be proposed to assess any effects?
	Response by SZC Co. at Deadline 2	(i) HGV traffic does not typically generate vibration sufficient to reach thresholds of damage to buildings, including heritage buildings, except where there are defects in the road paving or supporting formation. No locations where there are such defects are currently known, but should any become apparent prior of the start of works, the solution will be to repair the road to maintain it in a good condition.

ExQ1	Question to:	Question:
		Where receptors are very close to the edge of the road, low frequency airborne noise from the exhausts of HGVs is sometimes referred to by people experiencing it as vibration, even though it does not originate at the wheel/road interface. Low frequency noise at the levels likely to occur along roads affected by SZC traffic will not cause damage to buildings. (ii) Pre-construction condition surveys will only be undertaken at properties along the B1122 where necessary. Vibration monitoring will be undertaken in line with the **Code of Construction Practice** (Doc Ref 8.11(B)), and can be undertaken in response to specific requests from ESC to monitor at properties affected by road traffic vibration. However, as noted in part (i), groundborne vibration from road traffic is highly unlikely to result in damage to buildings.
	Response by Charles Macdowell, B1122 Action Group at Deadline 3	The applicant states that "HGV traffic does not typically generate vibration sufficient to reach thresholds of damage to buildings, including heritage buildings, except where there are defects in the road paving or supporting formation" without providing any reference or support. It may be that they are relying on Transport and Roads Research Laboratory reports 156 and 207 from the late 1980s, and the Design Manual for Roads and Bridges (DMRB) which is based on them. Since then, the permitted size and weight of HGVs has increased from 38 tonnes to 44, and we submit they are no longer appropriate. In 2008 the City of Bath, with the support of Unesco and Civitas, stated that 'it was their belief that HGV vibrations are a cause of structural damage to historic buildings and set aside the advice and guidelines in DMRB'. (reported in 'Context', Institute of Historic Buildings Conservation, No 144, May 2016). We would also refer the ExA to the following more recent studies: Modeling Traffic-Induced, In-Dwelling Vibration Using Urban Design and Planning Variables, K. Mert Cubukcu, Journal of Architectural and Planning Research 32(4):307-323 December 2015 This states "A general review of the literature reveals that architectural damage may occur when the PPV exceeds 5 mm/s, and structural damage may occur when the PPV exceeds 10 mm/s for modern buildings."

ExQ1	Question to:	Question:
		Traffic-induced vibrations. The impact on buildings and people. Anna Jakubczyk-Galczynskaa, Robert Jankowskib, The 9th International Conference "ENVIRONMENTAL ENGINEERING", 2014 Which states: "Traffic-induced vibrations may cause plaster cracks, structural damage and even failure and collapse of the structure." There are listed buildings on the B1122, not least Theberton Church, while others in Yoxford, Middleton Moor and Theberton are very close to the road.
	Response by SZC Co. at Deadline 5	The statement that "A general review of the literature reveals that architectural damage may occur when the PPV exceeds 5 mm/s, and structural damage may occur when the PPV exceeds 10 mm/s for modern buildings" is correct though incomplete. It is a reference to A survey of Traffic-Induced Vibrations (ISVR, Whiffin and Leonard, 1971) and their full conclusion on this point was: "*There is a risk of "architectural" damage to buildings when the ground vibrations reach the level of 5 mm/s. Measurements indicate that ground vibrations of this order occur adjacent to roads when there are road surface irregularities of about 20 mm in size. For normal dwelling- houses, constructed and maintained to a reasonable standard, there should be little risk of damage to load-bearing members. If the vibrations reach the level of 10-15 mm/s, people would find them unpleasant and there would be a risk of structural damage to buildings."* The levels of vibration due to lorries will not approach 5mm/s unless (i) the road paving contains major defects and (ii) the geology of the ground underneath the road is soft. Where the road surface does not have defects, and the soil is stiff, for example sand or gravelly sand, vibration of 5mm/s will not be reached even where there are defects such as backfilled trenches or manhole covers in the road. Historic buildings are only more vulnerable than other buildings if their structure is already damaged. An example would be pre-existing cracks in plaster where only small strain or acceleration may dislodge a piece of poorly attached plaster. Listing of a building does not mean that it is more sensitive to vibration than any other building.

ExQ1	Question to:	Question:
		The full paragraph from which the extract from the Environmental Engineering proceedings is quoted says "*When it comes to the effects of traffic-induced vibrations, they may be small and imperceptible; however, they may as well become the reason of a major malfunction or even lead to the collapse of a structure. As it is mentioned in [1], [6], [7], the most common visible effects of traffic are chaps and scratches on the plaster covering the building, falling off the paint and plaster, cracks on the elements of the structure or even building malfunctions and collapses*." The reference to collapse is to danger zone V, which is defined in the Polish Standard 'PN-85 B-02170. 1985, Evaluation of the harmfulness of building vibrations due to ground motion, Polish Committee for Standardization of Measurement and Quality' as: "*Zone V: The load bearing capacity of the building is dysfunctional as a result of a massive vibrations amplitude; this may result in a major malfunction or even lead to collapse of the structure.*" There is no possibility of vibration approaching Zone V occurring on any road affected by Sizewell C.
NV.1.77	The Applicant	**Early Years** B1122 Action Group [RR-0124] express concern that the level of traffic generated during the early years creates an unreasonable burden on the local community in terms of traffic, noise and air quality. Please address this particular concern and explain how the effects during early years could be considered reasonable in light of the recognised need to mitigate for similar levels of traffic later.
	Response by SZC Co. at Deadline 2	During the early years SZC Co. predict that there will be negligible effects on air quality along sections of the B1122 (**Volume 6 Chapter 5** of the **ES**) [APP-454], and moderate adverse noise effects along sections of the B1122 (**Volume 2, Chapter 11** of the ES**)** [APP-202]. SZC Co. also predict short-term major adverse effects on pedestrian amenity and on cycling amenity on the B1122 (**Volume 2, Chapter 10** of the **ES** [APP-198]. These effects are only acceptable if there is no practical alternative and should not be sustained for longer than it takes to deliver the Sizewell link road. It would be unacceptable for these effects to be imposed on the communities along the B1122 for the whole 10-12 year construction programme.

ExQ1	Question to:	Question:
		SZC Co. has made every effort to bring forward the principal mitigation (the Sizewell link road) at the earliest stage. Nevertheless, SZC Co. has also included a number of mitigation measures in the submitted DCO to limit and mitigate impacts on the B1122 communities prior to the opening of the Sizewell link road. These measures include limits on the number of HGV movements and the construction of a temporary single railway track with railway sidings and a passing loop for the locomotive within the LEEIE. This would enable two trains per day to be brought in via the Saxmundham to Leiston branch line in the early stage of the construction phase (they would be operational one year in). SZC Co. is also proposing to limit the number of trips on the B1122 by the construction workforce using the B1122 to reach the main development site as set out in section 4.3 of the Transport Assessment [APP-602] and paragraph 10.5.9 of **Chapter 10, Volume 2** of the **ES** [APP-198].
	Response by Charles Macdowell, B1122 Action Group at Deadline 3	We maintain that the level of traffic generated during the early years creates an unreasonable burden on the local community in terms of traffic, noise and air quality. We do not believe that the applicant has addressed this sufficiently. They state that "these effects are only acceptable if there is no practical alternative and should not be sustained for longer than it takes to deliver the Sizewell link road." There is an alternative: that the Link Road (ideally on the Route W North/ D2 route) be operational before work starts. The applicant also states that "it would be unacceptable for these effects to be imposed on the communities along the B1122 for the whole 10-12 year construction programme." It is hard to understand how it is acceptable for 2-3 years, which would be ample for a normal project, when it is not for 10. Noise and air quality are experienced and measured on a day-by-day, month-by-month basis. Is the applicant seriously telling residents "It's OK because it will be gone in two years time"? We also note that the applicant's Noise Mitigation Scheme would be "for properties within 300m of a new or altered highway". Therefore, homes impacted by the Early Year's use of the B1122 would not be included, no matter how badly they might be affected by up to 600 HGVs per day. Some homes on Middleton Moor are as close as 10 feet to the B1122. The Noise Mitigation Scheme must be extended to cover homes within 300m of the B1122.

ExQ1	Question to:	Question:
	Response by SZC Co. at Deadline 5	SZC Co. has nothing to add to its Deadline 2 response, other than to note that the **Noise Mitigation Scheme** [REP2-034] does not apply the 300m proximity test to properties on existing roads.
NV.1.79	The Applicant	**Working Hours** Is there a single document which clearly sets out the proposed working times for the main development site and the associated development sites? If not, could one be provided and incorporated into the Code of Construction Practice (CoCP) so the times agreed are clearly secured and capable of being enforced?
	Response by SZC Co. at Deadline 2	Working hours for the main development site and associated development sites are included in the **CoCP** (Doc Ref. 8.11 (B)) as follows: • Main development site: **Part B** of the **CoCP, Section 1.3** sets out that the working hours on the main development site, which allow for 24 hours for seven days per week. Table 1.1 sets out the expected shift patterns, with the type of activities undertaken in each shift set out in Section 1.3. These working patterns reflect the assumptions and mitigation measures set out within the ES; and • Associated development sites: **Part C** of the **CoCP, section 1.1 c)** sets out that the working hours on off-site associated developments are from Monday to Saturday and between the hours of 07:00 to 19:00 hours. Some activities may require 24 hour working and where this is the case, ESC will be notified in advance, including details of any noise control measures that may be necessary. The CoCP is capable of being enforced by the local planning authority through Requirement 2 of the draft DCO (Doc Ref. 3.1(C)).
	Response by Stop Sizewell C at Deadline 3	The Applicant states that the working hours on the main site are 24/7. Can the Applicant confirm this includes the borrow pits, which are within 300m of Eastbridge?
	Response by SZC Co. at Deadline 5	The works that are likely to occur overnight are listed in **paragraph 2.1.16** in **Volume 2, Chapter 3, Appendix 3D** of the **ES** [REP3-016]. Night-time work is not proposed at the borrow pits.

ExQ1	Question to:	Question:
NV.1.80	The Applicant, ESC	**Residential Amenity** In the respective chapters of the ES there are various locations which recognise that noise levels would exceed the SOAEL or be above the LOAEL. In each location the internal environment of residential receptors has been sought to be protected by mitigation when the appropriate threshold is exceeded. (i) In the locations where the SOAEL is exceeded in a residential garden how can this be said to meet the aims of the Noise Policy Statement for England in avoiding significant adverse impacts on health and quality of life from environmental …noise? (ii) In light of the length of the construction period for the main development site what noise level would be regarded as appropriate and what mitigation is offered to protect residential gardens to ensure this level is not breached?
	Response by SZC Co. at Deadline 2	(i) The SOAEL values for construction noise were derived from the guidance contained in BS5228-1: 2009+A1: 2014[16], which is appropriate for noise-sensitive premises, including gardens. The important SOAEL value for trains relates to sleep disturbance, which is an internal effect, and applies at a time when gardens are unlikely to be in use (i.e. at night). The other rail SOAEL values, and the SOAEL values for road traffic noise, are derived from the relevant Noise Insulation Regulations[17, 18], which relate to the internal environment. SZC Co. has only sought to protect the internal environment where the relevant effect occurs within the property, or where legislation or guidance suggests that is the appropriate course of action; examples would include the Noise Insulation Regulations for road and railways[19, 20] and Part 1 of British Standard 5228[21], which relates to construction noise. SZC Co. likewise has protected external areas where legislation or guidance suggests that is the appropriate course of action.

[16] British Standard BS5228-1: 2009+A1: 2014 Code of Practice for noise and vibration control at open construction sites – Noise

[17] UK Government. The Noise Insulation Regulations 1975 (as amended 1988) (SI 1988 No 2000)

[18] UK Government. The Noise Insulation (Railways and Other Guided Transport Systems) Regulations 1996 (SI 1996 No 428)

[19] UK Government. The Noise Insulation Regulations 1975 (as amended 1988) (SI 1988 No 2000)

[20] UK Government. The Noise Insulation (Railways and Other Guided Transport Systems) Regulations 1996 (SI 1996 No 428)

[21] British Standard BS5228-1: 2009+A1: 2014 Code of Practice for noise and vibration control at open construction sites – Noise

ExQ1	Question to:	Question:
		(ii) The medium magnitude of impact values identified in **Table 11.2** in **Volume 2, Chapter 11** of the **ES** [APP-202] correlate with a significant effect, in an EIA context, for a medium sensitivity receptor, i.e. a dwelling. These values are included in the **Code of Construction Practice** (Doc Ref. 8.11(B)) as the thresholds that the works must be managed against. By placing controls on noise generation at source or between the source and receptor, as envisaged by the controls in the **Code of Construction Practice**, this mitigation will protect residential gardens. The values for the main development site are lower than the values that would flow from BS5228-1: 2009+A1: 2014[22], in recognition of the duration and work hours for the site. These are considered to be the appropriate values, and the monitoring and management processes to be set out in the Noise Monitoring and Management Plans will be the key mechanism for achieving these values.
	Response by East Suffolk Council at Deadline 2	(I) If the SOAEL is exceeded in a residential garden, then this would not meet the aim of the NPSE in avoiding significant adverse effects on health and quality of life from noise. (ii) The LOAEL and SOAEL values that are adopted should ideally represent a balance of potential internal and external effects, although this is not possible in all cases. In any case, this reinforces the statement in NPS EN-1 that "it may be appropriate for the Planning Inspectorate to consider requiring noise mitigation through improved sound insulation to dwellings" but only in situations "when all other forms of noise mitigation have been exhausted". ESC considers that all possible forms of mitigation should be exhausted to reduce noise levels before they reach a receptor, so that adverse effects on external amenity are mitigated, not just on internal health/amenity. The SOAEL values for construction noise are based on those suggested in Table E2/Annex E4 of BS 5228-1+A1:2014 as thresholds for construction noise mitigation and are therefore based on assessing and mitigating internal impacts only. There is guidance in Annex E5 of BS 5228 which specifically relates to long-term construction projects involving "large scale and long-term earth moving activities" and provides recommended noise limits for this. ESC consider that this approach is more directly suitable than an approach based on noise insulation thresholds, and that it would provide the necessary balance between external and internal noise effects. The 55 dB LAeq,1h absolute noise limit recommended in that

[22] British Standard BS5228-1: 2009+A1: 2014 Code of Practice for noise and vibration control at open construction sites – Noise

ExQ1	Question to:	Question:
		annex is also broadly aligned with WHO thresholds for ambient noise in external amenity areas from the Guidelines for Community Noise, 1999 (50-55 dB LAeq,T). Alternatively, the ABC Method, per Table E1/Annex E3 of BS 5228 also provides suitable (albeit less onerous) criteria for assessing the impact of external construction noise.
	Response by SZC Co. at Deadline 3	SZC Co. has nothing to add to its response at Deadline 2 in respect of gardens and construction noise. In terms of ESC's comment on the guidance in Annex E.5 of BS5228-1: 2009+A1: 2014, this matter is under discussion between ESC and SZC Co., but SZC Co. notes that while the construction of the SZC project includes earth-moving activities, it is not an earth-moving project akin to surface mineral extraction activities, as described in BS5228-1: 2009+A1: 2014. There will be a range of sources present, including earth-moving plant, other construction sources, trains and unloading equipment, vehicles and static plant. The thresholds adopted for the main development site sought to balance this range of equipment, which would ordinarily require a range of different criteria, with the expected duration of the works. **Volume 1, Appendix 6G, Annex 6G.1** of the **ES** [APP-171] contains further details on the approach to criteria for the main development site.
	Response by East Suffolk Council at Deadline 3	(i) The Applicant states in their response that "The SOAEL values for construction noise were derived from the guidance contained in BS5228-1: 2009+A1: 201438, which is appropriate for noise-sensitive premises, including gardens." While the overarching guidance may be appropriate for residential receptors (including gardens), the figures from BS5228-1 adopted as construction SOAEL values specifically relate to the provision of insulation to control internal noise levels where "all reasonable measures have been taken to reduce the noise levels, but levels are still such that widespread community disturbance or interference with activities or sleep is likely to occur". ESC would reiterate our previous comments at D2 and specifically the reference to 5228-1 Annex 5E for long-term construction projects involving "large scale and long-term earth moving activities" which the proposed development would certainly be. The Applicant's other comments are noted. (ii) The Applicant states that "The values for the main development site are lower than the values that would flow from BS5228-1: 2009+A1: 2014, in recognition of the duration

ExQ1	Question to:	Question:
		and work hours for the site." However, significance thresholds for construction noise in the ES (e.g. medium impact, medium sensitivity receptor) are not lower at all times of day (0700-23:00). Annex E3 of BS 5288-1 (per the Applicant's response) sets thresholds for day, evening, and night periods, with the applicable threshold for evening periods (19:00 to 23:00) set 5 dB below the 60 dB LAeqT "Day" period adopted in the ES. Furthermore, Annex 5 of BS 5228-1 also recommends a threshold of 55 dB LAeqT for daytime noise from long-term construction projects involving "large scale and long-term earth moving activities".
	Response by SZC Co. at Deadline 5	SZC Co. has nothing further to add to its Deadline 2 response; while the project will include earth-moving plant, a range of sources will be present, including other construction sources, trains and unloading equipment, vehicles and static plant. The project is not an earth-moving project akin to surface mineral extraction activities, as described in BS5228-1: 2009+A1: 2014.
NV.1.90	The Applicant, Network Rail	**Additional Freight by Rail** Please explain what effect if any this might have on passenger services on the Ipswich to Lowestoft line.
	Response by SZC Co. at Deadline 2	There is anticipated to be no effect on the passenger services on the Ipswich to Lowestoft line.
	Response by Network Rail at Deadline 2	No analysis has yet been undertaken on the East Suffolk Line between Ipswich and Lowestoft however Network rail can comment on the section Between Ipswich and Saxmundham. The night time paths support the approach to not impact on passenger services, however, the interaction of these trains with all the other traffic in the Ipswich area needs to be further managed as the concept matures as any late running could have a knock on affect to the morning passenger train services. It has been suggested that EDF looks at introducing an intermediate block signal on the single line between Saxmundham and Woodbridge. This would mitigate any late running. The proposed day time 'flask path' requires close monitoring as the scheme matures as the new freight movement would be slower resulting in a risk to operations. Network Rail will be continuing to work with SZC on how best to mitigate impacts. Network Rail have previously advised that there is

ExQ1	Question to:	Question:
		additional benefits (More robust overnight operation) if additional block signals on the Single line were added.
	Response by SZC Co. at Deadline 3	Discussions with Network Rail are ongoing regarding the delivery of the rail services required for the project. SZC Co. note that while Network Rail has not undertaken analysis of the East Suffolk line between Ipswich and Lowestoft, they have considered the East Suffolk line from Ipswich to Saxmundham. The rail freight paths sought by SZC Co. will not use the line north of Saxmundham.
	Response by Woodbridge Town Council at Deadline 3	WTC comment – NWR's response shows that it can't be assumed that even night-only freight trains won't impact passenger services, at least occasionally when things don't run to timetable. So again the Applicant is assuming they can timetable trains without impacting other network users. A lot more work remains to be done here. The term "block signals" needs more explanation from NWR to show how it would deliver benefits to clear the single-line section for passenger services. Does it imply passing loops being constructed, so that the signals will control the trains entering blocks of single-line track?
	Response by SZC Co. at Deadline 5	SZC Co. would operate seven of the eight proposed freight trains overnight. The first freight train would not depart towards Sizewell until after the last passenger train of the evening, and there is contingency within the timetable to delay the first freight train of the night in case the last passenger train is delayed. In the morning, the risk of the first passenger train of the day being delayed by the last freight train leaving Sizewell is mitigated by the close proximity of Sizewell to the East Suffolk Line. If Sizewell site operations lead to the seventh train being delayed in leaving the site, and missing its planned slot on to the East Suffolk line it would not be permitted to leave Sizewell. The proposed timetable developed by SZC Co. has been constructed using the rail industry timetable planning rules, which apply to all passenger and freight operators on the GB rail network. The timetable planning rules set point to point timings for trains based on the capability of the rail infrastructure. If a train can operate using timings

ExQ1	Question to:	Question:
		detailed in the timetable planning rules then its normal operation would not impact on other train services. This approach also includes the operation of a slower SZC Co. freight train in the existing day time flask train path. The pathing work undertaken and quality assured by Network Rail demonstrates that the slower train can fit within this path, and comply with the timetable planning rules. Utilising 'spare' capacity on the network in this way is best practice.
NV.1.91	The Applicant, Network Rail	**Level Crossing Sirens** (i) Will all level crossings on the route require sirens to meet the appropriate safety standards? (ii) If this is not the case, please explain the differing standards and what would be expected to be provided at each level crossing.
	Response by SZC Co. at Deadline 2	(i) At the public highway level crossings on the Saxmundham to Leiston branch line (Knodishall, West House, Saxmundham Road, Leiston) it will be necessary to add audible alarms/sirens to comply with Network Rail safety standards, as a result of the new addition of mechanical barriers with road traffic lights. See also response to **Question NV.1.32** in this chapter. (ii) Not applicable.
	Response by Network Rail at Deadline 2	SZC have provided details in response to the examiners questions on locations required. In addition Network Rail would add that there are some crossings on the East Suffolk Line (Ipswich to Saxmundham) that will need MSL's installing which will have Yodel's fitted as standard. Network Rail will set the volume to suit the local environment and work with local neighbours however it should be noted that these also need to be of an effective volume.
	Response by SZC Co. at Deadline 3	No further comments to add to SZC Co. response for Deadline 2.
	Response by Suffolk County Council at Deadline 3	SCC remains concerned that this will cause an issue of disturbance at night to local residents, but understands there is a safety need. The Applicant should provide details on what other options are available if the noise volume levels are still causing a disturbance.

ExQ1	Question to:	Question:
		Would it be possible for a risk assessment to be undertaken to consider whether the risk that a visually-impaired user wishes to use the crossing over night is so small as to allow the volume to be significantly reduced or even cut in night-time hours?
	Response by SZC Co. at Deadline 5	SZC Co. continues to explore these issues with Network Rail.
NV.1.93	The Applicant, (ESC part (ii) only)	**Night-time Rail Noise** Campsea Ashe Parish Council, Woodbridge Town Council and ESC all express concern that the assessment of effects from the night-time rail operation as proposed has not been adequately assessed or those effects on residents properly mitigated. (i) Please respond to the concerns and set out how the assessment has been undertaken and how the mitigation offered would work in practice. (ii) Do the Council agree with these concerns?
	Response by SZC Co. at Deadline 2	(i) The Relevant Representations were made on the basis of the assessment set out in **Volume 9, Chapter 4** of the **ES** [APP-545], which has been superseded by the updated assessment set out in **Volume 3, Chapter 9** of the **ES Addendum** [AS-188] and the associated **Appendices 9.3.A to 98.3.E** [AS-257] and [AS-258]. The updated assessment explains that overly-conservative assumptions were made in the main ES, provides much more detailed assessment and sets out the mitigation measures that will be taken to avoid significant observed adverse effects. The mitigation that applies to operation of trains, and train infrastructure, is set out in the draft **Rail Noise Mitigation Strategy** [AS-258], which is to be secured by Requirement 25 in the draft DCO (Doc Ref. 3.1(C)). The **Noise Mitigation Scheme** (the original version of which was set out in **Volume 2, Appendix 11H** of the **ES** [APP-210] with a revised version provided as Doc Ref. 6.3 11H(A)), is to be secured via Schedule 12 of the **draft Deed of Obligation** (Doc Ref. 8.17(C)). (ii) No response from SZC Co. is required.
	Response by East Suffolk Council at Deadline 2	(ii) ESC does not agree with their concerns on the assessment methodology, ESC considers the effects have been adequately assessed (in terms of methodology/criteria).

ExQ1	Question to:	Question:
		ESC does agree that those identified effects would not be properly mitigated, based on current proposals. The Applicant has provided a draft Rail Noise Mitigation Strategy and a Noise Mitigation Scheme, we are not currently satisfied with these and are discussing further with the Applicant.
	Response by SZC Co. at Deadline 3	Discussions are ongoing with ESC and SCC on the **Noise Mitigation Scheme** [REP2-034] and the draft **Rail Noise Mitigation Strategy** [AS-258].
	Response by East Suffolk Council at Deadline 3	The Applicant's response is noted. ESC reiterate our previous response at D2 regarding the current draft RNMS and NMS, which ESC are discussing further with the Applicant.
	Response by Woodbridge Town Council at Deadline 3	WTC appreciates ESC's clear response at Deadline 2, which concurs with responses to other questions above about Noise and Vibration, and again shows that the Applicant has not done enough work on its FMS to submit a properly-formed DCO.
	Response by SZC Co. at Deadline 5	SZC Co. has nothing further to add.
NV.1.94	The Applicant, Network Rail	**Night-time Rail Noise** (i) Please explain the limiting factors for daytime deliveries. (ii) In understanding what these are, what alternatives have been considered that could overcome these limitations? (iii) How has the assessment of effects from night-time noise been assessed against these alternatives?
	Response by SZC Co. at Deadline 2	(i) and (ii) There is insufficient rail capacity available on the East Suffolk line during the day to provide more than one rail path. This is due to the extended length of single track south of Saxmundham and the hourly passenger timetable, which leaves insufficient running time for additional services. The length of single track could be split with a passing loop which would increase the capacity on the line. Such a proposal was consulted on through to the Stage 4 consultation. In addition to a passing loop, it would also be required to operate freight trains at 40mph along the line rather than the current maximum speed of 20mph to avoid disrupting the passenger service. The combination of adding the additional freight services to the line,

ExQ1	Question to:	Question:
		and required speed increases, would result in increasing the risk to level crossings on the East Suffolk line. In order to mitigate the increased risk, 45 level crossings on the East Suffolk line would require interventions. At the Stage 3 consultation it was identified that 12 footpath crossings would require closure and a further 33 level crossings upgraded to mitigate the increase in risk. As a result of further work undertaken by Network Rail it was decided that this option was not deliverable within the timescales required for the SZC Project. Following this decision, the focus was to maximise the utilisation of the East Suffolk line overnight, outside of the passenger service where trains could operate within the current speed restrictions along the line. (iii) As there is no viable alternative to operating trains overnight, it has not been possible to assess night-time noise against an alternative rail scenario.
	Response by Network Rail at Deadline 2	Network Rail have been engaged in previous reviews with SZC on freight operations on the East Suffolk Line. Day time operations will not be possible without significant impacts on daytime passenger operations. The proposed Freight trains will operate at significantly lower speeds than the passenger services and the Flask Path Train. Network Rail have undertaken quality assurance on the Capacity Analysis Technical Note (Feb 2021) and commenced reviews (i.e. Level crossing review) on the basis of the proposed 4 trains (7 night time and 1 day paths).
	Response by SZC Co. at Deadline 3	No further comments to add to SZC Co. response for Deadline 2.
	Response by Suffolk County Council at Deadline 3	As set out in SCC's Written Representation [REP2-189], SCC would prefer there to be no freight train movements at night because this is a new source and there is clearly much greater potential for disturbance at night. The responses above reflect our discussions with the Applicant and Network Rail, that they consider it impossible at this late point to deliver infrastructure investments to allow for day time freight trains in the required timescales. As set out in [REP2-189], we consider opportunities to do so were missed.
	Response by Woodbridge Town Council at Deadline 3	WTC comment – The Applicant has just dismissed day-time capacity improvements as not deliverable in time. However as night-time working is unacceptable to Woodbridge and

ExQ1	Question to:	Question:
		other track-side communities, the construction should not be allowed to start without first making these improvements (i.e. dualling the line).
	Response by SZC Co. at Deadline 5	SZC Co.'s position on these issues was explained at Deadline 2. SZC Co.'s response to whether or not there has been a "missed opportunity" is set out in its **Comments on Written Representations** [REP3-042] at Chapter 17.
NV.1.95	The Applicant, Natural England (part (ii) only)	**Night-time noise** The RSPB indicate that the assessment of effects from night-time noise on bats and other sensitive creatures has not been adequately assessed and consider additional noise modelling would need to be carried out. (i) Please respond to this concern. (ii) Do you agree with the concerns expressed by the RSPB
	Response by SZC Co. at Deadline 2	The Applicant disputes the RSPB's conclusion. The information which presents the baseline data and impact assessment of noise upon ecological receptors is presented in **Volume 2, Chapter 14** of the **ES** [APP-224]. This was informed by data presented in the noise and vibration chapter (**Volume 2, Chapter 11** of the **ES** [APP-202]) and additional noise modelling, particularly of high frequency noise (in relation to the impact to bats). With regards to bats, the impact of night-time noise upon bats is considered in detail within the **Volume 2, Chapter 14** of the **ES** [APP-224] and the updated bat impact assessment in **Volume 3, Chapter 2, Appendix 2.9B** of the **ES Addendum** [AS-208]). Paragraphs 8.2.22 – 8.2.61 in **Volume 3, Chapter 2, Appendix 2.9B** of the **ES Addendum** [AS-208]) present the assessment of potential impacts to bats resulting from the noise modelling results, including setting thresholds for impacts. The assessment utilises high frequency modelling at 22khz+ and 8khz+ to determine the potential impact of noise throughout the phases of the construction upon roosting, foraging and commuting bats. Within the updated bat impact assessment in **Volume 3, Chapter 2, Appendix 2.9B** of the **ES Addendum** [AS-208]), figures are presented which display the potential levels of high frequency noise upon bats at different Phases of the construction. This information is utilised to inform the impact assessment. The impact assessment utilises

ExQ1	Question to:	Question:
		available information and current practice to assess the impact on bats. Within the mitigation measures defined, current good practice has been followed and the assessment is informed by a comprehensive suite of surveys. However, as stated in paragraph 8.2.37 in **Volume 3, Chapter 2, Appendix 2.9B** of the **ES Addendum** [AS-208]), *'there are gaps in the assessment (for example in some cases the volume of noise was measured at frequencies that bats cannot hear) or the studies are not applicable to the assessment of potential impacts to bats resulting from construction'*. The assessment relies on the best available data, and the overall impacts and mitigation strategy were developed with the extensive level of survey information gained to date, which provides confidence in the effectiveness of the mitigation proposed, based on current best practice and research. However, there is limited research available for some impacts on some bat species, and bats, as living things, do not always behave as expected. Given this, the **Terrestrial Ecology Monitoring and Mitigation Plan** (TEMMP), submitted at Deadline 1 [REP1-016] and secured under Requirement 4 has been prepared. The measures within this document will identify any unforeseen effects of the construction through noise upon bats. This will allow any required remedial actions to address this to be implemented. Overall, the approach to mitigation and impact assessment relating to bats and noise is considered well supported and the assessment of no significant effect from noise is considered robust.
	Response by Natural England at Deadline 2	As these measures are proposed to mitigate impacts on licensable protected species these will be assessed by Natural England through our licensing process. For the progression of this issue the applicant must submit draft protected species licence applications to Natural England for review. If agreed Natural England may provide LoNIs to ensure the ExA has the required certainty in this regard. Further engagement on this issue will therefore be undertaken as part of the licensing process.
	Response by SZC Co. at Deadline 3	SZC Co. can confirm that protected species licence applications are currently being prepared following the bat surveys undertaken in 2021. These will be submitted to Natural England through the generic licensing mailbox as instructed and will be submitted to the examining authority at appropriate deadline.

ExQ1	Question to:	Question:
	Response by RSPB at Deadline 3	We still consider the assessment of effects from night-time noise on bats and other sensitive creatures has not been adequately assessed and consider additional noise modelling should be carried out. Our concerns relating to the assessment of the effects from night-time noise on bats are detailed in our Written Representations submitted at Deadline 2. We confirm we reviewed the documents referenced in the Applicant's response and considered those points for our Written Representations.
	Response by SZC Co. at Deadline 5	SZC Co. does not agree with the RSPB that further noise modelling is required. The approach to assessment is provided in the Deadline 2 response repeated above.
NV.1.96	The Applicant, Network Rail	**Ipswich to Lowestoft Main Line** (i) Please explain the current method of line construction for the main line between Ipswich and Saxmundham. (ii) Please confirm whether the joints between the sections of the track are located in a way as to minimise noise effects on receptors. (iii) It is understood from the assessment that the welds of joints for the Saxmundham to Leiston branch line are proposed to be undertaken in a certain way to minimise noise effects – please confirm whether this approach has been undertaken on the main line and if this is not the case please advise what the differences would be for receptors on the main line as opposed to those on the branch line.
	Response by SZC Co. at Deadline 2	(i) and (ii) The East Suffolk line has, for the most part, continuous welded rail (CWR), with some lengths of jointed track as well as switches and crossings (S&C). Details such as the exact location of the kinds of welds and joints in CWR and S&C that give rise to additional noise and vibration are not routinely held by Network Rail, and work is currently in progress to establish their exact locations and where necessary to plan appropriate mitigatory action. Please also see answer to **Question NV.1.12** in this chapter. (iii) As stated in response to parts (i) and (ii), information on the exact locations and kinds of weld present on the East Suffolk line is not routinely held by Network Rail. Work and discussions are in progress to determine the presence and location of aluminothermic

ExQ1	Question to:	Question:
		welds along the East Suffolk line, and to develop a plan for delivery of rail upgrades so that the welds can be removed. The updated assessment of groundborne vibration contained in **Volume 1, Appendix 9.3.A** of the **ES Addendum** [AS-257] describes the implications of aluminothermic weld or joint proximity for the outcomes.
	Response by Network Rail at Deadline 2	The East Suffolk Line has, for the most part, continuous welded rail (CWR), with some lengths of jointed track as well as switches and crossings (S&C). Network Rail are currently working with SZC on proposals for Track enhancements to SZC between Westerfield and Saxmundham Junction. In addition discussions includes status and potential alterations to sleepers, fasteners and welds to assist with noise mitigations. This work is ongoing and as such no further comments can be provided at this stage.
	Response by SZC Co. at Deadline 3	Discussions between SZC Co. and Network Rail are ongoing regarding legacy benefits for the East Suffolk line, including track upgrade work. As SZC Co. noted in response to **Question NV.1.12** at Deadline 2, no reliance is placed on works on the East Suffolk line, although the track type will influence the potential effects.
	Response by Suffolk County Council at Deadline 3	See answer to NV1.13
	Response by SZC Co. at Deadline 5	SZC Co. is working with Network Rail on the potential to replace track on the East Suffolk line to provide a legacy benefit for communities. The position will be updated through further Statements of Common Ground.
Chapter 22 - R.1 Radiological considerations		
R.1.1	The Applicant, ONR	**Low Level Waste (LLW)** (i) It is recognised that the current LLW Repository has a lifespan less than that of the proposed development. What provision is in place on site or elsewhere to safely deal with this waste over the lifetime of the plant?

ExQ1	Question to:	Question:
		(ii) It is advised that "It is assumed that ultimately new disposal facilities will be provided by the NDA" (para 7.7.20) [APP-192] Have letters of assurance or similar been received from the NDA? (iii) Has one been sought? Please provide copies for the Examination as appropriate.
	Response by SZC Co. at Deadline 2	(i) Authorised disposal routes for Low Level Waste (LLW) will be available throughout the design life of Sizewell C. Given the Government's commitment to new nuclear, including the aim of '*bringing at least one large scale nuclear project to the point of Final Investment Decision (FID) by the end of this Parliament*'[23] and the powers in Schedule 23 of the Environmental Permitting Regulations, it is reasonable to assume that Government will ensure adequate facilities are provided for disposal of LLW. (ii) and (iii) As stated in the response to (i), the UK Government has made a clear commitment to large-scale new nuclear and has powers under the Environmental Permitting Regulations to ensure adequate disposal facilities are in place. Therefore, letters of assurance have not been sought. It is also worth noting the NDA Strategy emphasises that '*In line with UK government expectations, the NDA group will continue to supply advice and information to third parties involved in the UK's nuclear new build programme and developers of advanced nuclear technologies*'[24].
	Response by ONR at Deadline 2	(i) In the event that LLW repository is not available, ONR would use routine regulatory tools (such as inspection and permissioning) to ensure waste is safely managed in accordance with our regulatory expectations. This includes aspects relevant to accumulation of radioactive waste (Licence Condition (LC) 32) and storage of nuclear matter (where radioactive waste is nuclear matter) (LC4(2)). The lifespan of LLW Repository is, in part, dependent upon the environmental safety case for disposals at LLW Repository, which is regulated by the Environment Agency not ONR. However, ONR notes the recent success in diverting wastes from LLW Repository through effective application of the waste hierarchy, which has driven the extension in the expected lifespan in LLW repository.

23 Department for Business, Energy and Industrial Strategy, "The Energy White Paper: Powering our Net Zero Future," Queen's Printer and Controller of HMSO 2020, London, 2020.

24 Nuclear Decommissioning Authority, "Strategy," Nuclear Decommissioning Authority, Cumbria, 2021.

ExQ1	Question to:	Question:
		(ii)&(iii) ONR has currently not sought any assurances from NDA relevant to disposal of LLW.
	Response by NDA and Magnox for Deadline 2	The NDA will confirm the position in relation to the new disposal facilities and letters of assurance or similar to the ExA as soon as practicable.
	Response by SZC Co. at Deadline 3	No further comments to add to SZC Co. response for Deadline 2.
	Response by Together Against Sizewell C at Deadline 3	In the 1976 Royal Commission Report on environmental pollution, Sir Brian Flowers stated that, "…there should be no commitment to a large scale programme of nuclear fission until it has been demonstrated beyond reasonable doubt that a method exists to ensure the safe containment of long-lived highly radioactive waste for the indefinite future". TASC therefore believes there is no justification for production of any radioactive waste streams as there does not exist a proven method by which the safe containment of long lived and highly radioactive waste can be contained for the indefinite future - see EN6 Para 2.6. Concern about the radiological impact of nuclear fuel has been exacerbated by the decision to operate the EPR for greater efficiency by increasing the burn up of fuel. ONR have yet to receive a report addressing the safety or otherwise of the long term storage of spent fuel. As the Dry Fuel Store (DFS) will be the last remaining building on any nuclear site for many decades into the future after decommissioning has been completed, it is increasingly evident that protection from climate change events could be problematic. Regardless of the long term safety of buildings, TASC believes it is immoral to leave this radioactive and long-lasting waste to the care and management of future generations who will have received no direct benefits from the electricity the waste generated, as we have pointed out in our Written Representation, Nuclear Waste. The design of the Hinkley C DFS is not yet approved and the indicative site for HPC could, as demonstrated in a recent TV programme, be affected by overtopping of the flood defence wall. The site of the SZB DFS is at a higher ground level than that proposed for SZC.

ExQ1	Question to:	Question:
		TASC does not believe that a radioactive waste solution has been demonstrated beyond doubt and would point out that adequate energy generation alternatives exist to avoid this problem.
	Response by SZC Co. at Deadline 5	The safe management and disposal of Low Level Waste has been undertaken in the UK since 1959 with the opening of what is now known as Low Level Waste Repository. The technology and means to continue to manage and dispose of Low Level Radioactive Waste continues to be available now and into the future.
R.1.2	The Applicant, ONR	**Waste Acceptance Criteria** Para 7.7.27 [APP-192] refers to WAC – this does not appear in the Glossary of Terms. (i) Please confirm that this means 'Waste Acceptance Criteria' - or if not what it does relate to. (ii) It is understood that the UK has not formally adopted these criteria for dealing with High Level Waste or for spent fuel – does this have any implications in respect of the information provided?
	Response by SZC Co. at Deadline 2	(i) Confirmed, WAC means 'Waste Acceptance Criteria'. (ii) The term Waste Acceptance Criteria (WAC) is used by waste service providers to ensure that waste they receive is capable of being legally disposed in accordance with their own regulatory requirements. Radioactive Waste Management Ltd (RWM) is responsible for establishing the WAC for a facility, as they are responsible for the implementation of the Geological Disposal Facility (GDF) as the ultimate receiver of wastes for disposal. As the plans for the construction of the GDF are at an early stage, the information necessary to define a final WAC is not available. In the meantime, and as a precursor to WAC, RWM produces packaging specifications, the primary purpose of which is to enable the holders of radioactive wastes to condition that waste into a form that will be compatible with the anticipated needs of transport to and disposal in a GDF (see paragraph 7.7.43 of **Volume 2**, **Chapter 7** of the ES [APP-192]).
	Response by ONR at Deadline 2	(i) The Applicant is best placed to respond to this question. (ii) Radioactive Waste Management (RWM) is a wholly owned subsidiary of the Nuclear Decommissioning Authority (NDA) who are tasked with implementing government policy on geological disposal of higher activity waste (HAW i.e. ILW, HLW and spent fuel). To ensure they can deliver on this, RWM regularly update the inventory of HAW within the UK

ExQ1	Question to:	Question:
		(and publish it online). The last update to the generic design system safety case for the geological disposal facility (GDF) included inventory from at least four EPR units. To ensure the safety case (and future waste acceptance criteria for HAW in the GDF) can be established as the design of the GDF advances, RWM and the waste owner (in this case NNB GenCo) engage early through the letter of compliance (LoC) process to ensure the inventory is up-to-date and waste forms are consistent with the assumptions in the current GDF generic design.
	Response by SZC Co. at Deadline 3	No further comments to add to SZC Co. response for Deadline 2.
	Response by Together Against Sizewell C at Deadline 3	In the 1976 Royal Commission Report on environmental pollution, Sir Brian Flowers stated that, "…there should be no commitment to a large scale programme of nuclear fission until it has been demonstrated beyond reasonable doubt that a method exists to ensure the safe containment of long-lived highly radioactive waste for the indefinite future". TASC therefore believes there is no justification for production of any radioactive waste streams as there does not exist a proven method by which the safe containment of long lived and highly radioactive waste can be contained for the indefinite future - see EN6 Para 2.6. Concern about the radiological impact of nuclear fuel has been exacerbated by the decision to operate the EPR for greater efficiency by increasing the burn up of fuel. ONR have yet to receive a report addressing the safety or otherwise of the long term storage of spent fuel. As the Dry Fuel Store (DFS) will be the last remaining building on any nuclear site for many decades into the future after decommissioning has been completed, it is increasingly evident that protection from climate change events could be problematic. Regardless of the long term safety of buildings, TASC believes it is immoral to leave this radioactive and long-lasting waste to the care and management of future generations who will have received no direct benefits from the electricity the waste generated, as we have pointed out in our Written Representation, Nuclear Waste. The design of the Hinkley C DFS is not yet approved and the indicative site for HPC could, as demonstrated in a recent TV programme, be affected by overtopping of the flood defence wall. The site of the SZB DFS is at a higher ground level than that proposed for SZC.

ExQ1	Question to:	Question:
		TASC does not believe that a radioactive waste solution has been demonstrated beyond doubt and would point out that adequate energy generation alternatives exist to avoid this problem.
	Response by SZC Co. at Deadline 5	No further comments to add to SZC Co. response for Deadline 2.
R.1.10	The Applicant, ONR	**Spent Fuel** (i) Please confirm that the current proposal does not include the encapsulation facility referred to at para 7.7.95. (ii) Assuming this to be correct, are you able at this stage to confirm there would be sufficient space within the DCO site to accommodate such a facility? (iii) Do the ONR agree that there would be sufficient space?
	Response by SZC Co. at Deadline 2	(i) The Application does not include a location for the encapsulation facility referred to in paragraph 7.7.95 of **Volume 2**, **Chapter 7** of the ES [APP-192]. Five years prior to the end of generation Sizewell C will produce the required documentation and assessment to obtain consent to proceed with decommissioning. (ii) Currently no location has been identified for an encapsulation facility as there is no requirement at this stage in the project. Under the Nuclear Reactors (Environmental Impact Assessment for Decommissioning) Regulations (EIADR) any new facilities required to manage decommissioning, including the Spent Fuel Encapsulation Facility (SFEF) and Spent Fuel Inspection and Repackaging Facility (SFIRF), will be scrutinised by the Environment Agency and the ONR prior to decommissioning commencing. Therefore, at an appropriate time (at this time believed to be 5 years prior to end of generation), SZC Co. will be required by law to identify a location for the SFIRF and SFEF. All funding for these facilities will be covered through the Sizewell C Funded Decommissioning Plan (FDP). (iii) No response from SZC Co. is required.
	Response by ONR at Deadline 2	(i)&(ii) The Applicant is best placed to respond to this question. (iii) The spent fuel encapsulation facility is not required until the spent fuel is retrieved from the Interim Spent Fuel Store (ISFS) and repackage for disposal to the GDF (>100 years after operations). At the time when the encapsulation facility will be constructed the

ExQ1	Question to:	Question:
		reactors will have ceased generation, decommissioning will be well-progressed, with many structures removed from the site. Therefore, in ONR's opinion there will be sufficient space for the construction of new facilities to enable the safe retrieval, repacking, and encapsulation of spent fuel. The inclusion of the encapsulation facility and the principle to encapsulate spent fuel immediately prior to transfer to the GDF is consistent with the guidance provided by Department of Energy and Climate Change (DECC) in 2011 on Funded Decommissioning Programmes (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/42628/3797-guidance-funded-decommissioning-programmeconsult.pdf).
	Response by SZC Co. at Deadline 3	No further comments to add to SZC Co. response for Deadline 2.
	Response by Together Against Sizewell C at Deadline 3	In the 1976 Royal Commission Report on environmental pollution, Sir Brian Flowers stated that, "…there should be no commitment to a large scale programme of nuclear fission until it has been demonstrated beyond reasonable doubt that a method exists to ensure the safe containment of long-lived highly radioactive waste for the indefinite future". TASC therefore believes there is no justification for production of any radioactive waste streams as there does not exist a proven method by which the safe containment of long lived and highly radioactive waste can be contained for the indefinite future - see EN6 Para 2.6. Concern about the radiological impact of nuclear fuel has been exacerbated by the decision to operate the EPR for greater efficiency by increasing the burn up of fuel. ONR have yet to receive a report addressing the safety or otherwise of the long term storage of spent fuel. As the Dry Fuel Store (DFS) will be the last remaining building on any nuclear site for many decades into the future after decommissioning has been completed, it is increasingly evident that protection from climate change events could be problematic. Regardless of the long term safety of buildings, TASC believes it is immoral to leave this radioactive and long-lasting waste to the care and management of future generations who will have received no direct benefits from the electricity the waste generated, as we have pointed out in our Written Representation, Nuclear Waste.

ExQ1	Question to:	Question:
		The design of the Hinkley C DFS is not yet approved and the indicative site for HPC could, as demonstrated in a recent TV programme, be affected by overtopping of the flood defence wall. The site of the SZB DFS is at a higher ground level than that proposed for SZC. **TASC does not believe that a radioactive waste solution has been demonstrated beyond doubt and would point out that adequate energy generation alternatives exist to avoid this problem.**
	Response by SZC Co. at Deadline 5	No further comments to add to SZC Co.'s response for Deadline 2.
R.1.11	The Applicant, ONR, EA	**Length of Plant Life** Much of the documentation refers to the power stations operating for between 60-76years. The DCO would however if granted not be time limited, consent would in effect be in place for two nuclear power stations in perpetuity. Does this have any implications for the advice you provide to the ExA or of the assessments that have been undertaken?
	Response by SZC Co. at Deadline 2	Under Licence Condition 15 of the Nuclear Site Licence, Sizewell C (as the licensee) shall make and implement adequate arrangements for the periodic and systematic review and reassessment of safety cases. Therefore, although the documents and assessments for the life of the plant are based on 60 year life, they will be regularly reviewed and reassessed for their applicability. Any plant life extension would be subject to rigorous regulatory scrutiny. This is a tried and tested process as demonstrated by the plant life extension on the Magnox and AGR fleet.
	Response by ONR at Deadline 2	With regard to the length of plant life, nuclear site licensees are required, by standard Licence Condition 15, to undertake periodic and systematic reviews of their plant safety case. ONR assesses major periodic safety reviews and, in order to permit continued operation, needs to be satisfied that the facility continues to meet its original design standards; that the licensee has implemented all reasonably practicable modifications to close any gaps between those standards and modern standards; that findings arising from operational experience have been addressed and that there are robust measures in place to manage any safety-related, ageing mechanisms. If ONR is satisfied on all these aspects, the facility may continue to operate, providing that continuing monitoring

ExQ1	Question to:	Question:
		activities do not reveal any new information that undermines the safety case. In practice at some stage in the life of a nuclear plant it is likely that the cost of maintaining the plant to acceptable safety standards will outweigh the financial gains from continued operation, and the operating organisation may therefore decide to close the plant down at that stage.
	Response by Environment Agency at Deadline 2	A Radioactive Substances Activity permit, if granted, would not be time limited and the site would remain under regulatory control until such a time that the applicant (operator) can demonstrate that they meet the requirements of our guidance on release from radioactive substances regulation (https://www.gov.uk/government/publications/decommissioning-of-nuclear-sites-and-release-from-regulation/decommissioning-of-nuclear-sites-and-release-from-regulation). The fact that the DCO would not be time limited does not have any implications for our assessment of radiological impact or our permit determination process.
	Response by SZC Co. at Deadline 3	No further comments to add to SZC Co. response for Deadline 2.
	Response by Together Against Sizewell C at Deadline 3	Nuclear plant has design limitations exacerbated by pressure and temperature, including corrosion, graphite bricks, internal cracking and weld defects. Material failure has also been identified as a cause of early plant closure e.g. at San Onofre, California, USA. The EPR at Flamanville in France has many technical problems. http://www.french-nuclearsafety.fr/Inspections/Supervision-of-the-EPR-reactor. The fact that Sizewell C may, if built, be in the hands of a private company, as referred to above, should give cause for concern. Some expectations for plant lifetime, longevity of encapsulation, buildings and conditioning material are aspirations only as no operational lifetime experience exists, especially for the EPR.
	Response by SZC Co. at Deadline 5	No further comments to add to SZC Co.'s response for Deadline 2.
R.1.12	ONR	**Design Acceptance Confirmation (DAC)** The Applicant's DAC would appear to expire on 13 December 2022. (i) Please explain how this regulatory system works and whether a further DAC would be required as the station would not be operational at this date. (ii) Are there any further implications if work has not commenced on site by this date?

ExQ1	Question to:	Question:
		(iii) Would you anticipate any reason why a further DAC would not be issued should a further application need to be made? (iv) Are there any other implications the ExA should be aware of in respect of the limited time of the current DAC?
	Response by SZC Co. at Deadline 2	No response from SZC Co. is required.
	Response by ONR at Deadline 2	(i) The GDA process is non-mandatory and there is no legal requirement for a valid Design Acceptance Confirmation (DAC). Within ONR's remit, to construct a new nuclear power plant in Great Britain requires a nuclear site licence to be granted. Even then, granting of a nuclear site licence does not provide regulatory permission for the start of construction. Under the conditions attached by ONR to a nuclear site licence, the licensee will require ONR's specific regulatory permission before any nuclear safety related construction can commence. It is ONR's policy that the output from GDA remains valid for a period of ten years from the date of issue. This period is consistent with the requirement for nuclear licensees to undertake periodic safety reviews of their existing nuclear facilities every ten years. For Hinkley Point C (HPC), the UK EPR design which was assessed as part of GDA was based on the 2008 EPR design under construction at Flamanville 3 (FA3) in Northern France. The GDA-assessed design formed the starting Reference Configuration (RC0) for HPC. That design was developed to a further reference configuration (RC1) that includes changes as a result of GDA, Fukushima response, FA3 feedback, UK context or site-specific requirements. The HPC design has been further developed to the current Reference Configuration 2 (RC2). The changes to the HPC design since GDA have been controlled under the licensee's licence condition compliance arrangements, subject to regulatory oversight by ONR. Unlike HPC, for Sizewell C the initial design configuration of the plant is not based on the GDA design, but is instead closely based on the current HPC configuration (RC2). Consequently, given ONR's close engagement with the HPC design development, we do not consider the ongoing validity of the DAC, issued by ONR at the end of GDA in 2012, is relevant to our assessment of the design proposed for Sizewell C. To summarise, no further DAC is required for Sizewell C as firstly a DAC is nonmandatory, and secondly the starting design is based on the design developed for HPC and not the final GDA design.

ExQ1	Question to:	Question:
		(ii) There are no implications if the construction work at Sizewell C has not started by December 2022. (iii) Based on responses to questions (i), (ii) and (iv), as a DAC is non-mandatory, the design has evolved at HPC since GDA, from which Sizewell C is based, and due to ONR's ongoing regulatory oversight of HPC, an application for a new DAC is not needed and would have limited benefit. (iv) We do not consider there are any other implications relating to the timelimited nature of the DAC issued in 2012.
	Response by SZC Co. at Deadline 3	No further comments to add to SZC Co. response for Deadline 2.
	Response by Together Against Sizewell C at Deadline 3	French reactor designers are working on a series 2 version of the EPR, stated to be easier to build and construct, but which has not received regulatory approval. This is acknowledgement that the EPR proposed for Sizewell is principally flawed and difficult to construct. TASC has also questioned how the single turbine configuration proposed for Sizewell C gives sufficient flexibility to cater for varying demand. SZB operated at half output because of grid stability issues during the pandemic: this is not possible with the EPR. The Sizewell Site Stakeholder Group (SSG) is waiting for a report on what happened as a result of the period of time Sizewell B operated at 50% output, such as excessive component wear or the impacts of prolonged use of boron to dampen reactor activity.
	Response by SZC Co. at Deadline 5	No further comments to add to SZC Co.'s response for Deadline 2.
R.1.14	The Applicant, ONR, EA, MMO	**Sea Defences** There is concern identified by a number of RRs e.g. (RR 0038**)** regarding the ongoing maintenance of the sea defences beyond the lifetime of the operation of the plant when it is reasonable to assume ILW, Spent Fuel and LLW may well continue to be stored on site. (i) What is proposed to be in place to ensure the integrity of the sea defences in the longer term?

ExQ1	Question to:	Question:
		(ii) How should the integrity of the defences be monitored through the lifetime of the plant? (iii) How is this to be secured through the DCO process?
	Response by SZC Co. at Deadline 2	(i) The design life of the sea defence is defined based on protection of the site until all nuclear wastes and spent fuel have been removed from the site (i.e. 110 years post Commercial Operation Date). This means that the sea defence design will be such that performance up to 2140 will be intrinsically ensured. Performance requirements relating to design life, such as sea levels and wave overtopping (which are influenced by climate change and sea level rise), are captured in the design of the crest height. In addition, degradation of the sea defence is considered and accounted for within the design to ensure that appropriate measures are taken (such as concrete cover for the crest wall and erosion protection for the backslope) that ensure the design life can be met. (ii) Working together with the designed-in robustness, an examination, maintenance, inspection and testing (EMIT) plan will be developed as part of the detailed design studies that will stipulate the measures that are needed to ensure integrity of the sea defence through life in line with the design. The EMIT plan will include regular planned EMIT activities that are needed to ensure that assumptions in the design are met. The EMIT plan will also include measures to take post event (such as a storm event or a seismic event) to, if necessary, reinstate the defence to its "as designed" state. An example of a measure that will exist within the EMIT plan is a requirement to inspect the sea defence following a storm event to ensure the rock armour has not shifted significantly. Stockpiles of constituent materials (such as the rock armour) will be stored locally to ensure that any maintenance can be performed within a reasonable time frame, as necessary. (iii) These measures do not require securing through the draft DCO as they are enforced through regulatory control via Licence Condition 15 of Sizewell C's future Nuclear Site Licence, which requires periodic and systematic review and reassessment of safety cases, which will include consideration of all external hazards (including flooding and adequacy of sea defences); and Licence Condition 28 which requires the licensee to make and implement adequate arrangements for the regular and systematic examination, inspection, maintenance and testing of all plant which may affect safety.

ExQ1	Question to:	Question:
	Response by ONR at Deadline 2	(i) The Applicant is best placed to respond to this question. (ii) ONR expects the Applicant to adequately demonstrate that the sea defences will protect against the design basis coastal flood, which includes climate change, throughout the lifetime of the plant. As part of ensuring the integrity of the sea defences and consistent with Licence Condition 28, ONR expects the Applicant to commit to adequate arrangements for the examination, inspection, maintenance and testing (EIMT) of the sea defences as a nuclear safety classified structure. (iii) This is secured through the nuclear site licensing regime and not the DCO process. Given ONR's nuclear safety remit, ONR will expect the sea defence design and related monitoring to be 'secured' ahead of nuclear plant commissioning. For nuclear site licensing, most closely tied to DCO in terms of timescales, ONR expects the Applicant to demonstrate that the SZC site can be adequately protected against the design basis sea level; this includes the future effects of climate change on wave and tide height as well as the static sea level. The final sea defence design and related monitoring will be assessed by ONR post nuclear site licensing, but prior to commissioning of the SZC nuclear plant.
	Response by Environment Agency at Deadline 2	(i) The EA is not aware of any proposals to ensure the integrity of the sea defences into the longer term, throughout the operational life of the site. We support SCC's position on the need to remove the defences at the point of decommission when the site is deemed safe. We believe this is essential work that needs to be undertaken. (ii) The detailed designs of the defences have not yet been agreed, so the specific method of monitoring is not clear. However, this should be specified and secured through a monitoring and mitigation plan. (iii) A DCO Requirement should be in place that secures the creation of a monitoring and mitigation plan, in consultation with the Marine Technical Forum.
	Response by the MMO at Deadline 2	The MMO believes that this question is for the Applicant. We note that we have not yet received a copy of the Applicant’s response to this question and so have no comments to add at this stage.
	Response by SZC Co. at Deadline 3	SZC Co. confirms that the sea defences will remain in place throughout the decommissioning phase. The Coastal Processes Monitoring and Mitigations plan includes the intention of a Cessation Report which would outline the programme for cessation of

ExQ1	Question to:	Question:
		maintenance of the Soft Coastal Defence Feature. SZC Co continues to engage with ESC regarding the default position of removing the HCDF at the end of decommissioning.
	Response by Together Against Sizewell C at Deadline 3	According to the Environment Agency, the SZC sea defences are not yet satisfactory. TASC finds it incredible that the sea defence is not within the proposed site licence area. In addition, ONR do not have details on how the whole site will be constructed, including the outer wall. This also includes the water course carrying all Leiston town rainwater/sewage outfall. SZC Operational site layout assumptions for DCO drawing ending 10004 refers.
	Response by SZC Co. at Deadline 5	No further comments to add to SZC Co.'s response for Deadline 2.
R.1.15	ONR, EA, MMO	**Sea Defences** In the event the power station operated beyond 60 years as referenced in a number of the ES documents what implications if any would this have?
	Response by SZC Co. at Deadline 2	No response from SZC Co. is required.
	Response by ONR at Deadline 2	ONR expects the Applicant to adequately demonstrate that the sea defences will protect against the design basis coastal flood, which includes climate change, throughout the lifetime of the plant. Should the lifetime of the plant be extended beyond planned timescales, ONR will require the site licensee to demonstrate that the site, including the sea defences, will remain safe for the extended timescales
	Response by Environment Agency at Deadline 2	To provide advice the Environment Agency needs to see the detailed design of the sea defences. To accommodate operation beyond 60 years, the designs will need to be adaptable and resilient in the long-term and include adaptation option pathways for design change with sea level rise.
	Response by the MMO at Deadline 2	Regarding implications from an MMO perspective, as the seaward limit encroaches landward, the High Mean Water Spring mark moves, and as such, more activities may become marine licensable.

ExQ1	Question to:	Question:
	Response by SZC Co. at Deadline 3	The detailed design of the sea defences was submitted at Deadline 2 and updated plans are provided at this Deadline 3 (Doc Ref. 2.5) to allow further consideration by stakeholders. The potential for project activities that are currently above mean high water spring (MHWS) (and therefore not licensable) to lay below MHWS in the future due to sea level rise and become licensable is noted and will be provisioned in the Deemed Marine Licence to capture this.
	Response by Together Against Sizewell C at Deadline 3	According to the Environment Agency, the SZC sea defences are not yet satisfactory. TASC finds it incredible that the sea defence is not within the proposed site licence area. In addition, ONR do not have details on how the whole site will be constructed, including the outer wall. This also includes the water course carrying all Leiston town rainwater/sewage outfall. SZC Operational site layout assumptions for DCO drawing ending 10004 refers.
	Response by SZC Co. at Deadline 5	No further comments to add to SZC Co. response for Deadline 3.
R.1.16	ONR, Emergency Services, ESC, SCC	**Emergency Plans** Are you satisfied with the Emergency Plans that are set out and how they correlate with the existing nuclear sites at Sizewell A and B?
	Response by SZC Co. at Deadline 2	No response from SZC Co. is required.
	Response by ONR at Deadline 2	Before making a licensing decision for SZC, ONR will seek assurance that the location is suitable for the establishment of an adequate emergency plan in accordance with the licence conditions and The Radiation (Emergency Preparedness and Public Information) Regulations 2019 (REPPIR). As part of ONR's Land Use Planning (LUP) assessment (https://www.onr.org.uk/land-useplanning.htm), consultation was undertaken with Suffolk County Council Emergency Planner responsible for the Sizewell B REPPIR19 off-site emergency plan as well as the planning departments of Magnox Ltd for the Sizewell A site, EDF Energy (for Sizewell B) and NNB GenCo (SZC) Ltd for Sizewell C. This provided assurance that adequate emergency planning arrangements can be maintained or developed during the construction, active commissioning and operational phases of

ExQ1	Question to:	Question:
		Sizewell C. ONR will take account of the assurance we have received in making a decision on whether to grant a licence for Sizewell C.
	Response by East Suffolk Council at Deadline 2	The original Vision agreed with the Applicant and referenced in the LIR [REP1-045] refers to 'a secure and safe project with robust emergency planning provisions', ESC is a member of the Joint Emergency Planning Unit hosted by SCC which provides local authority input to the Suffolk Resilience Forum. Suffolk Resilience Forum are the responsible authority with regards to Radiation (Emergency Preparedness and Public Information) Regulations 2019 (REPPIR19). See 22.22 of the LIR for further detail on what needs to take place to update on-site and off-site emergency response plans and 22.23 which request a new requirement to cover provisions for emergency planning which are not currently included in the draft DCO.
	Response by Suffolk County Council at Deadline 2	Ongoing work with the Applicant to agree this from SCC's perspective.
	Response by SZC Co. at Deadline 3	SZC Co. has noted ESC and SCC's request for a new DCO requirement on emergency planning. A new Requirement 5A was included within the **Draft DCO** [REP2-015] submitted at Deadline 2. SZC Co. will continue discussion with the Councils' to agree the wording of the new requirement and will seek to agree this through the Statement of Common Ground.
	Response by Together Against Sizewell C at Deadline 3	TASC is not aware if the Sizewell B emergency plan declared by the operator of SZB, can safely accommodate the maximum construction workforce for SZC, including those in worker hostels, plus SZB outage/operator workforce, plus the residents within the 1.35 km inner zone. We believe the operator assessment of risk for the SZB reactor does not conform to IAEA standards for a Detailed Emergency Planning Zone (DEPZ), also confirmed by Government department for Business, Energy and Industrial Strategy, which is 3-4kms distance from the plant, as pointed out in TASC's Written Representation, Emergency Planning. The reaction time for a fault on a Pressurised Water Reactor (PWR) such as Sizewell B, is believed to be 4 hours, a consideration which necessitated the construction of the Emergency Response centre for SZB as part of the Japanese earthquake response programme in the wake of the Fukushima disaster. This unique facility was constructed as a recognition of the need to act quickly in the face of a fault requiring a fast emergency response time of four hours, compared to 12 hours for AGR reactors in the current EDF fleet. We are not aware if Suffolk County Council consulted on

ExQ1	Question to:	Question:
		or planned their extended emergency response area out to 30 kms - to include open air visitor attractions and camping and caravan sites - nor on the acceptability of the mini-DEPZ, in full accord with REPPIR 19 and ACOP guidance.
	Response by SZC Co. at Deadline 5	No further comments to add to SZC Co.'s response for Deadline 3.
R.1.17	ONR, EA	**Transboundary Effects** A number of European governments and third parties have expressed concern about trans boundary effects particularly in the event of an accident beyond the design parameters of the power station e.g. see RR 802, RR 265, RR 155. (i) Are you satisfied this is adequately dealt with through the licensing regime? (ii) Does this assessment include the ancillary buildings such as the ISFS, and ILW storage?
	Response by SZC Co. at Deadline 2	No response from SZC Co. is required.
	Response by ONR at Deadline 2	(i) Yes. The UK-EPR design offers a number of lines of defence to protect against and mitigate the consequences of postulated design basis fault sequences. A risk reduction line of defence will also be implemented to mitigate the consequences of severe accidents. (ii) ONR maintains engagement with Hinkley Point C (HPC) on the development of the designs for the Interim Spent Fuel Store (ISFS) and Intermediate Level Waste (ILW) Store. Due to the replication strategy being implemented at Sizewell C (SZC) ONR expects the HPC designs to be used to inform the SZC site specific designs. Once the designs are suitably developed ONR will engage with SZC to ensure the site-specific designs fulfil the legal requirement to ensure the risks associated with the management of spent fuel and ILW on SZC are reduced so far as is reasonably practicable
	Response by Environment Agency at Deadline 2	(i) The environmental permitting regime does not presently consider transboundary effects, however, the Applicant has undertaken an assessment of the transboundary effects of proposed radioactive discharges from Sizewell C, including accident scenarios, to meet the requirements of Article 37 of the Euratom treaty. An Article 37 submission was made to the European Commission on 14 August 2020 and a hearing held on 10 February

ExQ1	Question to:	Question:
		2021. We participated in the hearing and are awaiting an opinion from the European Commission. Subject to ministerial direction, we will not grant a Radioactive Substances Activity permit for Sizewell C until we have received an opinion from the European Commission. (ii) The assessment of transboundary impacts has been undertaken at the discharge limits proposed in the Radioactive Substances Activity permit application. The discharge limits applied for are for the site as a whole and therefore must include all minor discharge routes such as the ISFS and ILW store. The assessment of transboundary effects from the proposed routine radioactive discharges therefore does include all ancillary buildings. We cannot comment on the assessment of transboundary effects in the event of an accident as this does not fall within our regulatory remit and would be for the Office for Nuclear Regulation to comment on
	Response by SZC Co. at Deadline 3	On the 3rd June 2021, the European Commission gave a positive opinion in relation to the Sizewell C Article 37 Submission. In the opinion they confirmed that the implementation of the plan for the disposal of radioactive waste in whatever form, arising from the two EPR reactors on the Sizewell C nuclear power station site located in the Suffolk Coast, United Kingdom, both in normal operation and in the event of accidents is not liable to result in radioactive contamination, significant from the point of view of health, of the water, soil or airspace of a Member State.
	Response by Together Against Sizewell C at Deadline 3	A number of respondents referred to the competence of ONR to manage the former duties of Euratom. The risk from accidental release of radiation impacting other countries is evident from Chernobyl. Again there is little justification for nuclear as adequate and superior alternatives for electricity generation exist. The construction of HPC was subject to challenge by Austria as an expression of the transboundary effects of a nuclear plant.
	Response by SZC Co. at Deadline 5	No further comments to add to SZC Co.'s response for Deadline 3.
R.1.18	ONR, EA	**Spent Fuel Store/ILW Store** No details are provided to indicate at what depth the spent fuel or ILW would be stored. Are you satisfied the licensing arrangements would ensure appropriate and safe storage of these elements in the event of a flood event?

ExQ1	Question to:	Question:
	Response by SZC Co. at Deadline 2	No response from SZC Co. is required.
	Response by ONR at Deadline 2	We are satisfied that ONR's regulatory framework provides appropriate oversight of the high standards of safety required to protect the spent fuel and ILW in the event of a flood event. The expectations for design/construction of facilities used to store spent fuel or ILW with respect to flooding do not differ from the nuclear facilities on the wider site, in that the stores should be able to withstand flooding conditions up to and including the design basis event (see ONR Safety Assessment Principle (SAP) EHA.12 Flooding). For completeness, it is noted that spent fuel and ILW would be stored above ground in the concept design for the EPR reactor station. It is noted that after the major earthquake near Japan in 2011 the spent fuel dry casks on the Fukushima site withstood the impact from both the earthquake and tsunami.
	Response by Environment Agency at Deadline 2	Ensuring safe storage of spent fuel and radioactive waste in accident conditions (i.e. a flooding event) does not lie within the Environment Agency's regulatory control and is the responsibility of the Office for Nuclear Regulation. We therefore have no comments to make on this.
	Response by SZC Co. at Deadline 3	No further comments to add to SZC Co. response for Deadline 2.
	Response by Together Against Sizewell C at Deadline 3	See previous comment as well as the TASC Written Representation, Nuclear Waste.
	Response by SZC Co. at Deadline 5	No further comments to add to SZC Co.'s response for Deadline 2.
R.1.20	The Applicant, ONR, EA, PHE	**Spent Fuel Store/ ILW Store** (i) Does Appendix 25B when assessing radiological effects from the site include an assessment of effects from the ISFS and ongoing storage of spent fuel and ILW or is it just the operation of the power station? (ii) It would not appear to be explicit in the assessment. This would appear to be particularly important as paragraph 25.6.20 of [APP 340] indicates 'direct radiation from Sizewell C is therefore largely attributable to the Interim Spent Fuel and Intermediate

ExQ1	Question to:	Question:
		Level Waste storage facilities on site.' Please clarify the position and advise what has been assessed under the ES. (iii) In light of the lack of detailed design for these facilities at this stage please explain how this assessment has been undertaken
	Response by SZC Co. at Deadline 2	(i) **Volume 2**, **Appendix 25B** of the ES [APP-341] includes an assessment of the effects from the ISFS and ongoing storage of spent fuel and ILW. This is included in Section 3 of the appendix 'Annual Dose to the Candidates for the Representative Person from Direct Radiation'. (ii) and (iii) The design of the Sizewell C spent fuel and radioactive waste stores is yet to be finalised and specific details regarding shielding and spent fuel and radioactive waste inventories are not yet available. Thus, the assessment is undertaken following a conservative approach assuming that the dose rate outside the Spent Fuel and ILW stores is 0.5 µSv/h on the external surface of the building. The buildings fall within the Nuclear Licensed Site Security Fence and external radiation would rapidly drop with distance. The dose value is derived from the assumption that the outside of the building will be an undesignated area, as defined in the Ionising Radiations Regulations 2017. Therefore, the maximum exposure is set pessimistically at the annual limit of 1,000 µSv/y occurring during a normal working year of 2,000 hours. In practice, the dose rates are likely to be much below these value.
	Response by ONR at Deadline 2	(i)-(iii) ONR considers the details of the assessment are best answered by the Applicant. ONR notes that a similar regulatory approach will be applied to Sizewell C as with Hinkley Point C (HPC), where ONR will assess the adequacy of the detailed design of the ISFS Facility and the ILW store as they develop, including direct radiation. Based on the EPR Generic Design Assessment (GDA), and the approach taken for HPC so far, we would expect these aspects of the SZC site will be compliant with relevant regulatory requirements.
	Response by Environment Agency at Deadline 2	(i) The radiological impact assessment provided has been undertaken at the proposed discharge limits applied for in the Applicant's Radioactive Substances Activity permit application. The discharge limits which have been applied for are for the site as a whole and therefore include all minor discharge routes such as the ILW and spent fuel store. Therefore the radiological impact assessment includes any impact from ongoing storage of ILW and spent fuel on site as well as operation of the power station.

ExQ1	Question to:	Question:
		(ii) It is for the applicant to provide details on how they have assessed the impacts of direct radiation. Regulation of direct radiation is undertaken by the ONR but we do account for direct radiation impacts in our assessments of radiological impact on people and the environment as part of the Radioactive Substances Activity permit determination process. We are reviewing the assessment of radiological impact provided by the applicant but have not yet reached any conclusions. (iii) It is for the applicant to provide details on how they have assessed the impacts of direct radiation. Regulation of direct radiation is undertaken by the ONR but we do account for direct radiation impacts in our assessments of radiological impact on people and the environment as part of the Radioactive Substances Activity permit determination process. We are reviewing the assessment of radiological impact provided by the applicant but have not yet reached any conclusions.
	Response by SZC Co. at Deadline 3	No further comments to add to SZC Co. response for Deadline 2.
	Response by Together Against Sizewell C at Deadline 3	The existing DFS is passively vented, cannot be sealed and would not, we understand, withstand air strike. The DFS is entirely reliant on the integrity of a dry cask storage method which has a relatively short operating history and the integrity of which is being challenged worldwide.
	Response by SZC Co. at Deadline 5	The operating life of the Sizewell C Interim Spent Fuel Store (ISFS) is assumed to be 100 years. The bounding (conservative) case from Radioactive Waste Management Ltd is that fuel may require up to 100 years of on-site interim storage. Noting this, the design life of the ISFS has been designed accordingly. The ISFS will have a robust safety case in place which will be required to demonstrate the plant can be operated safely during this period both under normal operations and any potential fault conditions. This includes consideration of external hazards such as air strike.
R.1.21	ONR	**Semi Urban Criterion** (i) Has your advice been sort in respect of the relationship of the site to the local population?

ExQ1	Question to:	Question:
		(ii) Are you satisfied that the proposals do not result in a radiological hazard being sited in an area which exceed the semi-urban criterion?
	Response by SZC Co. at Deadline 2	No response from SZC Co. is required.
	Response by ONR at Deadline 2	(i) No, although it was when the extant National Policy Statement for Nuclear Power Generation (EN-6) was developed. (ii) ONR's assessment of the proposed development concluded that siting two reactor buildings at the centre points provided by NNB Generation Company (SZC) Ltd as part of their application for a DCO meets the Government's demographic siting criteria as specified in BEIS 'Government Response: Consultation on the Siting Criteria and Process for a New National Policy Statement for Nuclear Power with Single Reactor Capacity over 1Gigawatt beyond 2025' July 2018. The disposition of the radioactive hazard across various other non-reactor buildings on the site does not affect that conclusion.
	Response by SZC Co. at Deadline 3	No further comments to add to SZC Co. response for Deadline 2.
	Response by Together Against Sizewell C at Deadline 3	TASC understands there was a debate about remote siting criteria prior to the approval of HPC. We are not convinced that sufficient planning constraints have been enacted up to 30kms nor that a full study of property and accommodation requiring immediate evacuation (i.e. not only capable of providing suitable shelter) has been carried out. In 2018, in response to the (aborted) consultation on the revised EN6, Suffolk Coastal District Council commented about the need to avoid housing projects compromising the development of nuclear.
	Response by SZC Co. at Deadline 5	No further comments to add to SZC Co.'s response for Deadline 2.
R.1.23	EA, ONR	**Sustainability Assessment** (i) The NPS relies on an understanding of the science around climate change and the effect on sea levels from 2009, has the understanding of the effects of climate change and effect on sea levels changed since the sustainability assessment was carried out? (ii) If the knowledge has developed what implications does this have?

ExQ1	Question to:	Question:
	Response by SZC Co. at Deadline 2	No response from SZC Co. is required.
	Response by ONR at Deadline 2	(i) The understanding of the science around climate change and the effect on sea levels has changed since 2009. (ii) There are limited implications resulting from the evolution of understanding around climate change and the effect on sea levels. The advancements mean that the Applicant can better understand the site-specific impact of climate change, including the uncertainties, and factor this into their design. ONR expects the Applicant to use the latest climate change projections, such as UK Climate Projections 2018 (UKCP18), in their hazard analysis for nuclear site licensing; further information is provided in a UKCP18 position statement (https://www.onr.org.uk/documents/2020/ukcp18-position-statement-rev-1.pdf). ONR will expect the Applicant to periodically consider advances in climate change predictions and identify any impact on claims made in their safety cases and any subsequent measures that need to be implemented.
	Response by Environment Agency at Deadline 2	Fluvial Climate Change Allowances For fluvial river climate change allowances, the FRA is correctly working to the UKCP09 allowances, and following the Environment Agency guidance in terms of the appropriate allowances to use. This equates to an increase of 25 % for the construction lifetime until 2030, and 35 % increase for the higher central allowance over the lifetime of the development, appropriate for determining offsite impacts, and a 65 % allowance for the lifetime of the development, used for determining the safety of the essential infrastructure development itself. The new recommended fluvial allowances from the UKCP18 data are due to be published by the Environment Agency in the next few months. They will be based on management catchments, which for Sizewell will be East Suffolk. The allowances for East Suffolk Management Catchment have reduced slightly compared to the UKCP09 allowances for East Anglia, with 29 % for Higher Central and 54 % for Upper End for the lifetime of the development. However the recommended allowances to use will also be changing, with Essential Infrastructure now recommended to use Higher Central (29 %) and all other uses to use Central allowances, which in this instance are 19 %. Therefore the recommended allowances have been reduced compared to the current UKCP09 allowances used in the FRA. Consequently the allowances used in the Sizewell flood

ExQ1	Question to:	Question:
		modelling and FRA are higher and therefore precautionary so can still be considered to be acceptable. Tidal Climate Change Allowances The Environment Agency published revised tidal sea level climate change allowances in 2019, based on the updated climate change projections from UKCP18. The MDS Flood Risk Assessment includes a comparison between the new sea levels and the previous UKCP09 sea levels in Appendix 5, which shows that the new allowances are higher than the old climate change allowances. The document concludes that for the reasonably foreseeable climate change scenarios the new UKCP18 RCP8.5 95 percentile climate change allowances will be used, as recommended by the Environment Agency, which is the correct precautionary approach to take. These UKCP18 flood levels were used in the tidal breach and coastal inundation flood modelling. For the reasonable worst case H++ climate change scenarios, used for the breach of the main defences and the beyond design scenarios, the report recommends that BECC Upper climate change allowances are used, which have been derived from the 2014 BECC Scoping Paper: How to Define Credible Maximum Sea Level Change Scenarios for the UK Coast, as they are 2.105m higher than the reasonably foreseeable allowances, and so will provide a worst-case situation. These have also been included in the modelling, as required.
	Response by SZC Co. at Deadline 3	SZC Co. carried out a review of the guidance on climate change set out by both the ONR and the Environment Agency during the assessment of flood risk. The **Main Development Site Flood Risk Assessment** [APP-093] utilises the guidance set out in the UKCP18 position statement, as required by ONR, and this is discussed in **Section 2.3d** of the **Main Development Site Flood Risk Assessment** [APP-093]. Furthermore, the Environment Agency noted the assessment should be carried out in accordance with current best practice, including the use of UKCP118 where appropriate. SZC Co. assessed the impact of various climate change scenarios in **Section 4** of the **Main Development Site Flood Risk Assessment** [APP-093] and adopted a precautionary approach. SZC Co. notes the response from both the ONR and Environment Agency at Deadline 2 confirming that the assessment of flood risk has been carried out in accordance with the

ExQ1	Question to:	Question:
		guidance provided. Therefore, SZC Co. considers that based on the adoption of a precautionary approach there are no outstanding works required in relation to this topic.
	Response by Together Against Sizewell C at Deadline 3	TASC believes it is unacceptable to even consider building in a flood risk zone 3, exposing construction projects and workforces to increasingly unpredictable weather and its consequences such as storms, tidal surges and over-topping from the effects of climate change. See: I Mech E report, plus new Climate Change Committee Advice 2021.
	Response by SZC Co. at Deadline 5	No further comments to add to SZC Co.'s response for Deadline 3.
R.1.24	ONR, The Applicant	**Plant Life** The ES suggests the reactors may have their life extended to operate for up to 76 years. (i) As ILW and spent fuel would need to be stored on site beyond this time, what is the current best estimate of the date for the site to continue to store such radioactive materials?
	Response by SZC Co. at Deadline 2	(i) The operational design life of the Interim Spent Fuel Store (ISFS) and the Interim Level Waste Interim Storage Facility (ILW ISF) are for a 100-year life, although they would be capable of extension beyond that, if necessary. This is to allow interim storage to be maintained until a GDF, or an alternate disposal/management route has been established, and the heat levels within the fuel are at levels that permit its disposal. It is worth noting that the strategy for prompt decommissioning means that the ILW store would be removed within 20 years of end of generation, although the ISFS would remain after this time.
	Response by ONR at Deadline 2	The duration for storage of radioactive waste and spent fuel on the licenced site is dependent upon access to the geological disposal facility to enable transfer of material from the site. The 2016 update to Radioactive Waste Management's (RWM's) generic disposal system safety case (gDSSC) includes inventory from at least 4 EDF Energy EPR reactors (i.e. units 1 and 2 at HPC and units 3 and 4 and SZC). Figure 11 in NDA Report No DSSC/421/01 (available online) identifies nuclear new build (NNB) Solid ILW emplacement timings in the GDF to occur from 2100-2140 and nuclear new build (NNB) Spent Fuel emplacement activities in the GDF to occur from 2145- 2190. There are several assumptions in the emplacement dates, and therefore the best estimate of the date the

ExQ1	Question to:	Question:
		site will continue to store radioactive materials is not defined beyond these windows. It is noted that the emplacement dates/timescales quoted above are for nuclear new build inventory from 12 reactor units (of any design) in the UK, with SZC representing units 3 and 4. Cooler (older) inventory will be emplaced first in the GDF, so it is assumed that SZC would follow HPC, which is assumed to commence in 2100 and 2145 for ILW and spent fuel, respectively. Relative to end of generation for SZC these dates represent, in ONR's opinion, reasonable timescales.
	Response by SZC Co. at Deadline 3	No further comments to add to SZC Co. response for Deadline 2.
	Response by Together Against Sizewell C at Deadline 3	Reliance on a Geological Deep Facility (GDF) as the long-term solution to radioactive waste management, the siting of which is highly controversial and which has been discussed for many years without arriving at a success conclusion, as previously mentioned and as detailed in TASC's Written Representation Nuclear waste, is immoral and unjustifiable. TASC reiterates its position that the mantra used by ministers that 'arrangements are in place' and that therefore new nuclear build should not be delayed and that the creation of new waste streams is justified, cannot in any way be seen as an acceptable or responsible policy as significant technical, scientific, social, environmental and indeed ethical issues remain unaddressed and unresolved. Not the least of those issues is the morality of knowingly generating new waste streams when the original legacy waste volume of 500,000 cubic metres remains without a universally agreed management solution. TASC refers the inspector to its Written Representation on this issue.
	Response by SZC Co. at Deadline 5	As previously stated, the operational design life of the Interim Spent Fuel Store (ISFS) and the Interim Level Waste Interim Storage Facility (ILW ISF) are for a 100-year life, although they would be capable of extension beyond that, if necessary. The safe management of both the Spent Fuel and Radioactive Waste is not dependent on the availability of the GDF. The technology is currently and continues to be available now and into the future.
R.1.28	ONR	**ONR Permits/Licences** Please advise on the latest position in respect of the Applicant's position in respect of the Funded Decommissioning Programme (FDP) and the position in respect of any Licenses needed to be obtained from you.

ExQ1	Question to:	Question:
		Do you consider there to be any impediment to the granting of any licenses for the site?
	Response by SZC Co. at Deadline 2	No response from SZC Co. is required.
	Response by ONR at Deadline 2	For Hinkley Point C (HPC) ONR has been consulted by the relevant government department (currently BEIS) on the technical aspects of the licensee's Decommissioning and Waste Management Plan (DWMP), which informs the HPC Funded Decommissioning Programme (FDP). We have not yet been consulted with regard to the Sizewell C DWMP. There is no link between the grant of a nuclear site licence by ONR and the approval by the Secretary of State (under the Energy Act 2008) of an FDP. However, as an approved FDP must be in place before the start of nuclear safety related construction, ONR would consult with the relevant department to ensure the FDP had been approved before giving consent for the start of construction of nuclear safety significant buildings at Sizewell C. This is likely to be several years after licence grant.
	Response by SZC Co. at Deadline 3	No further comments to add to SZC Co. response for Deadline 2.
	Response by Together Against Sizewell C at Deadline 3	Any investor into SZC must understand that a FDP is part of their commitment.
	Response by SZC Co. at Deadline 5	No further comments to add to SZC Co.'s response for Deadline 2.
R.1.29	ONR, ESC, EA, The Applicant	**Public Health** PHE have indicated a series of shortcomings in their RR with regard to both radiological and air quality issues – please respond to each of the points that they have raised in so far as it relates to your responsibilities and explain whether you consider these issues could be overcome. In the event you consider the issues can be resolved please explain how the matters would be resolved and under which regime appropriate mitigation would be secured and operation monitored.

ExQ1	Question to:	Question:
	Response by SZC Co. at Deadline 2	Responses to the comments raised by Public Health England in their relevant representation are included within the **Statement of Common Ground** with Public Health England (Doc Ref. 9.10.22). A summary of the responses to radiological and air quality comments is provided below for ease of reference. **Air Quality Impacts** The judgement placed on defining health significance was one of professional opinion, underpinned by the evidence provided in the ES, and reinforced though a precautionary approach where all residential receptors are considered sensitive, despite the baseline indicating the contrary. With reference to air quality, following a review of the air quality assessment outputs, the relative change in concentration and exposure for NO_2, PM_{10} and $PM_{2.5}$ at all receptors are orders of magnitude lower than is required for any quantitative exposure response assessment, from any construction and operational activity (including at the main development site, from transport beyond the site, at all associated developments and from the combined heat and power facility). As detailed in paragraph 28.6.146 of **Volume 2, Chapter 28** (Human Health and Wellbeing) of the **ES** [APP-346] from a health context, the only significant operational emission was from the periodic testing of the emergency backup generators. However, even here, the change in concentration and exposure is orders of magnitude lower than is required to quantify any manifest health outcome. This risk was set into context through a hypothetical assessment which demonstrated that even if a quarter of the population within East Suffolk would reside at the location with the maximum change in emission concentration for an entire year, there would still be no health impact. These findings set the basis to the professional judgement on significance, where all air quality objectives protective of the environment and health are met, and the relative change in concentration and exposure are insufficient to quantify any manifest health outcome (be it adverse or beneficial) forming a very low impact. When applied alongside the inherently precautionary approach where it is assumed that that the entire population within the study area are of uniformly high sensitivity to changes in air quality, the effect is still negligible (**not significant**). The change in construction exposure of non threshold emissions, such as NO_2, PM_{10} and $PM_{2.5}$ at any receptor modelled is orders of magnitude lower than is required to quantify

ExQ1	Question to:	Question:
		any manifest health outcome (be it adverse or beneficial). Sensitivity analysis is not required, and best demonstrated through the hypothetical assessment of risk for the LOOP backup generator emissions. Even when grossly overestimating population exposure (where it is assumed a quarter of East Suffolk live outside for an entire year in the highest process contribution), the relative change is still insufficient to result in an measurable health outcome. The proposed development does not materially impact upon air quality standards protective of health, and the relative change in concentration exposure remain orders of magnitude lower than is required to quantify any manifest health outcome. Sensitivity analysis is not required. Sensitivity testing was undertaken of the methods used to estimate future year emissions from road transport at the Stratford St Andrew Air Quality Management Area to confirm the assumptions on future vehicle emission rates used in the assessment. The methodology and sensitivity test is reported in **Volume 3, Appendix 2.7.A** of the **ES Addendum**[AS-127]. Emissions permitted under other regulatory regimes have been considered as part of the baseline modelling to which emissions from the proposed development have been added. Cumulative assessment with other projects that do not form part of the baseline assessment is presented within **Volume 10, Chapter 4** of the **ES** [APP-578]. **Fetal doses related to the fishing family are also considered in the Human RIA but are not discussed in Para 25.6.21 - It needs to be clear from which site and discharge route (aqueous, gaseous or both) the doses relate to.** The Radiological Considerations Chapter (**Volume 2, Chapter 25** of the **ES** [APP-340]) provides a summary of the results from the Human Radiological Impact Assessment, and as such not all results are included. A copy of the full radiological impact assessment is included within **Volume 2, Appendix 25B** of the **ES** [APP-371]. This ensures that the reader can have access to both a summary and the full assessment. Fetal doses were only assessed in terms of a Screening Assessment and as such was not included as part of the main summary. The results of the Screening Assessment showed that the dose to a foetus from discharges of Aqueous and Gaseous Effluent from Sizewell C would be 17 μSv/year. This constitutes less than 6% of the statutory (source and site) dose constraints of 300 and 500 μSv/year and is considered to be low.

ExQ1	Question to:	Question:
		Para 25.6.47 states exposure from natural sources as 2700 microSv, but this includes medical radiation therefore is not correct. Vol 2 Chpt 25 App 25A-25C Para 1.1.12 states 2.7mSv as well. This is a typographical error and should have read '*"…(0.4% of) the amount of radiation exposure from background sources in the UK (2700 µSv yr-1)….'* In terms of paragraph 1.1.12 of **Volume 2, Appendix 25A°** of the **ES** [APP-341], Background Dose is defined by the International Atomic Energy Agency as '*Dose or dose rate (or an observed measure related to the dose or dose rate) attributable to all sources other than the one(s) specified'*[25]. As defined by Public Health England, in the UK the average exposure to member of the public in UK is 2700 µSv/year[26]. As such the statement is correct. **Para 1.1.12 states RSR is delivered by EA on behalf of DECC...needs updating** Noted this is now Department for Business, Energy and Industrial Strategy. **App 25B Human RIA Para 30 should say "The different modules within PC-CREAM 08 model the contribution of radioactive decay chain products ('progeny') in slightly different ways. For the FARMLAND and RESUS modules only the first progeny that is not in secular equilibrium over a period of one year is modelled explicitly. In PLUME the first progeny, even if it is short-lived, is modelled explicitly so its contribution to dose at short distances downwind can be determined. DORIS considers all radionuclides in the decay chain and progeny that are not in equilibrium with the immediate parent are modelled explicitly [Ref 29]"** We note the comment raised by Public Health England. Both the original and revised statement are equivalent. **Table 2-4 Footnote 7 reference needs to be checked** This is a typographical error and should have read Reference 29.

25 International Atomic Energy Agency, "Terminology Used in Nuclear Safety and Radiation Protection," IAEA, Vienna, 2018.

26 Public Health England, "Ionising Radiation: Dose Comparisons," Public Health England, 18 March 2011. [Online]. Available: https://www.gov.uk/government/publications/ionising-radiation-dose-comparisons/ionising-radiation-dose-comparisons#:~:text=In%20the%20UK%2C%20Public%20Health,the%20body%20to%20differing%20degrees.. [Accessed 24 May 2021].

ExQ1	Question to:	Question:
		Para 124 – this paragraph discusses skyshine but does not reach a conclusion about whether the conclusions of the sensitivity analysis should be applied. This is discussed further in Paragraphs 145-147 and **Table 3-2** of **Volume 2, Appendix 25B** of the **ES** [APP-371]. It should be noted that the low level of radiation dose to the public from Sizewell C is dominated by Gaseous and Aqueous Discharges, and Skyshine and Direct Dose. **Would it not be more appropriate to refer to the skin dose limit given in EPR 2016 Schedule 23 Part 4 (1) Para 2 (a)?** Schedule 23 Part 4(1) Paragraph 2 (a) refers out to the Basic Safety Standards Directive. In the UK the Dose Limits specified in the Basic Safety Standards Directive are enshrined in domestic legislation via the Ionising Radiations Regulations 2017. As such the statement is correct. **Given importance of marine food pathway, has volumetric exchange rates been considered within the RIA?** The sensitivity analyses were undertaken in line with joint guidance from the Environment Agency, Scottish Environment Protection Agency, Northern Ireland Environment Agency, Health Protection Agency and Food Standards Agency on "Principles for the Assessment of Prospective Public Doses arising from Authorised Discharges of Radioactive Waste to the Environment"[27]. This identified the three specific areas noted in the comments. Although this does not explicitly consider the marine dispersion, the following text is provided in paragraph 34 of **Volume 2, Appendix 25B** of the **ES** [APP-371] in relation to the conservatism used in the volumetric exchange rates. This is summarised below. All marine dispersion parameters *'are the PC-CREAM default values, except for the volume of the local compartment, which has been increased from 3.00E+08 m3 to 4.00E+08 m3 to ensure that the discharge point (roughly 3.5 km from the coast) is within the local compartment. Sediment distribution coefficients and all properties of the other ocean compartments modelled within PC-CREAM were also default values. The default volumetric exchange rate corresponds to a local compartment volume of 3.00E+08 m3. This has been retained as a new volumetric exchange rate cannot be derived without*

[27] EA, SEPA, NIEA, HPA, FSA, "Principles for the Assessment of Prospective Public Doses arising from Authorised Discharges of Radioactive Waste to the Environment," Environment Agency, Cumbria, 2012.

ExQ1	Question to:	Question:
		hydrographical data relevant to the area [Ref 29]. A local compartment of 4.00E+08 m3 would have a higher exchange rate, which would result in lower doses, so it is conservative to retain the default value [Ref 17]. The change in volume is small compared to the volume of the regional compartment, so the impact on the regional compartment is expected to be small'.
	Response by ONR at Deadline 2	PHE's representation raised a number of points relating to the development's effects on local air quality and the consequences for public health. This is not a matter within ONR's regulatory remit, and we therefore offer no comments. With regard to radiological matters, the specific points raised by PHE relate to routine radiological discharges from the power station, for which the Environment Agency is the regulator and is best placed to provide comments on these.
	Response by Environment Agency at Deadline 2	The majority of the points raised by PHE relate to the clarity and/or accuracy of statements made in the Applicant's radiological assessment and at this stage of our assessment many do not appear to impact the validity of the assessment outcomes presented by the applicant. PHE made similar comments in response to our consultation on the Radioactive Substances Permit application made by the applicant (https://consult.environment-agency.gov.uk/psc/ip16-4ur-nnb-generation-company-szc-ltd-hb3091dj/consultation/view_respondent?uuId=54971961). We are considering PHE's comments through our permit determination process when verifying the Applicant's assessment. We are also factoring these comments in to our own independent assessment of radiological impact. We cannot comment on whether PHE have identified any issues that cannot be overcome until we have reached a draft decision. We are considering PHE's comments through our permit determination process when verifying the Applicant's assessment. We are also factoring these comments in to our own independent assessment of radiological impact. We cannot comment on whether PHE have identified any issues that cannot be overcome until we have reached a draft decision.
	Response by East Suffolk Council at Deadline 2	Air quality – refer to detailed response re: particulate matters and dust deposition, along with general air quality comments at AQ.1.2, AQ.1.3, AQ.1.7, AQ.1.11, and AQ.1.22.
	Response by SZC Co. at Deadline 3	No further comments to add to SZC Co. response for Deadline 2.

ExQ1	Question to:	Question:
	Response by East Suffolk Council at Deadline 3	ESC does not necessarily agree with all the statements made in the Applicant's response, but does agree that the impacts of the proposed development, following mitigation, are sufficiently low as to not give rise to any significant adverse effects on public health.
	Response by Together Against Sizewell C at Deadline 3	We acknowledge this is not an ONR issue but feel obliged to mention that we are not aware if any health impact studies have ever been carried out in the modern era for this Sizewell locality, although there are records in the National Archives relating to a leukaemia cluster around Sizewell A (see Leukaemia at Sizewell A | The National Archives.)
	Response by SZC Co. at Deadline 5	No further comments to add to SZC Co.'s response for Deadline 2.
R.1.30	ONR, The Applicant	**Relationship to Current Operations at Sizewell** Please respond to the points raised by Magnox Ltd (RR-991) and Pinsent Masons (RR-992) and in particular the concern regarding the assertion that "the Sizewell C Nuclear Generating Station can be constructed and operated in accordance with the Applicant's application proposals in a manner which adequately ensures the safe, secure and environmentally sound decommissioning of the Sizewell A Nuclear Site."
	Response by SZC Co. at Deadline 2	These matters are considered further within the Statement of Common Ground between SZC Co. and the Nuclear Decommissioning Authority (NDA) and Magnox Limited (Doc Ref. 9.10.19). SZC Co. intends to enter into a series of technical agreements with the NDA and Magnox which will ensure the safe, secure and environmentally sound decommissioning of the Sizewell A Nuclear Site alongside the construction and operation of the Sizewell C nuclear power station.
	Response by ONR at Deadline 2	ONR's assessment of the Sizewell C nuclear site licence application will include consideration of the applicant's case that operations of the site do not pose a safety hazard to the adjoining nuclear licensed site (i.e. Sizewell B). As Sizewell A is further from the C site than is the B site, then we would expect any such hazard to the A station to be considerably smaller. This will become apparent as our assessment progresses. Nevertheless, if the A station licensee has specific concerns regarding the hazards presented by the C station, either during construction or operation then they should bring

ExQ1	Question to:	Question:
		this to the attention of the prospective C station licensee; if necessary, ONR will then engage in discussions with the two companies.
	Response by NDA and Magnox at Deadline 2	At this stage, and on the basis of the Applicant's current proposals, the NDA and Magnox are not yet satisfied that the Sizewell C Nuclear Generating Station can be constructed and operated in accordance with the Applicant's application proposals in a manner which adequately ensures the safe, secure and environmentally sound decommissioning of the Sizewell A Nuclear Site. However, the NDA and Magnox have now entered into discussions with the Applicant.
	Response by SZC Co. at Deadline 3	These matters are part of continued ongoing discussions and are considered within the **Statement of Common Ground between SZC Co. and the Nuclear Decommissioning Authority and Magnox Limited** [REP2-083]. An updated statement will be submitted at Deadline 5.
	Response by Together Against Sizewell C at Deadline 3	We have noted NDA/Magnox concerns and expressed earlier our major concern about the impact on the immediately adjacent live reactor Sizewell B. We draw to the Inspector's attention the apparent contradiction of the ONR claiming there to be no safety issues resulting from the proximity of the 'C' site to those of 'A' and 'B' while the Nuclear Decommissioning Authority (NDA) stating that , " At this stage, and on the basis of the applicant's current proposals, the NDA and Magnox are not yet satisfied that the Sizewell C Nuclear Generating Station can be constructed and operated in accordance with the Applicant's application proposals in a manner which adequately ensures the safe, secure and environmentally sound decommissioning of the Sizewell A Nuclear Site. However, the NDA and Magnox have now entered into discussions with the Applicant." This paragraph can be found at: https://infrastructure.planninginspectorate.gov.uk/wpcontent/ipc/uploads/projects/EN010012/EN010012-004505-DL2%20-%20Nuclear%20Decommissioning%20Authority%20and%20Magnox%20Limited%20-%20Responses%20to%20the%20ExA%E2%80%99s%20Written%20Questions%20(ExQ1). pdf As was reported in national media on the 16th June, a fire (EDF says a 'small fire' at Hinkley Point, visible from Burnham, was safely extinguished (burnham-on-sea.com) which occurred on the Hinkley 'C' site underlined the concern that the close proximity of the A, B and proposed C plants at Sizewell means that events on one site have the ability

ExQ1	Question to:	Question:
		and the likelihood of affecting conditions on another or all three sites. In this case, the fire was thankfully small, but accidents involving, for example, a radioactivity release from the operational plant or a more significant conventional fire on the construction site could have far reaching impacts for the workforce and residents locally and possibly further away from the site. Finally, TASC points out that in the EN6 Sizewell site assessment, the ONR agreed that an individual reactor required 30 – 50 hectares of land for a safe construction process. Paragraph C.8.89 states: 'Nominators have indicated that in their view, the size of site required for the operation of a permanent site of a single nuclear power unit allowing for operation, maintenance, storage of spent fuel and intermediate level waste would be 30 – 50 hectares. The Office of Nuclear Regulation concur with this estimate.'
	Response by SZC Co. at Deadline 5	No further comments. This is a matter for the ONR.