# Comments on Other Submissions (submitted at Deadline 5 and 6)

## for the Royal Society for the Protection of Birds and Suffolk Wildlife Trust

**Submitted for Deadline 7**
**3 September 2021**

**Planning Act 2008 (as amended)**

**In the matter of:**

**Application by NNB Generation Company (SZC) Limited for an Order Granting Development Consent for**

## The Sizewell C Project

**Planning Inspectorate Ref: EN010012**
**RSPB Registration Identification Ref: 20026628**
**Suffolk Wildlife Trust Registration Identification Ref: 20026359**

# Contents

# 1. Quantifying Uncertainty in Entrapment Predictions for Sizewell C[1]

1.1. Please note that our detailed comments on this report (and on REP6-016 below) support our comments made at ISH10 and respond to the Examining Authority's question on agenda point 5g iii in their Request for Written Responses from ISH10.

#### 2.1.1.1 Potential for diurnal bias

1.2. The predictions for entrapment at Sizewell C are based on the results of monitoring of impingement and entrainment at Sizewell B. We have previously supported[2] the concerns of the Environment Agency[3] around the overflowing of a significant proportion of the bulk overnight impingement (CIMP) samples during the monitoring of impingement at Sizewell B and the subsequent discarding of a significant proportion of overnight samples (and their replacement with figures extrapolated from the hourly daytime samples). Given the predictions of impingement for Sizewell C are based on a scaling approach to the impingement recorded at Sizewell B, there is a concern that this could mean that potentially high catches overnight have not been fully represented in the impingement predictions. Cefas (2011)[4] explains the importance of avoiding bias in sampling design for impingement surveys, including diurnal bias. They note that such bias may arise from data that have been collected in daytime only given that night-time catches may be higher at some sites. They explain that "*Strong diurnal patterns are also commonly seen. These result from diurnal variations in fish activity, and from loss of visual orientation at night*".

1.3. The Applicant has responded to these concerns by discussing the evidence provided by the Environment Agency showing higher levels of impingement at night at Sizewell A and suggesting that this may be more affected by seasonal high impingement events than diurnal sampling bias. The Applicant also refers to a further analysis which identified 18 more bulk samples which may have overflowed and testing the effects of their inclusion or exclusion on impingement predictions. This is stated to be reported in BEEMS Scientific Position Paper SPP111.v2 but no examination reference is provided, and we have been unable to review this paper. However, the effects of this analysis on impingement predictions for key species are briefly discussed and the Applicant concludes that this provides evidence that the effects of diurnal bias vary in terms of increasing or decreasing predictions, depending on the species considered. However, based on the evidence provided in this report, along with the variation between levels of night-time impingement at different locations (as noted by Cefas, 2011) and the Sizewell A specific evidence provided by the Environment Agency, we are concerned that no further treatment of the potential for diurnal bias is provided.

1.4. The Environment Agency requested that a correction factor is employed to address potential underestimations and that consideration is given to the marked difference in recorded instances of sample overflow between the two contractors carrying out this work. No such correction factor has been applied and the latter issue has not been discussed within this report. In our view, this means that there is still some uncertainty around the reliability of the impingement (and subsequently, total entrapment) predictions and that impacts on birds of designated sites could be underestimated.

---

1 Quantifying Uncertainty in Entrapment Predictions for Sizewell C (REP6-028)

2 Paragraph 11.6 (epage 43) of RSPB and SWT's Comments on Other Submissions (submitted at Deadline 2) (REP3-074)

3 Paragraphs 8.11 – 8.19 (epage 15) of the Environment Agency Written Representations (REP2-135)

4 Sections 3.1.5 (epage 19) and B.3.3 (epage 34) of Cefas (2011) BEEMS Science Advisory Report No 006: Methodology for the measurement of impingement Edition 2 (note this is not part of the Sizewell C Examination documentation)

### 2.1.3 Equivalent Adult Value (EAV)

1.5. This report only considers the annual rate of loss of adult fish from populations through the use of EAVs to convert impingement data relating predominantly to juvenile life phases. We have raised concerns about applying this approach to the assessment of impacts on birds required for the Habitats Regulations Assessment, because juveniles of some species are taken by predatory birds, for example, little terns are known to feed smaller prey to young chicks. We therefore consider that assessments based on the use of EAVs may underestimate impacts via the food web on birds associated with designated sites.

### 2.1.4 Uncertainty in the performance of the LVSE mitigation

1.6. We welcome the acknowledgement that the effectiveness of the Low Velocity Side Entry (LVSE) intake heads is uncertain, and that the analysis therefore assumes that the LVSE heads provide no mitigation.

## 3.2 Uncertainty in Entrapment Predictions: Full analysis

1.7. With regard to potential impacts on fish species which are important prey resources for birds of designated sites, the full analysis presented in Table 7 and discussed in section 3.2 shows that mean annual mortality of sand gobies is predicted to represent 1.026% of the population estimate, with a 95$^{th}$ percentile of 1.410%. It is noted that this is primarily due to entrainment (rather than impingement) mortality. In addition, sea bass have a predicted mean annual mortality of 0.987% of the Spawning Stock Biomass (SSB) with a 95$^{th}$ percentile of 1.871%. The Applicant considers that these levels of mortality are unlikely to have population level effects, in the case of sand gobies:

> "*Because of the absence of a fishery, their short lifespan and early age of maturity, sand gobies have a sustainable harvesting rate of far greater than the precautionary 10% SSB threshold applied*"

and in the case of sea bass, because the figures "*do not account for the distribution of sea bass within the Greater Sizewell Bay*". However, given some uncertainty around these predictions remains (acknowledged by the Applicant in section 3.3) and our concerns around potential impacts on fish species of importance to birds of designated sites at the population/SSB level discussed here and at the local (Greater Sizewell Bay and tidal excursion) scale as discussed in our comments on SPP103[5], we remain of the view that further consideration of additional mitigation in the form of Acoustic Fish Deterrents is required.

[5] SPP103 Consideration of potential effects on selected fish stocks at Sizewell - Environmental Statement Addendum - Volume 3: Environmental Statement Addendum Appendices - Chapter 2 - Main Development Site - Appendix 2.17.A - Marine Ecology and Fisheries - Revision 2.0 (REP6-016)

# 2. SPP103 Consideration of potential effects on selected fish stocks at Sizewell (Environmental Statement Addendum - Volume 3: Environmental Statement Addendum Appendices - Chapter 2 - Main Development Site - Appendix 2.17.A - Marine Ecology and Fisheries)

2.1. Please note that our detailed comments on this report (and on REP6-028 above) support our comments made at ISH10 and respond to the Examining Authority's question on agenda point 5g iii in their Request for Written Responses from ISH10.

2.2. We welcome the update to the local effects assessment section of report SPP103 Consideration of potential effects on selected fish stocks at Sizewell[6]. We note below some comments and concerns regarding this assessment.

## Potential for diurnal bias

2.3. As discussed in section 1.1, the predictions for entrapment at Sizewell C are based on the results of monitoring of impingement and entrainment at Sizewell B. We have previously supported[7] the concerns of the Environment Agency[8] around the overflowing of a significant proportion of the bulk overnight impingement (CIMP) samples during the monitoring of impingement at Sizewell B and the subsequent discarding of a significant proportion of overnight samples (and their replacement with figures extrapolated from the hourly daytime samples). Given the predictions of impingement for Sizewell C are based on a scaling approach to the impingement recorded at Sizewell B, there is a concern that this could mean that potentially high catches overnight have not been fully represented in the impingement predictions. Cefas (2011)[9] explains the importance of avoiding bias in sampling design for impingement surveys, including diurnal bias. They note that such bias may arise from data that have been collected in daytime only given that night-time catches may be higher at some sites. They explain that "*Strong diurnal patterns are also commonly seen. These result from diurnal variations in fish activity, and from loss of visual orientation at night*".

2.4. We have commented further on this issue in our comments on the report Quantifying Uncertainty in Entrapment Predictions for Sizewell C[10], also at this deadline, but wish to note here that, in our view, uncertainty around the reliability of the impingement (and therefore total entrapment) predictions remains.

## Local effects on adult fish, larvae and juveniles

2.5. We note the discussion of estimated local depletion of key fish species, including those of importance to bird species of designated sites, in section 3.4, with results for all species presented in Table 7. For three of the species of importance to birds of designated sites (cod, whiting and

---

6 SPP103 Consideration of potential effects on selected fish stocks at Sizewell - Environmental Statement Addendum - Volume 3: Environmental Statement Addendum Appendices - Chapter 2 - Main Development Site - Appendix 2.17.A - Marine Ecology and Fisheries - Revision 2.0 (REP6-016)

7 Paragraph 11.6 (epage 43) of RSPB and SWT's Comments on Other Submissions (submitted at Deadline 2) (REP3-074)

8 Paragraphs 8.11 – 8.19 (epage 15) of the Environment Agency Written Representations (REP2-135)

9 Sections 3.1.5 (epage 19) and B.3.3 (epage 34) of Cefas (2011) BEEMS Science Advisory Report No 006: Methodology for the measurement of impingement Edition 2 (note this is not part of the Sizewell C Examination documentation)

10 Quantifying Uncertainty in Entrapment Predictions for Sizewell C (REP6-028)

dab), the predicted levels of depletion are approaching or over 10%, the depletion level for sea bass is 6.6% and four other species with predicted depletion levels of just under 5% (sand goby, dover sole, flounder, plaice). These levels appear significant, although the Applicant argues that they are small in the context of interannual variability.

2.6. Section 3.1.1 outlines the concerns of stakeholders and how these concerns are addressed by the updated assessment. We are grateful for the consideration of our points around the potential for effects on birds through depletion of juvenile fish. As we have explained previously, juvenile fish are important in the diet of many breeding seabirds, particularly while chicks are small. Section 3.4.1.1 Larvae and juveniles, indicates that Sizewell B and Sizewell C acting in-combination would cause a depletion of clupeid[11] larvae and juveniles in the Greater Sizewell Bay (GSB) and its tidal excursion of 8.0% based on a 10% daily exchange rate and 3.9% with a 20% daily exchange rate. Sizewell C alone would cause depletion of between 3.2% and 6.8% (based on a 20% and 10% daily exchange rate respectively). Again, although these levels appear significant, the Applicant considers these levels are not significant in the context of interannual variability.

2.7. Whilst we acknowledge that interannual variability in local populations for many fish species is large (both for adults and larvae/juveniles), our key concern is the effects of additional depletion from the Application during years where the local fish resources are at the lower end of the range of interannual variability for key species. As we noted in our Written Representations, lower levels of prey availability affect breeding success of seabirds through effects on productivity and survival (see e.g. Green, 2017[12]; Safina *et al.*, 1988[13]; Mitchell *et al.*, 2004[14]; Suddaby and Ratcliffe, 1997[15] for discussions of such impacts on tern species and UK seabirds), and the restricted foraging range of little terns means they may be particularly vulnerable to such effects. Section 3.3.3 explains that the assumption of homogenous fish density across the area of the assessment means that the predictions of depletion remain consistent irrespective of initial fish abundance, however, we are concerned that the ecological consequences of the same percentage depletion could be greater when prey levels are already at the lower end of the scale.

2.8. The local effects assessment appears to be based on periods of maximum abundance for the key fish species, which for most species of importance to bird species of designated sites occurs outside the bird breeding season (see Table 7). Given the need to assess impacts on breeding birds of the Minsmere-Walberswick, Outer Thames Estuary and Alde-Ore Estuary SPAs, an assessment of local depletion during the period April to September may be more informative and we query how this might affect the results (noting e.g. the differences in fish vertical distribution between the summer and winter months).

## Lack of inclusion of potential mitigation achievable with Acoustic Fish Deterrents (AFD)

2.9. We have continued to request that further assessment is provided showing the level of mitigation of fish mortality achievable both with and without an AFD to inform the HRA. We note that

[11] Includes e.g. herring and sprat

[12] Green, E. (2017) Tern diet in the UK and Ireland: a review of key prey species and potential impacts of climate change. RSPB

[13] Safina, S., Burger, J., Gochfeld, M. & Wagner, R. (1988) Evidence for Prey Limitation of Common and Roseate Tern Reproduction. Condor 90: 852-859

[14] Mitchell, P., Newton, S., Ratcliffe, N. and Dunn, T. (Eds.). (2004) Seabird Populations of Britain and Ireland: results of the Seabird 2000 census (1998-2002). Published by T and A.D. Poyser, London.

[15] Suddaby, D. and Ratcliffe, N. (1997) The Effects of Fluctuating Food Availability on Breeding Arctic Terns (*Sterna Paradisaea*). The Auk 114(3): 524-530

paragraph 1.3.14 of Written Summaries of Oral Submissions made at ISH7: Biodiversity and Ecology[16] committed to providing "*information as to the impact with and without an AFD*" at Deadline 6, although this does not yet appear to have been provided. Given our concerns around the levels of local depletion of prey populations for birds of designated sites discussed above, and potential impacts particularly during poor breeding seasons when prey availability is already low, we request that this information is provided in time to enable further discussion of the merits and practicalities of AFD installation.

# 3. Outline Vessel Management Plan[17]

3.1. Please note that our detailed comments here support our comments made at ISH10 and respond to the Examining Authority's question on agenda point 5d in their Request for Written Responses from ISH10.

## Exclusion of some activities

3.2. Paragraph 1.1.4 states that the plan excludes tug movements and marine works for outfall/intake tunnels, delivery of rock armour for Hard Coastal Defence Feature and shingle import/ recharge for Soft Coastal Defence Feature however the levels of activity associated with these and the reasons for their exclusion are not explained.

## Number of vessel movements

3.3. Table 3.1 is headed "Anticipated vessel movements" but the data in the Table appear to show the number of landings at each BLF rather than total vessel movements. For clarity it would be helpful to show the total number of movements (inward and outbound journeys) as these are used in subsequent calculations.

## Uplift in vessel movements – Table 4.2

3.4. Table 4.2 indicates the percentage uplift in vessel movements should Sizewell C vessel traffic use the various route options in summer or winter. With regard impacts on red-throated diver, the period of interest is the winter hence the column for the MBIF[18] (winter) is relevant. The winter period covers November to March inclusive (paragraph 3.1.2) representing a 5 month period only whereas the existing vessel activity along the routes described in paragraph 4.1.7 covers the whole year. It appears that the uplift in vessel activity for each season has been calculated on the basis of these whole year figures so does not properly represent the additional levels of activity (and disturbance) likely to be experienced by red-throated divers during the winter period.

3.5. We consider it would be more appropriate to calculate the uplift based on the 5 months in question. Assuming actual shipping data for those 5 months are not available, the estimated proportion of the yearly movements could be calculated instead, e.g. for Route 2 with 172 existing movements per year, for 5 months this would equal 172/12 x 5 = 71.67 movements. The addition of a further 400 movements (200 landings) over these 5 months would therefore result in a 558% uplift on existing activity during these winter months. This equates to a significant increase in potential disturbance impacts arising from use of these routes compared to that discussed in the report.

---

16 Paragraph 1.3.14 (epage 31) of the Written Summaries of Oral Submissions made at ISH7: Biodiversity and Ecology Parts 1 and 2 (15-16 July 2021) (REP5-112)

17 Outline Vessel Management Plan (REP6-027)

18 Marine Bulk Import Facility, also known as the temporary beach landing facility (BLF)

3.6. Taking a similar approach for Route 3 indicates the uplift would be just over 34% for the 5 winter month period.

## Vessel routes from Lowestoft and Ipswich/Harwich

3.7. Paragraphs 4.1.7 to 4.1.9 along with Plate 4.2 describe the potential vessel route options from the local ports of Lowestoft to the north of Sizewell and Ipswich and Harwich to the south. Based on this information, we would not support the use of route 1a (Lowestoft) or 1b (Ipswich/Harwich) during the winter period (November to March) as there are currently zero movements along this route. The commencement of vessel movements along this route would mean that an additional area of the SPA is potentially subject to significant disturbance displacement and the undisturbed area of the SPA available to divers would be reduced.

3.8. Table 4.2 indicates that the addition of Sizewell C activity during winter would result in a significant uplift in vessel movements (233%) on Route 2, however as discussed above, we consider that the additional activity actually equates to a 558% uplift for the 5 month winter period of relevance to red-throated divers. We therefore do not support the use of this route in winter. We note that no further alternatives are currently proposed for the northern route (Lowestoft) but that Route 3, which is not preferred by the Applicant, is available for the Ipswich/Harwich route. This would be preferable during the winter months as it both significantly limits vessel time within the SPA and the use of existing shipping lanes means the uplift in use (based on our calculations) is 34%. We would welcome any proposals for additional routes from Lowestoft which would minimise impacts.

## Indicative routes

3.9. Paragraphs 4.1.13 and 4.1.14 state that:

> "*It should be noted that indicative routes are corridors and are not intended to be prescriptive for the purposes of navigation and will not be followed precisely by every vessel*"

and go on to set out a number of safety-related reasons for which vessels may deviate from these routes. Whilst we acknowledge that safety (and the legislation around this) must be of primary importance, we query whether a commitment to use the identified routes (unless safety reasons require otherwise) could be clearer. For example, the Best Practice Protocol for Minimising Disturbance to Red-Throated Diver for the East Anglia ONE North project[19] commits to using mitigation routes for vessel traffic which avoid the Outer Thames Estuary SPA as far as possible and use existing navigation routes on approach to ports. This states in paragraph 7 that:

> "*The Applicant commits to implementing the measures outlined above and provided in Figure 1* [routing map] *by all project vessels throughout the construction and operation of the Project through the core winter period of 1st November to 1st March inclusive*"

noting that these measures would not apply in emergencies and for reasons of health and safety. The choice of the mitigation routes and the statement above on implementation represent a stronger commitment to mitigation where possible than that proposed for this Application, and we recommend that a similar approach should be taken here.

[19] Best Practice Protocol for Minimising Disturbance to Red-Throated Diver submitted at Deadline 8 in the examination of the East Anglia ONE North offshore windfarm

### Additional measures

3.10. The Best Practice Protocol for Minimising Disturbance to Red-Throated Diver for the East Anglia ONE North project also includes potential additional measures to reduce disturbance to red-throated divers, even (where possible) when direct routes have to be used for safety reasons. These include for example, commitments to avoid engine revving, avoid rafts of divers and to brief vessel crew regarding the vessel management practices (see paragraph 10). We recommend that similar measures are included for this Application.

### Monitoring

3.11. The approach to monitoring of effects on red-throated divers is described in section 5.3 and in brief, consists of observations made from the vessels themselves and through flying drones ahead of vessels. As we explained during ISH7[20], we consider that methods relying on boat-based observations are unlikely to be effective as birds are likely to be flushed at too great a distance to be observed from boats or may have avoided the area entirely due to boats being present. We therefore consider that the use of boat-based surveys would mean that the effects of disturbance on red-throated diver may be under-estimated. We also query the potential limitations of drone surveys, such as the distance they can fly from the operator, the weather conditions under which they can operate and whether suitably robust coverage can be achieved.

3.12. Based on the above, we do not agree that there is sufficient confidence that the monitoring strategy proposed is reliable enough to inform the need to move from a direct route to a mitigation route (as proposed in paragraphs 5.3.8 and 5.3.9).

### Conclusion

3.13. Given the concerns about the uplift in vessel activity on the direct routes and the lack of confidence in the monitoring proposed, we consider that it will be necessary to use the routes with the highest mitigation potential (as discussed above) for vessel movements during the winter period and that additional measures should be proposed to minimise vessel disturbance and ensure compliance with and understanding of the management plan.

## 4. Written Submissions Responding to Actions Arising at ISH7: Biodiversity and Ecology Parts 1 and 2 (15-16 July 2021)[21]

### 1.2 SSSI Temporary Land Take Clarification

4.1. Paragraph 1.2.1 states *the majority of the 3.02ha would not be damaged beyond repair and would be capable of retaining or supporting SSSI habitats* which suggests some of the SSSI would be damaged. We request the Applicant clarifies this.

4.2. Paragraph 1.2.4 notes three areas of temporary landtake (i) the area under the National Grid overhead power lines, (ii) the narrow corridor for the new Sizewell Drain and (iii) the corridor around the retained Leiston Drain.

---

[20] Paragraph 2.2 (epage 11) of RSPB and SWT's Transcript of Oral Contribution to Issue Specific Hearing 7 (ISH7) Parts 1 and 2 on Biodiversity and Ecology (REP5-164)

[21] Written Submissions Responding to Actions Arising at ISH7: Biodiversity and Ecology Parts 1 and 2 (15-16 July 2021) (REP6-002)

(i) the area under the National Grid overhead power lines

4.3. Paragraph 1.2.5 states

> *The ES (in Volume 2, Chapter 14 [AS-033]) explained at paragraph 14.7.125 (in part) and 14.7.131, the techniques which would be used to protect the SSSI land underneath the area where National Grid overhead power lines need to be installed, which will serve the expanded National Grid substation located at Sizewell B. In summary the approach in this area is for the wet woodland to be coppiced to enable the cable to be laid out, prior to lifting and the fen meadow would be protected from damage using appropriate methods for spreading the weight of plant in wet ground, such as the use of 'bog matting'. The operation is likely to be undertaken over a period of weeks and the SSSI interest would be retained. The works would be undertaken under a method statement agreed with Natural England.*

4.4. Paragraph 14.7.131 states

> *The wet woodland would be coppiced to ground level to accommodate the machinery and restringing and subsequently the coppice stumps would be allowed to regrow, and the regrowth managed at an appropriate height. Approximately 0.9ha of fen meadow habitat also lies within this corridor but this would be protected during the operation to install the overhead lines, using appropriate working methods to protect the ground. As outlined in* ***section 14.4*** *of this chapter, primary mitigation such as bog matting or similar would be implemented to ensure safe access by machinery and protection of the ground surface and coppiced vegetation. These mitigation measures will have a short term negative impact on the fen meadow habitat, but will prevent long-term damage caused by the powerline re-stringing. As such the works are considered to result in a temporary loss of fen meadow habitat only.*

4.5. In section 14.4, paragraph 14.4.16 states

> *The CoCP (Doc Ref 8.11) also includes a number of other control measures to limit impacts during construction, those of particular relevance to minimising impacts to ecological receptors include the following:*
>
> *To enable the re-provision and realignment of the overhead lines, the existing woodland vegetation within this corridor would be coppiced to ground level (in accordance with relevant plans) and then bog matting or a similar approach would be used to protect the wet woodland ground surface and coppiced stumps. Appropriate measures would also be used to protect the retained fen meadow habitats under this corridor.*

4.6. We do not agree the Applicant has provided sufficient details of measures to protect wet woodland and fen meadow during installation of overhead lines above Sizewell Marshes SSSI. We outlined our concerns that temporary damage may become permanent damage in our written representations[22] and request the Applicant provides detailed evidence-based measures to protect and re-establish the designated habitats.

4.7. This is a very important point about the temporary loss, not only the uncertainty over damage being permanent but also the high risk of it being so. The Applicant proposes to use bog matting. However, bog mats are used for access to reduce compaction but also simply from an operational point of view, to save time and risk of damage to equipment. In other words, bog mats are to help

[22] Written Submission for the Royal Society for the Protection of Birds and Suffolk Wildlife Trust REP2-506, Transcript of Oral Contribution to Issue Specific Hearing 7 (ISH7) Parts 1 and 2 on Biodiversity and Ecology REP5-164

with construction over short periods of time, not with protecting sensitive habitats. It appears the bog matting will be in place for several months in some areas and we request details of which habitat type(s) will be affected and for how long and how they know this time under a bog mat will not have a significant impact on the SSSI. If M22 is covered for several months this could be long enough to cause lasting damage. We are specifically concerned about light levels, humidity and oxygen/CO balance and creation of anoxic conditions.

### (ii) the narrow corridor for the new Sizewell Drain

4.8. Paragraph 1.2.6 states the newly created ditches with Aldhurst Farm are approaching SSSI quality

> *the newly created channel would be profiled to create high quality habitats which would be expected to achieve SSSI quality within a ten year period. The works would be undertaken under a method statement agreed with Natural England. Evidence to suggest that SSSI quality is achievable for the realigned Sizewell drain is provided by the establishment of similar ditches within the newly created wetlands at Aldhurst Farm, which are approaching, or may already have achieved, SSSI quality*.

4.9. We request the Applicant provides evidence of this in the form of botanical value and invertebrate fauna.

### (iii) the corridor around the retained Leiston Drain

4.10. Paragraphs 1.27 to 1.28 note the area of temporary landtake is likely to be revised to 1.0-1.5ha and look forward to clarification of temporary landtake at Deadline 7. While we welcome a reduction in temporary landtake, we request better clarification as to why it is reduced and also what habitat type this is. Even with a reduction in temporary landtake, our concerns that the temporary loss may become permanent damage outlined above still remain.

## *1.4 Water Monitoring Plan*

4.11. The Applicant previously stated the SSSI monitoring plan would be provided at Deadline 5[23] then at Deadline 6[24]. We are disappointed and very concerned the Applicant now proposes to only submit the plan at Deadline 7 (paragraph 1.4.1) on 3 September which is too late for consideration by the Examining Authority and Interested Parties at ISH10 on biodiversity and ecology on 27 August. We respectfully request the SSSI monitoring plan is considered at ISH14 on ground water and surface water on 14 September.

## *Appendix A: Water Monitoring Summary Note[25]*

4.12. QUESTION 1: HOW ARE WATER LEVELS PRACTICALLY MAINTAINED IN THE SSSI?
2.1 refers to and summarises the Sizewell Marshes SSSI Water Level Management Plan. Noted.

4.13. QUESTION 2: HOW IS WATER LEVEL MONITORING SECURED - IS THIS IN THE DCO, COCP OR ELSEWHERE?
3.1 refers to and summarises the Water Monitoring and Response Strategy [AS-236]. Noted.

---

[23] Table 14.1, Line 3.258 of SZC Co. Comments on Written Representations [REP3-042]

[24] Written Summaries of Oral Submissions made at ISH7: Biodiversity and Ecology Parts 1 and 2 (15-16 July 2021) REP5-112 paragraph 1.2.40

[25] Written Submissions Responding to Actions Arising at ISH7: Biodiversity and Ecology Parts 1 and 2 (15-16 July 2021) (REP6-002) Appendix A, Water Monitoring Plan summary note - starts on page 31

4.14. QUESTION 3: WHO IS SUPERVISING SZC CO.'S MONITORING AND UNDER WHAT ARRANGEMENT? Section 4 refers to Volume 2, Chapter 19 of the Environmental Statement Volume 2 Main Development Site Chapter 19 Groundwater and Surface Water [APP-297] and the water monitoring plan. We defer commenting until we have reviewed the water monitoring plan expected to be submitted to the Examination at Deadline 7.

4.15. QUESTION 4: WHAT ARE THE TESTS AND REMEDIAL MEASURES IF ANYTHING GOES WRONG? We defer commenting until we have reviewed the water monitoring plan expected to be submitted to the Examination at Deadline 7.

4.16. QUESTION 5: THERE IS A PROPOSED SIDE AGREEMENT WITH THE ENVIRONMENT AGENCY AND OTHERS. WHY IS THAT NOT A REQUIREMENT?
Section 6 refers to the blockage in the Leiston Drain on RSPB land. Again we defer commenting until we have reviewed the water monitoring plan expected to be submitted to the Examination at Deadline 7

### *Appendix F: SSSI Crossing land take calculation*

4.17. We note the Applicant has provided a drawing showing the SSSI landtake and SSSI area beneath the permanent bridge for the triple span bridge option and the proposed design (July 2021).

| SSSI crossing design | SSSI land take (ha) | SSSI area beneath the permanent bridge (ha) |
|---|---|---|
| Proposed design | 0.21 | 0.038 |
| Triple span bridge option | 0.19 | 0.032 |

4.18. We do still consider the triple span bridge to be the best option to minimise SSSI land take and habitat fragmentation as we have stated previously[26].

### *Appendix B: Sufficiency of compensatory habitats for marsh harriers[27]*

4.19. We have previously set out our position on the provision of marsh harrier compensatory habitats in the following documents:

- Written Representation (REP2-506) paragraphs 3.399 to 3.489 (epage 81)
- Comments on Other Submissions (submitted at Deadline 2) (REP3-074) section 8 (epage 32)
- Transcript of Oral Contribution to Issue Specific Hearing 7 (ISH7) Parts 1 and 2 on Biodiversity and Ecology (REP5-164) paragraphs 1.22 – 1.24 (epage 6)
- Comments on Other Submissions Submitted at Deadline 3 (REP5-165) section 2 (epage 3)
- Comments on any additional information/submissions received by Deadline 5 (REP6-046) section 14 (epage 29)

4.20. We have commented below on our key points in relation to the question of sufficiency of the compensation, but please see the documents above for further details. Please also see our comments on the Note on Marsh Harrier Habitat[28] below.

[26] Written Submission for the Royal Society for the Protection of Birds and Suffolk Wildlife Trust REP2-506

[27] Starts on page 49

[28] Note on Marsh Harrier Habitat (AS-408)

### *Timing of wetland creation*

4.21. The RSPB and SWT have raised concerns that the proposed wetland components of the compensatory habitat at Abbey Farm will not be functional in the early part of the construction period as they will not be constructed until the first winter (possibly running into the second winter) of the first phase of construction. Our position is that the timing of the wetland creation should be brought forward so that all the compensatory habitats are functional before construction commences. Section 2.4 of Appendix B states that in the first summer:

> "*the wetland is expected to be a shallow open water body at this stage, with some limited marginal vegetation and will attract small numbers of waterfowl, waders as well as small passerines drinking on its margins*"

4.22. Given that the Marsh Harrier Habitat Report[29] explains in section 2.1 that the reed will be established through planting of commercially available nursery stock, we would expect that the newly planted reed would require protection at this stage, which would limit use of these areas by both marsh harriers and potential prey species. White *et al*. (2014)[30] explain that:

> "*Newly-sprouted reed is eaten by a variety of grazing animals, eg geese, coots, deer, rabbits and livestock, and this can seriously inhibit reed growth/expansion. Some form of fencing is essential. Plastic netting with tape stretched across the enclosure has been successful at some sites to protect new plantings from grazing, but needs to be combined with regular human disturbance of the site. At other sites, complete cover with netting has been required to keep birds such as coots out of the enclosures. Other possible solutions include minimising the area of open water in the early stages to reduce attractiveness to water birds, as well as bird scaring devices such as rook scarers, plastic bags on tall sticks etc.*"

4.23. Similar measures were proposed by the Applicant for the creation of the Aldhurst Farm reedbeds for the first two years after planting:

> "*The newly planted reedbed will be protected from grazing by wildfowl (such as geese) in the first two years, using methods such as ticker tape, hawk silhouettes or other appropriate methods*."[31]

4.24. Whilst no details of the habitat establishment methods have been provided regarding Abbey Farm so far, we assume they would be similar as it is unlikely that the reed would successfully establish without some protection. As it is apparent that such measures would not be compatible with providing opportunities for marsh harrier foraging (and may even affect use of immediately adjacent habitats) we continue to hold the view that the wetland areas will not be functional in terms of providing marsh harrier prey until the habitats are established, and that the creation of these habitats should be brought forward to ensure that functionality is achieved before construction commences. If this is not possible, we advocate creation of wetland habitat elsewhere whilst maximising the dry habitats created at Abbey Farm (which should be provided as planned so that some compensation is in place before construction commences).

---

29 Marsh Harrier Habitat Report (REP2-119)

30 White, G., Self, M. and Blyth, S. (2014) Bringing Reedbeds to Life: creating and managing reedbeds for wildlife. RSPB

31 Section 3.1.1 (epage 18) of the Aldhurst Farm Habitat Creation Scheme Ecology and Landscape Management Plan DC/14/4224/FUL

### *Contingency provision at Westleton*

4.25. As we explained in our comments[32] on the Marsh Harrier Compensatory Habitat Report[33] (which covered the Westleton habitats), we are concerned about the likely effectiveness of the Westleton habitats (should they be included) given we have raised significant concerns about the predicted uplift in small mammal abundance achievable and the level of certainty regarding functionality of the habitats at Abbey Farm and consider that providing additional dry habitats will not address these effectiveness concerns. We are also concerned regarding the time needed to establish these habitats given that no establishment works have yet taken place. Tussocky grassland species are unlikely to flower/seed until the second year after establishment meaning that the food available to small mammals would be limited initially and prey populations will take some time to build. We therefore query whether these habitats would be functional in time for beginning of construction Phase 1 when impacts are likely to be most significant.

### *Tests of the Habitats Regulations*

4.26. The Applicant discusses the compensatory habitat requirements set out in the EC guidance on the provisions of Article 6[34], the compensatory requirements described in NPS EN-6[35] and the updated Defra guidance around protecting a European site[36]. The Applicant has looked in most detail at the requirements of EN-6 and has set out their conclusions in Table 5.1. We compared the compensatory proposals with the requirements of EN-6 in our Written Representations[37] and concluded that the proposals do not meet the requirements.

4.27. Below, we comment on the compensatory proposals in the light of the recently updated Defra (2021) guidance:

- *How technically feasible and effective the measures will be - based on scientific evidence and previous examples*

4.28. We agree that creation of the dry habitats proposed at Abbey Farm is technically feasible, although careful management will be required to fully establish and maintain the plant species and particularly the required vegetation structure for effective marsh harrier foraging. Whilst we note that some elements of the dry habitats have been undergoing establishment for some years, the lack of a detailed habitat establishment and management plan for this site means we that we are not yet confident that the necessary vegetation structure will be achieved.

4.29. We explained our concerns about the likely effectiveness of the compensation proposals in our Written Representations, but in summary we do not agree that, based on the scientific evidence available, there is confidence that the dry habitats at Abbey Farm will provide the uplift in prey provision (and thus harrier activity) predicted given the extent of the habitat proposed. The compensation area is also affected by several potential constraints on its effectiveness including the presence of a footpath and some overlap of noise and visual disturbance impacts in the early part of the construction period.

---

32 Section 2 (epage 3) of our Comments on Other Submissions Submitted at Deadline 3 (REP5-165)

33 Marsh Harrier Compensatory Habitat Report (REP3-053)

34 EC (2018) Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC

35 A.7.5 (epage 17) of National Policy Statement for Nuclear Power Generation (EN-6) Volume II of II – Annexes (DECC)

36 Defra (2021) Habitats regulations assessments: protecting a European site.

37 Paragraphs 3.474 to 3.489 (epage 97) of the Written Submission for the Royal Society for the Protection of Birds and Suffolk Wildlife Trust (REP2-506)

4.30. With regard the addition of the wet habitats at Abbey Farm, we have explained that we do not agree that these habitats will be effective during the crucial early stages of construction under the heading "Timing of wetland creation" above.

4.31. As explained above in the section "Contingency provision at Westleton", we also do not agree that there is confidence regarding effectiveness of any provision at this site (should this be brought forward).

- *How financially viable the measures are - the proposer must have enough funds to cover costs*

4.32. The Applicant has not commented explicitly on the financial viability of the proposals, other than to note that the habitats at Abbey Farm are within the EDF Energy Estate and that establishment has already commenced[38].

- *how the compensation would be carried out, including how it'll be managed and monitored over the time that's needed, and how it's been secured*

4.33. As noted above, we are concerned at the lack of a detailed plan for habitat establishment and management for both the wet and dry habitats and Abbey Farm. Whilst we appreciate the new DCO, Schedule 2, Requirement 14C (and the further changes to be made to it), in our view this is not sufficient to overcome our concerns.

4.34. Monitoring of the compensation area is included in the Terrestrial Ecology Monitoring and Mitigation Plan[39], and we welcome the inclusion of monitoring of prey populations as well as vegetation establishment and harrier usage of the site.

- *Distance from the affected site - compensation closer to the site is generally preferred, unless measures further away will benefit the network of European sites as a whole*

4.35. We agree that the compensatory proposals are located sufficiently close to the area affected.

- *How long the compensatory measures will take to reach the required quality and amount of habitat*

4.36. As explained above under the heading "Timing of wetland creation", this is a key area of concern for us as we do not agree that the wetland habitats will reach the required quality in tie to provide effective compensation during the early part of the construction period. We do not agree that these habitats will support sufficient available prey whilst they are under establishment due to the need to protect young reed from grazing damage. We continue to recommend that the creation of these habitats should be brought forward to ensure that functionality is achieved before construction commences. If this is not possible, we advocate creation of wetland habitat elsewhere whilst maximising the dry habitats created at Abbey Farm (which should be provided as planned so that some compensation is in place before construction commences).

4.37. In conclusion, we do not agree that the proposals fully meet the standards set out in the Defra (2021) guidance, for the following reasons:

- Lack of confidence that dry habitats can sustain the necessary level of prey provision or harrier activity
- Concern that the compensatory habitat extent is not adequate

[38] Response to HRA.1.6 (epage 495) in Responses to the Examining Authority's First Written Questions (ExQ1) - Volume 1 - SZC Co. Responses (REP2-100)

[39] Terrestrial Ecology Monitoring and Mitigation Plan (REP5-088)

- Concern that the wetland habitats will not be functional before construction commences, again meaning the compensation is not adequate
- The lack of detailed habitat establishment and management plans for both the wetland and dry habitats at Abbey Farm

4.38. Therefore currently we do not believe the Examining Authority can place confidence in these compensation proposals due to the lack of detailed information before it as to their effectiveness and the Applicant ability to secure all that is required legally, ecologically and financially.

# 5. Note on Marsh Harrier Habitat[40]

5.1. We wish to clarify the assumed RSPB/SWT position stated in paragraph 1.4.1 of the Note. We do not agree that the addition of land at Westleton will address our concerns around effectiveness and extent regarding habitats at Abbey Farm. To address these issues, the Applicant should bring forward the creation of wetland at Abbey Farm to ensure it is functional before construction commences, as discussed in our response to REP6-002 above.

## Our conclusions regarding adequacy of the compensation proposed

5.2. With regard to the comparison of the provision with the requirements of EN-6 referred to in paragraph 1.5.4, we commented on this in our Written Representations[41] and section 1 of our Comments on any additional information/submissions received by Deadline 5[42] and concluded that the compensatory provision did not meet all these requirements.

5.3. We also do not agree that the proposals fully meet the standards set out in the updated Defra (2021) guidance around protecting a European site[43] referred to in 1.5.10 of the Note, as discussed in our comments on REP6-002 above. In summary, this is due to:

- A lack of confidence that dry habitats can sustain the necessary level of prey uplift
- The concern that the compensatory habitat extent is not adequate
- The concern that the wetland habitats will not be functional before construction commences, again meaning the compensation is not adequate
- The lack of detailed habitat establishment and management plans for both the wet and dry habitats at Abbey Farm.

# 6. Comments at Deadline 6 on Submission from Earlier Submissions and Subsequent Written Submissions to ISH1-ISH6[44]

## Hydrology and Outline Drainage Strategy

6.1. We note the response in section 2.8.7 (epage 17) and have reviewed the Applicant's response in REP6-024 Appendix H[45]. We note in section 2.8.8 (epage 17) that the Applicant is intending to submit an updated Outline Drainage Strategy at Deadline 7 taking account of comments from the

[40] Note on Marsh Harrier Habitat (AS-408)
[41] Paragraphs 3.474 to 3.489 (epage 97) of the Written Submission for the Royal Society for the Protection of Birds and Suffolk Wildlife Trust (REP2-506)
[42] Section 1 (epage 5) of our Comments on any additional information/submissions received by Deadline 5 (REP6-046)
[43] Defra (2021) Habitats regulations assessments: protecting a European site.
[44] Comments at Deadline 6 on Submission from Earlier Submissions and Subsequent Written Submissions to ISH1-ISH6 (REP6-025)
[45] Deadline 6 Submission - 9.63 Comments at Deadline 6 on Submission from Earlier Submissions and Subsequent Written Submissions to ISH1-ISH6 - Appendices - Revision 1.0 Appendix H from p185 of pdf [REP6-024]

RSPB and SWT, so will refrain from further comment on this matter until we have had the opportunity to review that document.

## Coastal Processes

6.2. We note the response in section 2.8b and welcome the Applicant finally acknowledging the presence of annual vegetation of drift lines and perennial vegetation of stony banks habitats along the southern Minsmere frontage. However, we do not agree with the Applicant's conclusion in section 2.8.9 that this does not affect the original conclusions of the Shadow HRA Report [APP-145] (section 7.7 c) 1)). We cannot agree with the assumption that "*Although the whole beach retreat would be slowed as a result of additional shingle, there would be no impact to the cycle of erosion and reconstruction of the beach face and hence to the frontal supra-tidal zone where drift lines form*" particularly as this will be influenced by *imported SCDF sediments* that are *within the native size-distribution* but likely to be at the coarser and lacking fine material, so less suitable for supporting the interest of the existing supra-tidal shingle.

6.3. As per our response to the ExA 2nd Written Questions Part 3 CG2.6, we remain to be convinced that the approach to coastal processes has not taken sufficient account of the SAC and Ramsar designated vegetation interest features.

## Bats/bat survey reports

6.4. We note the Applicant's response to our Deadline 3 written submissions[46]. We wish to reiterate the following concerns outlined our Written Representations[47] that the Applicant does not appear to have addressed so far.

### Limited Use of Buffering

6.5. The buffering of 10 metres surrounding key bat areas (Bridleway 19, Kenton Hills, Ash Wood, Fiscal Policy and Blackwalks)[48] is not enough to prevent potentially significant impacts from light and noise disturbance. In our opinion, these buffer areas should be at least 25m. This is because:

- For lighting, the Applicant's own consultant (Dr Davidson-Watts) refers to an example where barbastelle have been noted foraging within 25 metres of street lights[49] (but we assume no closer). Based on this observational data and the fact there is no other recorded evidence that barbastelle will forage any closer, this buffer should be used based on a precautionary basis of protecting a nationally important population;

- The bat assessments for Upper Abbey bridleway (using modelling at the Roundhouse) and Stonewell Belt (using modelling at Ash Wood Cottage with a 5m acoustic screen) foraging/commuting areas use average noise levels and conclude a non-significant impact. However, for Upper Abbey bridleway, predicted night-time maximum noise levels at the Roundhouse could be as high as 67dB LAmax[50] which represents a significant adverse impact.

---

46 Comments on Applicant Comments at Deadline 6 on Submissions from Earlier Deadlines and Subsequent Written Submissions to ISH1-ISH6 REP6-025 paragraphs 2.8.11 to 2.813

47 Written Submission for the Royal Society for the Protection of Birds and Suffolk Wildlife Trust [REP2-506] paragraphs 3.622-3.762

48 Technical note on indicative lighting modelling REP3-057

49 Comments on Councils' Local Impact Report REP3-044 table 8.2

50 Volume 2 Main Development Site Chapter 11 Noise and Vibration Appendix 11B Construction Noise Assessment APP-204

Acoustic screens in key areas will not mitigate noise impacts for bats roosting and flying at over 5m above the ground, which would be typical for barbastelle;

- We still have the outstanding concern about how the implementation of the dark corridors is actually secured by the DCO and how they will be kept as dark as claimed. Currently there are no thresholds defined in any of the secured documents although we understand this will be dealt with by a Deadline 7 submission. However, the use of the phrases such as 'reasonably practicable' with regard to lighting remains a significant concern. This and other statements suggest that health and safety will determine lighting levels during construction and implementing adaptive mitigation may therefore be impossible. Consequently, the only way to mitigate the risk of impact is to increase the buffer zones to 25m;

- There is very little in the way of determination of noise impacts from the Green Rail depot along the edge of Kenton Hills. This is especially important given the recent proposed increases in night rail movements. It is likely that unloading will create a significant noise source. If this is done at night, there is a risk to foraging bats along the fringes of the wood and bund. However, if unloading occurs during the day, there appears to be no assessment on the impacts on the barbastelle roosts close by. Furthermore, the 5m acoustic screen will not mitigate noise impacts for barbastelle roosting and flying, which is likely to occur well over 5m above the ground;

- The 10m buffering along Bridleway 19 is also of concern given the buffer is from the centreline of the track (in effect making the buffer considerably less than 10m). In our view, the proposed 25m buffer needs to be taken from the boundary of the source of the light and noise; and

- Ash Wood, which potentially has high levels of light and noise impact very close to important barbastelle roosts, needs to be looked at carefully with a view to remove the lighting shown along the southern edge of the wood.

### Lack of roost monitoring within the SSSI triangle

6.6. There appears to be a limited number of bat boxes given the number of roosts that might be lost. Given the low level of effort put into searching for roosts, especially within the SSSI triangle, it seems highly likely that the number of bat boxes needed to sustain barbastelle, has been significantly underestimated. Again, we request a roost survey of the SSSI triangle to ensure there is more robust evidence underpinning potential total roost loss figures. If access makes this impossible, then we would recommend that more boxes need to be provided at a quantum agreed with Natural England.

6.7. We also question the limited scope of roost mitigation generally, which is currently restricted to boxes. Given the most important bat roost found on the entire Applicant's estate is a dead conifer, some thought should be given to veteranisation of a variety of tree species in suitable locations (unimpacted by noise and light with good access to foraging).

### Displacement of barbastelle into surrounding woodland

6.8. We have significant concerns about the assumption that displacement of foraging barbastelle into the wooded areas (which has been recognised by the Applicant in the Updated Bat Impact

Assessment[51]) will have no long-term impact on the population. Barbastelle are primarily a bat of woodland edge and open habitats and are well known for commuting and foraging across wide open areas. Therefore, it is strange to assume that forcing them to feed within wooded habitats is not going to have some effect on them. This is further compounded by the fact that the vast majority of Kenton Hills woodland is dense conifer plantation (in contrast to more naturalised deciduous wood) which provide very poor commuting and foraging opportunities. The Report[52] goes on to state *The evidence outlined above suggests that bats are able to quickly adapt when exposed to a range of 'high-level' noise* (paragraph 8.2.52). The critical point is that adapting to feeding in conifer plantation (or in other words, being forced to feed in sub-optimal habitat caused by light and noise barrier effects) does not infer there is no significant impact.

6.9. We request further consideration of the long-term impacts of this displacement and would expect the need for additional compensation as a result.

## Aldhurst Farm, Marsh Harrier Compensation and Studio Field access and suitability.

6.10. It is suggested by the Applicant that additional habitat for foraging barbastelle is provided by Aldhurst Farm, the marsh harrier compensation site and Studio Field complex[53]. However, the lack of a suitable baseline means that it is difficult to infer what additional benefits these new habitats will provide compared to use beforehand. Furthermore, there appears to be little thought given to the fact the noise and light barrier effects may prevent access to these areas and the impact of increased energy expenditure to reach these sites. We request more detail in this respect.

## Impacts on juvenile and pregnant female barbastelle

6.11. We are concerned that the importance of Goose Hill for breeding females and juvenile barbastelle has not been fully recognised and the effects displacement will have on their foraging, given their inability to fly long distances.

6.12. The baseline surveys show Goose Hill as important feeding resource for breeding females and juveniles, with their restricted range and flying ability. Table 8.18 of the Updated Bat Impact Assessment indicates that the 2011 radio tracking work concluded that Goose Hills was a key foraging area for barbastelle on the Applicant's estate during pre-lactation period and again in 2014, was important for females post breeding. Table 8.20 states that a pre-lactation commuting route from Ash Wood through to Goose Hills has been identified for barbastelle. Due to the small hunting ranges of breeding females, Goose Hills is likely to be close to, or even include a maternity site that will be lost. This has not been fully recognised and there remains a significant risk that there is both a direct loss of a barbastelle maternity colony and subsequent impact from the development on foraging for poor flying pregnant females and juveniles.

6.13. Due to their limited range, it is unclear whether these bats would be able to use the SSSI crossing, or indeed access other feeding areas (such as Aldhurst Farm) and hence may face significant

---

[51] Volume 3 Chapter 2 Environmental Statement Addendum Terrestrial Ecology and Ornithology Appendices 2.9.A-2.9.D Part 1 of 2 AS-208 Appendix 2.9.B Updated Bat Impact Assessment paragraph 8.3.58

[52] Volume 3 Chapter 2 Environmental Statement Addendum Terrestrial Ecology and Ornithology Appendices 2.9.A-2.9.D Part 1 of 2 AS-208 Appendix 2.9.B Updated Bat Impact Assessment

[53] Volume 3 Chapter 2 Environmental Statement Addendum Terrestrial Ecology and Ornithology Appendices 2.9.A-2.9.D Part 1 of 2 AS-208 Appendix 2.9.B Updated Bat Impact Assessment paragraph 8.3.32- 8.3.34
Comments at Deadline 6 on Submissions from Earlier Deadlines and Subsequent Written Submissions to ISH1-ISH6 - Appendices REP6-024 Appendix B: In-combination impacts of light and noise on bats paragraph 2.4.1

impact. Despite this, there has been no work to understand what percentage of home range of females and juveniles will be lost and what this impact would look like.

### Predicted residual effect of fragmentation on barbastelle

6.14. There are no conclusions as to what the predicted residual effects may be for barbastelle. Having concluded significant impacts on barbastelle due to habitat fragmentation, there appears to be no attempt to explain what that will actually mean to the population or, how conclusions can be tested through an appropriately detailed monitoring protocol.

### Loss of Upper Abbey Farm bat roosts

6.15. If the bat house is proposed to mitigate the loss of the barn at Upper Abbey Farm (it is not clear in the documents[54]), it is unlikely to provide suitable mitigation for the multiple species roost within the barn that will be lost. To achieve this, a larger and more complex design will be required to achieve the differences in access, light, temperature and humidity required by multiple species currently found in the existing barn.

### Monitoring and Assessment during construction

6.16. There is not enough emphasis on rarer species within the analysis of the data so far. The use of a percentage metric means common species mask the actual (rather than relative) importance of a specific location for rare species. The way in which the data have been analysed is leading towards a generic monitoring protocol that is unlikely to pick up population changes in rarer species such as barbastelle. Therefore, we request that future analysis concentrates on actual barbastelle and Natterer's numbers, ignoring their relative contribution to the community as a whole and hence avoid masking significant trends caused in these two species, as a result of sheer numbers of more common species.

6.17. There are a number of historic sites that need continued monitoring but appear to have been dropped: MS24 (important site by the SSSI crossing), MS14 (important site further down B19 and would help determine functionality of an important dark corridor), MS22 (important site to assess the critical B19/Fiscal Policy interface), MS05 (important site to determine Ash Wood on the southern edge). In our view, these important sites should be retained.

6.18. There continues to be a questionable approach to the footprint of the development itself. There are three MS sites that will be 'lost' and yet in the past have recorded numbers of bats. In any assessment these sites baseline data need to be considered and included in the data assessment and not ignored. Hence any data assessment of the remaining sites needs to consider the effect of these numbers in any robust and scientifically valid analysis. In other words, for genuine no impact, the remaining sites should increase to offset the lost sites (MS11, MS10, MS08). If the remaining sites maintain the same levels of activity, this actually suggests a net impact, not no impact.

6.19. The introduction of radio tracking is welcomed, to enable the comparison of levels of bat activity not just presence/absence and give sufficient detail on populations.

[54] Volume 3 Chapter 2 Environmental Statement Addendum Terrestrial Ecology and Ornithology Appendices 2.9.A-2.9.D Part 1 of 2 AS-208 Appendix 2.9.B Updated Bat Impact Assessment paragraph 8.3.85

### Hinkley Point C

6.20. There is repeat reference of Hinkley Point C as an analogous example. The footprint of Hinkley Point C is dominated by an intensively managed mixed farmed landscape, supporting low levels of bat activity, whereas the Sizewell estate includes a wetland SSSI, mixed woodland and a wider woodland/wetland complex in close proximity to the RSPB's Minsmere Reserve. The area supports a nationally important population of barbastelle as well as a Natterer's bat population of county importance. Therefore, Hinkley C does not have a comparable bat population from which to base conclusions on potential impacts or effectiveness of mitigation.

6.21. In addition there is very little evidence of roosting within the footprint of Hinkley Point C and it would be expected to have far lower levels of activity due to the poor-quality foraging habitats. Consequently, using Hinkley Point C as evidence that the current mitigation will work and prevent a significant impact on the bat population, in particular of barbastelle, is flawed.

6.22. Furthermore, the combination of survey and monitoring at Hinkley Point C is only robust enough to say there continues to be some use of a retained feature across the construction site (a green lane) by barbastelle during construction. Key factors such as number of bats, timing and frequency of movement and the nature of this use (such as foraging and commuting) are not commented on.

### Sizewell B Relocated Facilities Works

6.23. The Applicant states in paragraph 2.8.21 that the Application in-combination with the Sizewell B relocated facilities works will not result in additional noise impacts on land functionally linked to the Minsmere-Walberswick SPA as there is limited potential for the construction phases of these projects to temporally overlap and if overlap were to occur, the lower noise levels of the Sizewell B relocated facilities construction would not add to the impacts of Sizewell C construction. Reference is made to an assessment within the HRA for the relocated facilities works, however, the link provided to this reference does not work. The Environmental Statement[55] for the relocated facilities works, which is before this Examination, does not contain details of this assessment. Based on the information provided it is therefore difficult to review these conclusions and our key concerns remain whether the relocated facilities work would result in additional *seasons* during which parts of Sizewell Marshes experience noise levels of over 65dB (for breeding birds) or 70dB (for wintering birds) or whether (if the relocated facilities works were delayed), additional *areas* of Sizewell Marshes would experience noise levels over these thresholds.

### Minsmere Sluice

6.24. We note the response in section 3.5.1 (on epage 25 & 26) and have reviewed the Applicant's response in REP6-024 Appendix M[56] and have commented in response to that document.

[55] Volume 1 Introduction to the Environmental Statement Chapter 2 Overview of the Sizewell C Project Appendix 2A - Sizewell B Relocated Facilities Environmental Statement Parts 1 – 4 (APP-163, APP-164, APP-165 and APP-166)

[56] Deadline 6 Submission - 9.63 Comments at Deadline 6 on Submission from Earlier Submissions and Subsequent Written Submissions to ISH1-ISH6 - Appendices - Revision 1.0 Appendix H from p185 of pdf [REP6-024]

# 7. Comments at Deadline 6 on Submission from Earlier Submissions and Subsequent Written Submissions to ISH1-ISH6 – Appendices[57]

## Appendix B: In-combination impacts of light and noise on bats

7.1. We provide our initial comments below and reserve the right to provide further comment at a future deadline when we have reviewed the proposals for task specific lighting in detail.

7.2. Paragraph 2.1.5 Point 2 states *real world data from a comparable site (Hinkley Point C) has been used to identify in-combination effects in a real-world situation*. However Hinkley Point C is not a comparable site and this has been raised previously by other interested parties and in our written representations[58].

### Section 2.3 Point 2

7.3. We strongly dispute that there are similar impacts from this Application and Hinkley Point C (2.3.1). The main point of difference is the actual importance of the bat assemblage between Hinkley Point C and the Application site here and it having a nationally important population of barbastelle.

7.4. Paragraph 2.3.2 details the changes at Hinkley Point C and is used as evidence that bats (in this case barbastelle) will shift commuting and foraging behaviour to dark corridor mitigation routes. However, the main limitation of this analysis is that the data were collected using static recorders, which can only provide a general measure of use and are not quantitative. These data may in fact be a reflection of increased usage by a smaller number of individual bats and as a result may actually reflect constrainment in foraging areas created by the development.

- 8.3.56 (screen shot from ES Addendum) acknowledges a fragmentation effect along Bridleway 19 and Stonewall Belt and yet mitigation provided is only a 10m buffer from the middle of the track, effectively rendering it a narrow buffer which will have minimal mitigating effect. An obvious way to reduce the effect would be to extend the buffer to an ecologically meaningful width, but this option has been ignored.

- 8.3.57 (screen shot from ES Addendum) clearly acknowledges that commuting and foraging along Black Walks, the edge of Kenton Hills and within Ash Wood may be impacted by construction noise at 65 dB (>22 kHz), which is very likely to have a significant effect on bats. It then suggests this would cause displacement further into the woodland areas rather than fragmentation. In our view, we would call this a fragmentation effect, as the barbastelle are likely to be effectively contained within specific woodland areas. Furthermore, barbastelle is a bat species known to commute regularly over large, open areas and forage widely. They are not a specialised woodland bat and hence this fragmentation, forcing them further into suboptimal woodland habitat (for feeding) is likely to have a significant impact over the course of the construction period. There appears to be no assessment of what the longer term implications of this fragmentation is in terms of feeding, survival and reproduction.

[57] Comments at Deadline 6 on Submission from Earlier Submissions and Subsequent Written Submissions to ISH1-ISH6 – Appendices (REP6-024)

[58] Written Submission for the Royal Society for the Protection of Birds and Suffolk Wildlife Trust REP2-506 paragraphs 3.626 to 3.628

- 8.3.57 (screen shot from ES Addendum) notes *Potential alternative commuting routes via the SSSI crossing and eastern edge of Goose Hills would likely only be affected during Phase 1. Therefore, effects in these areas are not considered significant*. Given the importance of these areas, the length of time of Phase 1 and the impacts on other areas in close proximity (Ash Wood, Bridleway 19 and Kenton Hills), we question how this could be dismissed so easily. For instance, there is no attempt to explain a change in behaviour, what this might mean in terms of commuting and foraging and why this would not impact barbastelle populations.

### Section 2.4 Point 3

7.5. Paragraph 2.4.1 refers to new habitats that will provide additional foraging for bats. However some of these habitats, such as the wet woodland within the marsh harrier compensation area, have not yet been created and will not be functional before the construction impacts occur. We also query whether barbastelle will access these areas, particularly the marsh harrier compensation area during construction phases 1 and 2, when there will be significant noise and light disturbance[59] [60] on the adjacent main development site, given the concerns over the proposed mitigation detailed above and in our written representations[61].

### Section 2.5 Point 4

7.6. Please refer to our comments on the TEMMP included within this submission and our Deadline 5 submission[62].

### Section 2.6 Point 5

7.7. We welcome the controls for task specific lighting such as narrow spectrum, no UV, use of warm colour (≤2700k) and tunable LED (paragraph 2.6.1). However, the use of the word 'proximity' remains highly ambiguous. We are concerned that this only applies to the 10m buffer and hence, at 11m metres, these mitigation proposals will not apply. In our view the buffer needs to be wider than 10m and more clarity needs to be given as to when and where lighting mitigation outlined in this section will and can be applied.

7.8. Paragraph 2.6.1 states *where lighting is proposed parallel to commuting routes/flightpath a 10m buffer zone will be left*. In our view this is not enough to avoid impact, especially given along Bridleway 19, the buffer is taken to start from the centre line of the track, and hence the actual buffer will be considerably less than that. Furthermore, barbastelle are very likely to commute along the tree/hedge/scrub line of the track, often on the outside and hence rendering the 10m buffer ecologically meaningless.

7.9. We also refer to recent published evidence (Boyes *et al,* 2021[63]) that strongly suggests a significant impact on caterpillars, the main prey items for barbastelle from LED lighting, with numbers reduced by up to 52%. Again, this suggests the current buffers of 10m will not be sufficient to prevent impact on foraging.

---

59 Volume 3 Chapter 2 Environmental Statement Addendum Terrestrial Ecology and Ornithology Appendices 2.9.A-2.9.D Part 1 of 2 Appendix 2.9.B [AS-208] Figures 2.9.B.14 and 2.9.B.15

60 Technical note on indicative lighting modelling [REP3-057]

61 Written Submission for the Royal Society for the Protection of Birds and Suffolk Wildlife Trust [REP2-506], Comments on Other Submissions Submitted at Deadline 3 [REP5-165]

62 Comments on Other Submissions Submitted at Deadline 3 REP5-165

63 Boyes et al (2021) Street lighting has detrimental impacts on local insect populations. Science Advances: 7(35)

## Section 2.7 Point 6

7.10. Plate 1 shows retained commuting routes with no in-combination effect of noise and light, (lighting at 0m) during phase 1 of the development. This plate, whilst used for in-combination purposes clearly illustrates noise spill into important commuting and roost areas along Kenton Hills and Ash Wood. The Technical Note on Indicative Lighting Modelling[64] also shows clear light spillage of 25lux into Ash Wood as outlined in our Deadline 5 submission[65]. The drawn-on green lines do not help with interpretation and there appears to be in-combination effect along Bridleway 19 that has been covered by the drawn on lines. This requires clarification and if this is the case, further mitigation is required especially in light of the fact that there is currently a very narrow buffer that is unlikely to provide any meaningful mitigation.

7.11. Paragraph 2.7.2 considers potential in-combination impacts at Ash Wood. With regard the in-combination impacts along the southern edge of Ash Wood, an important roost area for barbastelle, we believe that the 5m fence will not remove this pathway given the height that barbastelle roost (and commute and forage). This is further compounded by the fragmentation caused and observed in the report (although strangely not termed as fragmentation), forcing foraging further within the woodland.

7.12. Plate 3 shows the location of boundary treatments around Ash Wood. It is concerning that not only are the buffer areas only 10m but there appears to be no buffer at all in the northwest border of Ash Wood where there are a number of roosts (R3, R13, R14). This is despite clear spill of light and noise.

## Appendix G: Response to National Trust Written Representations

7.13. We note that a number of concerns raised by the National Trust are similar to our concerns and we do not believe that the Applicant's responses adequately resolve these issues. In particular, in B2.11 (epage 144-145) and B3.11 (epage 154-5) National Trust have raised similar concerns to ours regarding the impacts of the proposed SCDF management on the vegetated shingle at the County Wildlife Site and adjacent Minsmere shoreline. We do not believe that the Applicant's response (the dynamics of adjacent beaches are not altered and that the SCDF sediment is within the natural range) is sufficient to address these concerns.

## Appendix M: Minsmere Sluice Operation and Impacts Review

7.14. Whilst we recognise that the flood risk assessments have determined that the potential increased flow in the Leiston Drain to the Minsmere Sluice is deemed non-significant, we remain concerned that the potential for increased volumes should be monitored to ensure no unexpected impacts from the models is exceeded. Paragraph 1.5.1 (epage 331) confirms that the realignment and shortening of the Sizewell Drain encourages a slightly higher rate of flow. Paragraph 1.5.2 references that the key findings are summarised in the Groundwater Conceptual Model Paper. Reference to this paper[66] highlights the nature of the relationship with the sluice. For example, section 1.2.11 (epage 12) notes that during maintenance works on the Minsmere Sluice in 2014, in which water levels within Leiston Drain were temporarily modified, there was a strong response in the peat groundwater within Sizewell Marshes. Section 1.4.16 (epage 19) observes the influence of tide-locking and flow reversal associated with the operation of the Minsmere

[64] Technical Note on Indicative Lighting Modelling REP3-057
[65] Comments on Other Submissions Submitted at Deadline 3 REP5-165
[66] Deadline 3 Submission - 9.28 Comments on Written Representations Appendices - Revision 1.0 – Appendix B [REP3-043]

Sluice of APP-309 is also observed in the Sizewell Drain at the downstream end of the SSSI. Section 1.5.16 (epage 24) notes that the realignment of the Sizewell Drain will allow surface water to discharge from the Sizewell Marshes more freely to the Minsmere Sluice (reiterated in section 1.7.14 epage 27) and whilst the models conclude the impact was not assessed as significant, we believe this should be monitored.

7.15. We also note that in section 1.5.20 (epage 334) the change in flood depth within the Minsmere Levels in a 1 in 200-year coastal inundation event, is stated to be less than 0.03m at both, 2030 and 2090 epochs. This does not appear to accord with the Environment Agency's Written Representation[67] which identified that the modelling shows that there is an increase by up to 0.24m depth in the design tidal 0.5% (1 in 200) annual probability flood event in 2090 and we would welcome clarification of this discrepancy.

# 8. Draft Noise Monitoring and Management Plan - Main Development Site[68]

## Figure A.1 – Barrier (Noise) Location Plan

8.1. It is concerning there appears to be no screening along the northern edge of Kenton Hills and Nursery Covert, despite proximity of barbastelle roosts and foraging/commuting and the noise (and light) spill into these areas[69]. Whilst accepting a 5m screen will never mitigate all impacts we would expect some screening in these locations. It is possible the Applicant believes the proposed earth bund will act as the screen. If this is the case, this needs to be made clear and justified. Again, the same point applies with reference to the relative height: barbastelle roost, commute and forage above 5m and hence there is expected to be considerable residual effect despite screening that does not appear to have been accounted for.

## Figure B.1 – Indicative Monitoring Location Plan

8.2. It appears the plan has been primarily driven by anthropogenic led concerns. We question why there is no monitoring for and adjacent to key areas such as Kenton Hills, southern end of Bridleway 19, around much of Ash Wood, nor at the SSSI crossing.

## Figure C.1 - ES baseline monitoring location plan

8.3. There are baseline monitoring locations within Kenton Hills (MS16) and Nursery Covert (MS17). We request baseline and construction monitoring at the barbastelle roosts and foraging/commuting areas in those areas.

## Appendix B

8.4. Whilst we note the focus of this plan is on management of noise with regard human receptors, we consider that noise monitoring will be necessary to verify predictions and monitor impacts on ecological receptors. We are therefore concerned that Appendix B indicates that no noise

---

67 Deadline 2 Submission - Written Representation (WR) section 2.6 (p6) [REP2-135]

68 Draft Noise Monitoring and Management Plan - Main Development Site (REP6-029)

69 Comments at Deadline 6 on Submissions from Earlier Deadlines and Subsequent Written Submissions to ISH1-ISH6 - Appendices REP6-024 Appendix B: In-combination impacts of light and noise on bats
Volume 3 Chapter 2 Environmental Statement Addendum Terrestrial Ecology and Ornithology Appendices 2.9.A-2.9.D Part 1 of 2 AS-208 Appendix 2.9.B Updated Bat Impact Assessment
Technical Note on Indicative Lighting Modelling REP3-057

monitoring is proposed on the Minsmere South Levels or on the majority of Sizewell Marshes where impacts on breeding and wintering waterfowl functionally linked to the Minsmere-Walberswick SPA have the potential to result in adverse effects on the integrity of this SPA. We therefore request that suitable monitoring locations are proposed.

# 9. Examining Authority's 2nd written questions

## Bio.2.2 Biodiversity and ecology, terrestrial and marine Part 1 – Matters to be dealt with in writing following ISH7 – wet woodland

9.1. *In relation to both fen meadow and wet woodland why should clearance (and therefore effects) be permitted before the fully functioning establishment of the compensation? The ExA notes this issue is raised by both Natural England and the RSPB/SWT.*

9.2. Compensation habitat should be functional before habitat loss occurs and we do not agree that clearance (and therefore effects) should be permitted before the fully functioning establishment of the compensation habitat is achieved.

9.3. We stated our views in our Written Representations[70] at paragraph 3.66

> *Compensation habitat should be in place and functional before habitat loss occurs. The construction programme should follow the appropriate compensation work and not the other way around. We request the Applicant defines the seasons when the habitat creation work would need to take place. The timing of the construction programme needs to accommodate this.*

at paragraph 3.73 (fen meadow)

> *3.73 The Strategy does not mention when the habitat creation works will commence in relation to the construction programme and SSSI land-take. Section 6 states the target is to establish at least 4.5ha of M22 fen meadow habitat across the three fen meadow sites within 10 years of commencing the habitat creation works. The Indicative Phasing Schedule shows fen meadow habitat creation during construction years 1 to 3. Compensation habitat should be in place and functional before habitat loss occurs. The construction programme should follow the appropriate compensation work and not the other way around. We request the Applicant defines the seasons when the habitat creation work would need to take place. The timing of the construction programme needs to accommodate this.*

at paragraph 3.88 (wet woodland)

> *Section 6 of the Strategy[71] notes establishment of the wet woodland habitats would commence within 12 months of the commencement of development under the DCO and continue for 10 years. The test of success (paragraph 7.1.1 of the Strategy) is the establishment by Year 10, of at least 3.06ha of developing wet woodland habitat. Compensation habitat should be functional before habitat loss occurs. We are concerned it will not be functional for at least 10 years following loss of the SSSI habitat.*

and at paragraph 3.92 (conclusions)

[70] Written Submission for the Royal Society for the Protection of Birds and Suffolk Wildlife Trust [REP2-506] paragraph 3.88
[71] 9.8 Wet Woodland Strategy (REP1-020)

*Compensation habitat should be in place and functional before habitat loss occurs. The construction programme should follow the appropriate compensation work and not the other way around. We request the Applicant defines the seasons when the habitat creation work would need to take place. The timing of the construction programme needs to accommodate this.*

9.4. We re-iterate the need to provide functional compensation in advance of habitat loss.

## 10. CG2.6 Impacts on coastal processes

*At DL5 the Applicant submitted a revised version of the CPMMP [REP5-059]. Please indicate whether there are any further concerns: (i) as regards the wording of that draft plan including in relation to the geographical extent of the proposed monitoring, the means of monitoring and future mitigation to maintain the shingle transport corridor and mitigation triggers? (ii) in relation to the funding of the monitoring and mitigation process by the Applicant and the duration for that to process and funding to be in place? (iii) the means of securing and enforcing the CPMMP provisions? (iv) whether this now satisfactorily addresses the details sought of the proposed secondary mitigation in the event that the SCDF-supported sediment pathway across the site frontage is interrupted?*

10.1. As per our Written Representation[72], Deadline 3 submission[73] and our transcript of our oral contributions to ISH6, submitted at Deadline 5[74], the RSPB/SWT's key concern remains that the vegetated shingle that is currently present along that southern Minsmere frontage, which is an internationally important feature, part of the Special Area of Conservation (SAC) and Ramsar site, does not appear to have been acknowledged by the CPMMP.

10.2. We welcome the response by the Applicant [REP6-024][75], which confirms the Applicant understands and accepts the RSPB/SWT's explanation of the presence of annual vegetation of drift lines and perennial vegetation of stony banks habitats along the southern Minsmere frontage. However this recognition is not enough to overcome our concerns.

10.3. We also note that recognition needs to be included within the CPMMP[76] which continues to state "*Supra-tidal shingle was also previously recorded on the Minsmere to Walberswick Heaths and Marshes SAC frontage but was destroyed a decade or so ago (between 2010 and 2011) by natural coastal erosion."*

10.4. We have covered our concerns our Deadline 6 submissions[77] and the conclusion that we do not believe sufficient detail has been presented to understand the mitigation approach in respect of the Minsmere - Walberswick designated sites. We note that the Applicant has sought to address

[72] RSPB/SWT Written Representation paras 3.113 – 3.116 [REP2-506]

[73] Comments on Other Submissions (submitted at Deadline 2) for the Royal Society for the Protection of Birds and Suffolk Wildlife Trust para 5.2 p15 to para 5.8 p16 [REP3-074]

[74] Deadline 5 Submission - Other - Transcript of Oral Contribution to Issue Specific Hearing 6 (ISH6) on Coastal Geomorphology for the Royal Society for the Protection of Birds and Suffolk Wildlife Trust [REP5-163]

[75] Deadline 6 Submission - 9.63 Comments at Deadline 6 on Submission from Earlier Submissions and Subsequent Written Submissions to ISH1-ISH6 - Appendices - Revision 1.0 para 2.8.9 (p17 pdf) [REP6-024]

[76] Deadline 5 Submission - 6.14 Coastal Processes Monitoring and Mitigation Plan - Revision 2 section 1.2 p22 [REP5-059]

[77] [REP6-046] Deadline 6 Submission - Comments on any additional information/submissions received by D5 – Section 4

these concerns [REP6-024][78], with a response that confirms that there will be an impact on natural processes but that these could be beneficial. We agree this *could* be the case, but believe there should be acknowledgement that the impact on natural processes has the **potential** to be adverse on the dynamic shingle interest feature and it is not clear how this would be addressed and managed with appropriate mitigation should it arise. Without this in place we cannot address whether the proposed mitigation strategy or the associated funding model is viable nor effective.

## 11. HRA.2.5 Mitigation for recreational pressure - Minsmere Monitoring and Mitigation Plan (MMP) [REP5-105] and Monitoring and Mitigation Plan for Sandlings (Central) and Alde, Ore and Butley Estuaries European Sites [REP5-122]

*Could you comment on the latest mitigation package in respect to Minsmere and recreational pressure, as provided by the Applicant at Deadline 2 and updated at Deadline 5 [REP5-105]. Does this satisfy your concerns with regards to the stated need for additional strategic off-site measures to mitigate for recreational pressure? Could you also comment on the MMP for Sandlings (Central) and Alde, Ore and Butley Estuaries, which has also been submitted at Deadline 5 [REP5-122].*

11.1. We provided our comments on the update to the Minsmere-Walberswick and Sandlings (North) Monitoring and Mitigation Plan and the new Monitoring and Mitigation Plan for Sandlings (Central) and Alde, Ore and Butley Estuaries European Sites in sections 5 and 6 (epage 13) of our response at Deadline 6 (REP6-046).

11.2. In summary, we consider that these Monitoring and Mitigation Plans provide a good basis to enable the mitigation of impacts on these European sites, although some further refinements may be required, including to determine the level of initial resourcing provided and to address the speed of implementation of additional mitigation measures. We note that these plans do not cover impacts outside European sites, including on protected and priority species and SSSIs, as required by the EIA.

11.3. We also remain of the view (set out in detail in section 7 (epage 15) of REP6-046 which covers our comments on the Aldhurst Farm Technical Note REP5-126) that in order to fully mitigate impacts of the Application on designated sites, proposals for alternative greenspace for construction workers should be developed alongside these mitigation and monitoring plans to reduce additional visits to designated sites as far as possible.

[78] Deadline 6 Submission - 9.63 Comments at Deadline 6 on Submission from Earlier Submissions and Subsequent Written Submissions to ISH1-ISH6 - Appendices - Revision 1.0 para 2.8.9 (p17-18 pdf) [REP6-024]

# Documents from Deadline 5

## 12. Comments on Code of Construction Practice

12.1. We have provided comments on the updated Code of Construction Practice[79] (CoCP).

### Part B: Main Development Site

#### 1 General Requirements

12.2. Paragraph 1.2.1 considers principles for site layout. The second bullet should include ecological receptors as well as neighbouring residential properties. The third bullet should specify noise sensitive receptors as residential properties and ecological receptors.

12.3. We note that night shift activities include noisy activities such as unloading and storing HGV, freight and occasional marine overnight deliveries (paragraph 1.3.6). As outlined above we are concerned about noise impacts from the Green Rail depot on foraging bats and barbastelle roosts in Kenton Hills close to the rail terminal and request the Applicant confirms monitoring will be undertaken during noisy night-time activities.

#### 6 Terrestrial ecology and ornithology

12.4. Paragraph 6.1.2 explains the Terrestrial Ecology Monitoring and Mitigation Plan (TEMMP) is secured by a requirement included in Schedule 2 of the Draft DCO. For clarity we request the addition of 'requirement 4'.

12.5. Paragraph 6.1.3 explains the measures within the mitigation strategies, draft licenses and non-licensable method statements are secured by the TEMMP. All additional bat mitigation measures submitted to the Examination since the bat mitigation strategy[80] and the bat method statement[81] were submitted must be secured in updates to those documents, the TEMMP and the CoCP. Any additional mitigation measures for other protected species must also be similarly secured.

12.6. Table 6.1 still does not provide sufficient details of measures to protect wet woodland and fen meadow during installation of overhead lines above Sizewell Marshes SSSI. We outlined our concerns that temporary damage may become permanent damage in our written representations[82] and request the Applicant provides detailed evidence-based measures to protect and re-establish the designated habitats.

---

79 Code of Construction Practice REP5-079

80 Volume 2 Main Development Site Chapter 14 Terrestrial Ecology and Ornithology Appendix 14C Protected Species APP-252 Appendix 14C1A – Bat Mitigation Strategy

81 Volume 2 Main Development Site Chapter 14 Terrestrial Ecology and Ornithology Appendix 14C Protected Species APP-252 Appendix 14C1B – Bat Method Statement

82 Written Submission for the Royal Society for the Protection of Birds and Suffolk Wildlife Trust REP2-506, Transcript of Oral Contribution to Issue Specific Hearing 7 (ISH7) Parts 1 and 2 on Biodiversity and Ecology REP5-164

# 13. Further comments on Terrestrial Ecology Monitoring and Mitigation Plan

13.1. Having had time to fully review the Terrestrial Ecology Monitoring and Mitigation Plan (TEMMP)[83] submitted at Deadline 5 we now provide further comments in addition to our comments submitted at Deadline 6[84].

## 3. Main Development Site - Designated Sites (Nationally and locally designated sites) and habitat creation areas

### 3.1 Introduction

#### *a) Sizewell Marshes SSSI (and related compensation habitats)*

#### *i Retained areas of the SSSI*

13.2. We welcome the hydrological monitoring will include areas favoured by rarer species (Table 3.1). However, expert advice needs to be taken as to the exact locations and should not just be presence/absence but also quantitative measures to understand potential changes over time.

13.3. Based on the distribution of M22, M22B and M22D vegetation communities within Sizewell Marshes SSSI from NVC survey[85], we estimate approximately 58ha of retained M22, M22B and M22D fen meadow, that is 55% of the SSSI, is at risk of damage. This area of fen meadow is at risk due to the uncertainty of the proposals and it is our view there will be a shift from groundwater to surface water that will change the botanical community significantly as detailed in our Written Representations[86].

#### *ii. Areas of the SSSI subject to temporary land take*

13.4. Paragraph 3.1.8 refers to temporary land take. As raised in the past[87], above and at Issue Specific Hearing 7[88], we continue to question the Applicant's that conclusion that 3 ha of SSSI will only be temporarily lost. There is a high risk that this 3 ha will in fact be permanent lost due to damage to during the construction period. Therefore, based on the need to take a precautionary approach and the length of time to deliver functional compensation, this area needs to be considered permanently lost to the SSSI. The area concerned is M22 and should be replaced at the ratio of 9:1, as recommended by Natural England. Again to be clear, this loss is from both the SSSI crossing and the footprint of the Main Development Site.

## 4. Main Development Site – Protected Species

### 4.4 Natterjack toad

13.5. Paragraph 4.4.5 considers the natterjack toad monitoring programme. The natterjack toad monitoring strategy needs to be sufficient in detail to pick up annual population and recruitment

---

83 Terrestrial Ecology Monitoring and Mitigation Plan (TEMMP) REP5-088

84 Comments on any additional information/submissions received by D5 REP6-046

85 Volume 2 Main Development Site Chapter 14 Terrestrial Ecology and Ornithology Appendix 14A3 - Plants and Habitats Annex 14A3.1: Figures 14A3.1 - 14A3.2 APP-230 Figure 14A3.2

86 Written Submission for the Royal Society for the Protection of Birds and Suffolk Wildlife Trust REP2-506

87 Written Submission for the Royal Society for the Protection of Birds and Suffolk Wildlife Trust REP2-506

88 Transcript of Oral Contribution to Issue Specific Hearing 7 (ISH7) Parts 1 and 2 on Biodiversity and Ecology REP5-164

trends. This is likely to require more than one annual visit. Additionally, monitoring after construction should be undertaken annually not every two years.

## 4.5 Bats

### *Roosts*

13.6. Paragraph 4.5.8 considers loss of roosts in trees. As there has been no roost survey within the SSSI triangle, we expect the loss of roost resource to have been underestimated and we continue to request a roost survey of the SSSI triangle. If access makes this impossible, then more bat boxes need to be provided at a quantum agreed with Natural England.

### *Table 4.4*

13.7. As mentioned above the introduction of radio tracking is welcomed, to enable the comparison of levels of bat activity not just presence/absence and give sufficient detail on populations. It is not clear where radio tracking of bats will be undertaken during construction. We recognise this may need to be determined once construction has started/be adapted as the construction phases progress and request clarification.

13.8. Monitoring of key commuting routes – there is no site that captures the Kenton Hills/Fiscal Policy to B19 Bridleway link. This is a critical area and also at risk from high levels of disturbance. Furthermore, the only site on Bridleway 19 is at Upper Abbey Farm. As we have raised previously there needs to be more monitoring in this area.

13.9. There is not enough emphasis on rarer species within the analysis of the data so far. The use of a percentage metric means common species mask the actual (rather than relative) importance of a specific location for rare species. The way in which the data have been analysed is leading towards a generic monitoring protocol that is unlikely to pick up population changes in rarer species such as barbastelle. Therefore, we request that future analysis concentrates on actual barbastelle and Natterer's numbers, ignoring their relative contribution to the community as a whole and hence avoid masking significant trends caused in these two species, as a result of sheer numbers of more common species.

### *Lack of buffering*

13.10. The TEMMP does not adequately address buffering. This remains a fundamental concern as discussed in detail above namely that 10m buffering of key roosts and commuting is not enough. Especially along B19, where the buffer is from the centreline of the track (in effect making the buffer considerably less than 10m) and around Ash Wood (potentially high levels of impact very close to important roosts). Please refer to our comments on the Applicant response to our written submissions included within this submission above. We request monitoring of buffers is included within the TEMMP.

## Statics

13.11. There are a number of historic sites that need continued monitoring but appear to have been dropped: MS24 (important site by the SSSI crossing), MS14 (important site further down B19 and would help determine functionality of an important dark corridor), MS22 (important site to assess the critical B19/Fiscal Policy interface), MS05 (important site to determine Ash Wood on the southern edge). In our view, these important sites should be retained.

13.12. Again as mentioned above there continues to be a questionable approach to the footprint of the development itself. There are three MS sites that will be 'lost' and yet in the past have recorded numbers of bats. In any assessment these sites baseline data need to be considered and included in the data assessment and not ignored. Hence any data assessment of the remaining sites needs to consider the effect of these numbers in any robust and scientifically valid analysis. In other words, for genuine no impact, the remaining sites should increase to offset the lost sites (MS11, MS10, MS08). If the remaining sites maintain the same levels of activity, this actually suggests a net impact, not no impact.

# 14. Further comments on Natterjack toad licence method statement

14.1. We provided our initial comments on the updated Natterjack toad licence method statement[89] at Deadline 6[90]. We have now reviewed the method statement and the specific proposals for habitat creation in detail and provide further comments below.

## Comments on Part 2

14.2. Paragraph 1.1.2 states 'it is unlikely that operational lighting would be required for the WMZ although *this would be determined by detailed design'.*

14.3. Without an understanding of what this is, it is hard to understand potential impacts and the final mitigation requirements. If operational lighting is required, what are the likely impacts and hence what further mitigation is proposed?

14.4. Paragraph 1.1.3 notes the precise design of the WMZ is to be confirmed. This is acceptable, but on condition that any finalisation avoids the current extent of the rabbit warrens and the buffer of 10m.

14.5. We welcome all the new proposals in paragraph 1.1.4 and it appears the Applicant has taken on board our suggestions.

14.6. Paragraph 1.3.3 states '*it is proposed that development is used as an opportunity to supplement natterjack toad conservation'* To confirm, the proposals are mitigation not extra natterjack conservation and this needs to be clarified. For example, this work should not then be used in the BNG calculations.

[89] Volume 2 Main Development Site Chapter 14 Terrestrial Ecology and Ornithology Appendix 14C Protected Species - Appendix 14C7B: Natterjack Toad Draft Licence REP5-053

[90] Comments on any additional information/submissions received by D5 REP6-046

# 15. Comments on Responses to Examining Authority's First Written Questions (ExQ1) - Volume 1 - SZC Co. Responses[91]

Please note to aid readability and reduce the need to refer to previous submissions we have included both the original responses, responses on those responses previously made before our comments on those responses (marked in bold) including references to our other submissions on these points.

| **Part 1 - Biodiversity and ecology (terrestrial & marine) - General** | |
|---|---|
| **Bio.1.28**<br><br>Please could Mr Taylor expand and explain the points made in [RR-0792] on the headings (i) Cooling Water Systems and (ii) Ecology. Please use the document numbers from the Examination Library and give the relevant paragraph numbers. | |
| Response by SZC Co. at Deadline 2 | The Applicant makes the following comments: Cooling Water Systems: The Hinkley Point C (HPC) project has identified that installation of an Acoustic Fish Deterrent (AFD) system is not feasible nor required from an environmental perspective and is seeking to vary the Water Discharge Activity (WDA) permit to remove the need to install an AFD. The Environment Agency position is that the AFD is required to ensure no impact on the Severn Estuary European Marine Site (under the Habitats Regulations). An appeal against non-determination of the WDA permit variation is currently in progress with an inquiry start date of 8 June. The Sizewell C Project has not proposed an AFD system on the basis that it is not required to mitigate the effects of the proposed cooling water system. In any event, determination of the DCO application will be based on the environmental information submitted with the application and is independent of the appeal process at HPC. The cooling water system intake and outfall tunnels are buried several tens of metres below the seabed and will be constructed by tunnel boring machines. They can have no impact on coastal processes. Four cooling water intake heads (2 per intake tunnel) and two cooling water outfall heads will be placed >3k from the shore, beyond the Sizewell-Dunwich Bank and will not impact coastal processes (as detailed in Section 20.10 of Volume 2, Chapter 20 (Coastal Geomorphology and Hydrodynamics) of the ES [APP311]). Dredged material will be disposed of locally in a designated disposal area to be licenced by the Marine Management Organisation (MMO) (as described in Schedule 20 of the draft DCO (Doc Ref. 3.1(C)). Sediment quality has been tested to demonstrate that there would be no impact on the local ecology and additional sediment sampling and analysis will need to be conducted prior to disposal. The proposed development has considered and assessed the potential impacts from dredge-related activities and the construction and operation of the cooling water system on marine ecology and fisheries receptors in Sections 22.6 to 22.11 in Volume 2, Chapter 22 (Marine Ecology and Fisheries) of the ES [APP-317] and the residual effects including mitigation measures are detailed in Section 22.13 of [APP-317], as updated by Volume 1, Chapter 2 of the ES Addendum [AS-181]. The potential impact of the cooling water system on coastal geomorphology and hydrodynamics receptors is assessed in Section 20.10 of Volume 2, Chapter 20 (Coastal Geomorphology and Hydrodynamics) of the ES [APP-311]. The effects of future climate change and warming sea temperatures in relation to thermal discharges is also considered in Sections 22.6 to 22.11 in [APP-317] for marine ecology and fisheries receptors. As stated in [APP-317], future entrainment |

[91] Comments on Responses to Examining Authority's First Written Questions (ExQ1) - Volume 1 - SZC Co. Responses (REP3-046)

| | |
|---|---|
| | temperatures were considered for the following scenarios accounting for predicted future warming based on UK Climate Projections 09 (UKCP09) rather than UKCP18 as future sea temperatures are not included in the current UKCP18 marine climate predictions. The potential impacts from the proposed development activities during construction, commissioning and operational phases on marine receptors (including designated features) from an Environmental Impact Assessment (EIA) context have been considered and assessed in [APP-311, APP-314, APP-317 and AS-181]. Designated features in the shadow Habitats Regulations Assessment (HRA) [APP-145], as updated by the shadow HRA Addendum [AS-173], are assessed in a HRA context against the conservation objectives of each relevant designated site. Ecology An assessment of effects on terrestrial ecology and ornithology is presented within Volume 2, Chapter 14 [AS-033] and Volumes 3-9, Chapter 7 of the ES [APP-363, APP-394, APP-425, APP-461, APP-494, APP-523, APP-555] with additional information submitted to the Examining Authority as summarised within the ES Addendum [AS-181 to AS-188]. Whilst SZC Co. recognises that there will be impacts on terrestrial ecology and ornithology, the Project has sought to minimise effects, where possible, and embed mitigation and enhancements within design. During construction, works will be carefully managed to minimise impacts on ecology. Species-specific mitigation plans and method statements have been developed for all protected species found to be using the site. Following completion of construction works, the temporary construction area at the main development site would be restored to a new landscape founded on the concept of establishing the Suffolk Coast and Heaths AONB landscape in microcosm, by creating a mosaic of some of its most valued habitats. Once fully established, this habitat 'mosaic' would have a higher biodiversity value than the existing habitats, specifically as existing extensive arable areas would be replaced with new grasslands, heathland, woodlands and scrub. Further details are set out in the Main Development Site Design and Access Statement [APP-585 to APP-587 and Doc Ref. 8.1Ad2] and the Outline Landscape and Ecology Management Plans for the main development site [REP1-010], two village bypass [AS-262 and AS-263] and the Sizewell link road [AS-264 and AS-265]. Once the habitats are established, the Biodiversity Net Gain Reports (refer to the updated reports included within [REP1-004 ,REP1-017, REP1-018, and REP1-019] demonstrate that a net gain of over 19% across the development would be achieved. |
| Response by Michael Taylor at Deadline 2 | Please refer to [REP2-372] for full response. |
| Response by SZC Co. at Deadline 3 | Direct Cooling Water Cefas operate the Wavenet network of buoys, data from which are available on the network's webpage (http://wavenet.cefas.co.uk/Map), as the representation states. EDF Energy has operated a wave buoy off Sizewell from February 2008 to the present day. Live data from the wave buoy are displayed on the Wavenet webpage for public viewing, free of charge, by permission of EDF Energy. On Cefas advising SZC Co, as an executive agency of Defra, Cefas is bound by the civil service code of conduct and must provide impartial advice regardless of whether it is providing advice to government or to a third party. Cefas routinely provides advice to the Marine Management Organisation on all elements of marine licensing, however, to avoid perceived conflict of interest Cefas stopped providing technical advice to the MMO on NNB projects. The MMO uses a range of other technical advice, for Sizewell specifically from Hydraulics Research Wallingford and ABP Mer. Cefas are internationally recognised as experts in fisheries science and provide SZC Co with technical advice on the potential impacts of cooling water |

| | |
|---|---|
| | abstraction on fish. The assessments show that SZC Co without an AFD system fitted will have no significant impact on fish populations, although we acknowledge we are not yet agreed with the Environment Agency and Natural England on all elements of the fish assessments. We are aware of the calculations made by Together Against Sizewell C (TASC) – they do not disprove the Cefas assessments at all. AFD systems have not been installed at offshore locations like the intake headworks of HPC and SZC and are considered an unacceptable safety risk. Regarding dredging, all sediments to be dredged and disposed need to be tested every 3 years for chemical contaminants (including radiological contaminants) and approved for disposal by the MMO. At Hinkley, HPC Co strongly disputes all of the claims made my Mr Deere-Jones. Ecology Specifically in respect of biodiversity net gain, updated reports were submitted at Deadline 2 and further information and clarifications are provided in responses to questions Bio 1.260 onwards (see also below). The compensatory habitat approach for SSSI landtake, including Aldhurst farm. is not included in the Biodiverstiy Net Gain (BNG) metric and this is also covered in the responses by SZC Co. to questions Bio 1.260 onwards provided at Deadline 2. Specially in response to the felling of Coronation Wood, this was undertaken under a separate planning application as explained in the original answer to Bio 1.68 at Deadline 2 [REP2-100], with full ecological supervision of the works and under relevant protected species licenses. SZC Co. rejects any suggestion that this 'could have resulted in wildlife crime.' Specifically in relation to Marsh Harriers, the potential for adverse effects on integrity on the European sites, which includes review of the impacts noted by Mr Taylor, has been fully considered in the Shadow Habitat Regulations Assessment Report [APP-145 to APP-149, AS-173 to AS-178 and REP2-032] and a number of answers to questions at Deadline 2 provided further clarifications. |
| Response by RSPB & SWT at Deadline 3 | We stated our concerns that an AFD has not been proposed for the Application in our Written Representations submitted at Deadline 2 and requested that evidence and case studies around the use of AFDs are presented in order to consider this more fully. We also recommend that figures comparing levels of predicted impingement and entrainment with and without an AFD are provided in order to assess its potential efficacy and inform the consideration of their inclusion within the mitigation proposals. We support the comments of the Environment Agency on their concerns around underestimation of fish mortality and Natural England around the potential for long term impacts of fish depletion on SPA designation bird species and of both the EA and NE on the need to reconsider the provision of an AFD for this Application. |
| Response by SZC Co. at Deadline 5 | An AFD system has not been proposed at Sizewell C for several reasons. While AFDs may be considered best practice at riverine and onshore coastal abstraction points, an AFD system has never been installed at an offshore location like Sizewell C. The Environment Agency acknowledges this as does Fish Guidance Systems Ltd (arguably the only supplier able to provide such a system). SZC Co. does not dispute the efficacy of AFD systems but to install, maintain and operate a system at the location of the Sizewell C intakes would require either diver or Remotely Operated Vehicles – neither of which is considered safe and/or feasible. Further detail is provided in the AFD Report (Doc Ref. 9.48) to be submitted at Deadline 5. Case studies and a with/without assessment are not provided because SZC Co considers the installation of an AFD unfeasible. The RSPB concerns are noted and specific comments in the RSPB's D2 written representations have been responded to by the SZC's Comments on Responses from Earlier Deadlines - Appendix P: Marine Ecology Paper - Response to RSPB and SWT submitted at Deadline 5 (Doc Ref. 9.54). To address impacts on fish |

| | |
|---|---|
| | directly and potential indirect effects due to localised changes in fish abundance the Applicant has provided two assessment approaches:<br><br>1. Population level assessment: These assessments determine the effects of the station relative to the relevant population comparator and answer the question of whether the station would cause significant effects on fish populations. The assessment approaches are detailed in TR406.v7 [AS-238]. Impingement predictions with and without mitigation measures are provided throughout the ES allowing full transparency and perceived effectiveness of mitigation measures proposed. The latest tables are available in Appendix 7L of REP2-110. It is noteworthy that the MMO in their Deadline 2 Submission to the Planning Inspectorate determined at paragraph 3.2.7 [REP2-140]: "Notwithstanding these uncertainties [LVSE and FRR mitigation effectiveness], the entrapment estimates indicate that even in the absence of LVSE and FRR mitigation measures, only 4 species exceed the 1% threshold: bass, for which density adjustment substantially reduces assessment of impact; sand goby, for which mortality rate >1% Spawning Stock Biomass (SSB) is not a concern at population level; thin-lipped mullet, for which value is an artefact of the low level of landings and absence of SSB; and eel, for which the applied Equivalent Adult Value (EAV) of 1 is unrealistically high, and is a species most likely to benefit from the FRR. On this basis, the MMO consider there is a good level of confidence that actual impacts to all fish species will not be significant. Therefore, the MMO support the conclusions of the ES." To address the uncertainties described by the MMO, a sensitivity analysis will be submitted at Deadline 6 addressing uncertainty in FRR efficiency, confidence intervals in impingement predictions and variation in population sizes. The sensitivity analysis will precautionarily assume no benefit from the LVSE heads.<br><br>2. Local depletion assessment: The local depletion assessment is independent but complementary of the population assessment. Focusing on the most restricted spatial scale of impact, the Greater Sizewell Bay and tidal excursion, this assessment considers the potential for the station to deplete fish in the local body of water. The local depletion assessment can be applied, for example, to determine the potential for changes in the availability of fish prey for SPA designated bird species. The assessment approaches were detailed in SPP103.v3 [AS-238]. Following consultation with the Environment Agency and Natural England, SPP103.v4 was provided to statutory stakeholders along with the calculation spreadsheets. An updated version of SPP103 (.v5) will be submitted at Deadline 6 addressing further D2 submissions from the RSPB/SWT, and Natural England. |
| **Response by RSPB & SWT at Deadline 7** | **We commented on the issues around installation of an AFD in our comments on the Acoustic Fish Deterrent Report (REP5-123) which can be found in section 9 of our Comments on Other Submissions (submitted at Deadline 5) (REP6-046).**<br><br>**We have also commented in our Deadline 7 submissions on point 1 (population level assessment) via our comments on the report Quantifying Uncertainty in Entrapment Predictions for Sizewell C (REP6-028) and on point 2 (local depletion assessment) through our comments on SPP103 Consideration of potential effects on selected fish stocks at Sizewell (REP6-016).** |
| **Bio.1.48**<br>[APP-224], para 14.4.11, bullet 1. Marsh harrier foraging habitat. Please will the Applicant set out the following in one document: (a) The significance of the marsh harrier – this should cover policy, legal, ecological and any other relevant aspects (b) How it is affected by the Proposed Development? (c) the areas over which it forages over the Minsmere South Levels and Sizewell Marshes SSSI and any other areas where its foraging, breeding or other activities are likely to be affected by the proposed | |

| | |
|---|---|
| development (d) where the permanent foraging habitat referred to in this bullet "is being established and enhanced within the northern part of the EDF Energy estate" (e) the need for and role of any other areas for marsh harriers which are proposed (including Westleton) (f) state clearly whether the fen meadow compensation areas at Halesworth and Benhall (and if the change request is accepted also at Pakenham) play any role in relation to the marsh harrier. (g) How the SofS should decide whether the area at Westleton is required and whether its compulsory acquisition is justified. (In this regard the Applicant is also referred to the Secretary of State's decision letter on Hornsea Three, Section 6.)<br><br>(g) Any uncertainties over the success of replacement foraging (or other) areas for the marsh harrier and the probabilities of success (h) conclusions in relation to the marsh harrier and the relevant policy, legal and ecological aspects. (i) For the avoidance of doubt, this document should cover but not be limited to s.40 of the Natural Environment and Rural Communities Act 2008, s.28G of the Wildlife and Countryside Act 1981, environmental assessment and the Habitats Regulations, EN-1 and EN-6. | |
| Response by SZC Co. at Deadline 2 | Responses to the points raised in this question are provided in Responses to the points raised in this question are provided in Appendix 7F of this chapter. |
| Response by RSPB & SWT at Deadline 3 | The RSPB and SWT have set out our concerns regarding the level of compensation provided by the currently proposed 48.7ha area of dry habitats within the EDF Estate in our Written Representations submitted at Deadline 2. Specifically, we have raised concerns about the level of uplift in prey provision that can be achieved through the management of dry habitats and the uncertainty around the Applicant's calculations of the number of small mammals (key prey species for marsh harriers) that can be provided by this area. We agree with Natural England's comments in their Relevant Representations and repeated in their response to question BIO.1.49 that wetland habitat creation is likely to provide optimal compensatory habitat with greater certainty of success (with regard prey provision for marsh harrier) than the management of dry habitats. However, wetland creation and establishment takes time and any habitats created now may not be fully functional by the time construction commences, hence our concerns about the proposed conversion of c10% of the current compensation area to wet habitats raised in our Written Representations and in our comments on the Marsh Harrier Habitat Report, also submitted at Deadline 3. Therefore, our position remains that wetland habitat would represent the most beneficial habitat provision for foraging marsh harriers with a greater certainty of success as compensation, but based on current timelines, the replacement of any of the currently proposed dry habitat compensation with wet habitats would not be desirable unless it can be made functional by the time construction commences. If this is not possible we advocate for wet habitat creation in addition to the currently proposed dry habitats, as in the longer term, this would provide greater benefits for the marsh harrier population, whilst retaining the maximum potential compensatory provision from the dry habitats currently proposed (albeit we argue that this potential is lower than the Applicant suggests). For clarity, we also note and agree with the Applicant's point30 that the wetland habitats at Aldhurst Farm are not likely to benefit foraging marsh harriers from Minsmere as this would require overflight of the construction area, which has been assessed to represent a 'barrier' to marsh harrier flight activity. |
| Response by SZC Co. at Deadline 5 | As detailed in the Marsh Harrier Compensation Area Design Update to Include Wetland report [REP2-119], SZC Co considers that the habitat managements being implemented on the compensatory habitat area will provide sufficient increase in prey availability to compensate for the foraging habitats from which marsh harrier are predicted (on a precautionary basis) to be displaced. The dry areas of habitat |

| | |
|---|---|
| | have been carefully designed to optimise habitat structure and quality and maximise prey abundance. Both Natural England and the RSPB have attended workshops and reviewed design options to identify the preferred design for the layout of the dry habitats and the selected design is currently in establishment. The development of the wetland component within the compensatory habitat area was introduced to support a request from the RSPB to provide wetlands within the design. It is being created in the first winter of the construction period to ensure that there are no noise impacts to breeding marsh harriers during the excavation of the wetland and to ensure the wetland is created as soon as possible once consent is received. The proposed reedbeds within the wetland component would not be fully established in the subsequent summer. However, the wetland is expected to be a shallow open water body at this stage, with some limited marginal vegetation, which will attract small numbers of waterfowl, waders as well as small passerines drinking on its margins. The waterbody will be in close proximity to tree belts (established and new plantings), and existing long grass areas providing ambush opportunities on the wetland margins for marsh harriers. The wetland would therefore provide valuable marsh harrier foraging habitat during this period. By the second summer, the reedbeds can be expected to be well established. In conclusion, the new wetland is expected to benefit the prey provision to marsh harrier even in its immature state. A further submission will be made at Deadline 6 in relation to the habitats being created on-site and the contingency location at Westleton, particularly in relation to prey availability. |
| **Response by RSPB & SWT at Deadline 7** | **We have provided detailed comments at Deadline 7 on the wetland component of the compensatory habitats in our comments on Appendix B of the Applicant's Written Submissions Responding to Actions Arising at ISH7: Biodiversity and Ecology Parts 1 and 2 (15-16 July 2021) (REP6-002). These comments are summarised below.**<br><br>**Measures will be necessary to protect the establishing reedbed from grazing pressure from ducks and other animals. Such measures would not be compatible with providing opportunities for marsh harrier foraging as it would be likely that ducks and small birds would be prevented from using much of the area, therefore we continue to hold the view that the wetland areas will not be functional in terms of providing marsh harrier prey until the habitats are established, and that the creation of these habitats should be brought forward to ensure that functionality is achieved before construction commences. If this is not possible, we advocate creation of wetland habitat elsewhere whilst maximising the dry habitats created at Abbey Farm (which should be provided as planned so that some compensation is in place before construction commences).** |
| **Marine water quality and sediment** | |
| **Ma.1.8** Para 21.6.166, Section C.d.d.b.<br><br>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 & SWT 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 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.<br><br>BEEMS Scientific Advisory Report. BEEMS Expert Panel. 2011. Chlorination by-Products in Power Station Cooling Water. Scientific Advisory Report SAR009. Lowestoft, UK:2011 |
| **Response by RSPB & SWT at Deadline 7** | **The Applicant's response at Deadline 5 has addressed part of our concerns about indirect effects. However, we continue to query whether there is potential for direct toxic effects on birds, for example, through birds resting on the water surface or diving for prey coming into direct contact with these chemicals. And without evidence to alleviate these concerns continue to question whether these exposure routes and the concentrations within the plumes have potential to cause bird morbidity or mortality?** |