

East Anglia THREE Offshore Windfarm

East Anglia THREE

In Principle East Anglia THREE Project Southern North Sea pSAC Site Integrity Plan

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1 Introduction

1.1 Purpose of the Plan

1. The purpose of the In Principle East Anglia THREE Project Southern North Sea pSAC Site Integrity Plan (the 'Plan') is to set out the approach for East Anglia THREE Limited (EATL) to deliver any project mitigation or management measures in relation to the Southern North Sea possible Special Area of Conservation (pSAC) required by the condition 13(2) contained within the Deemed Marine Licences (DMLs) for the generation and transmission assets (schedules 10 to 13 of the draft Order) for the proposed East Anglia THREE project.
2. The East Anglia THREE project related measures outlined in the Plan are in place to ensure the avoidance of significant disturbance of harbour porpoise *Phocoena phocoena* in relation to the pSAC site Conservation Objectives, and therefore allow the conclusion of 'no adverse effect beyond reasonable scientific doubt' on the pSAC.
3. The approach and measures listed in the Plan respond to the conclusions of the Habitats Regulations Assessment (HRA) completed by EATL (REP6-021). The HRA concluded that further mitigation and management measures may be necessary in relation to in-combination effects of pile driving noise.
4. Following completion of the Appropriate Assessment (AA) by the Competent Authority it is acknowledged that the Plan may require revision to reflect the conclusions of the AA; it is the AA which will be used to determine any mitigation and management measures that need to be secured in the Plan post consent.
5. The mitigation and management measures in the Plan will be reviewed and updated post consent in line with the approach set out in the Plan.
6. The Plan provides a framework for further discussion and consultation by EATL with the Marine Management Organisation (MMO) and other relevant stakeholders including Statutory Nature Conservation Bodies (SNCBs) post consent to agree the exact details of any required project related management measures.
7. Due to the long lead in time for the development of offshore wind farms it is not desirable or possible to provide final detailed method statements prior to consent being granted. However, agreeing guiding principles will allow refinements to be made based on the best available knowledge and technology. A final detailed Plan will be produced closer to the time of construction, following revision and consultation as per the outline schedule in Section 2.
8. At the time of the submission of the Plan the Joint Nature Conservation Committee (JNCC) and Natural Resources Wales (NRW) have undertaken consultation on five sites to be considered as pSACs for harbour porpoise. The consultation closed on the 3rd

May 2016. Ministers will take the final decisions on whether to proceed with the pSACs based solely on the scientific case presented following the initial selection process and consultation responses.

9. Until final decisions have been made, the Conservation Objectives for each site remain as draft and management measures are yet to be confirmed. As such, the Plan should be considered as in Principle until further guidance from JNCC and Natural England is provided. In its final form, the Plan will include updated information on Conservation Objectives and management measures for the Southern North Sea pSAC.

1.2 Draft of relevant conditions in DMLs

10. EATL have proposed condition 13(2) contained in the DMLs for generation and transmission assets (schedules 10 to 13) to secure the East Anglia THREE Project Southern North Sea pSAC Site Integrity Plan. Any requirement for capturing mitigation requirements in relation to mortality and injury to marine mammals is captured by the MMMP (and secured in Condition 13(1)(f) of the relevant DMLs). Any requirements to reduce acoustic disturbance in relation to European Protected Species (EPS) will be captured through the EPS Licencing process (see Section 5.3.1).

1.2.1 East Anglia THREE Project Southern North Sea pSAC Site Integrity Plan conditions

11. The original version of the draft Order did not include any conditions relating to the pSAC. EATL have drafted additional condition 13(2) to ensure that the East Anglia THREE project can only proceed in the event that it does not give rise to an adverse effect on the integrity of the pSAC, and to secure any necessary management or mitigation measures, as outlined in this document. The wording of proposed condition 13(2) reflects the fact that the exact measures that may be required will follow the conclusions of the AA. Until the AA is completed and final Conservation Objectives and management measures are provided for the pSAC it is not possible to define the required mitigation or management measures with greater precision.
12. EATL acknowledge that any required mitigation or management measures should be precise, effective and deliverable in order to maintain the integrity of the pSAC. The Plan is designed to ensure that this will be the case once any required measures have been defined. Section 2 provides an outline schedule for refinement and approval of the Plan.
13. EATL believe that condition 13(2) secures necessary mitigation within the DML, whilst allowing scope for refinement of the precise mitigation measures to be adopted through consultation once final Conservation Objectives and management measures are available for the pSAC, and once final construction methods for the project have been confirmed. This will enable use of the most appropriate project related measures to be confirmed based on best knowledge, evidence and proven available technology at the

time of construction. This approach will also remove the need to revise the DML condition should the most suitable measures to be adopted change between the time of consent and construction.

14. Proposed condition:

Pre-construction plans and documentation

13(2) In the event that driven or part-driven pile foundations are proposed to be used, the licenced activities, or any phase of those activities may not commence until an East Anglia THREE Project Southern North Sea pSAC Site Integrity Plan which accords with the principles set out in the In Principle East Anglia THREE Project Southern North Sea pSAC Site Integrity Plan has been submitted to the MMO and the MMO is satisfied that the plan provides such mitigation as is necessary to avoid adversely affecting the integrity (within the meaning of the 2007 Regulations) of a relevant site, to the extent that harbour porpoise are a protected feature of that site.

13(3) For the purpose of paragraph (2)

(a) the Southern North Sea possible Special Area of Conservation must be treated as a European offshore marine site until

(i) that Area (or any part of it) becomes a European offshore marine site or a European site; or

(ii) it is decided that no part of that Area should be a European offshore marine site or a European site; and

(b) harbour porpoise must be treated as a protected feature of the Southern North Sea possible Special Area of Conservation.

1.3 Structure of the Plan

15. Following a brief introduction, including details of the proposed pSAC condition to be included in the relevant DMLs, the in Principle Plan outlines consultation undertaken, an outline schedule for refinement of the Plan, a brief description of the project and a summary of the current status of the Southern North Sea pSAC. It then provides an overview of the conclusions of the HRA; and mitigation and management measures relevant to the pSAC. Following the completion of the AA, post consent, the Plan will be revised and updated.

2 Consultation

2.1 Pre-consent

16. EATL have consulted on the structure and content of the Plan, as well as the proposed pSAC condition for inclusion in the relevant DMLs, with the MMO and Natural England. Their comments have been taken into account in the drafting of this document and a consultation log is provided as Appendix 1.
17. The Wildlife Trusts and Whale and Dolphin Conservation have also been provided draft versions of this document for comment during the Examination process. Their comments have also been taken into account in the drafting of this document and are included in the consultation log at Appendix 1.

2.2 Post consent

18. This section of the Plan will capture any ongoing consultation with the MMO and relevant bodies as required by this Plan. EATL accepts that there will be an ongoing requirement to review the need for project mitigation and management measures with the MMO and other relevant bodies as project design and construction plans are progressed. A consultation programme will be developed at the post consent stage. This programme will be approved in writing by the MMO.

2.3 Schedule for agreement of the Plan

19. It is not possible at this stage to determine exact dates for agreement and refinement of the Plan. However, key milestones have been outlined in Table 1 to signpost the likely development of the Plan between consent and construction.

Table 1: Milestones for refinement and agreement of the Plan (Indicative only)

Indicative stage	When	Action	Relevant Authority/Consultee
In-principle Plan developed	Prior to close of examination	Drafted by EATL, review and agreement in approach.	MMO and Natural England; TWT and WDC
Consent granted and AA	Summer 2017	EATL review in principle Plan, identify areas for revisions/updates.	Internal only
Southern North Sea pSAC final Conservation Objectives and Management measures are defined/ further advice is provided/site is adopted.	Unknown (it is not possible to determine when this may occur)	EATL review in principle Plan, identify areas for revisions/updates once further guidance on the pSAC is received. If required EATL will undertake consultation to ensure any required thresholds for disturbance or noise levels are captured in the Plan.	MMO, Natural England , TWT and WDC
Draft design	Pre-construction	EATL will be refining the project	Internal only

Indicative stage	When	Action	Relevant Authority/Consultee
- if applicable		design during the pre-construction period. Updates to design that could impact the conclusions of the AA may be subject to further assessment if deemed appropriate in consultation with the relevant authority. Any updated assessment will also require consideration of mitigation and management measures outlined in the Plan.	
Submission and review of draft Plan and any associated documentation	Minimum of 12 months prior to commencement of pile driving	The Plan will be updated to capture all assessments and mitigation measures. Alongside the draft Plan implementation plans, methods statement and monitoring requirements will also be drafted for any required measures.	MMO, Natural England , TWT and WDC
Noise Prognosis	Minimum of 9 months prior to pile driving	An updated noise assessment based on final foundation and installation design and installation shall be submitted to the MMO The MMO will disseminate the Noise Prognosis to such parties as it considers necessary in order to facilitate consultation on the Final Design.	MMO and NE, with copies sent to TWT and WDC.
Final design	Approximately 9 months prior to construction	EATL will confirm the project design and installation techniques during the pre-construction period. Updates to design that could impact the conclusions of the AA may be subject to further assessment if required by the competent authority. Based on the final project design, an updated assessment will be undertaken if necessary, this will include consideration of in-combination effects. Updates to the assessment that could impact the conclusions of the AA may be subject to further assessment if required by the competent authority. Any assessment will also include the efficacy of mitigation or management measures.	MMO and Natural England; with copies sent to TWT and WDC.
Final Plan sign-off	Minimum 4 months prior to	The draft Plan will be updated and finalised.	MMO to approve.

Indicative stage	When	Action	Relevant Authority/Consultee
	commencement of pile driving	The Final Plan will be submitted four months prior to the commencement of pile driving for written approval from the MMO prior to any piling works commencing.	
Construction monitoring and reporting	Construction (not expected before 2021)		MMO

3 Description of Project

20. We have not included a full description of the project in the Plan as this is available in the primary application documentation (see Chapter 5 Description of the Development, (Document Reference 6.1.5) and Chapter 12 Marine Mammal Ecology (Document Reference 6.1.12). However, as the project description is refined post consent this section of the Plan will be updated to reflect any relevant changes.

4 Southern North Sea pSAC for Harbour Porpoise

21. The Southern North Sea pSAC is the largest of the pSACs proposed for the conservation of harbour porpoise. The only qualifying feature of the site is harbour porpoise (the Habitats Directive Annex II species). The Southern North Sea pSAC boundary is based on a modelling prediction of harbour porpoise habitat (Heinänen and Skov 2015), and harbour porpoise densities are linked to this modelled suitable habitat. JNCC (2015) have also defined seasonal (summer and winter) areas of the pSAC reflecting how the importance of the site to harbour porpoise varies.

4.1 Draft Conservation Objectives

22. The draft Conservation Objectives for the proposed Southern North Sea pSAC are designed to ensure that the obligations of the Habitats Directive can be met. Article 6(2) of the Directive requires that there should be no deterioration or significant disturbance of the qualifying species or to the habitats upon which they rely. This Plan sets out how the project will identify, agree and implement suitable and appropriate mitigation measures to ensure that is upheld.
23. The draft Conservation Objectives for the site are (JNCC and Natural England 2016):
- To avoid deterioration of the habitats of the harbour porpoise or significant disturbance to the harbour porpoise, thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to maintaining Favourable Conservation Status (FCS) for the UK harbour porpoise.*
- To ensure for harbour porpoise that, subject to natural change, the following attributes are maintained or restored in the long term:*
- 1. The species is a viable component of the site;*
 - 2. There is no significant disturbance of the species; and*
 - 3. The supporting habitats and processes relevant to harbour porpoises and their prey are maintained.*
24. These draft Conservation Objectives ‘are based on considerations of the ecological requirements of the species within the site, yet their interpretation is contextualised in their contribution to maintaining¹ FCS at a wider scale. With regard the Southern North

¹ Maintain implies that, based on our existing understanding, the feature is regarded as being in favourable condition and will, subject to natural change, remain in this condition after designation (JNCC & Natural England 2016).

Sea site, harbour porpoise need to be maintained rather than restored' (JNCC and Natural England 2016).

4.2 Advice on Management Measures

25. Specific management measures are yet to be developed for the pSAC, however JNCC and Natural England (2016) advise that *'the site should be managed in a way that ensures that its contribution to the maintenance of the harbour porpoise population at FCS is optimised, and that this may require management of human activities occurring in or around the site if they are likely to have an adverse impact on the site's Conservation Objectives either directly or indirectly identified through the assessment process'*.
26. In the absence of management measures for the pSAC, EATL are confident that their commitment to develop a MMMP, Project Southern North Sea Site Integrity Plan and EPS licencing in consultation with the relevant authorities in the pre-construction period will ensure that project management and mitigation measures, if deemed necessary, are secured and will use the most appropriate methods therefore upholding the Conservation Objectives.

5 Project Mitigation and Management Measures

5.1 Potential Project and In-combination Effects

27. The HRA Screening (Document Reference 5.4, Section 2.5.4) and consultation with Natural England (*Appendix 12.1* (Document Reference 6.3.12 (1)) of the East Anglia THREE DCO application) identified the proposed Southern North Sea draft SAC (dSAC, now pSAC) for harbour porpoise as the only Natura 2000 site for marine mammals requiring further assessment for the proposed East Anglia THREE project. Section 2.5.4 of the HRA Screening (Document Reference 5.4) identified the following potential effects on the harbour porpoise qualifying feature:
- Potential disturbance and displacement as a result of increased noise levels generated during construction;
 - Changes in prey availability during construction, operation and decommissioning; and
 - Increased collision risk with vessels during construction, operation and decommissioning.
28. The potential for any lethal effects and auditory injury (instantaneous onset of Permanent Threshold Shift (PTS)) associated with underwater noise has been screened out of the HRA assessment, as proposed embedded mitigation measures associated with pile driving will ensure this is not a risk for marine mammals (as agreed through the Evidence Plan process and in response to the Preliminary Environmental Information Report consultation (see section 12.1.5.3 of Document Reference 6.3.12 (1))).
29. Other sources of underwater noise (mostly low frequency noise) during installation and operation (such as vessel noise, seabed preparation, rock dumping, cable installation and maintenance, or turbine noise) are not predicted to cause lethal effects or auditory injury (defined as PTS) to marine mammals as assessed in the Environmental Statement (ES; Document Reference 6.1.12). As stated in Table 12.2 of the ES, explosives (which do have the potential to cause lethal effects or injury) will not be used during decommissioning.
30. Based on the draft Conservation Objectives there is no indication that the proposed East Anglia THREE project would not enable the draft Conservation Objectives to be upheld and there should be no potential for a likely significant effect (LSE) from the proposed East Anglia THREE project alone.
31. In order to reach a conclusion of no adverse effect on site integrity, the HRA concluded that in-combination with other plans or projects further mitigation and management

measures may be necessary in relation to potential disturbance from pile driving noise. The potential for an adverse effect on site integrity was not concluded for any of the other in-combination assessments. As such, mitigation or management measures are only considered in relation to disturbance from pile driving noise at East Anglia THREE in this Plan.

32. Until further revisions are made to the other plan and project descriptions and timelines included in the HRA in-combination assessment as well as further guidance being provided by the JNCC and Natural England on management measures for the pSAC, the potential mitigation and management measures for EATL cannot be fully defined. Therefore, EATL have listed project related measures that may be required and that can be secured through this Plan if necessary (see Section 5.4 of this document).
33. Following completion of the AA by the competent authority it is acknowledged that the Plan may require revision to reflect the conclusions of the AA. The AA, any new conservation objectives and, following the designation of the pSAC as a SAC, any Review of Consent outcomes will be used to determine any mitigation and management measures that need to be secured in the Plan post consent.

5.2 Embedded mitigation and the MMMP

34. Whilst predicted noise levels in very close proximity to the driven pile are comparable to those estimated for injury and mortality, the establishment of exclusion zones and soft-start procedures, through the MMMP, would reduce the risk of injury to any marine mammals located within a few metres of the pile during installation to negligible levels. EATL have provided a draft MMMP (dMMMP) with the DCO application (Document Reference 8.15 of the East Anglia THREE DCO application).
35. The dMMMP is in line with current best practice to prevent mortality and injury to marine mammals from pile driving (JNCC, 2010).
36. The final MMMP will be developed in the pre-construction period and will be based upon best available information and methodologies at that time, in consultation with the relevant authorities. Embedded mitigation has been agreed during consultation with Natural England, as has the approach to developing the MMMP post consent (Document Reference 6.3.12 (1)).
37. The MMMP is secured under Condition 13(1)(f) of the deemed Marine Licences (DML) for generation and transmission assets, in schedules 10, to 13 of the draft Order), and the final MMMP will require written approval from the MMO at least four months prior to construction.

5.3 Licensing

5.3.1 EPS

38. An EPS Licence will be sought from the MMO supported by a detailed risk assessment of the potential risk to harbour porpoise (and any other EPS deemed necessary at the time of application) based on the finalised project parameters and piling schedule/details.
39. EATL has received written confirmation from the MMO that, based on available information and current evidence provided, the MMO see no reason not to issue an EPS licence under regulation 53 of the Conservation of Habitats and Species Regulations 2010 on submission of an application (Document Reference: Deadline 2/ MMO Letter re EPS Licence/ ECMM14).
40. As stated in section 12.3.2 of Chapter 12 Marine Mammal Ecology of the ES, EATL will commit to the use of soft-start procedures and exclusion zones to prevent the risk of mortality and auditory injury to EPS during pile driving activities.

5.3.2 Marine Licences

41. Associated works which may give rise to potential impacts for underwater noise will be subject to additional licensing (post DCO consent) and notifications e.g. geophysical surveys and unexploded ordnance (UXO) clearance.

5.4 East Anglia THREE Project Southern North Sea pSAC site integrity measures

42. Following the HRA, EATL has determined that project management and mitigation measures may be required, regarding the potential for disturbance to harbour porpoise from pile driving noise.
43. This section of the Plan sets out the measures currently available or likely to be available in the future, which could be applicable to the project. For each of the measures information will be provided to detail in what way it will result in the avoidance of significant disturbance to harbour porpoise and allow the conclusion of 'no adverse effect beyond reasonable scientific doubt' on the pSAC. Note there are two relevant issues to be considered here:–
 - The final project design has not yet been confirmed (as detailed in the HRA); and
 - The pSAC management measures are unavailable.
44. The adopted mitigation measures will be agreed in the period between consent and the commencement of piling in accordance with the requirements of this Plan and as secured by condition 13(2) of the relevant DMLs following an updated assessment of the

potential impacts from pile driving and an assessment of the efficacy of the proposed mitigation measures. Potential measures are defined below, however, confirmation of any measure(s) that will be employed cannot be confirmed until the project design is finalised, and the final Conservation Objectives and management measures are known for the pSAC. At that point it will be clear what any required measures must achieve in terms of mitigation.

45. The project measures outlined below are in addition to the mitigation secured within the MMMP.
46. Potential mitigation to be delivered by the project management measures include:
 - Spatial: Minimising the total area of ‘disturbance’ at any one time. This could be a reduction in the area of the North Sea MU or pSAC which is subject to noise levels (based on a threshold to be determined following further guidance) that may cause disturbance to harbour porpoise; and
 - Temporal: Minimising the duration of additional underwater noise generated through piling events over any given time frame that may cause ‘disturbance’ to harbour porpoise in the North Sea MU or the pSAC (based on a threshold to be determined following further guidance).

5.4.1 Measure 1: Scheduling of pile driving

47. Amendment of the piling schedule potentially including seasonal restrictions could allow a reduction in the total in-combination area of disturbance from multiple projects, thus reducing the area of the pSAC that harbour porpoise may be avoiding at any one time. It could also be used as a measure to reduce the duration of any in-combination continuous disturbance within a given time period (month, season or year).
48. Amendments to the scheduling of pile driving will allow the MMO to schedule piling, having regard to previous, ongoing and future piling associated with other offshore developments and other activities likely to act in-combination such as seismic surveys.

5.4.2 Measure 2: Alternate foundation methodologies

49. The use of alternate foundation methods, within the consented project envelope, such as suction piles or gravity base foundations, would result in lower noise levels than pile driving during the construction of the wind farm. The in-combination total area of disturbance to harbour porpoise could be reduced by the implementation of alternate methods.
50. Developments are on-going in relation to methods such as vibro-piling and double walled piles which also have the potential to greatly reduce the area of potential disturbance from pile driving.

5.4.3 Measure 3: Noise mitigation systems

51. Noise mitigation systems are currently being developed that enable a reduction of pile driving noise (decibels) at source. These methods currently include various types of bubble curtain, hydro sound dampers, screens or tubes, and cofferdams.
52. By a reduction in the noise at source the total area of potential disturbance to harbour porpoise would be reduced. It should be noted that suitability of any noise mitigation system will be dependent on a number of factors including pile diameter and length, ground conditions, and water depth. These factors will be considered in any assessment of the efficacy of the measure. The information to inform this selection will be contingent on the selection of the chosen foundation type and supplier which will only be available once contracts are being finalised post consent and Financial Investment Decision (FID).
53. Prior to the start of construction a noise prognosis for the final design of the wind farm will be prepared and submitted to the MMO. This will clearly set out the predicted noise levels to be generated by the preferred foundation type, installation technique and construction programme. This will then be used to update the commitments within this Plan. An outline of the schedule for this work has been provided in Table 1.

5.4.4 Other potential measures

54. The Plan allows the consideration and assessment of other relevant technologies or methodologies that may emerge in the future. This will ensure that any new technologies or methods that may occur prior to construction can be used during construction of the project.
55. Given the time lag between consent and the start of offshore construction (up to seven years); it is likely that new measures will be available. The Plan should not be restricted to measures only available at the time of consent.

5.4.5 Measures not applicable

56. Seasonal restrictions could be captured by a schedule of pile driving and EATL believes that inclusion of seasons separately is unnecessary duplication of 5.4.1. Although it should be noted that as the location of the East Anglia THREE project lies within both summer and winter areas of the pSAC, this means that pile driving noise could radiate into both areas throughout the year.
57. Changes in the location of wind turbine generators are not included in the Plan as a potential project mitigation or management measure by EATL. The East Anglia THREE project is located entirely within the pSAC, as such it is not possible to relocate wind turbine generators to locations outside of the pSAC, or to maximise distance from the pSAC boundary.

5.4.6 Assessment of efficacy of measures and implementation

58. Prior to the implementation by EATL of any project mitigation or management measures an assessment of the ability of each measure (alone or in combination with other measures) will be required to ensure the approach is able to achieve any required reduction in disturbance to harbour porpoise. The assessment is expected to include a degree of likely confidence in each measure.
59. EATL will work with the MMO and other statutory consultees to ensure that any approach to such assessment, is done in timely manner, and using the most robust approach possible.
60. Following assessment of project mitigation and management measures EATL will work with the MMO to develop a timescale for delivery of any measures, an implementation plan, as well as agree any reporting or monitoring requirements. The implementation plan will include the approach to enforcement of the measures, and how any failures will be rectified.
61. It is anticipated that following the provision of final Conservation Objectives for the pSAC and final management measures, details of acceptable levels of disturbance will be provided, as well as noise thresholds above which noise is considered to disturb harbour porpoise. This will enable an approach to assessment to be agreed, which will then enable the requirements of any project mitigation and management measures employed by EATL to be identified and consulted upon, and appropriate implementation plans to be developed.

6 Summary

62. The Conservation Objectives for the Southern North Sea pSAC remain as draft and Management Measures are yet to be confirmed. Once further guidance from JNCC and Natural England is provided the Plan will be updated in consultation with the MMO and other relevant bodies.
63. The Plan will be used to capture identification, consultation and assessment of any project management or mitigation measures required to ensure 'no adverse effect beyond reasonable scientific doubt' on the pSAC.

7 References

Heinänen, S. and Skov, H (2015). The identification of discrete and persistent areas of relatively high harbour porpoise density in the wider UK marine area, JNCC Report No.544 JNCC, Peterborough.

JNCC (2015) SAC selection; harbour porpoise *Phocoena phocoena*. Available at: <http://jncc.defra.gov.uk/protectedsites/sacselection/species.asp?FeatureIntCode=S1351>

JNCC and Natural England (2016) Harbour Porpoise (*Phocoena phocoena*) possible Special Area of Conservation: Southern North Sea Draft Conservation Objectives and Advice on Activities. Advice under Regulation 18 of The Offshore Marine Conservation (Natural Habitats, etc.) Regulations 2007 (as amended), and Regulation 35(3) of The Conservation of Habitats and Species.

JNCC et al. (2010). Draft EPS Guidance - the Protection of marine European Protected Species from injury and disturbance. JNCC, CCW and NE. Habitats and Species Regulations 2010 (as amended).

Appendix 1 Table of Consultation

64. A draft of this In-Principle Plan was provided to the MMO for comment on the 30th September 2016. MMO provided comments on the 2nd September. These comments were incorporated into a second draft of the In-Principle Plan, which was then sent to Natural England and the MMO for comment on the 8th September following further discussions with all parties. Natural England provided comments on the 14th September which were then incorporated into the draft submitted at Deadline 4 (REP-014)
65. Following Deadline 4 comments were received from MMO and The Wildlife Trusts.

Consultee	Comment	Response
MMO 2 nd September 2016	General The document is welcomed to the extent that it provides more clarity on the framework for finalising and implementing the mitigation. However, more clarity on timings of approach including submissions, revisions and provision of supporting information should be included	Noted. Table 1 was added with indicative milestones, including interaction with stakeholders and feedback mechanisms
	Section 1.1 Is this document only considering disturbance of harbour porpoise (and not other parts of draft COs i.e. impacts to supporting habitats and their prey?)	Clarifications added that this is just covering disturbance
	Section 1.1 Clarity is needed. Is this to be a certified document? Is it being considered draft until it is submitted to meet DML?	Yes, this will be a certified 'In Principle' document and will work like the MMMP/Monitoring Plan
	Section 1.2.1 Mitigation measures should be precise, effective and deliverable and clearly defined. What mitigation should be defined and result from the AA. Important that AA is consulted upon.	Additional text added to clarify links to the Appropriate Assessment
	Section 1.2.1 We have some concerns about the proposed wording of conditions but welcome the detangling of MMMP from disturbance of mammals	Since the comments were received there have been further discussions on the wording. EATL welcomes MMO's support on the approach.
	Section 5.1 MMO would have expected that the projects considered in combination would be included in this section? It allows understanding of WCS to be considered.	Links to the HRA have been added to the text which includes the projects considered at this stage.
	Section 5.1 Mitigation measures would need to be defined enough to provide beyond reasonable	Further detail on measures added to section linking to the outcome of the Appropriate Assessment

Consultee	Comment	Response
	scientific advice a conclusion of no AEOI.	
	Section 5.4 Worst case parameters are available for the project	As this is a living document, and worst case assumptions are listed in the HRA, these do not need to be added to this document.
	Section 5.4 Mitigation measures should be defined and secured prior to a decision being made, and the detail finalised and mitigation delivered post consent. They can be revised following changes in design etc. post consent	Noted and secured by condition 13(2) of the dDCO. However, given the status of management measures EATL cannot provide any values for what the final plan will achieve, therefore only the principles are covered in this document
	Section 5.4 Removing certain potential mitigation measures which are not feasible is welcomed to help focus on mitigation measures that are deliverable.	Noted
Natural England 14 th September	General Natural England welcomes the Southern North Sea pSAC Site Integrity Plan as a stand-alone document to set out the approach to delivering any management or mitigation measures that are required to avoid significant disturbance of harbour porpoise and allow the conclusion of no adverse effect on site integrity to be made in relation to the Southern North Sea pSAC from the East Anglia THREE project	Noted
	General Natural England would welcome further consideration and clarity being provided with respect to the timings and submission of work in relation to the delivering of some of the documents described in the Plan as outlined further below. It is imperative that adequate time is allowed prior to construction for consideration and implementation of the most appropriate mitigation and/or management measures.	Noted. EATL will continue to discuss refinement to the indicative milestones provided in this draft.
	Section 1.2 The final part of section 1.2 is confusing and may benefit from re-wording. It is not clear if the intention is to suggest that EPS licensing is the only way to deal with the issue of disturbance. Natural England advises that an EPS licence is not a form of mitigation to reduce acoustic disturbance. It may help to add in the wording ' <i>...to reduce acoustic disturbance</i> ' after the word 'requirements' in the final sentence and to make the intended role of EPS Licensing clearer.	Noted, the wording has been changed as suggested.
	Section 5.4.3 Paragraph 48 states a noise prognosis report shall be prepared and submitted to the MMO prior to the start of construction. Given the	An indicative timescale of at least 9 months prior to the start of piling has been stated in the timeline.

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	<p>complexities that may be involved in this and the implications for mitigation at East Anglia THREE; how long before construction will the noise prognosis be undertaken and can timings be secured in the Site Integrity Plan to ensure that enough time is allowed for it to be properly considered? This would also apply to the assessment of the ability of any mitigation measure alone or in-combination with other measures discussed in paragraphs 53-54.</p>	
	<p>Natural England also queries whether, given the potential complexities involved, four months prior to construction is early enough for the MMMP to be submitted as stated in paragraph 31 and secured under Condition 13(f) of the DML.</p>	<p>EATL consider 4 months as the standard for marine licences to be acceptable for submitting the MMMP, however EATL welcome further discussion with the MMO/NE as required.</p>
	<p>Table 1 Natural England welcomes the inclusion of Table 1 in Version 5 of the Plan, but the milestone for 'Submission and Review of draft Plan' is missing and as this includes all the implementation plans, method statements and monitoring requirements, we feel it is key to have this included.</p>	<p>This has now been added with timescale stated of minimum of 6 months prior to pile driving</p>
	<p>Natural England welcomes the clear outlining of which mitigation measures may be feasible for East Anglia THREE. However, we feel further detail should be included for each of these in future iterations of the Plan.</p>	<p>Further detail will added in future iterations of the Plan as more information becomes available</p>
	<p>Section 5.4.5 states that seasonal restrictions on pile driving are not included in the Plan as a potential mitigation or management measure by EATL, but there is no real justification for this provided and Natural England believes a seasonal/appropriate temporal restriction at East Anglia THREE could potentially be beneficial and may help to manage in-combination impacts on the pSAC. Therefore, we would advise that restrictions on pile driving be removed from section 5.4.5 and considered alongside measures 1-3.</p>	<p>EATL agrees that any seasonal restriction is covered by Measure 1 Schedule of Piling and therefore to include both is unnecessary duplication. This has been updated.</p>
<p>MMO, 6th October 2016</p>	<p>The MMO has reviewed the draft Site Integrity Plan (SIP) submitted by the applicant at Deadline 4 and is, in general, content with the approach taken. However, further clarity is required in respect of in-combination assessment. It is the MMO's view that in-combination effects should be considered based upon what is known at the time of decision, and should not be scoped out as stated at paragraph 5 on page 3 of the plan.</p>	<p>In-combination effects have been assessed in detail as part of the Information for the HRA (REP4-016) and will be a key consideration for the Appropriate Assessment. Therefore it is not deemed necessary to repeat that information within the In Principle SIP. It is the intention that the final SIP would take account of any projects that may cause in-combination effects at the time of construction of East Anglia THREE and as stated in paragraph 33 of the document: <i>"Following completion of the AA by the competent authority it is acknowledged that</i></p>

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		<p><i>the Plan may require revision to reflect the conclusions of the AA. The AA, any new conservation objectives and, following the designation of the pSAC as a SAC, any Review of Consent outcomes will be used to determine any mitigation and management measures that need to be secured in the Plan post consent”</i></p> <p>Furthermore, Table 1 of the In Principle SIP commits EATL to conduct the following, approximately 9 months prior to construction: <i>“Based on the final project design, an updated assessment will be undertaken if necessary, this will include consideration of in-combination effects. Updates to the assessment that could impact the conclusions of the AA may be subject to further assessment if deemed appropriate in consultation with the relevant authority.”</i></p>
	<p>Consideration should be given within the SIP as to how the Review of Consents may affect the mitigation and management measures outlined in the Plan. The review will consider previously consented projects and may require further mitigation measures to be applied to projects, through variation to DCO/DML conditions.</p>	<p>The Applicant is aware that ‘the Review of Consents may affect the mitigation and management measures outlined in the Plan’ and that the ‘review will consider previously consented projects and may require further mitigation measures to be applied to projects, through variation to DCO/DML conditions.’</p> <p>To take this into account and as detailed in Table 1, throughout the refinement of the SIP there would be several opportunities to update the SIP prior to construction, as stated above this will include a review of the in-combination assessment, and will also include a review of the mitigation measures. As the SIP is refined more detail can be added with regard to the Review of Consents and the potential implications of the review and any further mitigation measures that may be applied to projects. As such the Applicant’s view is that it is not necessary to make any further amendments to the In Principle SIP in this regard this stage.</p>
	<p>Paragraph 18, on page 6 refers to the development of a post consent consultation programme. This programme should be approved in writing by the MMO.</p>	<p>The text in paragraph 18 has been amended to include the following statement: <i>“This programme will be approved in writing by the MMO”</i></p>
	<p>The MMO welcomes the inclusion of a timetable for refinement and agreement of the plan (Table 1) but queries whether submission of a draft plan, (at 12 months prior to commencement of pile driving), noise prognosis, (at 9 months prior to pile driving)</p>	<p>The Applicant would also like to re-iterate paragraph 19 of the In Principle SIP, which states that: <i>‘It is not possible at this stage to determine exact dates for agreement and refinement of the Plan. However, key milestones have been</i></p>

Consultee	Comment	Response
	<p>and final design, (at 9 months prior to construction) can be dealt with in a more streamlined manner. Can a draft plan be adequately reviewed before noise propagation is known?</p>	<p><i>outlined in Table 1 to signpost the likely development of the Plan between consent and construction</i>.</p> <p>As such, the suggested timelines are only indicative of when the milestones presented in Table 1 may be completed. Table 1 states that the draft Plan will be submitted a 'Minimum of 12 months prior to commencement of pile driving' and the noise prognosis would be a 'Minimum of 9 months prior to pile driving'. It may well be the case that the two activities are running in parallel. In order to get the most accurate noise prognosis, it is fundamental to wait until the final foundation and installation design has been approved. However significant updates may be able to be made to the In Principle SIP prior to this, including reviewing approaches to assessments and mitigation measures, based on latest findings and current guidance at the time. Therefore, the Applicant believes it is not appropriate to amend the indicative timetable at this stage.</p>
	<p>The Noise Prognosis referred to in Table 1 states that it will be submitted to the MMO but has no further action. It should be made clear in the Plan that the MMO will disseminate the Noise Prognosis to such parties as it deems necessary in order to facilitate consultation on the Final Design.</p>	<p>Table 1 has been amended to include the following statement:</p> <p><i>"The updated noise assessment based on final foundation and installation design and installation shall be submitted to the MMO. The MMO will disseminate the Noise Prognosis to such parties as it considers necessary in order to facilitate consultation on the Final Design."</i></p> <p>It should also be noted that Table 1 has been updated to confirm that EATL will send copies direct to TWT and WDC.</p>
	<p>Final Plan sign-off referenced in Table 1 is to be submitted 4 months prior to commencement of pile driving; this must have MMO written approval prior to any piling works commencing.</p>	<p>Table 1 has been amended to include the following statement:</p> <p><i>"The Final Plan will submitted as a minimum four months prior to the commencement of pile driving for written approval from the MMO prior to any piling works commencing."</i></p>
	<p>Paragraph 33 on page 12 states that, upon completion, the Appropriate Assessment (AA) may be used to determine any additional mitigation and management measures; however this should also include reference to any new conservation objectives and any review of consent outcomes, as these may also result in additional mitigation</p>	<p>Paragraph 33 has been amended to include the following text:</p> <p><i>"Following completion of the AA by the competent authority it is acknowledged that the Plan may require revision to reflect the conclusions of the AA. The AA, any new conservation objectives and, following the</i></p>

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	requirements.	designation of the pSAC as a SAC, any Review of Consent outcomes will be used to determine any mitigation and management measures that need to be secured in the Plan post consent.”
	Paragraph 37 states that the final MMMP will be ‘agreed’ with the MMO; this should be amended to state that the MMMP will require ‘written approval’ from the MMO at least 4 months prior to construction.	Paragraph 37 has been amended to include the following text: <i>“The MMMP is secured under Condition 13(1)(f) of the deemed Marine Licences (DML) for generation and transmission assets, in schedules 10, to 13 of the draft Order), and the final MMMP will require written approval from the MMO at least four months prior to construction..”</i>
	The practicalities of scheduling pile driving, as described in paragraph 48 on page 14 of the plan requires further consideration, particularly in reference to the level of in-combination assessment conducted as part of the HRA process. Initiating and managing a prohibition or restriction on pile driving for this and/or other projects may be problematic and thought should be given as to the appropriate authority for undertaking the necessary assessment and determination. It is advisable that the AA should consider in-combination effects (based upon the details currently known), that the need for scheduling of piling between projects should be considered and identified, where possible, prior to the determination of the application.	The Applicant acknowledges that the practicalities of scheduling pile driving, as described in paragraph 48 on page 14 of the In Principle SIP requires further consideration. Initiating and managing a prohibition or restriction on pile driving for this and/or other projects needs to be agreed at a strategic level. The Applicant agrees that the AA should consider in-combination effects (based upon the details currently known and has provided as much information as possible in this regard in the Information for the HRA (Document Reference: Deadline 6 / HRA / The Applicant)) in order to support the AA to be completed by the Competent Authority.
TWT, 6 th October 2016	The Wildlife Trusts welcome the SIP as an approach to the delivery of mitigation and management measures to address the impact of the in-combination effects of pile driving noise on the Southern North Sea pSAC. At this stage we cannot agree with the conclusion of no LSE for the project alone. Therefore, the SIP may also be required to deliver mitigation measures for the project alone	Throughout the refinement of the SIP there will be several opportunities to update the SIP prior to construction; this will include a review the project alone and in-combination mitigation measures that may be required.
	The Wildlife Trusts support the mitigation measure principles as outlined in section 5.4.1 to 5.4.4 of the SIP. The applicant has outlined themselves that detailed mitigation and management measures cannot be fully defined until a number of parameters have been agreed or defined, e.g. construction methodology, assessment against final conservation objectives and management advice for the pSAC. Due to this uncertainty, we would welcome a SIP expert working	As outlined in Table 1 of the SIP, there is a proposed timetable for the development and review of the SIP and an opportunity through consultation for input into the development and delivery of this document post consent. The Applicant will consider and discuss the possibility of an expert working group, however at this time feels this might be more appropriate at a strategic, rather than project, level.

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	<p>group to assist in the development and delivery of this document post consent. It would be useful to see further detail of the mitigation in future iterations of the SIP.</p>	
	<p>Section 5.4.5 outlines that seasonal restrictions on pile driving are not included in the Plan because the project lies within both summer and winter areas of the pSAC. However, we believe it would be beneficial to include some consideration on seasonality of piling activity. Specifically, we know very little in relation to seasonality with regards to breeding and calving and as more information becomes available, it would be useful to consider this.</p>	<p>Section 5.4.5 has been updated to reflect the position that adding seasonal restrictions would duplicate any piling schedule restrictions already accounted for.</p> <p>The Applicant acknowledges that currently very little is known with regards to breeding and calving in relation to the proposed pSAC. If, or when, more information becomes available this would be considered further in the SIP.</p>
	<p>The Schedule of Agreement of the plan in section 2.3 provides useful indicative timescales for key milestones and we are pleased to see The Wildlife Trusts listed as a consultee in some sections. However, we would request to be fully listed in the “final submission and review of the draft Plan and any associated documentation” (not only draft), and also be listed under “noise prognosis”, “final design” and “Final plan sign-off”. We also feel that noise prognosis and final design should be listed before the submission and review of draft Plan and associate documents and the timescales altered to reflect this. We consider it appropriate for the timescales to be listed as a condition of the application.</p>	<p>Table 1 has been updated.</p>
	<p>The applicant notes in paragraph 35 that “the dMMMP is in line with the current best practice to prevent mortality and injury to marine mammals from pile driving”. We would like to note that we believe this guidance is out of date and is not fit for purpose for such large-scale wind farm developments. We accept that the Applicant has no other guidance to go on, but this is why we advocate strong precaution in relation to mitigation</p>	<p>The Applicant notes The Wildlife Trusts comment and as outlined in the EIA and Information for the HRA a precautionary approach has been taken throughout the assessments on which the required mitigation will be determined.</p>
	<p>We welcome the clarification in paragraph 10 of the SIP in relation to the requirements of the DMLs. “Any requirement for capturing mitigation requirements in relation to mortality and injury to marine mammals is captured by the MMMP (and secured in Condition 13(f) of the DML). Any requirements to reduce acoustic disturbance in relation to European Protected Species (EPS) will be captured through the EPS Licencing process (see Section 5.3.1) and any requirements in</p>	<p>Noted</p>

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	<p>relation to the Southern North Sea pSAC will be secured by conditions 13-(2) to 13-(4) of the DML.” We understand that the MMO has provided the Applicant with a letter of comfort that they see no objections to the granting of an EPS licence. However, we would like to highlight concern for the potential cumulative effects of multiple EPS licences which may be granted by the MMO for wind farm developments and the potential risk that this would have for the harbour porpoise population.</p>	
<p>Whale & Dolphin Conservation, 6th October 2016</p>	<p><i>The ExA invites responses related to the Applicant’s assessment of effects on the Southern North Sea pSAC [REP4- 016], the draft Site Integrity Plan (SIP) [REP4-013] and the drafting of Condition 13 of the dDMLs to secure the SIP [REP4-003 and 004].</i></p> <p>We would like to draw your attention to The Wildlife Trusts response to this question, as we echo their concerns and fully support, and agree with, their detailed response on this question</p>	<p>See above responses to the TWT comments.</p>
<p>Natural England 24th November 2016</p>	<p>We only have one suggested amendment to the SIP, it is in paragraph 5.4.1 (see below)</p> <p>Amendment of the piling schedule, <i>potentially including seasonal restrictions</i>, could allow a reduction in the total in-combination area of disturbance from multiple projects, thus reducing the area of the pSAC that harbour porpoise may be avoiding at any one time. It could also be used as a measure to reduce the duration of any in-combination continuous disturbance within a given time period (month, season or year).</p>	<p>Amendment made to paragraph.</p>
<p>TWT 1st December 2016</p>	<p>Many thanks for your email and an updated proposal.</p> <p>We appreciate the offer of further consultation with TWT on the SIP document</p>	<p>Table 1 amended to include consultation with TWT and WDC up to the “Submission and review of draft Plan and any associated documentation” stage.</p>