

# REPORT on the IMPLICATIONS for EUROPEAN SITES Able Marine Energy Park

An Examining Authority report prepared with the  
support of the Planning Inspectorate Secretariat

Version 2.1

October 2012

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## INTRODUCTION

Able Humber Ports Ltd. (the applicant) have applied to the Secretary of State for a development consent order (DCO) under section 37 of the Planning Act 2008 (as amended) for the proposed Able Marine Energy Park. The Secretary of State has appointed an Examining Authority (ExA) to conduct an examination of the application, to report its findings and conclusions and to make recommendations to the Secretary of State as to the decision to be made on the application.

The Secretary of State is the competent authority for the purposes of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (the Habitats Directive) and The Conservation of Habitats and Species Regulations 2010 (the Habitats Regulations) in relation to the application and the findings and conclusions on nature conservation issues reported by the Examining authority will assist the Secretary of State in making an appropriate assessment under the Habitats Regulations. This report compiles, documents and signposts information received during the examination of the Development Consent Order application. It is issued to ensure that the statutory nature conservation body, Natural England, is consulted and this process may be relied on by the Secretary of State for the purposes of Regulation 61(3) of the Habitats Regulations. This report, and the consultation responses received upon it, will inform the Examining Authority's report to the Secretary of State as to:

- the implications of the project for the European Sites in view of their conservation objectives, and
- whether the integrity of any of the European sites will be adversely affected.

The following documents have been used to inform this report:

### **Application Documents**

- Able Marine Energy Park Environmental Statement dated December 2011, document reference TR030001/APP/14b
- Able Marine Energy Park Habitats Regulations Assessment Report dated December 2011, document reference TR030001/APP/15
- Able Marine Energy Park Environmental Statement Response to Planning Inspectorate Questions dated June 2012

### **Representations**

- Able Marine Energy Park Supplementary Environmental Information dated June 2012, document reference TR030001/APP/14b
- Able Marine Energy Park response to the Planning Inspectorate questions (Rule 8 letter) dated June 2012
- Able Marine Energy Park Response to the Planning Inspectorate's Second Set of Questions, dated September 2012

- Able Marine Energy Park Applicant's comments on the Relevant Representations dated June 2012
- Able Marine Energy Park Responses to answers posed by the examiner dated 24 July 2012
- Able Marine Energy Park Applicant's comments on Written Representations dated August 2012
- Associated British Ports Written Representations dated 29 June 2012
- Associated British Ports Further Written Representations commenting on the replies to the ExA's Questions and the responses to the Relevant Representations dated 2 August 2012
- Associated British Ports Representations in relation to the Supplementary Environmental Information and applicant's comments on Written Representations dated 24 September 2012
- Environment Agency Summary of Written Representations dated 29 June 2012
- Environment Agency Answers to the Examining Authority's first written questions dated 29 June 2012
- Environment Agency Answers to the Examining Authority's 2nd round questions dated 7 September 2012
- Environment Agency Comments on other parties' responses to the Examining Authority's 1st written questions dated 3 August 2012
- Environment Agency Comments on response (by the applicant) to Relevant Representations made by the Environment Agency including comments on Supplementary Information submitted by the applicant
- Marine Management Organisation Written Representations dated 22 June 2012
- Marine Management Organisation responses to the Examining Authority's first questions dated 22 June 2012
- Marine Management Organisation Comments on Relevant Representations dated 22 June 2012
- Marine Management Organisation Comments on written responses and responses to comments on Relevant Representations dated 3 August 2012
- Marine Management Organisation Responses to the Examining Authority's second questions dated 7 September 2012
- Natural England Written Representations dated 29 June 2012
- Natural England's Response to Able comments on relevant representations dated 3 August 2012

- Natural England Examining Authority's Requests for Further Information & Written Comments under Rule 17 dated 7 September 2012
- Royal Society for the Protection of Birds Written Representations dated 29 June 2012
- Royal Society for the Protection of Birds Response dated 3 August 2012
- Royal Society for the Protection of Birds Examining Authority's Second Written Questions Response dated 7 September 2012

### **Statements of Common Ground**

- Statement of Common Ground on Shadow Habitats Regulations Assessment between Able Humber Ports Ltd and the Marine Management Organisation and Natural England dated 24 August 2012
- Statement of Common Ground between Able Humber Ports Ltd and the Marine Management Organisation, Natural England and the Environment Agency dated 27 July 2012

### **Hearings**

- Able Marine Energy Park Summary of applicant's case put at Specific-Issue hearings 11-September 2012
- Associated British Ports Summary of Oral Representations at HRA/Ecology Hearings 11th and 12th September 2012
- Associated British Ports Summary of Oral Representations at the Marine Hearing 13 September 2012
- Environment Agency Summary of oral representations made at the Issue Specific Hearings held on 11th, 12th & 13th September 2012
- Marine Management Organisation Written summary of the oral case put by the MMO at the issue specific hearings on the compensation site and associated HRA matters 11-12 September
- Marine Management Organisation Written summary of the oral case put by the MMO at the marine issue specific hearings on the compensation site 13 September
- Natural England Specific Issue Hearing on the compensation site, main site and associated HRA matters (Tuesday, 11 and Wednesday, 12 September 2012) and Specific Issue Hearing on marine issues (Thursday, 13 September 2012) plus supporting appendix

- RSPB Summary of the oral case put at the Issue Specific Hearing on the compensation site held on the 11 September 2012 and Habitats Regulations matters relating to the main development site held on 12 September 2012

## **Structure of the Report**

The report is in two parts:

The first part is a series of screening matrices for the European (Natura 2000) sites that might potentially be affected by the Marine Energy Park. These matrices collate evidence on whether the project is likely to have significant effects on the key features of each European site. It acknowledges that the Applicant and Natural England have agreed that the European sites on which significant effects are likely are the Humber Estuary Special Area of Conservation, the Humber Estuary Special Protection Area and the Humber Estuary Ramsar site.

The second part comprises matrices summarising the anticipated effects on the integrity of the Humber Estuary Special Area of Conservation, the Humber Estuary Special Protection Area and the Humber Estuary Ramsar site in the context of their conservation objectives. These matrices collate the information received within the submission and during the examination as listed in the previous section.

## **List of abbreviations**

**Able MEP: Able Marine Energy Park**

**ABP: Associated British Ports**

**EA: Environment Agency**

**MMO: Marine Management Organisation**

**NE: Natural England**

**RR: Relevant Representation**

**RSPB: Royal Society for the Protection of Birds**

**sHRA: Shadow Habitats Regulations Assessment**

**SIH: Specific Issue Hearing**

**SoCG: Statement of Common Ground**

**WeBS: Wetland Bird Survey**

**WR: Written representation**



## SCREENING FOR LIKELY SIGNIFICANT EFFECTS

The project is not connected with or necessary to the management for nature conservation of any of the European sites considered within the assessment. The project has been assessed by the Applicant as potentially having a significant effect on European sites within its vicinity, either alone or in combination with other projects. It has been subject to a screening exercise by the Applicant for likely significant effects of the project in relation to all the sites potentially affected.

The list of sites for inclusion within the assessment was presented within the applicant's Habitats Regulations Assessment Report.

### Potential Impacts

Potential impacts upon the Natura 2000 sites identified above which were considered within the applicant's report are provided in the table below.

#### *Impacts considered within the screening and effects on integrity matrices*

The potential impacts associated with the Marine Energy Park have been grouped into broad ecological impacts on the European site features as shown in the table below.

Designated site(s)	Impacts in submission information	Presented in screening Matrices as*
<b>Humber Estuary SAC/Ramsar</b>	<ul style="list-style-type: none"> <li>• Noise generated by construction activities including piling</li> <li>• Vibration generated by piling</li> <li>• Noise during operation of AMEP</li> <li>• Lighting during operation of AMEP</li> </ul>	<ul style="list-style-type: none"> <li>• Disturbance/displacement of species designated as European site features</li> </ul>
	<ul style="list-style-type: none"> <li>• Construction of the berthing pocket</li> </ul>	<ul style="list-style-type: none"> <li>• Change to intertidal habitat</li> </ul>
	<ul style="list-style-type: none"> <li>• Changes in suspended sediment concentrations as a result of piling, flooding of the compensation site and activities such as capital or maintenance dredging</li> <li>• Release of contaminated sediments as a result of dredging</li> </ul>	<ul style="list-style-type: none"> <li>• Changes to water quality leading to changes in aquatic ecology</li> </ul>
	<ul style="list-style-type: none"> <li>• Changes caused by existence of quay and disposal of dredge arisings to flow patterns and morphology.</li> <li>• Changes to the sediment budget caused by disposal of sediment outside the estuary</li> </ul>	<ul style="list-style-type: none"> <li>• Changes to estuary morphology, hydrodynamics and sedimentary regime</li> </ul>
	<ul style="list-style-type: none"> <li>• Capital and maintenance dredging</li> <li>• Construction of quay/manufacturing area</li> <li>• Disposal of dredge arisings from capital and maintenance dredging</li> </ul>	<ul style="list-style-type: none"> <li>• Loss of designated habitats and associated benthos</li> </ul>
<b>Humber Estuary SPA/Ramsar</b>	<ul style="list-style-type: none"> <li>• Capital and maintenance dredging</li> <li>• Construction of quay/manufacturing area</li> <li>• Construction of compensation site at Cherry Cobb Sands</li> </ul>	<ul style="list-style-type: none"> <li>• Loss of supporting habitat</li> </ul>
	<ul style="list-style-type: none"> <li>• Construction and operation of quay/manufacturing area affecting surrounding habitat through noise, lighting and human activit</li> </ul>	<ul style="list-style-type: none"> <li>• Disturbance/displacement of birds designated as European site features</li> </ul>
	<p>Alteration/loss to benthic communities as a result of:</p> <ul style="list-style-type: none"> <li>• Changes in suspended</li> </ul>	<ul style="list-style-type: none"> <li>• Loss of foraging resources</li> </ul>

	<p>sediment concentrations as a result of piling, flooding of the compensation site and activities such as capital or maintenance dredging</p> <ul style="list-style-type: none"> <li>• Disposal of dredge arisings from capital and maintenance dredging</li> <li>• Release of contaminated sediments as a result of dredging for quay construction and construction of the compensation at Cherry Cobb Sands</li> </ul>	
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The applicant has defined a likely significant effect for impacts on bird populations which are designated features of the European sites as being a reduction of 1% or less in the population. In some cases though, bird species occur on the Able Marine Energy Park (AMEP) in very small numbers so although 1% or more of the population would be affected these, these effects are not viewed as significant because the birds could be accommodated elsewhere in the European sites. Similarly where the species recorded are not reliant on the habitats lost this was not regarded as a significant effect. The screening assessment has also taken mitigation into account where it was evident that it could be incorporated into the project and would be successful (Able Habitats Regulations Assessment paragraphs 3.2.9-3.2.12).

## SCREENING MATRICES

The European Sites included within the Applicant’s assessment and the likely significant effects on their qualifying features are detailed within the screening matrices below. Under each table a set of evidence footnotes is provided which outline the evidence on which the decision of likely significant effect have been based. This evidence has come from the documents listed in the introduction to this report and the Issue Specific hearings held on 11, 12 and 13 September 2012. Note that any references to the potential impacts of the Cherry Cobb Sands assessment site refer to the original proposal for a managed realignment scheme.

Matrix Key:

C= construction

O = operation

D = decommissioning

✓ = Likely significant effect

✗ = No likely significant effect

? = Likely significant effect cannot be excluded

The decommissioning column in the matrices has been greyed out because the applicant’s HRA states that the quay and infrastructure comprising imported fill material and services will not be decommissioned (HRA section 4.11). Other sections

have been greyed out because the potential impacts were not relevant to individual features.

**NB The contents of the matrices are based on the information supplied by the applicant. Where this is disputed by other interested parties this is highlighted and the footnotes summarise the points of dispute and cross-reference to the relevant documents or statements.**

## Matrix 1: Humber Estuary Special Protection Area

<b>Humber Estuary SPA</b>												
<b>Distance to project: 0km</b>												
<b>European site features</b>	<b>Likely Effects of NSIP</b>											
	<i>Loss of foraging resources</i>			<i>Direct loss of supporting habitat</i>			<i>Displacement or disturbance thro' increased noise or lighting</i>			<i>In combination impacts</i>		
	<i>C</i>	<i>O</i>	<i>D</i>	<i>C</i>	<i>O</i>	<i>D</i>	<i>C</i>	<i>O</i>	<i>D</i>	<i>C</i>	<i>O</i>	<i>D</i>
Avocet* (wintering)	<b>xh</b>	<b>xh</b>		<b>xc</b>	<b>xc</b>		<b>xc</b>	<b>xc</b>		<b>xk</b>	<b>xk</b>	
Bittern* (wintering)	<b>xa</b>	<b>xa</b>		<b>xa</b>	<b>xa</b>		<b>xa</b>	<b>xa</b>		<b>xa</b>	<b>xa</b>	
Hen harrier* (wintering)	<b>xa</b>	<b>xa</b>		<b>xa</b>	<b>xa</b>		<b>xa</b>	<b>xa</b>		<b>xa</b>	<b>xa</b>	
Bar-tailed godwit* (wintering)	<b>xh</b>	<b>xh</b>		✓j	✓j		<b>xc</b>	<b>xc</b>		<b>xk</b>	<b>xk</b>	
Ruff* (passage)	<b>xd</b>	<b>xd</b>		<b>xd</b>	<b>xd</b>		<b>xd</b>	<b>xd</b>		<b>xk</b>	<b>xk</b>	
Bittern* (breeding)	<b>xa</b>	<b>xa</b>		<b>xa</b>	<b>xa</b>		<b>xa</b>	<b>xa</b>		<b>xa</b>	<b>xa</b>	
Marsh harrier* (breeding)				<b>xf</b>	<b>xf</b>		<b>xf</b>	<b>xf</b>		<b>xk</b>	<b>xk</b>	
Avocet* (breeding)	<b>xh</b>	<b>xh</b>		<b>xc</b>	<b>xc</b>		<b>xc</b>	<b>xc</b>		<b>xk</b>	<b>xk</b>	
Little tern (breeding)*	<b>xa</b>	<b>xa</b>		<b>xa</b>	<b>xa</b>		<b>xa</b>	<b>xa</b>		<b>xa</b>	<b>xa</b>	
Shelduck	<b>xh</b>	<b>xh</b>		✓j	✓j		✓b	✓b		<b>xk</b>	<b>xk</b>	

(wintering) <sup>§</sup>												
Knot (wintering) <sup>§</sup>	<b>xh</b>	<b>xh</b>		<b>xi</b>	<b>xi</b>		<b>xi</b>	<b>xi</b>		<b>xk</b>	<b>xk</b>	
Dunlin (wintering) <sup>§</sup>	<b>xh</b>	<b>xh</b>		✓j	✓j		✓b	✓b		<b>xk</b>	<b>xk</b>	
Black-tailed godwit (wintering) <sup>§</sup>	<b>xh</b>	<b>xh</b>		✓j	✓j		<b>xc</b>	<b>xc</b>		<b>xk</b>	<b>xk</b>	
Redshank (wintering) <sup>§</sup>	<b>xh</b>	<b>xh</b>		✓j	✓j		✓b	✓b		<b>xk</b>	<b>xk</b>	
Knot (passage) <sup>§</sup>	<b>xh</b>	<b>xh</b>		<b>xi</b>	<b>xi</b>		<b>xi</b>	<b>xi</b>		<b>xk</b>	<b>xk</b>	
Dunlin (passage) <sup>§</sup>	<b>xh</b>	<b>xh</b>		✓j	✓j		✓b	✓b		<b>xk</b>	<b>xk</b>	
Black-tailed godwit (passage) <sup>§</sup>	<b>xh</b>	<b>xh</b>		✓j	✓j		✓b	✓b		<b>xk</b>	<b>xk</b>	
Redshank (passage) <sup>§</sup>	<b>xh</b>	<b>xh</b>		✓j	✓j		✓b	✓b		<b>xk</b>	<b>xk</b>	
Assemblage qualification – the site qualifies under article 4.2 of the Birds Directive because it regularly supports 153, 394 individuals waterbirds in the non-breeding season+	<b>xh</b>	<b>xh</b>		✓g,j	✓g,j		✓e	✓e		<b>xk</b>	<b>xk</b>	

\* The SPA qualifies under article 4.1 of the Birds Directive as it is regularly used by 1% or more of the Great Britain populations of these Annex 1 species.

§ The SPA qualifies under article 4.2 of the Birds Directive as it is regularly used by 1% or more of the biogeographical populations of these regularly occurring migratory species.

+ Species recorded include dark-bellied brent goose, shelduck, wigeon, teal, mallard, pochard, scaup, goldeneye, bittern, oystercatcher, avocet, ringed plover, golden plover, grey plover, lapwing, knot, sanderling, dunlin, ruff, black-tailed godwit, bar-tailed godwit, whimbrel, curlew, redshank, greenshank and turnstone.

The decommissioning column in the matrix has been greyed out because the applicant's HRA states that the quay and infrastructure comprising imported fill material and services will not be decommissioned (HRA section 4.11).

### **Evidence:**

- a.** Species not recorded in either the WeBS data for the site over the last five years or from the 'Through the Tide Count' surveys 2010-11 (See paragraph 11.5.44 of ES Chapter 11, HRA report table 5.10). Agreed by Natural England (NE) in their Written Representations, Annex H.
- b.** More than 1% of the population of the Humber Estuary uses the Killingholme Marshes Foreshore & will be displaced (HRA table 5.7). Agreed by Natural England (NE) in their Written Representations, Annex H.
- c.** Species uses the North Haven Killingholme Pits – no habitat will be lost and there will be no disturbance from construction activities. No visual disturbance will occur during construction as North Killingholme Haven Pits are largely shielded by the existing bund which extends around the south of the Haven Pits, combined with the screen planting on top. In addition large scale construction works will be more than 200m away from the Haven Pits (ES Chapter 11). Noise levels from piling are predicted to be no higher than current base levels (ES Chapter 11, paragraphs 11.6.34-11.6.54). There will be no residual light impacts after mitigation (ES Chapter 19, paragraphs 19.3.1 - 19.8.3). Additional information supplied by Able in response to the Examining Authority's (ExA) first round of questions, paragraphs 51.9 – 51.13 and as Supplementary Environmental Information report EX19.1. NE raised initial concerns (Written Representations Annex H). They have yet to give a final view on the additional information but advise that it should be possible to mitigate these

impacts through the provision of DCO requirements setting maximum noise limits and storage heights for containers (paragraph 4.3.2 shadow HRA Statement of Common Ground).

- d.** Only one bird recorded at Killingholme Marshes & one at North Killingholme Haven Pits – although this is more than 1% of the population for the Humber Estuary this is clearly not an important area for ruff within the estuary. Agreed by Natural England (NE) in their Written Representations in both Annex H and paragraph 6.18.
- e.** 2.7% of the overall wetland assemblage will be displaced by the development (HRA report 5.4.19). However some of the assemblage species are present at less than 1% of the Humber Estuary population, including dark-bellied brent goose, golden plover, grey plover, knot, oystercatcher, turnstone. Others such as scaup, goldeneye and greenshank have not been recorded at all at Killingholme Marshes foreshore or North Killingholme Haven Pits (HRA report table 5.10). Agreed by NE in their Written Representations Annex H.
- f.** More than 1% of the Humber Estuary population has been recorded on the Killingholme Marshes but the species is not dependent on the area lost and no disturbance of breeding birds is predicted at North Killingholme Haven Pits (HRA report, table 5.9). Agreed by NE but with the caveat that they are not convinced that there will be no disturbance at North Killingholme Haven Pits (Written Representations Annex H).
- g.** Two of the main onshore areas used by curlew at Killingholme Fields lie within the AMEP site (HRA report paragraph 5.4.21). Black-tailed godwit, lapwing, redshank, whimbrel and shelduck also use the fields (HRA report paragraph 5.3.27). Intertidal mudflats at Killingholme Marshes foreshore will also be lost. Agreed by NE in their Written Representations Annex H.
- h.** The predicted effects of the change in the thermal plume in the vicinity of the outfall from the power station are insignificant so no likely significant effects on marine fauna or habitats are predicted (HRA report paragraph 5.4.24). Following requests for further information the applicant has modelled the predicted effect of relocation (SEI, report EX.7) and the statutory agencies have confirmed that they are satisfied with this (NE response to 2<sup>nd</sup> questions paragraph 69, EA response to 2<sup>nd</sup> questions paragraph 10.4, MMO response to 2<sup>nd</sup> questions paragraph 14.4.4).
- i.** Occurs at less than 1% of the Humber Estuary population (HRA report table 5.10). Agreed by NE in their Written Representations Annex H.

- j.** Loss of intertidal mudflats at Killingholme Marshes foreshore as a result of construction of the quay which is important supporting habitat (HRA report paragraph 5.5.4). Agreed by NE in their Written Representations Annex H.
- k.** The following projects were screened in as potentially having an effect in combination with Able MEP: Able UK Northern Area, Green Port Hull, Drax Heron Renewable Energy Plant, Helius Bio Power, Hull Riverside Bulk Terminal & Ursa Glass Wool Factory. All these projects include mitigation measures; Green Port Hull also includes compensation measures. The Applicant concluded therefore that there will be no likely significant effects from the loss of estuarine habitat, the loss of terrestrial habitat or disturbance/displacement from either construction or operation of AMEP in combination with any other plans or projects (SEI report EX44.1 paragraphs 4.51-4.5.27, tables 4.7 & 4.8, HRA report paragraphs 6.7.1-6.7.6). Table 4.8 though still appears to include compensation measures within its assessment of the effects from Able MEP making an assessment of the adverse effect on integrity difficult. However the following species have already been identified as likely to be significantly affected by AMEP alone and were therefore included in the appropriate assessment section of the applicant's HRA report: bar-tailed godwit, shelduck, dunlin, redshank, black-tailed godwit and the bird assemblage. It should be noted though that this relates to likely significant effects arising from loss of supporting habitat and not any of the other impacts identified in Matrix 1.

Concerns have been raised about the general approach taken to the assessment of in-combination effects and whether all likely significant effects have been identified (EA response to second questions paragraph 2.4, MMO written summary of marine SIH representations paragraph 2.24, sHRA SoCG paragraph 4.4.2). NE has raised particular concerns about in-combination impacts on curlew and whether these will be taken into consideration when the applicant undertakes further assessment of the impacts on non-breeding birds (NE response to second questions paragraph 25 & written summary of marine SIH representations paragraph 32).

Matrix 2: Humber Estuary Special Area of Conservation

<b>Humber Estuary SAC</b>															
<b>Distance to project: 0km</b>															
<b>European site features</b>	<b>Likely effects of NSIP</b>														
	<b>Disturbance/displacement</b>			<b>Water quality changes leading to changes in aquatic ecology</b>			<b>Changes to intertidal habitat</b>			<b>Habitat loss</b>			<b>Estuary morphology, hydrodynamics &amp; sedimentary regime</b>		
	<i>C</i>	<i>O</i>	<i>D</i>	<i>C</i>	<i>O</i>	<i>D</i>	<i>C</i>	<i>O</i>	<i>D</i>	<i>C</i>	<i>O</i>	<i>D</i>	<i>C</i>	<i>O</i>	<i>D</i>
Atlantic salt meadows				<b>xe</b>	<b>xe</b>					<b>√a</b>	<b>√a</b>		<b>xh</b>	<b>xh</b>	
Coastal lagoons (priority habitat)				<b>xd</b>	<b>xd</b>					<b>xd</b>	<b>xd</b>				
Dunes with <i>Hippophae rhamnoides</i>							<b>xe</b>	<b>xe</b>		<b>xe</b>	<b>xe</b>				
Embryonic shifting dunes							<b>xe</b>	<b>xe</b>		<b>xe</b>	<b>xe</b>				
Estuaries				<b>xe</b>	<b>xe</b>		<b>xk</b>	<b>xk</b>		<b>√b</b>	<b>√b</b>		<b>xh</b>	<b>xh</b>	

Mudflats & sandflats not covered by seawater at low tide				<b>xe</b>	<b>xe</b>					<b>✓b</b>	<b>✓b</b>		<b>xh</b>	<b>xh</b>	
Fixed dunes with herbaceous vegetation ('grey dunes'- priority habitat)							<b>xe</b>	<b>xe</b>		<b>xe</b>	<b>xe</b>				
Salicornia & other annuals colonising mud & sand										<b>✓b</b>	<b>✓b</b>		<b>xh</b>	<b>xh</b>	
Sandbanks which are slightly covered by sea water all the time				<b>xc</b>	<b>xc</b>					<b>xc</b>	<b>xc</b>		<b>xc</b>	<b>xc</b>	
Shifting dunes along the shore line with Ammophila arenaria ('white dunes')				<b>xe</b>	<b>xe</b>		<b>xe</b>	<b>xe</b>		<b>xe</b>	<b>xe</b>				
Grey seal	<b>xf</b>			<b>xi</b>	<b>xi</b>					<b>xf</b>	<b>xf</b>				
River lamprey	<b>?g</b>	<b>?g</b>		<b>xi</b>	<b>xi</b>					<b>?g</b>	<b>?g</b>				
Sea lamprey	<b>?g</b>	<b>?g</b>		<b>xi</b>	<b>xi</b>					<b>?g</b>	<b>?g</b>				

**Evidence:**

- a.** Should be a positive likely significant effect as modelling predicts that 12.3 ha of saltmarsh will be created through accretion (HRA report Annex D). These figures have been revised to 2 ha immediate loss with 10.35 ha gain in the long-term, giving a net figure of 8.35 ha (Annex B sHRA SoCG)
- b.** Net loss of mudflat of 33.97 ha (direct loss of 31.5 ha, indirect loss of 10.35 ha but also a direct gain of 7.88 ha of mudflat) and a loss of 13.5 ha of sub-tidal habitat (HRA report Annex D). Permanent loss or change to benthic communities will occur as a result of dredging but no loss of benthic diversity is expected and subtidal mudflats are widespread within the estuary (SEI report EX10.4 paragraph 1.4.46). The lack of impact on benthic ecology is disputed by other interested parties (NE Response to Able comments on RR paragraphs 2.11-2.12, July SoCG paragraph 15.3.20, sHRA SoCG paragraph 4.4.3, EA WR paragraph 4.3, ABP Representations in relation to SEI A7 paragraphs 7.4, 7.7 & 7.8, A9 paragraphs 9.1-9.3). Disposal of gravel at site HU080 has been highlighted as a particular concern and the applicant has undertaken to provide additional information on potential impacts on benthic ecology at this site (MMO written summary of oral representations marine SIH paragraphs 2.22-2.23, NE written summary of oral representations paragraph 32, EA written summary of oral representations marine SIH hearing).
- c.** Sandbanks are not immediately affected by project and indirect morphodynamic change as a result of the project is not likely to affect the extent of the sandbanks (HRA report Annex D).
- d.** No impacts on either area or water quality (HRA report Annex D).
- e.** No reduction in area or in quality (HRA report Annex D).
- f.** No effect on pup production because Donna Nook is beyond airborne and waterborne noise disturbance limit. Underwater noise will create temporary disturbance but this should not prevent permanently prevent pups from entering estuary, or affect its food supply. Most seals will prefer to hunt for food at sea and so will not approach the AMEP site closely enough to risk auditory damage (sHRA report Annex D, ES Chapter 10 paragraphs 10.6.34-10.6.45). Mitigation for noise and vibration from piling is proposed (ES Chapter 16, paragraphs 16.7.4, 16.7.7, SEI EX10.7). Concerns were initially expressed regarding the extent of mitigation in place during construction (NE WR paragraph 8.76, MMO response to 1<sup>st</sup> questions paragraph 5.1). The sHRA SoCG outlines a suite of measures (paragraph 4.3.1) which the MMO & NE agree would provide the basis for requirements in the DCO & DML to mitigate potential construction impacts (paragraphs 4.3.2-4.3.3).

- g.** There will be some loss of sub-tidal habitat which could affect sea lamprey ammocoetes. Adult migratory movement could be affected by underwater noise (sHRA Annex D)
- h.** Modelling: A number of computer models have been developed by the applicant to assess the impact of the construction of the quay and the original managed realignment compensation site (Chapter 8 of the ES, Annexes 8.1, 8.3 & 8.4, and Supplementary Environmental Information reports EX8.5, 8.7 & EX8.10). Concerns about the accuracy and reliability of these models have been raised by other interested parties (ABP advice from P. Whitehead in Written Representations, Further Written Representations & Section 2, Summary of Oral Representations from Issue Specific Hearing of 13 Sept, NE Written Representations, paragraphs 8.60-8.65 and EA Written Representations paragraphs 4.18-4.19, 4.24-4.25). In the July SoCG (paragraph 13.3.4) the MMO advise that the modelling undertaken of effects on the hydrodynamic & sedimentary regime, including the methods used & the input parameters are appropriate to assess the project (but expect to see further comments on the significance of any design changes to the compensation site). MMO concerns about the sedimentation levels in the berthing pocket described in EX8.6 were addressed by Able's witness in the marine SIH (written summary of oral representations paragraphs 2.8-2.9).

NE are satisfied with the details contained in EX8.7 of the SEI regarding erosion at North Killingholme Haven Pits being caused by increase bed shear stress, changes in the wave regime and the effect of the compensation site (note this is based on the information about the managed realignment scheme not the Regulated Tidal Exchange now proposed).

Dredging: The MMO remains concerned about the implications of additional dredging around the E.ON and Centrica outfalls and the resultant increase in suspended material. The EA & ABP have expressed similar concerns (EA Comments on Able's response to Relevant Representations paragraphs 4.17-4.20, ABP Written Representations paragraphs 86, 89, & representations in relation to SEI). The applicant has indicated that they will put a monitoring and mitigation strategy in place via a condition on the Deemed Marine Licence (DML) but no details have yet been received (MMO written summary of oral representations paragraphs 2.1-2.7).

Dredge disposal: Arisings of both erodible and non-erodible material are proposed for deposition at site HU080. Concerns have been raised by about potential impacts on the hydrodynamic regime of the estuary (NE response to Able's comments on relevant representations paragraph 2.13.6, ABP Written Representations paragraphs 77-79).

- The MMO advise that the site has historically taken greater volumes than those proposed by the application (written summary of oral representations marine SIH paragraph 2.16).

- Concerns have been raised by ABP about the cyclical nature of sedimentation in the Sunk Dredged Channel and that the proposed annual volume of dredge arisings would substantially increase the need for dredging (ABP Response to written representations paragraph 1.5). The MMO and EA will both consider further the points raised by ABP if relevant data is supplied (EA written summary of marine SIH oral representations, MMO written summary of marine SIH oral representations paragraph 2.16). The MMO is working with the applicant to develop suitable wording for either a condition on the DML or inclusion in the Marine Environmental Management and Monitoring Plan to ensure material disperses from HU080 as predicted; the applicant is also considering regular bathymetric surveys of the Sunk Dredged Channel (MMO written summary of oral representations marine SIH paragraphs 2.12-2.13).
  - The material proposed for deposition HU080 by the applicant includes gravel which is not usually permitted at this site. A previous case where gravel was disposed at HU080 involved a much smaller volume of material (MMO written summary of oral representations for marine SIH paragraphs 2.18-2.20). The applicant has produced a technical note which the MMO & EA are considering. At present the MMO is of the view that the modelling will not have an effect on the environment (MMO written summary of oral representations for marine SIH paragraph 2.22, EA written summary of oral representations for marine SIH).
  - ABP have raised a concern that by taking material from the middle of the Humber estuary to the lower estuary could affect the morphology of the estuary (Summary of oral representations marine SIH paragraph 3.1). The MMO advise that the applicant has assessed morphology in EX8.7 and they are of the view that any effects would be localised and would not result in a knock-on effect (MMO Summary of oral representations marine SIH paragraph 2.14).
- i. Water turbidity: Predicted to increase temporarily as a result of dredging but expected to be within the natural range of variability within the estuary (Applicant sHRA report Annex D, ES Chapter 10 paragraphs 10.6.68, 10.6.81). NE has advised that the relevant targets within the SSSI conservation objectives need amending to take account of site-specific conditions (NE WR paragraph 69). Questions have been raised about the effect of sediment plumes (ABP Representations in relation to the SEI, A7 paragraph 7.4). Concerns were raised by the statutory agencies about the potential effect of relocating the E.ON and Centrica outfalls to give a combined thermal plume which would affect aquatic ecology. The applicant has modelling the predicted effect of relocation (SEI, report EX.7) and the statutory agencies have confirmed that they are satisfied with this (NE response to 2<sup>nd</sup> questions paragraph 69, EA response to 2<sup>nd</sup> questions paragraph 10.4, MMO response to 2<sup>nd</sup> questions paragraph 14.4.4).

- j.** Queries were raised as to whether the impact of capital & maintenance dredging for the berthing pocket had been correctly assessed (NE WR paragraph 8.32, EA Response to comments on RR paragraph 5.2, MMO WR paragraph 7.4, ABP WR Peter Whitehead paragraphs 31-33). The applicant produced additional information in SEI EX10.6. NE now agrees that the change in the nature of the habitat within the berthing pocket will not be significant in the context of the estuary (July SoCG paragraphs 15.9.57). The EA advises that they are satisfied with the immediate habitat loss tables included in SEI EX11.23 that the berthing pocket has been included within the 7.7ha of functional habitat loss (EA response to 2<sup>nd</sup> round questions paragraph 2.4). The MMO advise that EX10.6 does not contain a creditable methodology for assessing significance (MMO Response to 2<sup>nd</sup> questions) but do accept the applicant's calculation in EX8.6 of a reduced rate of sedimentation in the berthing pocket (MMO Written summary of oral representations at marine SIH, paragraph 2.8).
- k.** The dredging of the berthing pocket will lead to a change in the nature of the subtidal biotopes but this will not be significant. Agreed by NE but not by EA (sHRA SoCG paragraphs 15.9.1-15.9.7)

Matrix 2A: Humber Estuary Special Area of Conservation in-combination effects

<b>Humber Estuary SAC</b>															
<b>Distance to project: 0km</b>															
<b>European site features</b>	<b>Likely effects of NSIP</b>														
	<b>Disturbance/displacement</b>			<b>Water quality changes leading to changes in aquatic ecology</b>			<b>Changes to intertidal habitat</b>			<b>Habitat loss</b>			<b>Estuary morphology, hydrodynamics &amp; sedimentary regime</b>		
	<i>C</i>	<i>O</i>	<i>D</i>	<i>C</i>	<i>O</i>	<i>D</i>	<i>C</i>	<i>O</i>	<i>D</i>	<i>C</i>	<i>O</i>	<i>D</i>	<i>C</i>	<i>O</i>	<i>D</i>
Atlantic salt meadows				<b>xe</b>	<b>xe</b>					<b>xd</b>	<b>xd</b>		<b>xd</b>	<b>xd</b>	
Coastal lagoons (priority habitat)				<b>xa</b>	<b>xa</b>					<b>xa</b>	<b>xa</b>				
Dunes with <i>Hippophae rhamnoides</i>							<b>xa</b>	<b>xa</b>		<b>xa</b>	<b>xa</b>				
Embryonic shifting dunes							<b>xa</b>	<b>xa</b>		<b>xa</b>	<b>xa</b>				
Estuaries				<b>xe</b>	<b>xe</b>					<b>xd</b>	<b>xd</b>		<b>xd</b>	<b>xd</b>	
Mudflats & sandflats not covered by				<b>xe</b>	<b>xe</b>					<b>xd</b>	<b>xd</b>		<b>xd</b>	<b>xd</b>	

seawater at low tide																		
Fixed dunes with herbaceous vegetation ('grey dunes'- priority habitat)							<b>xa</b>	<b>xa</b>		<b>xa</b>	<b>xa</b>							
Salicornia & other annuals colonising mud & sand										<b>xd</b>	<b>xd</b>		<b>xd</b>	<b>xd</b>				
Sandbanks which are slightly covered by sea water all the time				<b>xc</b>	<b>xc</b>					<b>xc</b>	<b>xc</b>		<b>xc</b>	<b>xc</b>				
Shifting dunes along the shore line with Ammophila arenaria ('white dunes')				<b>xa</b>	<b>xa</b>		<b>xa</b>	<b>xa</b>		<b>xd</b>	<b>xd</b>							
Grey seal	<b>xb</b>			<b>xb</b>	<b>xb</b>					<b>xb</b>	<b>xb</b>							
River lamprey	<b>xf</b>	<b>xf</b>		<b>xe</b>	<b>xe</b>					<b>xd</b>	<b>xd</b>							
Sea lamprey	<b>xf</b>	<b>xf</b>		<b>xe</b>	<b>xe</b>					<b>xd</b>	<b>xd</b>							

**Evidence:**

- a. See footnote e to matrix 2.
- b. See footnote f to matrix 2.

- c. Sandbanks are not immediately affected by project and indirect morphodynamic change as a result of the project is not likely to affect the extent of the sandbanks (sHRA report Annex D). See footnote d for a summary of concerns raised regarding hydrodynamic & morphological change.
- d. The following projects were screened: Able UK North, Donna Nook managed realignment scheme, Immingham oil terminal approach channel deepening, Green Port Hull, Grimsby Ro-Ro, Hull Bulk Terminal, Humber flood risk management strategy (includes Donna Nook managed realignment scheme), tidal stream generator and Humber Gateway offshore wind farm. The Applicant concluded that in the shorter term habitat loss in the Humber Estuary will be significant but minor. In the longer term the measures outlined in the Humber Estuary flood risk management strategy will offset these losses (SEI report EX44.1 paragraphs 4.4.1-4.4.26, tables 4.5-4.6, sHRA report paragraphs 6.7.1-6.7.6) It should be noted though that the habitat losses generated by Able MEP have been identified as being significant in their own right (see matrix 2).

Concerns have been raised about the general approach taken to the assessment of in-combination effects (EA response to second questions paragraph 2.4, MMO written summary of marine SIH representations paragraph 2.24, sHRA SoCG paragraph 4.4.2). The EA advises that the predicted impacts from Able MEP on benthic communities as a result of capital & maintenance dredging should be assessed in-combination with other projects. They also have concerns about the disposal of ineredible material and the assessment of hydrodynamic & morphological change. Assessments of hydrodynamic & morphological changes should include dredging and disposal, as well as existing managed realignment sites, quay construction and the tidal stream generators (it is unclear from the revised SEI report EX44.1 whether the tidal stream generation bid under DECC MEAD funding for the Humber is included) (EA response to 2<sup>nd</sup> questions paragraphs 4.1-4.5). The applicant has not undertaken an in-combination assessment of the effects of dredge disposal at sites HU081, HU082 & HU083; the MMO had not previously advised the applicant that deposition was being undertaken at HU083. An updated position regarding the way forward will be developed by the MMO/CEFAS and the applicant and the ExA will be informed of the outcome (MMO written summary of representations marine SIH, paragraphs 2.24-2.30, NE written summary of representations paragraph 32, EA written summary of representations marine SIH). The applicant has advised that they will need to revise their in-combination assessment to take account of the revised compensation proposals (Able written summary of representations HRA hearing paragraph 19).

- e. There could be an increase in suspended sediment as a result of the combined effects of Able MEP with Able UK Northern Area, Immingham oil terminal approach channel deepening, Hull riverside bulk terminal and tidal stream generator. The impacts of all these projects though are small and localised so are unlikely to have a combined significant effect (SEI report EX44.1 paragraphs 4.4.28-4.4.34, sHRA report paragraphs 6.7.1-6.7.6).

See footnote d for a summary of the concerns raised by the statutory agencies regarding the assessment of dredging.

- f. The following projects were considered: Immingham oil terminal approach channel deepening, Green Hull Port, & Grimsby ro-ro. The Applicant concluded that if simultaneous piling occurred at Able MEP & Green Port Hull then lamprey could experience a cumulative impact but this is unlikely to increase the level of impact significantly (SEI report EX44.1 paragraphs 4.4.35-4.4.36, sHRA report paragraphs 6.7.1-6.7.6). It should be noted that noise impacts from Able MEP have already been identified as being significant in their own right (see matrix 2). NE has also raised the question as to whether the correct tidal stream generator has been considered; Able's position is that it has (NE written summary of representations paragraph 32, Able written summary of representations HRA hearing paragraph 19).

Matrix 3: Humber Estuary Ramsar site

<b>Humber Estuary Ramsar site</b>																		
<b>Distance to NSIP: 0km</b>																		
	<b>Likely effects of NSIP</b>																	
<b>European site features</b>	<b>Displacement/disturbance</b>			<b>Estuary morphology, etc</b>			<b>Habitat changes</b>			<b>Habitat loss</b>			<b>Water quality</b>			<b>Loss of foraging resources</b>		
	<b>C</b>	<b>O</b>	<b>D</b>	<b>C</b>	<b>O</b>	<b>D</b>	<b>C</b>	<b>O</b>	<b>D</b>	<b>C</b>	<b>O</b>	<b>D</b>	<b>C</b>	<b>O</b>	<b>D</b>	<b>C</b>	<b>O</b>	<b>D</b>
Criterion 1 - The site is a representative example of a near-natural estuary with the following component habitats: dune systems and humid dune slacks, estuarine waters, intertidal mud and sand flats, saltmarshes, and coastal brackish/saline lagoons.				<b>xa</b>	<b>xa</b>		<b>xb</b>	<b>xb</b>		<b>✓c</b>	<b>✓c</b>		<b>xd</b>	<b>xd</b>				
Criterion 3 - supports a breeding colony of grey seals <i>Halichoerus grypus</i> at Donna Nook.	<b>xe</b>	<b>xe</b>								<b>xe</b>	<b>xe</b>		<b>xf</b>	<b>xf</b>		<b>xe</b>	<b>xe</b>	

Criterion 5 - In the non-breeding season, the area regularly supports 153,934 individual waterbirds	✓g	✓g								✓h	✓h					xi	xi	
Criterion 6 - regularly supports 1% of the individuals in the populations of the species or subspecies*	✓g	✓g								✓h	✓h					xi	xi	
Ramsar criterion 8 - acts as an important migration route for both river lamprey and sea lamprey between coastal waters and their spawning areas.	?j	?j								?j	?j		xf	xf				

\* Species present include: shelduck, golden plover, knot, dunlin, black-tailed godwit, redshank (all wintering), golden plover, knot, dunlin, black-tailed godwit and redshank (passage)

**Evidence:**

- a. See footnotes c & h in matrix 2.
- b. See footnote e in matrix 2.
- c. See footnotes a & b in matrix 2.
- d. See footnotes c & e in matrix 2.

- e. See footnote f in matrix 2.**
- f. See footnote i in matrix 2**
- g. See footnotes b & e in matrix 1.**
- h. See footnote j in matrix 1.**
- i. See footnote h in matrix 1**
- j. See footnote g in matrix 2.**

Matrix 3A: Humber Estuary Ramsar site in-combination effects

<b>Humber Estuary Ramsar site</b>																		
<b>Distance to NSIP: 0km</b>																		
	<b>Likely effects of NSIP</b>																	
<b>European site features</b>	<b>Displacement/disturbance</b>			<b>Estuary morphology, etc</b>			<b>Changes in intertidal habitat</b>			<b>Habitat loss</b>			<b>Water quality</b>			<b>Loss of foraging resources</b>		
	<b>C</b>	<b>O</b>	<b>D</b>	<b>C</b>	<b>O</b>	<b>D</b>	<b>C</b>	<b>O</b>	<b>D</b>	<b>C</b>	<b>O</b>	<b>D</b>	<b>C</b>	<b>O</b>	<b>D</b>	<b>C</b>	<b>O</b>	<b>D</b>
Criterion 1 - The site is a representative example of a near-natural estuary with the following component habitats: dune systems and humid dune slacks, estuarine waters, intertidal mud and sand flats, saltmarshes, and coastal brackish/saline lagoons.				<b>xa</b>	<b>xa</b>		<b>xc</b>	<b>xc</b>		<b>xd</b>	<b>xd</b>		<b>xb</b>	<b>xb</b>				
Criterion 3 - supports a breeding colony of grey seals <i>Halichoerus grypus</i> at Donna Nook.	<b>xe</b>	<b>xe</b>								<b>xe</b>	<b>xe</b>		<b>xe</b>	<b>xe</b>				
Criterion 5 - In the non-breeding season, the	<b>xf</b>	<b>xf</b>								<b>xf</b>	<b>xf</b>					<b>xf</b>	<b>xf</b>	

area regularly supports 153,934 individual waterbirds																	
Criterion 6 - regularly supports 1% of the individuals in the populations of the species or subspecies*	<b>xf</b>	<b>xf</b>							<b>xf</b>	<b>xf</b>					<b>xf</b>	<b>xf</b>	
Ramsar criterion 8 - acts as an important migration route for both river lamprey and sea lamprey between coastal waters and their spawning areas.	<b>xg</b>	<b>xg</b>							<b>xh</b>	<b>xh</b>		<b>xb</b>	<b>xb</b>				

\* Species present include: shelduck, golden plover, knot, dunlin, black-tailed godwit, redshank (all wintering), golden plover, knot, dunlin, black-tailed godwit and redshank (passage)

**Evidence:**

- a.** See footnotes c & d in matrix 2A
- b.** See footnote e in matrix 2A
- c.** See footnote e in matrix 2
- d.** See footnotes e & f in matrix 2 and footnotes c & d in matrix 2A.
- e.** See footnote f in matrix 2
- f.** See footnote l in matrix 1
- g.** See footnote f in matrix 2A
- h.** See footnote d in matrix 2A



On the basis of the evidence available the Applicant's report considered that the effect of the project on the following sites **should be subject to appropriate assessment:**

Humber Estuary Special Area of Conservation  
Humber Estuary Special Protection Area  
Humber Estuary Ramsar site

This has not been disputed by any other interested parties.

## **EFFECTS ON INTEGRITY**

**The conservation objectives for the Humber Estuary Special Area of Conservation are as follows:**

With regard to the natural habitats and/or species for which the site has been designated („the Qualifying Features“ listed below);

**Avoid the deterioration of the qualifying natural habitats and the habitats of qualifying species, and the significant disturbance of those qualifying species, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving Favourable Conservation Status of each of the qualifying features.**

Subject to natural change, to maintain or restore:

- The extent and distribution of qualifying natural habitats and habitats of qualifying species;
- The structure and function (including typical species) of qualifying natural habitats and habitats of qualifying species;
- The supporting processes on which qualifying natural habitats and habitats of qualifying species rely;
- The populations of qualifying species;
- The distribution of qualifying species within the site.

### **Qualifying Features:**

H1110. Sandbanks which are slightly covered by sea water all the time; Subtidal sandbanks  
H1130. Estuaries  
H1140. Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats  
H1150. Coastal lagoons\*

H1310. *Salicornia* and other annuals colonising mud and sand; Glasswort and other annuals colonising mud and sand

H1330. Atlantic salt meadows (*Glauco-Puccinellietalia maritima*)

H2110. Embryonic shifting dunes

H2120. Shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes"); Shifting dunes with marram

H2130. Fixed dunes with herbaceous vegetation ("grey dunes"); Dune grassland\*

H2160. Dunes with *Hippophae rhamnoides*; Dunes with sea-buckthorn

S1095. *Petromyzon marinus*; Sea lamprey

S1099. *Lampetra fluviatilis*; River lamprey

S1364. *Halichoerus grypus*; Grey seal

\* denotes a priority natural habitat or species (supporting explanatory text on following page)

Taken from Natural England's website (see

[http://www.naturalengland.org.uk/Images/UK0030170-Humber-Estuary-SAC\\_tcm6-31768.pdf](http://www.naturalengland.org.uk/Images/UK0030170-Humber-Estuary-SAC_tcm6-31768.pdf))

### **The conservation objectives for the Humber Estuary Special Protection Area are as follows:**

With regard to the individual species and/or assemblage of species for which the site has been classified („the Qualifying Features" listed below);

**Avoid the deterioration of the habitats of the qualifying features, and the significant disturbance of the qualifying features, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving the aims of the Birds Directive.**

Subject to natural change, to maintain or restore:

- The extent and distribution of the habitats of the qualifying features;
- The structure and function of the habitats of the qualifying features;
- The supporting processes on which the habitats of the qualifying features rely;
- The populations of the qualifying features;
- The distribution of the qualifying features within the site.

### **Qualifying Features:**

A021 *Botaurus stellaris*; Great bittern (Non-breeding)

A021 *Botaurus stellaris*; Great bittern (Breeding)

A048 *Tadorna tadorna*; Common shelduck (Non-breeding)

A081 *Circus aeruginosus*; Eurasian marsh harrier (Breeding)

A082 *Circus cyaneus*; Hen harrier (Non-breeding)

A132 *Recurvirostra avosetta*; Pied avocet (Non-breeding)

A132 *Recurvirostra avosetta*; Pied avocet (Breeding)

A140 *Pluvialis apricaria*; European golden plover (Non-breeding)

A143 *Calidris canutus*; Red knot (Non-breeding)

A149 *Calidris alpina alpina*; Dunlin (Non-breeding)

A151 *Philomachus pugnax*; Ruff (Non-breeding)

A156 *Limosa limosa islandica*; Black-tailed godwit (Non-breeding)  
A157 *Limosa lapponica*; Bar-tailed godwit (Non-breeding)  
A162 *Tringa totanus*; Common redshank (Non-breeding)  
A195 *Sterna albifrons*; Little tern (Breeding)

## Waterbird assemblage

Taken from Natural England's website (see [http://www.naturalengland.org.uk/Images/UK9006111-Humber-Estuary-SPA\\_tcm6-32298.pdf](http://www.naturalengland.org.uk/Images/UK9006111-Humber-Estuary-SPA_tcm6-32298.pdf))

These are high level objectives. More detailed advice is found in the December 2009 conservation objectives document and the Regulation 33 advice (dated April 2003) (Natural England written summary of representations HRA hearing paragraph 16).

Matrices 4, 5 and 6 below and the accompanying evidence footnotes provide a summary of the shadow Appropriate Assessment carried out by the Applicant (Able Marine Energy Park Habitats Regulations Assessment Report dated December 2011, document reference TR030001/APP/15). The notes incorporate evidence gathered throughout the consultations undertaken and the examination process from the documents and hearings listed in the introduction.

### Matrix Key

✓ = Adverse effect on integrity is likely  
? = Adverse effect on integrity cannot be excluded  
x = Adverse effect on integrity can be excluded

C = construction  
O = operation  
D = decommissioning

The decommissioning column in the matrices has been greyed out because the applicant's HRA states that the quay and infrastructure comprising imported fill material and services will not be decommissioned (HRA section 4.11). Other sections have been greyed out because the potential impacts were not relevant to individual features.

**NB The contents of the matrices are based on the information supplied by the applicant. Where this is disputed by other interested parties this is highlighted and the footnotes summarise the points of dispute and cross-reference to the relevant documents or statements.**

Matrix 4: Humber Estuary SPA summary of effects on site integrity from the project alone

European site:	Humber Estuary Special Protection Area			
European site features	Effects of project			
	Habitat loss		Disturbance/displacement	
	C	O	C	O
Bar-tailed godwit (wintering)	✓f,j	✓f,j	✓f,l,k	✓f,l,k
Shelduck (wintering)	✓a,j	✓a,j	✓a,l,k	✓a,l,k
Dunlin (wintering) <sup>§</sup>	✓d,j	✓d,j	✓d,l,k	✓d,l,k
Black-tailed godwit (wintering)	✓e,j	✓e,j	✓e,l,k	✓e,l,k
Redshank (wintering)	✓h,j	✓h,j	✓h,l,k	✓h,l,k
Dunlin (passage) <sup>§</sup>	✓d,j	✓d,j	✓d,l,k	✓d,l,k
Black-tailed godwit (passage) <sup>§</sup>	✓e,j	✓e,j	✓e,l,k	✓e,l,k
Redshank (passage) <sup>§</sup>	✓h,j	✓h,j	✓h,l,k	✓h,l,k
Assemblage qualification – the site qualifies under article 4.2 of the Birds Directive because it	✓a,b,c,e,f,g,h,i,j	✓a,b,c,e,f,g,h,i,j	✓a,b,c,e,f,g,h,i,j,l,k	✓a,b,c,e,f,g,h,i,j,l,k

regularly supports 153,394 individuals waterbirds in the non-breeding season				
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**Evidence:**

**NB For map showing Count Sectors please see ES Chapter 11, Figure 11.4**

- a. Shelducks use the Killingholme Marshes foreshore (mainly Count Sectors C, D & E). Sector C and most of Sector D will be lost to accommodate the building of the new quay. A disturbance distance of 275m has been assumed by the Applicant, based on a literature review. Although shelducks may show a degree of habituation, on a precautionary basis, up to two thirds of the birds using Count Sector E of the Killingholme Marshes Foreshore could be affected. The combined effect of direct habitat loss and disturbance will lead to displacement of numbers that are regularly in excess of 1% of the Humber Estuary population. It remains uncertain whether any displaced birds could be accommodated elsewhere in the estuary, so it has been assumed that there would be a reduction in the Humber Estuary population. It is not possible to mitigate these effects (HRA report, paragraphs 6.3.9-6.3.14 & Section 6.4).
- b. Ringed plover use Count Sectors D and E of the Killingholme Marshes foreshore. The majority of Count Sector D will be lost and Sector E will be affected by disturbance during construction. Numbers of ringed plover in excess of 1% of the Humber Estuary population may still be present on the undisturbed area of Sector E but even allowing for this important numbers of the Humber Estuary population will be lost as a result of the development. The population of ringed plover in the UK is declining so further loss will result in an adverse effect upon a European site which cannot be mitigated (HRA report, paragraphs 6.3.9-6.3.14 & Section 6.4).

- c. The greatest numbers of lapwing were recorded by the 'Through the Tide' Count in Sector E and it is possible that some of these birds will remain undisturbed. However the WeBS data suggests that the loss of important numbers of lapwing cannot be excluded. (HRA report, paragraphs 6.3.19 - 6.3.25 & Section 6.4).
- d. Dunlin use the intertidal habitat at Killingholme Marshes foreshore throughout the passage and winter periods. Both the 'Through the Tides' Count and the WeBS core count record numbers of dunlin equal to or greater than 1% of the Humber Estuary population. The counts recorded dunlin mainly using Count Sectors C, D & E but also in A and B. All of C and most of B & D will be lost. E and the remainder of B are likely to be affected by disturbance. Even if some birds are retained in Sectors A & E, numbers in excess of 1% of the Humber Estuary population will be lost. Dunlin numbers show a long-term decline in both the UK and the Humber Estuary, though this may be due in part to increased numbers wintering in the Waddenzee. The loss of 1% or more of the Humber population would have an adverse effect which cannot be mitigated within the European site. (HRA report, paragraphs 6.3.25-6.3.29 & Section 6.4).
- e. Killingholme Marshes foreshore is used by important numbers of foraging black-tailed godwits, with mean peaks of at least 1% of the Humber Estuary population from the WeBS data and over 66% for the 'Through the Tide' Count. These peaks occur in autumn when the birds are going through their post breeding moult before moving to other sites within the Humber and the Wash. Smaller peaks occur during the spring passage. In autumn birds are mainly in Count Sectors C and D. From late winter birds are more likely to be in Sector E. Even larger numbers roost at North Killingholme Haven Pits which is the preferred roost site for this species on the Humber. No significant effects are predicted by the Applicant on the birds roosting at this site, but proximity between roost sites and feeding sites may be important for black-tailed godwits and it is possible that the loss of foraging opportunities at Killingholme Marsh foreshore may affect their use of this preferred roost. WeBS counts show that the population of this species has increased rapidly since the early to mid 1990s. Despite this trend, the number of roosts which are likely to be lost from the Haven Pits is such that the Humber Estuary population would be significantly reduced (HRA report paragraphs 6.3.30 - 6.3.39 & Section 6.4).

NE identifies black-tailed godwit as one of the 3 key species that would be particularly affected by the AMEP development (NE written representations paragraph 5.19). The birds found on the Humber belong to the race *Limosa limosa islandica* which breed in Iceland and use the Humber Estuary on passage to their wintering grounds. Numbers have increased in

recent years largely because of a rise in breeding numbers (RSPB WR Annex D1 response to question 96). NE's advice is that the conservation objectives are designed to accommodate natural fluctuations in numbers and the increase in black-tailed godwit numbers is irrelevant when considering the impacts of Able MEP (NE advice on conservation objectives given in HRA hearing). 66% of the population found on the Humber have been recorded on the Killingholme foreshore based on the 'Through the Tide' counts carried out by the applicant (NE response to 2<sup>nd</sup> questions paragraphs 47-48, Able response to 2<sup>nd</sup> questions paragraph 25.1, RSPB response to 2<sup>nd</sup> questions). NE advises that there is a strong correlation between use of the high-water roost at North Killingholme Haven Pits area and use of the foreshore (NE WR paragraph 5.18). The birds use this area of the estuary during their autumn moult when it would be difficult for them to fly longer distances (NE response to 2<sup>nd</sup> questions paragraphs 8-11, WR paragraph 5.17, RSPB response to 2<sup>nd</sup> questions & WR paragraphs 2.10-2.16). Black-tailed godwits began to use the North Killingholme Haven Pits in greater numbers from 1996 onwards once wildfowling ceased at the site (NE appendix to HRA hearings written summary). NE advises that the loss of a favoured feeding ground could result in displaced birds being lost from the SPA rather than simply re-locating. The European Management Plan for this species states that threats to non-breeding birds in the UK are acute as the species is especially concentrated at a few sites (NE response to 2<sup>nd</sup> questions paragraph 59). The RSPB provide similar advice on the specialist requirements of the Icelandic race of black-tailed godwits and their tendency to aggregate in small areas of estuaries (RSPB response to 2<sup>nd</sup> questions, questions 16 & 17).

- f.** The 'Through the Tide' count recorded bar-tailed godwits at Killingholme Marshes foreshore, suggesting that the area is an important area for this species during the late winter/spring passage but also at other times of year. The godwits were recorded mainly in Count Sectors C, D and E. Sectors C and D will be lost and much of Sector E will also be lost as foraging area due to disturbance. The Applicant advises that it is not possible to mitigate these effects within the European site. Population and distribution trends for bar-tailed godwits are unclear both within the Humber Estuary and more widely within Europe (HRA report 6.3.40 - 6.3.44 & Section 6.4).
- g.** The Humber Estuary is the fifth most important UK wintering site for curlew. The WeBS data and the 'Through the Tide' Count both record numbers of curlews using the Killingholme Marshes foreshore in excess of 1% of the Humber population. The birds mainly use Count Sector D with lower numbers in Count Sectors C and E and little use of B and A. Sector C will be lost and two-thirds of Sector E will be unavailable because of disturbance. The majority of birds are foraging and roosting/loafing but some also roost on the foreshore. Birds also forage on the inland fields at high tide with numbers at 1% or more of the Humber Estuary population. An area of land will be included within the AMEP development

site (Area A) that will provide an alternative foraging area for curlew. This habitat will be created prior to any significant area of existing terrestrial habitat being lost. Curlew populations on the Humber increased in the 15 year period from 1991/2-2006/7, however large declines occurred over the same period at Killingholme Marshes. The UK population have been declining since 2000 with a decline in the UK breeding population and a shift to wintering in the Netherlands. The provision of alternative habitat will mitigate the loss of the inland fields but the loss of the intertidal mudflat at Killingholme Marshes foreshore could lead to the loss of 3% of the Humber Estuary population. This will lead to an adverse effect which cannot be mitigated within the European site (HRA report 6.3.45 - 6.3.52 & Section 6.4).

NE identify curlew as one of the 3 key species that would be particularly affected by the AMEP development (NE written representations paragraph 5.19). Area A is also subject to a planning permission that would allow the use of part of the land for the laydown area for the proposed Drax power station. The applicant has suggested several options to deal with this, the preferred one being to phase the Able MEP development so that an area south of Station Road could be used as part of Area A until Drax have finished using the laydown area. The applicant will voluntarily supply supplementary environmental information on use of the area between Station Road and Area A (Able written summary of representations HRA hearing paragraphs 21-22). This is the only option that has been considered in detail by NE; they advise that it would be capable of delivering sufficient mitigation but a requirement should be included in the DCO (NE written summary of representations HRA hearing paragraphs 28-30). The applicant is willing to do this but now advises that Drax are no longer pursuing their proposal so will not require any land within Area A (Able written summary of representations HRA hearing paragraphs 21,23). The RSPB have expressed concerns as to how long it will take Area A to become functional as wet grassland (RSPB WR, Proof of Evidence by Tony Prater paragraph 4.2.3)

- h.** Numbers of redshank recorded on Killingholme Marshes foreshore are in excess of 1% of the Humber Estuary population (WeBS data) and reached peak numbers of approximately 10% of the population ('Through the Tide' Count). They were recorded throughout the Count Sectors but favoured Sectors C and D which will both be lost to AMEP. WeBS data indicates peak numbers occurring in the winter. The 'Through the Tide' Count showed a peak during the autumn passage period but also recorded numbers in excess of 1% of the Humber Estuary population persisting through the winter and into March. Most feeding sites of redshank on the Humber Estuary are in close proximity to high water roosting areas; the roost at North Killingholme Haven Pits holds between 200 and 250 birds. It is possible that on high tides some of the

population using the foreshore may move to roost at the Haven Pits, but there is no data to confirm this linkage. The redshank population on the Humber has remained relatively stable as a whole. The loss of the Killingholme Marshes foreshore could lead to the loss of a substantial part of the redshank population on the Humber Estuary and this effect cannot be mitigated. Birds using the Haven Pits are not likely to be disturbed during construction, but if the use of this roost is linked to their use of the foreshore then this could also lead to a reduction in the numbers using the Haven Pits (HRA report paragraphs 6.3.53 - 6.3.59 & Section 6.4).

NE identifies redshank as one of the 3 key species that would be particularly affected by the AMEP development (NE WR paragraph 5.19).

- i.** AMEP will result in the displacement of between 0.2 and 2.5% of the Humber Estuary bird assemblage (population size is based on the 5 year mean peak between 2004/5-2008/9) because the permanent habitat loss and disturbance during construction of the Killingholme Marshes foreshore. NE & the RSPB advise that the level of displacement calculated by the applicant is likely to be an under-estimate (NE written representations paragraph 6.14, RSPB written representations full proof of evidence by Tony Prater paragraph 3.8). The North Killingholme Haven Pits will not experience any habitat loss or disturbance but those species which roost near their foraging grounds may be discouraged from using the Haven Pits as a roost site (HRA report paragraphs 6.6.30-6.3.62 & Section 6.4). This point is disputed by NE, see footnote I.
- j.** Figures for direct and indirect habitat loss have now been agreed between the applicant and NE (see sHRA SoCG Annex B, SEI reports EX11.23 & EX11.24, NE response to second round of questions paragraph 32). The EA accepts the short-term habitat losses calculated in EX11.23 (EA response to second round of questions paragraph 2.4) but not the long-term losses (EA comments on the applicant's response to WRs paragraphs 4.28-4.31).
- k.** Functional habitat loss as a result of disturbance from lighting, noise, human activity etc has been identified by the applicant as being 6 ha of mudflats (Annex B sHRA SoCG). Restrictions on piling though as proposed in paragraph 4.3.1 of the sHRA SoCG have been agreed with NE and the MMO as likely to avoid disturbance to SPA birds provided a suitable requirement is incorporated in the DCO or DML (paragraphs 4.3.2-4.3.3).

- I. NE has advised that North Killingholme Haven Pits may also be subject to disturbance. The applicant has produced additional information on the location & effect of lighting (SEI report EX19.1). Disturbance during construction will be secured by Schedule 11, reqmt 17 of the DCO such that 50m lighting towers will be fitted with directional luminaires to limit spill outside the working areas to avoid adjacent sensitive ecological habitats & unnecessary overspill into the estuary area. (Table 16.1 AMEP's response to 1<sup>st</sup> round of questions) They have also suggested noise & height restrictions that could avoid problems. NE has yet to provide a formal response on this but feel that it should be possible to address this issue through an appropriately worded requirement (NE written summary of representations HRA hearing paragraph 32).

Matrix 5: Humber Estuary SAC summary of effects on site integrity from the project alone

<b>Humber Estuary SAC</b>				
<b>European site features</b>	<b>Likely effects of project</b>			
	<b>Disturbance/displacement</b>		<b>Habitat loss</b>	
	<i>C</i>	<i>O</i>	<i>C</i>	<i>O</i>
Atlantic salt meadows			✓a	✓a
Estuaries			✓a	✓a
Mudflats & sandflats not covered by seawater at low tide			✓a	✓a
River lamprey	xc		xb	xb
Sea lamprey	xc		xb	xb

**Evidence:**

**Figures for direct and indirect habitat loss have now been agreed between the applicant and NE (see sHRA SoCG Annex B, SEI reports EX11.23 & EX11.24, NE response to second round of questions paragraph 32). The EA accepts the short-term habitat losses calculated in EX11.23 (EA response to second round of questions paragraph 2.4) but not the long-term losses described in EX11.24 (EA comments on the applicant’s response to WRs paragraphs 4.28-4.31).**

- b.** The abundance of lamprey impinged at the South Humber Power Station at the edge of the main channel suggests this area as a possible preferential route for migration. It is considered unlikely that the shallow sub-tidal areas near AMEP will be used for feeding but individuals may rest there during the day (migration is mainly nocturnal). However as the loss of sub-tidal habitat is less than 0.1 % of the sub-tidal estuarine habitat within the estuary so there should be no adverse effects (HRA report paragraphs 6.5.11, .ES Annex 10.2). Agreed by the MMO (MMO 2<sup>nd</sup> question response).

- c. The applicant's sHRA report states that on the basis of the Subacoustech study on Atlantic salmon they concluded that there will be corridor through the estuary through which migratory species, including lamprey can pass, even when piling is being carried out (HRA report paragraphs 6.5.1-6.5.10, ES Annex 10.2). This was disputed by the statutory agencies and the applicant proposed mitigation measures (sHRA SoCG paragraph 4.3.1). The MMO and NE have accepted this as offering the basis for a detailed DCO or DML requirement which is currently being developed (sHRA SoCG paragraphs 4.3.2-3)

Matrix 6: Humber Estuary Ramsar summary of effects on site integrity from the project alone

<b>Humber Estuary Ramsar site</b>				
<b>European site features</b>	<b>Likely effects of project</b>			
	<b>Disturbance/displacement</b>		<b>Habitat loss</b>	
	<i>C</i>	<i>O</i>	<i>C</i>	<i>O</i>
Criterion 1 - The site is a representative example of a near-natural estuary with the following component habitats: dune systems and humid dune slacks, estuarine waters, intertidal mud and sand flats, saltmarshes, and coastal brackish/saline lagoons.			✓ <b>a</b>	✓ <b>a</b>
Criterion 5 - In the non-breeding season, the area regularly supports 153,934 individual waterbirds	✓ <b>e</b>	✓ <b>e</b>	✓ <b>d</b>	✓ <b>d</b>
Criterion 6 - regularly supports 1% of the individuals in the populations of the species or subspecies*	✓ <b>e</b>	✓ <b>e</b>	✓ <b>d</b>	✓ <b>d</b>
Ramsar criterion 8 - acts as an important migration route for both river lamprey and sea lamprey between coastal waters and their spawning areas.	<b>xc</b>	<b>xc</b>	<b>xb</b>	<b>xb</b>

- a.** See footnote a for matrix 5.
- b.** See footnote b for matrix 5.
- c.** See footnote c for matrix 5.
- d.** See footnotes a-i for matrix 4.
- e.** See footnotes a-l for matrix 4.

