



The Sizewell C Project

9.47 Written Summaries of Oral Submissions made at ISH7: Biodiversity and Ecology Parts 1 and 2 (15-16 July 2021)

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CONTENTS

CONTENTS	1
1 ISSUE SPECIFIC HEARING 7: BIODIVERSITY AND ECOLOGY (PARTS 1 AND 2)	1
1.1 Introduction	1
1.2 Agenda Item 2: Terrestrial Ecology	1
1.3 Agenda Item 3: Marine Ecology	27

1 ISSUE SPECIFIC HEARING 7: BIODIVERSITY AND ECOLOGY (PARTS 1 AND 2)

1.1 Introduction

1.1.1 This document contains the Applicant's written summaries of the oral submissions made at Issue Specific Hearing 7 (ISH7) on Biodiversity and Ecology (Parts 1 and 2) held on 15 and 16 July 2021.

1.1.2 In attendance at ISH7 on behalf of the Applicant was:

- Hereward Phillpot QC of Francis Taylor Building (HPQC);
- Stephen Tromans QC of 39 Essex Chambers (STQC);
- John Rhodes of Quod (Planning Manager (Strategic));
- Richard Jones of Quod (Planning Manager (Main Development Site));
- Andy Langley of Atkins (SZC Civil Site Establishment Engineering Lead); HPQC
- Dr Stephen Roast of SZC Co. (Planning Manager (Marine));
- Dr Murray Grant of Royal HaskoningDHV (Ornithologist);
- Matthew Simpson of Royal HaskoningDHV (HRA Lead)
- Alan Lewis of AECOM (Technical Lead (Ecology));
- Mark Lee of Atkins (Groundwater Lead);
- Dr Mark Breckels of CEFAS (Marine Ecology Lead).

1.1.3 Where further information was requested by the Examining Authority (ExA), this is to be provided at Deadline 6 in the Applicant's Written Submissions Responding to Actions Arising from ISH7.

1.2 Agenda Item 2: Terrestrial Ecology

a) Duties under ss.28G and 28I of the Wildlife and Countryside Act 1981 and the effects of s.28P

1.2.1 HPQC noted that **Appendix 7B** to the **response to ExQ1 Bio1.5-1.7 [REP2-109]** submitted at Deadline 2 draws together a list of how these legal duties apply to a variety of features of the Sizewell Marshes SSSI including

the species and the habitat features for which it has been designated. SZC Co. would check that is comprehensive and whether there is another place in the application where that is drawn together, and if not a note would be provided which hopefully will assist the Examining Authority's reporting. *[Post-hearing note: SZC Co. have checked Appendix 7B [\[REP2-109\]](#) and consider it to provide a comprehensive summary of measures committed to within the Application for the conservation of protected species and habitats. SZC Co. note that a summary of mitigation measures is also provided within the **Mitigation Route Map** (Doc Ref. 8.12(C)), however, Appendix 7B [\[REP2-109\]](#) provides a more detailed description of the measures committed to.]*

1.2.2 HPQC noted that the Applicant is engaging with Natural England on matters of mutual interest to ensure outstanding matters are dealt with as clearly as possible.

b) The Sizewell Marshes SSSI

i. The SSSI crossing

1.2.3 HPQC noted that the results of the lighting modelling effects on bats were provided at Deadline 3 (Doc Ref. 9.54). HPQC also noted that a report on further design work on the SSSI crossing would be submitted at Deadline 5 (Doc Ref. 2.5 (A)).

1.2.4 HPQC addressed a number of preliminary matters arising from Interested Parties' oral submissions.

1.2.5 The first point was in reference to Suffolk County Council's submission in relation to Annex C to EN-6.

- It was noted that the reference relied upon by the County Council was to be found in the Site Assessments in Annex C, Volume II of NPS EN-6. Annex C summarises the assessments and sets out why each of the sites was found to be potentially suitable – this text does set or purport to set policy tests for the purpose of decision-making in response to individual applications for development consent. These tests are set out in NPS EN-1 and Volume 1 of EN-6, and clearly identified as such.
- It is important to properly understand paragraph C.8.63 of Annex C to EN-6 in its own terms but also having regard to the policy tests for decision making.
- HPQC noted that the County Council had drawn attention to the reference to minimising impacts in the final sentence of paragraph

C.8.63 which reads: "*The applicant will need to develop an ecological mitigation and management plan to minimise the impacts.*" However, when the sentence is looked at as a whole, it does not say that all aspects of the design of the proposed development must minimise impacts, nor does it set that as a policy test for assessing the acceptability of a particular set of proposals. Instead, it is concerned with the contents of the ecological mitigation and management plan, and what that document would seek to achieve.

- Furthermore, there is no policy that provides (or even indicates) that minimising impact on the SSSI must as a matter of principle override any other public interest considerations that may be engaged and taken into account in the planning balance, such as for example, the impact on the timing of delivery on a project that the NPS describes as urgent. It also does not override the requirement to balance those impacts against other impacts where the considerations may pull in a different direction, for example landscape impacts in the context of an AONB. It is not to be understood as a policy requirement to minimise at whatever cost to other interests of public importance. That balance was reflected in the judgment that ESC has reached as to the acceptability of the crossing as now proposed.
- NPS EN1 identifies in section 5.3 (paragraphs 5.3.10 and 5.3.11) the policy test for decision making in relation to development within or outside a SSSI and which is likely to have an adverse effect on the site's notified special interest features. Such development should not normally be permitted, but an exception may be made where the benefits (including need) of the development clearly outweigh the impacts. In those circumstances requirements and/or obligations should be used to mitigate the harmful (i.e. significantly harmful, see f.n. 102) aspects of the development and, where possible, to ensure the conservation and enhancement of the site's biodiversity or geological interest.
- The NPS policy reflects an approach which is entirely consistent with the applicable legal duties, and a decision made applying and in accordance with that policy would be effective to discharge the statutory duty in section 28G(2). The policy test does not require minimisation of adverse impacts at all costs. As summarised above, it is important to recognise that for the purposes of decision making, there is a balance to be struck in terms of the inter-play between a number of factors which are important in public interest terms, but which may pull in different directions in some instances.

1.2.6 The second point related to an issue which was raised about achieving a greater degree of transparency and clarity on the differences between the

proposals the Applicant invites the Secretary of State to approve, and the triple span bridge. It was noted that the ExA's consideration of this issue will engage the policies on alternatives which have been canvassed previously in the ISHs. The Applicant will prepare and seek to agree with the Councils a document including a plan or plans setting out the differences between the bridge designs with a view to submitting agreed plans into the Examination.

- 1.2.7 Mr Richard Jones explained the differences between the proposed single-span bridge and discounted triple-span bridge and why the difference in permanent SSSI land take is limited to 0.02ha.
- 1.2.8 Both options would be in the same location across the SSSI and are the same length (140m). They have a similar width overall during construction (approximately 40m) and the same span over the Leiston Drain (approximately 30m).
- 1.2.9 The proposed single span bridge has 110m of embankments and a 30m bridge over Leiston Drain. The discounted triple span bridge has 70m of embankments, a 30m bridge over Leiston Drain and two further 20m bridges.
- 1.2.10 The two further bridge spans associated with the discounted triple span bridge do not reduce the SSSI land take, because only the southernmost span of the triple-span bridge is in the SSSI. To construct the bridge support structures for the triple-span a working platform is needed in the SSSI, due to the underlying peat which has very little structural strength. To lay that working platform, ground improvements are needed, in the same way that they are for the HCDF where peat is present. In practice that means a tight grid of rigid inclusions needs to be installed into the wetlands before the working platform can be placed on top. We consider that the part of the SSSI that will be subject to that grid of piles could never become SSSI again. Therefore, in a SSSI land take sense, there is no relative benefit from that section of the SSSI containing either a 20m bridge or an extra 20m of embankment.
- 1.2.11 Due to slightly different designs, there is a small amount of additional wet woodland (0.02ha) that would be lost within the SSSI with the proposed bridge compared to the discounted alternative.
- 1.2.12 As set out in SZC Co's. **Response to First Written Questions** [REP2-100] at G.1.34, there is a 6-12 month programme saving, which means the construction impacts of the project are 6-12 months shorter and the public benefits of the project would be realised 6-12 months sooner.

- 1.2.13 Mr Jones explained that he considers that programme benefit to be very significant because Paragraph 3.3.15 of EN-1 is clear that there is an urgent need for new (and particularly low carbon) energy NSIPs to be brought forward 'as soon as possible'.
- 1.2.14 Section 3.5 on EN-1 is clear that new nuclear should 'start generating as soon as possible' (paragraph 3.5.9) because new nuclear 'will play a vital important role in the de-carbonisation of the electricity system'. (Paragraph 3.5.10).
- 1.2.15 SZC Co. is submitting a short document that sets out the unique strength of that urgent need at Deadline 5.
- 1.2.16 Mr Jones also explained the design refinements that are submitted at Deadline 5 in response to ongoing discussions with stakeholders:
- a soffit no lower than 6.8m (AOD) at its intersection with the Leiston Drain;
 - a span no wider than 15m; and
 - the crest will be no lower than 8.6m (AOD).
- 1.2.17 Requirement 12C of the draft **Development Consent Order** (Doc Ref. 3.1(D)) is also to be updated at Deadline 5 to ensure that future details of the layout, scale and external appearance of the permanent SSSI Crossing adhere to the above dimensions. The construction and permanent stages of the SSSI Crossing must also be built in general accordance with the updated plans submitted at Deadline 5 (Doc Ref. 2.5(A)).
- 1.2.18 The design update falls within the Rochdale envelope assessed for the purposes of environmental assessment and the above serves only to further constrain the parameters in response to stakeholder feedback.
- 1.2.19 The update brings the benefit of not needing to adapt the SSSI Crossing during the operational period of the power station, which would have required parts of the crossing to have been re-landscaped to accommodate the increased height. Further details on why this is not necessary are provided in **SSSI Crossing Future Adaptation Review** provided at Deadline 5 (Appendix J of Doc Ref. 9.54).
- 1.2.20 Mr Lewis responded to a number of points that were made in relation to habitat fragmentation and ecology associated with the SSSI Crossing.
- 1.2.21 Lighting plots submitted at Deadline 3 [[REP3-057](#)] demonstrate there is no light spill to the east or west of the drain, so preserving a dark corridor in this area. No fragmentation is anticipated in relation to otters, water voles

or bats. A recent design iteration, which increases the soffit height to 6.8m, covered by Mr Jones, will also ensure there is no fragmentation effect for invertebrates or fish.

- 1.2.22 In response to a point made by Mr McFarland of Suffolk Wildlife Trust in which he stated that the 3.02ha of temporary land take would be effectively permanent land take, Mr Lewis summarised the temporary land take position. Of the 3.02ha of temporary land take, 1.45 ha is well to the south under the overhead lines and so not associated with the SSSI Crossing. Of the remaining 1.57ha within the SSSI Triangle area, only a small part is close to the SSSI Crossing and the area which will be heavily trafficked by vehicles to build the SSSI Crossing is modest. The works within the area of temporary land take of 3.02ha would be controlled by a method statement, secured under Requirement 14 and this would secure the ability of Natural England to control the impacts in this area. SZC Co will reply in writing on this point at Deadline 6.

ii. Fen meadow replacement, mitigation, monitoring and fallback

- 1.2.23 HPQC noted the ExA's reference in the hearing to the loss of 0.7ha of fen meadow from the SSSI and confirmed that original figure has now been reduced to 0.46ha.

- 1.2.24 In respect of the approach to delivering replacement fen meadow habitat, HPQC noted that the risk arising from the relative complexity of establishing this habitat type where it does not currently exist is already reflected in the multiplier recommended by Natural England. Hence it is important not to 'double-count' that risk when considering the adequacy of the proposed replacement provision based on that multiplier. An allowance to reflect and address the risk is built in to the Applicant's proposals and has informed the land quantum. Although there have been suggestions from other Interested Parties that the Applicant should use another multiplier which is not intended to be used for that purpose, resulting in an even higher figure for replacement habitat, the Applicant is conscious of the fact that compulsory powers are being relied upon in respect of the land required to deliver replacement fen meadow habitat. The multiplier relied upon by the Applicant is based on advice from Natural England, the Government's advisor on these matters, and a body with a particular formal role in respect of SSSIs pursuant to the Wildlife and Countryside Act 1981. In those circumstances, seeking to apply the suggested different multiplier would be problematic in light of the tests for compulsory acquisition powers. HPQC submitted that in those circumstances the approach adopted in this case is entirely reasonable.

- 1.2.25 HPQC noted that the Applicant will look into the drafting points in relation to the Requirement 14A (Doc Ref. 3.1(D)). The Applicant will engage with

East Suffolk Council in relation to the point raised that the drafting of the Deed of Obligation is not subtle enough.

- 1.2.26 HPQC noted the responses to the Rule 8 letter are not collated in one place but are spread across various submissions so these will be pulled together, or a list of where these are located, for submission at Deadline 5. This can be found in the Deadline 5 cover letter.
- 1.2.27 Mr Lewis noted that extending the contingency approach in the Fen Meadow Strategy nationally would divorce any contingency habitat measures further from Sizewell and provided a reference which supported his conclusion that the contingency approach should be limited to East Anglia.
- 1.2.28 In relation to recreating fen meadow at other sites, using the contingency fund, Mr Lewis explained that extending the search across a wider geographic area would increase the chances of finding additional sites. For example, Norfolk has a lot of fen meadow sites. Furthermore, the contingency provisions extend the approach to include '*enhancement*' (in addition to habitat creation) to broaden the opportunity for betterment.
- 1.2.29 The Fen Meadow Plan which will come forward at Deadline 6 will provide further details of the proposals at the three selected sites in Suffolk and no measures will be undertaken that might detrimentally affect the water levels at Pakenham SSSI.
- 1.2.30 The Fen Meadow Plan will cover any inputs and outputs to the various watercourses. The approach will potentially use intra-site measures to raise water levels and also lower ground levels. The latter approach will remove nutrient laden topsoils, and also bring ground level down closer to the ground water. The approach will not require large diversions of water from water courses. Mr Lewis also confirmed that there would be no diversions of any public rights of way.
- 1.2.31 Mr Lewis reviewed the list of wetland plant species listed in the Sizewell Marshes SSSI citation and confirmed that eleven species or species groups are listed and are components of the fen meadow community. These species would be expected to be embedded within an established M22 community within a period of 10 years at the fen meadow sites and there are no species that would be particularly difficult to re-establish. The fen meadow sites would not be isolated '*pockets of habitats*' but will be close to existing areas of fen meadow as well as other habitats in the river corridors.
- 1.2.32 The potential fen meadow habitat compensation sites are very limited in extent and SZC Co. does not control suitable land, such that compulsory

acquisition powers may be necessary through the DCO. Mr Lewis explained that he was scheduled to meet the landowners of the three fen meadow sites shortly to discuss the proposals.

iii. Wet woodland and other flora and fauna by reason of which it is of special interest

1.2.33 This agenda item was deferred to written questions.

iv. Water level monitoring

Response to points raised by ExA

1.2.34 A series of points were raised in relation to water levels by the ExA, as follows:

- How are water levels practically maintained in the SSSI?
- How is water level monitoring secured? Is this in the DCO, COCP or elsewhere?
- Who is monitoring your monitoring and under what arrangement?
- What are the tests and remedial measures if everything goes wrong?
- There is a proposed side agreement with the EA and others. Why is that not a requirement?
- What eel/fish passage will be implemented and agreed upon and how will it be secured?

1.2.35 HPQC noted that the requests to deal with securing mechanisms and the side agreements with the Environment Agency would be responded to in writing.

1.2.36 Mr Lee (on behalf of SZC Co.) explained that water levels are managed and maintained using a series of control structures that modify the movement of water through the SSSI. These include blind bunds and piped connections between individual drainage channels at set levels. There is a plan (Drawing 5129919/SZC/009) in [\[APP-304\]](#) that shows the layout of the control structures and the direction of flow in the drains. This drawing is based on information provided by Suffolk Wildlife Trust, who manage the site on a day-to-day basis on behalf of EDF who own the land. Mr Lee clarified that there are no pumps used to manage water levels in the Sizewell Marshes, just piped connections and blind bunds.

- 1.2.37 Mr Lee explained that the Sizewell Marshes is a very passively managed system with respect to water levels. The control structures are not actively managed, beyond routine maintenance, and there is not regular intervention to modify water levels. In contrast, the RSPB reserve to the north is more actively managed by people changing levels, and opening/closing sluices to keep water levels within an optimal range.
- 1.2.38 Mr Lee stated that the proximity of the SSSI to the Minsmere Sluice exerts a control on water levels within the Sizewell Marshes. The sluice is tide-locked twice daily, causing water levels to back up the low gradient Leiston Drain into the Sizewell Marshes and restricting the outflow of water. The low lying, low gradient nature of the system means that localised restrictions can affect water levels upstream, as noted by Mr Collins with respect to the current high water levels in the Sizewell Marshes.
- 1.2.39 Mr Lee confirmed that the fen meadow in the SSSI is wetter than it would normally be at this time of year. This is a result of a blockage in the Leiston Drain downstream of the SSSI.
- 1.2.40 Mr Lee set out that an assessment has been carried out and reported in APP-297. This showed there is little anticipated change, based on numerical modelling. SZC Co. is in the process of drafting a water monitoring plan which will set out target thresholds for change. The intention, as set out in **Volume 2 Appendix 19F** in [\[APP-309\]](#) (updated as [\[AS-236\]](#)), is to maintain water levels in line with the existing baseline conditions. Mr Lee stated that the monitoring plan will be submitted at Deadline 6, following consultation with stakeholders.
- 1.2.41 Mr Lee confirmed that there is a very extensive baseline dataset to work with to define the pre-existing conditions that support the ecology in the SSSI. Target levels will be defined based on this extensive dataset, collected over a seven year period. Detail on the proposed monitoring regime will be incorporated in the water monitoring plan to be submitted at Deadline 6. Baseline monitoring is currently ongoing to ensure continuity of data.
- 1.2.42 Mr Lee clarified that the main predicted change is a slight temporary reduction in water levels at some times of the year during construction. This change is greatest during the winter months, when it is less ecologically sensitive as water levels are high in any event. Mr Lee confirmed the ExA's understanding that there is a straightforward test that can be applied by comparing monitored water levels during construction and operation with the baseline range.
- 1.2.43 Mr Lee set out that as part of the proposed development there is realignment of the Sizewell Drain including a new control structure at the

downstream end of the realigned drain. Details are presented in **Appendix 19C** of **Volume 2** of the **Environmental Statement** [APP-309]. This control structure will be adjustable allowing water to be retained in the SSSI. This will allow any reduction in water levels relative to baseline conditions to be managed and addressed.

Response to points raised by SWT

- 1.2.44 In response to Mr McFarland's statement setting out that SWT agree water levels can be managed as proposed but there may be changes to water chemistry, Mr Lee clarified that Appendix B of [REP3-043] contains a paper drafted specifically to address the concerns around changing the water balance in the SSSI. Mr Lee explained that the paper sets out in detail why the concerns raised by Mr McFarland are not supported by the evidence. Mr Lee explained that there is already a mix of sources of water within the Sizewell Marshes, including surface water, groundwater, direct rainfall and overland flow. The paper sets out the current water balance in the SSSI, and the small degree by which it changes during construction and operation.
- 1.2.45 Mr Lee explained that the management of water levels is not about introducing more nutrient rich water at the upstream end of the system, which would be potentially detrimental to the supported ecology. Mr Lee reiterated that water levels can be managed by retaining water already within the SSSI at the downstream end of the system.

Response to points raised by Dr Rob Low

- 1.2.46 Mr Lee stated that there is a well-established monitoring network both within the Sizewell Marshes SSSI and the surrounding area. Mr Lee advised that the suitability of the monitoring network was agreed with stakeholders, including the Suffolk Wildlife Trust, Natural England and the Environment Agency, early in the characterisation of the site and the data collected from it underpins the conceptualisation of the groundwater and surface water regime.
- 1.2.47 Mr Lee (on behalf of SZC Co.) stated that the monitoring installations in the peat in the SSSI are standard instruments for monitoring water levels in this setting and are recording data that reflects the actual position of the water table.
- 1.2.48 Mr Lee clarified that the point made in response to the Written Representations in [REP3-042] about the use of generic literature values relates to the fact that there is an extensive, site specific baseline monitoring dataset that it is more appropriate to use as a basis for assessing change. Mr Lee stated that the baseline data show that the SSSI

is not currently in line with the conditions described in the published literature as being required to support M22. Mr Lee noted that the ecology at the site is considered to be in good condition despite the water regime not being within the range described in the published literature. Mr Lee stated that the published literature is an aggregate set of conditions based on survey data from sites around the country, which maybe in different hydrological settings. Mr Lee acknowledged that it describes the conditions in which plant assemblages in the M22 classification are understood to be most successful. This does not alter the fact that the conditions in the SSSI are not aligned with those in the published literature as being necessary to support M22.

- 1.2.49 In the absence of site specific data, it would be necessary to use generic literature values as the basis for assessing the impact of the proposed development activities. However, Mr Lee stated that as there is an extensive site-specific baseline dataset to assess change against, using this data is a more appropriate and robust approach to measuring change. If it can be demonstrated that there is no change in the water environment relative to baseline conditions there is no mechanism for change to occur in the ecology that it supports.
- 1.2.50 Mr Lee advised that the water monitoring plan, to be submitted at Deadline 6, will set out detailed proposals on future monitoring and reiterated that the intention is to maintain water levels in line with the recorded baseline conditions.
- 1.2.51 Mr Lee explained that the assessment of change compares predicted levels and flows with baseline conditions with only very small differences seen across the SSSI. A value of 10cm has been used as a threshold in the assessment based on the magnitude of difference predicted by the numerical modelling, and informed by ecological sensitivities.
- 1.2.52 Mr Lee stated that there is an important point about the timing and duration of any difference from baseline conditions, and whether the difference means that there is a change from the range of conditions currently experienced by the SSSI. A reduction in water levels in the winter months is less significant than an equivalent reduction in the summer. Water levels are naturally higher in the winter so a small reduction, in the order of 10cm, is not ecologically significant. An equivalent reduction in the summer months may lead to temporary ecological change by limiting access to the water table for shallow rooted species. The assessment shows that the greatest change is predicted in the winter months, with change across the SSSI less than 10cm during summer. The change also reduces in magnitude as the construction programme progresses.

- 1.2.53 Mr Lee restated that the water monitoring plan to be submitted at Deadline 6 will include trigger levels for action. These will include minimum summer water levels. Mr Lee reiterated that these levels will be based on the baseline dataset and designed to ensure that water levels are maintained within the presently observed range. Mr Lee advised that the predicted change is also not uniform through the year. A greater degree of change is predicted in the winter months when water levels are higher meaning the small reduction in levels is not problematic for the supported ecology. There is a lesser degree of change predicted in the summer months.

Response to points raised by Minsmere Levels Group

- 1.2.54 Mr Lee acknowledged there is an issue with constriction of flow in the Leiston Drain downstream of the SSSI at present. This shows up in the monitoring data, and is evident from the abnormally high water levels in the SSSI. Mr Lee indicated that discussions are ongoing about clearing the obstruction to allow the Leiston Drain to function normally. Discussions have been held with the Environment Agency and the East Suffolk Internal Drainage Board to facilitate clearance.
- 1.2.55 Mr Lee indicated there have been previous instances of obstructions occurring in the Leiston Drain during the baseline monitoring period.
- 1.2.56 Mr Lee reiterated that the water monitoring plan will set out the proposed monitoring regime based on the outcome of the assessment of potential change.

Response to points raised by Natural England

- 1.2.57 Mr Lee stated that it is recognised that this is a complex system and it is hard to get into the finer points of detail during the Issue Specific Hearing. Mr Lee indicated that the site is not a uniform entity, and the predicted changes to the water environment vary both spatially and through time. Mr Lee reiterated that the concerns raised around the scale and duration of changes are addressed in detail in previous written submissions. The most pertinent is Appendix B of [\[REP3-043\]](#), which sets out the timing, duration, magnitude and nature of the predicted change and what this means in terms of change from baseline conditions.
- 1.2.58 The concerns from interested parties are around the potential changes to the water environment that supports the ecology of interest. Mr Lee stated that based on the assessment undertaken there is not predicted to be an impact from the proposed activities during construction or operation.
- 1.2.59 Mr Lee restated that a water monitoring plan is being prepared to set out how the actual change in water levels will be measured.

- 1.2.60 As part of the preparation of the water monitoring plan SZC Co. is seeking to agree appropriate trigger levels for intervention, using the proposed control structure at the downstream end of the realigned Sizewell Drain. The intention is that water levels within the Sizewell Marshes will remain within the annual range experienced under baseline conditions.
- c) Minsmere – marsh harrier, including proposed compensatory measures at Upper Abbey Farm (including wetland) and discussion of the land at Westleton
- 1.2.61 STQC on behalf of SZC Co. confirmed that due to the loss of foraging habitat on the site of the permanent development the Applicant was relying upon an 'IROPI' case. The compensatory measures are at Upper Abbey Farm. If the Secretary of State considers it necessary then there are compensatory measures at Westleton.
- 1.2.62 SZC Co. confirmed that it would provide a response to the written representation of the RSPB and SWT which would deal with issues such as the levels of precaution in our assessment, the metric used in the calculation of the area and other matters (**Appendix M of SZC Co's Comments on Submissions from Earlier Deadlines (Deadlines 2-4)** (Doc Ref. 9.54)). In terms of the Marsh Harrier Implementation Plan, this is a post-consent requirement which is secured by new condition 14C in the **draft DCO** (Doc Ref. 3.1(D)). SZC Co. also confirmed that it would respond to Mr Streeten's submissions as regards legal points raised by him at Deadline 6.
- 1.2.63 Mr Lewis provided a summary of the on-site provision of marsh harrier compensatory habitat in the north east corner of the EDF Energy estate. These habitats are a mosaic of grasslands, planted hedge lines and also wild flower mixes and were viewed on the Accompanied Site Inspections. An important recent change introduced in the January 2021 changes application is the inclusion of a new wetland area in this area. These new wetlands will provide ideal foraging habitat for the harriers and are much closer to the reedbeds at Minsmere [where the marsh harriers nest] than the Sizewell Marshes SSSI.
- 1.2.64 A summary was also provided of the contingency site at Westleton. The site area is approximately 60ha. If this site is required, the approach would be to provide a mosaic of rough grassland and wild flower areas as well as taller areas of planting which will provide linearity for harriers to hunt along. It would not be possible to create wetlands on the site within a time frame that would be meaningful.
- 1.2.65 Mr Lewis explained the approach to monitoring of marsh harriers, which is included in the **Terrestrial Ecology Monitoring and Mitigation Plan**

(TEMMP) (Doc Ref. 9.4(A)). This defines three types of monitoring: monitoring of the birds themselves, monitoring of prey availability and monitoring of the establishment of the habitats.

1.2.66 The ExA asked whether the marsh harriers were likely to use the newly created areas. Mr Lewis explained that there is a high degree of confidence that the marsh harriers will use these areas, including the wetlands. They are already using the newly created grasslands to hunt to some extent. The question is whether these areas, including the wetlands, attract marsh harriers to the extent expected but he was confident, given the extent of the proposal and the proximity to the Minsmere reedbeds, that the on-site habitats are sufficient. Further details are to be provided in writing at Deadline 6.

1.2.67 Mr Lewis listed the criteria used to select suitable sites for marsh harrier contingency compensation habitats, as follows:

- Site not designated for existing ecological value, on a statutory or non-statutory basis, or forming part of the RSPB Minsmere Reserve.
- Proximity to Minsmere reedbeds (within 4km).
- Preference for arable or (low ecological value) sown pastures areas, currently of relatively low value to marsh harriers, most suitable for conversion to high quality non wetland foraging habitat, without damaging any existing habitat value.
- Single contiguous site preferable to scattered multiple sites to enable effective and co-ordinated management.
- Preference to avoiding popular footpath and other rights of way, which might dissuade harriers from using these areas.
- Existing hedges, ditches and varied topography preferable to provide connectivity and ambush opportunities for foraging harriers.

1.2.68 At 'Stage 4' consultation, SZC Co. identified three possible alternative sites and following that consultation it was decided to take 'Site 1' forward for three main reasons:

- it is the most contiguous site;
- it is entirely arable; and
- it has fewer public rights of way than at least one of the alternatives.

- 1.2.69 In response to several points from participants, Mr Lewis explained that the site is about 3.5km from the Minsmere reedbed and confirmed that, if required, the habitats at Westleton would only be required for the construction phase of Sizewell C. Once the temporary construction area is removed, there would be no impediment to the marsh harriers using the Sizewell Marshes SSSI again. Mr Lewis explained that he was scheduled to meet the landowner of the Westleton site shortly to discuss the proposals. A note is to be provided on the selection of the Westleton site at Deadline 6.
- 1.2.70 Mr Streeten commented that largely relying on terrestrial habitat (with only a small proportion of wetland habitat) for the compensatory habitat provision was a novel approach and did not meet the test of certainty. In response to Mr Streeten, Dr Grant contested this view. He stated that while marsh harrier is a species which is focused on wetland habitats in terms of key nesting and foraging habitat, the species does also forage over other dry habitats. Dr Grant referred to the increase in the UK population in recent decades and the fact that a greater proportion of that population nest and forage within dry agricultural habitats as opposed to being exclusively within the wetland areas.
- 1.2.71 Dr Grant explained that marsh harrier is known to be very adaptable in its use of foraging habitat. At Minsmere and the surrounding area, there is a large discrepancy between the wetland habitat, which is semi-natural and not intensively managed, and the dry habitats, much of which is intensively managed habitat. In other parts of the marsh harrier range, dry habitats are not so intensively managed and the birds are using dry habitats to forage.
- 1.2.72 In summary, Dr Grant stated that there is nothing that would limit the ability of harriers to use the proposed compensatory habitat through the breeding season. The habitat types created will increase the provision of prey items (in this case, small mammals, rabbits, small passerines and probably gamebirds) and marsh harrier will use the habitat as a foraging resource throughout the whole breeding season.
- 1.2.73 The compensatory habitat at Upper Abbey Farm is particularly suitable because it is immediately adjacent to the wetland habitat at the Minsmere South Levels where the marsh harrier currently forage.
- 1.2.74 The ExA asked whether there could be an issue with competing predators for marsh harrier prey items. Dr Grant responded that he could see no reason why this should be a major issue. The compensation habitat is adjacent to the Minsmere South Levels and, therefore, if there is a high level of prey abundance on the Minsmere South Levels then it follows that other predators will be competing with the marsh harriers on that area. This also applies to the Sizewell Marshes, which is the main area from which the

Shadow HRA assumes that the foraging marsh harriers would be displaced. There is no reason to assume that predators would become more focussed on the compensation habitat in preference to the Minsmere South Levels or elsewhere.

d) HRA

- 1.2.75 The agenda item was subtitled *'To understand the differences between Interested Parties (IPs) and the Applicant on the Applicant's conclusion of no adverse effects on integrity (as presented in the **Shadow HRA Report** [APP-145 to APP-152] and addendums [AS-173 to AS-178]) for disturbance/displacement effects on breeding and non-breeding waterbirds using functionally-linked land to Minsmere-Walberswick SPA/Ramsar site due to noise and visual disturbance'*
- 1.2.76 In response to this agenda item, Dr Grant introduced by explaining that there are two different issues (breeding waterbirds and non-breeding waterbirds), with disturbance/displacement effects related to effects on functionally linked land.
- 1.2.77 For both groups (i.e. breeding and non-breeding waterbirds), disturbance and displacement does not affect any of the birds that are within the boundaries of the designated sites and affects only those birds that are either using the Minsmere South Levels and Sizewell Marshes, which are the two key areas of functionally linked land in this instance.
- 1.2.78 In the case of breeding waterbirds, the **Shadow HRA** [APP-145] concluded that 11% of the breeding gadwall and 7% of the breeding shoveler occurring on the Minsmere-Walberswick SPA (and Ramsar site) and the functionally linked habitats in the Minsmere South Levels and Sizewell Marshes would be displaced as a result of noise and visual disturbance. However, all of the birds predicted to be displaced occur on the functionally linked habitats.
- 1.2.79 Dr Grant further explained that the birds which breed within the designated site are not dependent on the functionally linked habitats on the Minsmere South Levels and Sizewell Marshes for the provision of resources which cannot be obtained from within the designated site itself. Instead, the functional linkage is concerned with the occurrence of additional breeding birds on these nearby habitats outside the designated site. In this regard, the functional linkage is fundamentally different to that for the Minsmere-Walberswick SPA (and Ramsar site) marsh harrier population, for which the functionally linked habitats provide a foraging resource to the birds which breed within the designated site.
- 1.2.80 In relation to the non-breeding waterbirds (with gadwall and shoveler also relevant here), again the effects of disturbance and displacement are only

relevant to the functionally linked land, and not birds that are using the designated land. In this case, the issue is specifically for the birds on the Sizewell Marshes that are predicted to be displaced, as opposed to those that are on the Minsmere South Levels, which has higher numbers and is immediately adjacent to the designated site.

1.2.81 For both non-breeding gadwall and shoveler, there are several other sites in the wider area which are used by these during the winter period, and it is highly likely that there is interchange of birds between these sites and the Sizewell Marshes. On the basis of the relatively small proportion of the SPA population of non-breeding gadwall and shoveler which is likely to depend upon the Sizewell Marshes, combined with the fact that other sites outside the SPA have the potential to provide more extensive areas of supporting habitat, means that the predicted displacement of birds from substantial parts of the Sizewell Marshes will not prevent the SPA from continuing to support the existing population of non-breeding gadwall and shoveler. these areas.

1.2.82 Following the discussion, STQC stated that it was encouraging to learn that there was no significant difference of opinion between SZC Co. and the RSPB. The points of difference relate to survey data and precaution. These points are to be responded to in writing at Deadline .

- i. To understand the differences between IPs and the Applicant on the effects of recreational pressure on European sites and to discuss the monitoring, mitigation and management proposed to conclude no adverse effects on integrity

Recreational displacement: Main areas of disagreement

1.2.83 Mr. Rhodes explained that there were three main areas of debate between the parties:

- the potential numeric scale of the effect of displacement and construction workers;
- whether that effect may be harmful and how to monitor and mitigate to ensure that it is not; and
- whether a SANG is additionally required.

Numeric scale of effect

1.2.84 Mr. Rhodes explained that the assessment undertaken by the Applicant was highly precautionary for four principal reasons:

- It assumes that all 29% of visitors surveyed in 2014 who said they would be displaced to alternative locations would in fact be displaced. Surveys of this nature tend to be pessimistic, for reasons which the Applicant has stated earlier in the Examination (in relation to tourism).
- It assumes that all those visitors would be displaced and that they would be displaced to European sites. There are two particularly cautious aspects of this assumption:
 - many visitors did not name a European site as their alternative destination. Instead, they gave answers such as Aldeburgh or Thorpeness. For the purposes of the precautionary assessment, however, it was assumed that they would not visit the town or the beach but they would in fact access the nearest European site. In the case of Aldeburgh they would go to the Alde-Ore estuary and in the case of Thorpeness they would go to Sandlings;
 - only 67% of respondents actually named any specific location. For the purposes of the assessment, however, it was assumed that the remaining 37% would visit the same European sites in the same proportions. This is notwithstanding approximately half of the people surveyed lived outside the area and (if displaced) may well choose entirely different locations in different parts of the country.
- The assessment took no account of those who may be displaced from European sites, notwithstanding two of the seven survey locations were within European sites (Aldringham Walks and Dunwich Heath). Some of those respondents indicated that they would be displaced but that has not been factored into the assessment. Equally, no general reduction in visitor numbers has been assumed, notwithstanding the case made against Sizewell C by some interested parties that overall visitor numbers in the area would reduce.
- No account was taken in the assessment of the measures which the Applicant has since put in place or to which it is committed in the **draft Deed of Obligation** (Doc Ref. 8.17(E)), a number of which are designed to reduce displacement. These include the creation of a recreational resource at Aldhurst Farm; a commitment to a RAMs payment in accordance with ESC's recreation and avoidance mitigation strategy; enhancing local rights of way and reducing the risk of beach closures. These matters were not factored into the assessment.

- 1.2.85 Despite the precautionary nature of the assessment, relatively low percentage increases in visitor numbers were found for the large majority of European sites, with the exception of the outer area at Minsmere and at Thorpeness, which the assessment translated as Sandlings. The assessment did not assume that an increase in numbers to well managed sites was necessarily an impact but it did recommend that enhanced management measures would be appropriate at the Minsmere European Sites and the northern part of Sandlings SPA but that, otherwise, no measures were necessary to protect the integrity of European sites.

Monitoring and management

- 1.2.86 Mr Lewis summarised two plans which are designed to protect the integrity of European sites in the context of recreational displacement.
- 1.2.87 The Minsmere Monitoring and Management Plan, includes embedded mitigation measures from the outset and was shared with examination at Deadline 2 [\[REP2-118\]](#). The initial mitigation measures include wardens, ecological surveys, surveys of visitor behaviour as well as engagement with visitors to influence their behaviours. The types of behaviours to be addressed include the potential increased tramping of habitats and dogs being exercised off leads in sensitive areas.
- 1.2.88 Mr Lewis explained that the plan was being updated at Deadline 5 to include a 5% investigatory trigger, using raw visitor numbers either through manual or vehicle counts (Doc Ref. 9.15(A)). This would trigger further investigation, potentially including further surveys, which could then lead to further mitigation measures being deployed.
- 1.2.89 The Minsmere Plan has been discussed with stakeholders over a period of months and a number of changes were agreed with the RSPB at a meeting on the 9 of July. The Minsmere Plan would be secured under the Deed of Obligation and a contingency fund, where the additional mitigations can be drawn from, is set out in the Deed of Obligation.
- 1.2.90 The second plan is a Monitoring and Mitigation Plan for the Sandlings (Central) and Alde-Ore Estuary and will be submitted for the first time at Deadline 5 (Doc Ref. 9.56). The difference between this plan and the Minsmere Plan is that the only embedded mitigation in this plan are a commitment to monitoring and the same approach as the Minsmere Plan in relation to briefing packs to campus workers, which would have benefits for all sites. The plan for the Sandlings (Central) and Alde-Ore Estuary (Doc Ref. 9.56) commits to monitoring from the outset, covering visitor numbers and ecological monitoring. It uses the same 5% investigatory trigger to determine whether there was a need for further monitoring or potentially mitigation. The funds for this plan are also secured in the Deed

of Obligation, including a contingent fund should the monitoring and governance process determine a need for mitigation.

SANG

1.2.91 Mr Rhodes explained the Applicant's view that a SANG was not necessary. Natural England's Written Representations had suggested that it was not yet satisfied that a SANG should be provided and others have deferred to Natural England. There may, however, be some mis-understanding about the nature of the construction worker accommodation which is said to give rise to the need for a SANG. In particular:

- Natural England's written representations express concern for the *"construction of accommodation for 5,900 workers (which) would be hugely significant in scale, and also occur in an area with no existing residential dwellings, close to the coast and important wildlife habitats"*.
- The Applicant is not constructing accommodation for 5,900 workers. The accommodation proposals are limited to 2,400 campus bed spaces and 600 caravan spaces. Workers there would not be allowed dogs.
- The remainder of the workforce would be distributed over a 60 minute drivetime and would principally occupy existing tourist or private accommodation, in place of others who might be expected to be more likely to visit European sites.
- The figure of 5,900 workers reflects the 2 year peak of construction activity and the impact, therefore, is very different from the equivalent permanent residential accommodation.
- Construction workers have particular characteristics which suggests they would be more likely to recreate when they return home and that principal forms of recreation would involve visiting towns or undertaking active sports, for which provision is made in the Leiston sports facilities proposed in the application. A survey of 297 outage workers in 2016 confirmed these characteristics. It found that only 2% stated they had visited Minsmere and 2% had visited Dunwich Heath. Only one non home-based worker stated that they had walked a dog in the countryside.
- There is no policy requirement for a SANG in the NPS or in the Local Plan, which appears to recognise that Sizewell has already provided compensation for its nature conservation impacts through the development of Aldhurst Farm (Local Plan paragraph 10.16).

- 1.2.92 The quality of what has been provided at Aldhurst Farm should not be under-estimated. SZC Co. agreed to submit a written response at Deadline 5 summarising the position but it was noted that it includes 27ha of high quality recreational resource which links to a number of existing and proposed enhanced walks in the area and will provide a very valued resource for construction workers, local residents and visitors to the area. SZC. Co. has not called Aldhurst Farm a SANG because it has not been proposed in the same way (to mitigate purely residential impacts) and because it has a value to a number of communities. Nevertheless, in scale and quality it is equivalent to the resource that a SANG would provide.
- 1.2.93 SZC Co. has no other land available or proposed within the DCO for the creation of an additional SANG and a case for compulsory powers to create a SANG on other land could not be supported given the weakness of the requirement.

Discussion and response

- 1.2.94 A number of Interested Parties expressed their views that impacts had been under-estimated. ESC was pleased that the Applicant had now agreed to a RAMs payment but thought there was more to be done by way of mitigation. The RSPB advised that they had submitted a detailed response on the assessment numbers, which were not agreed but confirmed that good progress had been made on the monitoring and management plan for Minsmere, which was welcome. RSPB would, however, seek the development of a SANG and they supported the case expressed by Natural England for a two-pronged approach: monitoring and management coupled with the provision of a SANG.
- 1.2.95 Others expressed concern for the age of the survey data, the risk of in-combination effects, the risks arising from workers seeking active sports including water sports and mountain biking. National Trust were concerned for impacts on Dunwich Heath which they felt had been excluded from the assessment and not sufficiently addressed.
- 1.2.96 Many parties expressed interest in the monitoring and management plans, recognising that progress had been made but that the MMP for the other European sites had not yet been shared and that the setting of trigger levels was important.
- 1.2.97 Mr. Rhodes responded on behalf of the Applicant to explain:
- SZC. Co was very grateful for the positive approach that had been taken to engagement on the monitoring and management plans. A workshop was proposed this week or the following to see if agreement could be reached around the discussion on numbers but also to

discuss further progress with the MMPs. All parties wish to achieve the same outcomes and the Applicant was very open to additional suggestions about the MMPs, triggers etc. The governance arrangements were clearly set out in the **draft Deed of Obligation** (Doc Ref. 8.17(E)) and there should be every confidence that the MMPs would work – they followed the approach suggested for mitigation by Natural England and ESC and any measures identified as being necessary to put in place could be quickly activated to address any risk of harm.

- A requirement for active sporting facilities was factored into the commitments at Leiston and at the campus, but it was also relevant that the Applicants were committing to and funding significant improvements to local footpaths and cycleways, which should bring significant benefit for cyclists.
- There should be no risk arising from in-combination effects because ESC's Local Plan policy was clear that all development of any significant scale should contribute towards the RAMs fund (to be applied by ESC to mitigate impacts) whilst any very substantial development (such as Brightwell Lakes or the Saxmundham garden suburb) was required to provide a SANG.
- SZC Co. had not come late to the idea of a RAMS payment – the terms of which had been agreed some time ago and are recorded in the LIR. It is relevant, however, that the matters to be funded by the ESC RAMS fund are similar to those to which SZC Co. has committed in the MMPs. SZC Co. would welcome further discussion with ESC about how its RAMS payment could be used to maximum complementary effect to ensure additional mitigation and protection for European sites.
- Dunwich had been the subject of particular consideration. It was one of the seven survey locations and it is also within the area where mitigation is committed through the **Minsmere European sites MMP** (Doc Ref. 9.15(A)). Additionally, the Applicant is in discussion with the National Trust about a Resilience Fund to address any other impacts.

1.2.98 Against this background, Mr. Rhodes suggested that there was no evidence that this combination of measures would not be successful in mitigating any impacts. No case for a SANG had been demonstrated but, in any event, the scale and quality of the provision at Aldhurst Farm would more than meet that requirement. The Applicant was doing everything it reasonably can to limit and mitigate any potential adverse effects.

- ii. Progress on written agreement to maintain access for the RSPB to the southern side of Minsmere Reserve.

1.2.99 This agenda item was not discussed at ISH7. However, the Applicant noted that it will respond to the written representation of the RSPB at Deadline 6.

- iii. 'collision risk' – concerns raised by NE re. lack of collision risk assessment for new pylons

1.2.100 This matter was explored briefly having been raised by NE. SZC Co. highlighted that a pylon plan had been prepared and stated that rather than taking up examination time, a discussion could be had with NE to see if concerns could be set to rest *[Post-hearing Note: SZC Co has agreed to prepare a short briefing note for NE and discuss with NE specialists to try and close this issue to the satisfaction of both parties.]*

- iv. Position update on air quality effects due to NOx and acid deposition

1.2.101 This item was not discussed at ISH7.

- e) Protected species

1.2.102 This agenda item was deferred to written questions.

- f) Other designated sites

1.2.103 This agenda item was deferred to written questions.

- g) Ancient woodland, veteran trees and the route of the Two-Village Bypass

1.2.104 In response to a question from the ExA, Mr Rhodes identified the loss of one veteran and one notable tree in the location where the two village bypass runs between Farnham Hall and Foxborrow Wood. He also showed on the shared screen an extract from the revised site clearance plan to identify how close scrutiny of the works had enabled SZC Co. to commit to the retention of c. 8m of hedgerow, located to the south of the existing path at Farnham Hall, which had previously been shown to be lost. The hedgerow contained three trees.

1.2.105 He advised that SZC Co. was also working to see whether it may be possible to retain the notable tree, which was close by. A detailed tree survey is being commissioned to check whether the earthworks would necessitate the loss of the tree's root protection area. The work would be shared with the Council and he hoped a conclusion would be reached by Deadline 6.

- 1.2.106 In response to a request from the ExA he also confirmed that SZC Co. would confirm the relationship between the 'TVB boundary' shown on Figures 1 and 2 submitted as part of [\[REP4-006\]](#) and the DCO application drawings.
- 1.2.107 He advised that there was not expected to be a hydrological impact on Foxborrow Wood from the bypass, as he was advised that the water table lies below the depth of the cutting.
- 1.2.108 In response to a point made by S. Morgan, Mr Lewis stated that Nuttery Belt is not ancient woodland on the evidence available. The presence of several ancient woodland indicator species in the ground flora does not necessarily mean that it is ancient woodland since some of these ancient woodland indicators can colonise from adjacent areas of woodland. A written response will be provided in relation to the status of Nuttery Belt at Deadline 6.
- 1.2.109 In relation to ecological surveys of the area, Mr Lewis explained that access has historically been quite difficult to some of the woodland areas and this has hindered attempts to survey these woodlands.
- 1.2.110 In relation to a query about dormice, Mr Lewis explained that they are very rare in east Suffolk and are unlikely to be present. However, August is a good period for dormouse survey and Mr Lewis agreed to undertake a survey of dormice to assist the ExA. This survey would include the ancient woodlands of Foxburrow Wood and Palant's Grove, subject to access being available.
- h) [The Sizewell Link Road – mitigation for loss of watercourses, mammal and invertebrate surveys](#)
- 1.2.111 Mr Lewis responded to a number of points made by Environment Agency in relation to the water courses on the Sizewell link road. There are seven watercourses that vary in width, they are very small and they are ephemeral in nature. Of the seven water courses, six of them will be crossed using portal culverts which retain the beds of the river retain the banks of the river and SZC Co will maximise the height of the culverts, subject to the vertical alignment of the road.
- 1.2.112 In response to a question from the ExA, on the maximum and minimum sizes of the water courses, Mr Lewis responded that these varied from between 80cm and 1.2m in width at bed level.
- 1.2.113 In response to question from the ExA, on portal culverts, Mr Lewis explained that these were like 'mini bridges', with three sides in which the bed of the river and the banks are retained (in contrast to a four-sided box

culvert). Mr Lewis stated that this approach will avoid fragmentation if there happened to be any dispersing water voles or otters, although when SZC Co. undertook Phase 1 ecology surveys [\[APP-426\]](#) of the route it was determined that no surveys of those species would be warranted [see also below].

- 1.2.114 Mr Lewis explained that the total length of the seven new culverts on the SLR watercourses is about 205 meters. In comparison, SZC Co. has already provided 2km of new ditches at the Aldhurst Farm wetland site which exceeds the compensation requirements of ditches of 670m of loss from the Sizewell Marshes SSSI. Mr Lewis also confirmed that SZC Co. will be working closely with the Environment Agency to optimise the areas of ditch and stream, within the order limits of the SLR, to increase the value of those for biodiversity.
- 1.2.115 Mr Lewis then addressed the issue of surveys. Several respondents had suggested that SZC Co. had not undertaken sufficient surveys or that these were too late. However, most of the surveys undertaken in 2021 are being used to inform the protected species licenses. They are not being used to supplement the environmental impact assessment and do not change the conclusions in relation to the **Environmental Statement** [\[APP-461\]](#) or **Environmental Statement Addendum** [\[AS-185\]](#).
- 1.2.116 By way of example on survey coverage, Mr Lewis stated that the main development site is probably one of the best studied development sites in the country. The baseline ecology surveys started in 2012 and as well as the very extensive surveys undertaken by SZC Co., SWT has undertaken annual surveys of birds and plants. There is a huge volume of ecological information.
- 1.2.117 Mr Lewis noted that access has been a problem in a couple of locations. In relation to the Sizewell link road there was one block of land which SZC Co. was unable to access in 2019 and so this was surveyed in 2020.
- 1.2.118 In order to illustrate how Phase 1 ecology surveys are used to inform the need for surveys of individual surveys of particular species or groups, Mr Lewis used the example of the Phase 1 survey on the River Alde on the route of the Two village bypass. Based on the habitats present, that Phase 1 survey defined the need for water vole, otter and invertebrate surveys and those surveys were undertaken in the River Alde valley. However, the water courses on the Sizewell link road are much smaller [see above] and are not suitable for voles, otters or valuable invertebrate communities. Where SZC Co. thinks it would be helpful to the ExA to undertake additional surveys, SZC Co. will do so and will undertake the dormouse survey and additional bat surveys of the woodlands on the Two village bypass route. However, this would not be warranted in relation to water vole, otter and

invertebrate surveys of the very small watercourses on the Sizewell link road.

- 1.2.119 In relation to a comment on the loss of arable habitats for skylarks along the Sizewell link road, Mr Lewis noted the former arable areas on the main development site which have been transformed to grassland and have now got a high density of skylarks. There is no doubt, that at the project-wide level, SZC Co will create additional habitats for skylarks.
- 1.2.120 In relation to a comment on great crested newts, Mr Lewis stated that two great crested newt breeding ponds would be lost but that a total of eight great crested newt breeding ponds would be provided. In parallel with the normal protected species licence, SZC Co. will also be submitting a district level licensing inquiry which is a second option for licensing for this species and is now available in Suffolk.
- 1.2.121 In response to a question on whether the ExA will get feedback on the approach taken to licensing of great crested newts before the end of the examination, Mr Lewis confirmed that a decision will be made on the approach and this information will be made available to the ExA.
- 1.2.122 In relation to a point made on bats and the potential for a cumulative effect between the Sizewell link road and the main development site, SZC Co. noted that the protected species matters will be dealt with in written questions and this will be addressed there if requested.
- 1.2.123 In relation to surveys that Edwina Galloway made reference to, Mr Lewis confirmed that he would locate the surveys, review and respond at Deadline 6.
- 1.2.124 The ExA requested that the councils and SZC Co. develop a SoCG in relation to bats. Mr Lewis confirmed that SZC Co. would work with the Councils to develop this.
- i) [Duties under ss. 40 and 41 Natural Environment and Rural Communities Act 2006](#)
- 1.2.125 This agenda item was deferred to written questions. STQC confirmed that the Appellant would address the submissions of the RSPB on Regulation 10 of the Habitats Regulations in a note.
- j) [The position in relation to Letters of no impediment and any Environment Agency comfort letters](#)
- 1.2.126 This agenda item was deferred to written questions.

1.3 Agenda Item 3: Marine Ecology

a) HRA, European and other designated sites

i. Marine Mammals

1.3.1 STQC confirmed that SZC Co. would respond to any comments which Natural England and the MMO had on the site integrity plan once those were received.

1.3.2 STQC further confirmed that the underwater noise assessment would be revised and submitted at Deadline 5 and that this will deal with the MMO's points including the cutting of piles during decommissioning.

ii. Fish, including migratory fish

1.3.3 Discussions on fish including migratory fish were deferred to the discussions under agenda item (b) '*Cooling water system, acoustic fish deterrents*'.

iii. Birds – Disturbance/displacement of the red-throated diver qualifying feature of the Outer Thames Estuary SPA due to vessel movements/traffic

1.3.4 STQC confirmed that the Applicant is happy to work with Natural England and the MMO on the terms of a vessel management plan and that it would take on board comments on best practice from the RSPB and the SWT. It would look to conclude those discussions and submit it at Deadline 7.

1.3.5 STQC confirmed that the Applicant was confident that all in-combination effects relating to marine impacts had been properly assessed. He confirmed that to assist the examination the Applicant would prepare a short note demonstrating where they had been assessed, to be submitted at Deadline 6.

b) Cooling water system, acoustic fish deterrents

1.3.6 STQC informed the Panel of important similarities between issues to be decided as part of the SZC application and those which have been heard as part of a permit variation appeal at HPC. It was explained that at HPC the DCO, Marine Licence and WDA Permit all contained a condition which required an AFD system to be installed. Furthermore, the EIA and HRA demonstrated that an AFD was not required to mitigate impacts on fish species or populations. HPC Co. took the view that it could not safely install an AFD and therefore applied for a variation of the WDA to remove the

requirement for one. If successful, then the appellant will follow with an application to vary the DCO.

- 1.3.7 The EA failed to determine the variation application at HPC in the required timeframe and therefore the HPC Co. appealed. The matter has been heard at a 9-day environmental appeal inquiry. The inquiry concluded on 24 June and the matter has been recovered by the Secretary of State for the Environment, Food and Rural Affairs because of its public importance. Over the 8 days of evidence the inquiry canvassed (in very considerable detail) issues including: EAV, LVSE and the FRR etc.
- 1.3.8 The Appellant has no control over when the Secretary of State's decision will be issued. It may be before the end of this Examination, maybe not. If it is issued, then it will be put before the ExA.
- 1.3.9 STQC made the point that issues which were being touched on at this hearing have been the subject of forensic examination with evidence and cross-examination in the usual way. Whilst SZC Co. will respond to the evidence of Dr Henderson as best as possible in writing it is impossible to replicate the microscopic scrutiny that one gets at an inquiry. There is a huge amount of technical material which sits behind all of these issues.
- 1.3.10 Dr Roast confirmed the definitions of impingement and entrainment. Entrainment is the process by which organisms that are small enough to pass through the filtration screens transit the entire cooling water system, through the condensers and are discharged in the main cooling water discharge at the outfall 3km offshore. In contrast, impingement is the process by which organisms that are too large to pass through the filtration screens are removed from the cooling water flow and, instead, transit through the Fish Recovery and Return (FRR) system before being returned to sea via the FRR outfall (some 400 m from shore). Some organisms may be impinged first before 'squeezing' through the filtration mesh and transiting the full cooling water system and are assessed as entrained organisms; however, most entrained organism are plankton (eggs and larval stages of marine organisms) and small enough to pass through the filtration mesh without touching it.
- 1.3.11 Dr Roast further explained that both impingement and entrainment are used to assess impacts of the cooling water system on marine fauna and that the term 'entrapment' is used to describe entrainment and impingement combined.
- 1.3.12 STQC confirmed that SZC Co. would consider the points made by Dr Henderson around biofouling and respond in writing at Deadline 6. Similarly, the Applicant will respond in writing to points made regarding 'thin fish' at Deadline 6.

- 1.3.13 STQC confirmed that to address the uncertainty in the efficacy of the mitigation measures including the fish recovery and return (FRR) system) SZC Co. will provide a sensitivity analysis at Deadline 6 addressing uncertainty in FRR efficiency, confidence intervals in impingement predictions and variation in population sizes comparators. The uncertainty analysis will precautionarily assume no benefit from the LVSE heads.
- 1.3.14 STQC confirmed that the sensitivity analysis report would also provide the MMO with information as to the impact with and without an AFD however the MMO's view that the impacts without an AFD are not significant was welcomed.
- 1.3.15 STQC emphasised that it was wrong for Fish Guidance Systems Ltd to state that the decision not to install an AFD was 'commercial'. The central issues are the real risk of health and safety to divers who would have to maintain equipment and also the absence of any significant harm to fish without the AFD.
- c) **The securing mechanisms to control impacts on marine water quality**
- 1.3.16 STQC confirmed that construction impacts relating to marine matters are addressed by the **CoCP** (Section 12, Part B) (Doc Ref. 8.11(C)) which is secured by Requirement 2. Operational discharges relating to the cooling water and the FRR are to be addressed through the WDA Permit. Sediments and dredging are covered by conditions 35 and 36 of the DML.
- 1.3.17 Dr Roast explained that Condition 50 on the deemed marine licence secures the obligation for a plan to monitor impingement to be submitted prior to the marine works commencing.
- 1.3.18 Dr Roast briefly described that impingement monitoring, as undertaken at Sizewell B for EIA purposes, would be repeated at Sizewell C for comparisons with EIA predictions numbers and the baseline.
- 1.3.19 Dr Breckels added that SZC Co. undertakes fish impingement monitoring at Sizewell B and they would be providing a plan for the fish monitoring at Sizewell C. Further, he confirmed that the basis of the fish monitoring would be informed by a Scientific Advisory Report (SAR006). This is a specific report which describes the methods of how impingement monitoring should be done at nuclear power stations and was informed by the BEEMS Expert Panel, an independent panel working on the best method available for fish impingement monitoring. It's not part of the submitted PINS documents but is an available document that is endorsed by the Environment Agency.

- 1.3.20 Dr Breckels further explained that the impingement monitoring at Sizewell C would demonstrate if the impingement predictions made within the DCO are correct and within the bounds of the SZC Co. impingement estimates.
- 1.3.21 In response to Mr Sked's comments, Dr Breckels elaborated that the SZC Co. had engaged with the Environment Agency to discuss potential mitigation options for certain fish species and that these discussions are ongoing.
- d) Progress update on status of the Water Industry National Environment Programme (WINEP) study being undertaken by Essex and Suffolk Water
- 1.3.22 HPQC noted that Northumbrian Water Limited will be submitting an update on WINEP investigations and there will be discussions between the Applicant and Northumbrian Water Limited once that is received. The Applicant will report on that once those discussions have occurred.
- e) Fisheries, fish stocks, equivalent adult values, *Sabellaria spinosa*
- Sabellaria*:
- 1.3.23 Dr Roast confirmed that *Sabellaria* had only be found at the location of the intakes for Unit 1 (that is, the most southerly intake).
- 1.3.24 Dr Breckels confirmed that it was SZC Co's intention to provide a high level *Sabellaria* monitoring plan, as requested by the MMO for D7. Further, he explained that the intention is to consult with Natural England on possible enhancement options in advance.
- 1.3.25 **Fish/EAVs:** STQC confirmed that the issue of EAVs is a matter which is being considered as part of the HPC inquiry. He stated that the simple point is that the EAV method is a risk assessment tool. One is trying to understand what the impact is of a juvenile fish being impinged is given we know that a high proportion would not survive to adulthood and spawn. If one has a 1% or less effect on a fish stock then that is not going to be problematic because one sees much higher variations in stocks through fishing, natural mortality, weather events and so on.
- 1.3.26 The problem is that if you are assessing an annual rate of loss, i.e. what is the annual rate of loss from this fish population then the EAV will give you that figure when compared with the population. However, if you use the SPF method proposed by the Environment Agency then you are following forward in time on a cumulative basis the absence of that fish in future years. The very simple point is that you aren't comparing like with like. One

can explain it in many ways but the Applicant will seek to set it out clearly in writing at Deadline 6.

- 1.3.27 In relation to two species, twaite shad and eel SZC Co. has, on a very precautionary basis, assumed an EAV of '1' which assumes that every single juvenile will survive into adulthood. Again, this will be set out in the written material.
- 1.3.28 Dr Breckels explained that in terms of the question posed regarding the completeness of presented results there was no uncertainty in the SZC Co.'s fish impingement predictions. He emphasised that impingement predictions have been clearly laid out in the documentation that the SZC Co. has provided throughout the DCO process, and that the most recent impingement predictions are in [\[REP2-110, Appendix 7L\]](#). He emphasised that within that document for full transparency, SZC Co. had provided the most concurrent fish impingement estimates in relation to what was originally provided in the ES.
- 1.3.29 Dr Breckels further explained that SZC Co. had provided impingement estimates in a step-wise manner, starting with estimates of unmitigated impingement and then detailing each subsequent level of mitigation up to full mitigation, so each step of the process can be followed.
- 1.3.30 Addressing a point raised by Dr Henderson on the uncertainty in entrainment effects, Dr Breckels confirmed that the number of fish that are either impinged or entrained, depends on the length of those fish and the relative widths, otherwise known as the fineness ratio.
- 1.3.31 Dr Breckels clarified that it is the fineness ratio that determines whether or not fish pass through the drum screens. If they are impinged on the drum screens, they go down the impingement route and are discharged by the FRR and if they pass directly through, then they are entrained.
- 1.3.32 In responding to the ExA question, Dr Breckels clarified that the drum screens are composed of 10 x 10mm mesh, and that it is the very smallest proportion of fish that are entrained. Dr Breckels also confirmed that long, thin fish are able to pass through the mesh.
- 1.3.33 In addressing a comment raised by Dr Henderson on river lamprey, Dr Breckels indicated that data exist on the actual length distribution of the river lamprey that are caught at Sizewell B and that this data is reported in technical appendices [PDF page 61 of [AS-238](#)].
- 1.3.34 Dr Breckels then highlighted that most of the river lamprey that are impinged at SZB are above 13cm (130mm) in length. Further Dr Breckels explained that that length distribution is consistent with what you would

expect, as river lamprey smaller than that are still in the freshwater environment. This is because they haven't metamorphosed and been released into the sea. Finally, Dr Breckels explicated that Sizewell B does catch a few smaller river lamprey than this which are impinged and this is probably most likely 'flush-outs' from rivers.

1.3.35 Dr Breckels disputed a further point raised by Dr Henderson where the latter had contended that juvenile fish aren't detected in the entrainment sampling. Specifically, Dr Breckels highlighted that within the impingement reports provided by SZC Co., and that particularly for species like herring and sprat, the entrainment sampling picks up a lot of these juvenile fish [APP-324]. Dr Breckels dismissed the point that there was a big gap between the entrainment and impingement fractions sampled. Further, Dr Breckels, confirmed that it was possible to back propagate and see what (if any) proportion of the fish fraction are missing from the sampling.

1.3.36 Finally, Dr Breckels reiterated that SZC Co. would be providing more detailed responses to Dr Henderson's comments at D6.

1.3.37 STQC confirmed that the Applicant would respond in relation to glass eels and that it would respond in relation to smelt at Deadline 6 and twaite shad at Deadline 5 (see **Appendix K** of Doc Ref. 9.54). Finally, despite the conclusion of no significant effect on eels the appellant is pursuing mitigation measures in terms of eel passes.

1.4 Other (non-agenda) items

1.4.1 HPQC noted that there was a query raised at ISH1 related to Articles 53 and 54 of the draft Order and the relationship between the offences they created and Schedule 5, paragraph 32B of the Planning Act 2008 which provides for the creation of offences in connection with (d) construction, improvement, maintenance or management of a harbour. The query concerns the extent to which the offences by Arts 53 and 54 fall within that exception.

1.4.2 Dealing with Art. 53 first which relates to the obstruction of works, and is intended to relate only to those works which are physically part of the harbour which will be created under the DCO. As currently drafted in Rev. 4 [REP2-015], draft Art. 53 is too wide in its scope, because it embraces "the marine works" and "authorised development" which are both defined terms and thus goes beyond the harbour. In the next version of the draft DCO the drafting of Art. 53 will be pared back so that it relates only to those marine works which would form part of the harbour when it is operational. That would bring the drafting into line with Art. 61 of the HPC DCO, which

applied to the temporary jetty only. That drafting was imported into the HPC DCO from the earlier HEO which had been made in advance of the DCO.

- 1.4.3 HPQC explained that Art. 54 as currently drafted is considered to sit within the scope of para. 32B without the need for further amendment. The offence created is in connection with the management of the harbour. It relates to things which are done, which obstruct in one way or another the activities of an officer of the harbour authority or other person acting in pursuance of this Order or any enactment “relating to the harbour limits”. The acts concern intentionally obstructing such a person, failing to comply with a requirement properly made by the officer, or failing to produce documents etc. that the officer requires for the purpose of performance of their functions. The matters in Article 54 relate to the management of the harbour, and steps that would be taken which would interfere with that, and thus would legitimately be created as offences.