PROPOSED ABLE MARINE ENERGY PARK

STATEMENT OF COMMON GROUND
ON SHADOW HABITATS
REGULATIONS ASSESSMENT

between

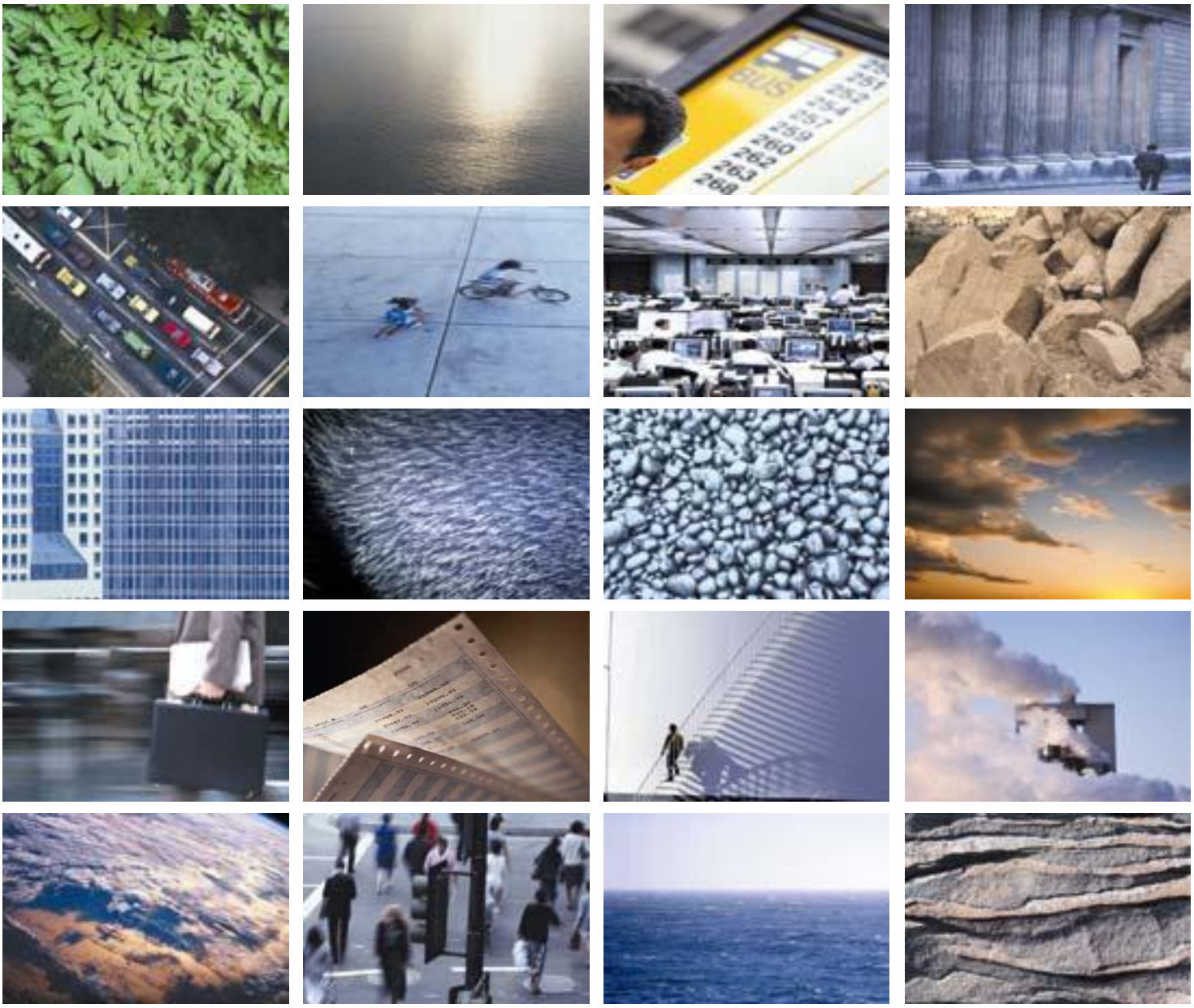
ABLE HUMBER PORTS LTD (the Applicant)

and

THE MARINE MANAGEMENT ORGANISATION, and NATURAL ENGLAND

Final Version, dated 24 August 2012

ORGANISATION	NAME	SIGNATURE
ABLE HUMBER PORTS LIMITED	R M CRAM	[redacted] Date:24-8-12
NATURAL ENGLAND	A HEARLE	[redacted] Date:24-8-12
THE MARINE MANAGEMENT ORGANISATION	G MCNIVEN	GMcN Date:24-8-12
This report details the level of agreement between the Organisations above with respect to the shadow habitats regulations assessment undertaken by the Applicant for the Able Marine Energy Park.		



Able Humber Ports Ltd

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August 2012

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Able Humber Ports Ltd

Proposed Able Marine Energy Park:

Statement of Common Ground on Shadow Habitats Regulations Assessment

August 2012

Reference 0120872

For and on behalf of Environmental Resources Management	
Approved by:	Andy Coates
Signed:	
Position:	Technical Director
Date:	24 August 2012

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CONTENTS

1 INTRODUCTION

1.1 BACKGROUND

1.1.1 In December 2011, Able Humber Ports Ltd (AHPL) submitted an application to the Infrastructure Planning Commission (IPC) (now dissolved with its duties transferred to the Planning Inspectorate) for consent to develop a marine energy park. If consented, the development will be known as Able Marine Energy Park (AMEP). AMEP will incorporate a new quay together with facilities for the manufacture of marine energy components including offshore wind turbines. The development of AMEP, east of North Killingholme, will lie partly within the Humber Estuary Special Area of Conservation (SAC), Special Protection Area (SPA) and Ramsar site (referred to collectively hereafter as the European sites).

1.1.2 It is a requirement under European law, as implemented in the UK by the Habitats Regulations (1), for competent authorities to determine whether a project such as AMEP, will be likely to have a significant effect on any European site, either individually or in-combination with other projects. If a significant effect is likely or the possibility of the effect being significant cannot be excluded (*ie* there are uncertainties), then an appropriate assessment (AA) of the implications of the project (against the European site's conservation objectives) must be undertaken. The process is known as a Habitats Regulations Assessment (HRA) and the sequence of steps which comprise it are set out in Section 3 of Natural England's Written Representations.

1.1.3 AHPL prepared a shadow HRA (sHRA) report which accompanied the submission to the application as required by the IPC at the time. That report concluded that AMEP would result in an adverse effect on the integrity of the European sites and that compensation measures would be required, if the competent authority was satisfied that there were no alternatives and the development must be carried out for imperative reasons of over-riding public interest (IROPI). Consultations with key stakeholders have been ongoing since the application was made about the reported findings of the assessment and the necessary compensation measures.

1.2 AIM OF THIS DOCUMENT

1.2.1 There is universal agreement between AHPL, Natural England (NE) and Marine Management Organisation (MMO) that AMEP will result in both a likely significant effect and an adverse effect on the integrity of the European sites. It is also agreed that in order for the proposals to proceed, measures are required which compensate for the adverse effects of AMEP.

(1) *The Conservation of Habitats and Species Regulations 2010*. SI 2010 – 490 (as amended). The Stationery Office Ltd.

1.2.2 The Examining Authority welcomed AHPL's decision to produce a statement of common ground with interested parties on the matters relevant to the sHRA. This document sets out the matters which are common ground and are agreed by the signatories to it. It also highlights any areas where there is still disagreement and states what actions are being taken to seek to reach agreement. The signatories comprise Able Humber Ports Ltd, Natural England (NE) and the Marine Management Organisation (MMO).

1.2.3 The Examination Panel suggested that it would be valuable if the following organisations could be party to the SoCG before it was submitted:

- Royal Society for the Protection of Birds (RSPB);
- Lincolnshire Wildlife Trust (LWT); and
- Local authorities (Hull, North Lincolnshire and North East Lincolnshire Council).

1.2.4 These organisations were contacted by letter on 9th August 2012 (see copy letters in *Annex A*), advising them that AHPL would be sending them a working draft copy of the document on the 17th August, on which they were invited to provide comments prior to submission of the SoCG on Friday 24th August. The draft was issued on Friday 17th August 2012 as stated and a copy of the draft and the comments received on it are contained in *Annex A*.

1.2.5 The Infrastructure Planning (Examination Procedure) Rules 2010, defines a statement of common ground (SoCG) as, "*a written statement prepared jointly by the Applicant and any interested party, which contains agreed factual information about the application*".

1.2.6 In 2010, the Department for Communities and Local Government issued, '*Planning Act 2008: Guidance for the examination of applications for development consent for nationally significant infrastructure projects*'. That guidance provides the following advice on the contents of a SoCG.

"63. The statement of common ground is a written statement prepared jointly by the Applicant and the main objectors, setting out the agreed factual information about the application. A statement of common ground is useful to ensure that the evidence at the examination focuses on the material differences between the main parties. Effective use of such statements is expected to lead to a more efficient examination process. 64. The statement should contain basic information on which the parties have agreed….. In addition to basic information about the application, agreement can often be reached on technical matters… The topics on which agreement might be reached in any particular instance will depend on the matters at issue and the circumstances of the case.

65. As well as identifying matters which are not in real dispute, it may also be useful for the statement to identify areas where agreement is not possible. The statement should include references to show where those matters are dealt with in the written representations or other

documentary evidence. Agreement should also be sought before the examination commences about the requirements that any order granted should contain".

1.3 STRUCTURE OF THE DOCUMENT

1.3.1 *Chapter 2* summarises the status and the statutory function of the relevant organisations in respect of the sHRA.

1.3.2 *Chapters 3* and *4* contain the conservation objectives, and list mitigation which is embedded within the project. They summarise the agreed positions on shadow screening of effects and the shadow Appropriate Assessment which resulted from the screening process, and summarise the position regarding in-combination effects with other plans and projects. In this document the term European sites refer to the Humber Estuary Special Area of Conservation (SAC), Special Protection Area (SPA) and Ramsar site. Ramsar sites are sites listed under the 1971 Convention on Wetlands of International Importance (see Section 3 of Natural England's Written Representations for more information).

1.3.3 *Chapter 5* sets out the measures which have been agreed to compensate for adverse effects on the European sites should the tests of no alternatives and IROPI be accepted by the competent authority. *Chapter 6* summarises the agreed position overall in respect of the sHRA.

2 ROLES AND RESPONSIBILITIES

2.1 INTRODUCTION

2.1.1 The organisations which have signed this document have particular roles and responsibilities which have been set out in the following sections.

2.2 ABLE HUMBER PORTS LTD

2.2.1 AHPL is the applicant for the project.

2.3 NATURAL ENGLAND

2.3.1 Natural England is a statutory body established under the Natural Environment and Rural Communities Act 2006 (the "NERC Act"). Natural England is the statutory advisor to Government on nature conservation in England and promotes the conservation of England's wildlife and natural features. It is financed by the Department for Environment, Food and Rural Affairs ("Defra") but is a Non-Departmental Public Body, which forms its own views based on the best scientific evidence available.

2.3.2 Natural England works for people, places and nature, to enhance biodiversity, landscapes and wildlife in rural, urban, coastal and marine areas; promoting access, recreation and public well-being, and contributing to the way natural resources are managed so that they can be enjoyed now and by future generations.

2.3.3 Section 2 of the NERC Act provides that Natural England's statutory general purpose is:

"… to ensure that the natural environment is conserved, enhanced and managed for the benefit of present and future generations, thereby contributing to sustainable development."

2.3.4 Section 2(2) states that Natural England's general purpose includes:

- promoting nature conservation and protecting biodiversity;

- conserving and enhancing the landscape;
- securing the provision and improvement of facilities for the study, understanding and enjoyment of the natural environment;
- promoting access to the countryside and open spaces and encouraging open-air recreation; and
- contributing, in other ways, to social and economic well-being through management of the natural environment.

2.3.5 Natural England is also a statutory consultee in respect of (amongst other things) plans and projects subject to the requirements of the various Environmental Impact Assessment Regulations in England, proposals likely to damage any of the flora, fauna or geological or physiographical features for which a Site of Special Scientific Interest ("SSSI") has been designated, and plans or projects likely to have a significant effect on any European site. European sites include SPAs and SACs, or Ramsar sites. In addition, Natural England exercises additional duties with regards to SSSIs under the Wildlife and Countryside Act 1981(as amended) and in relation to Natura 2000 sites under the Habitats Regulations.

2.4 MARINE MANAGEMENT ORGANISATION

2.4.1 The relevant Secretary of State is the competent authority for Habitats Regulations Assessment and Appropriate Assessment under the Planning Act 2008. As such, the MMO is not a competent authority with regards to Appropriate Assessment within the DCO process, but remains as Regulator of its outcomes via the implementation of any Deemed Marine Licence arising from the DCO application (should this be granted).

2.4.2 Any likely significant effects of the proposed development should have been properly taken into account in the developers shadow HRA for the DCO application. In regards to those activities to be undertaken identified below the level of MHWS and which may have an adverse effect upon the integrity of a European Site, it is likely that conditions to the DML will arise as a result of the conclusions of the HRA/AA process. As such, the MMO remains an interested party in the outcomes and conclusions of the Appropriate Assessment process.

3 SHADOW SCREENING ASSESSMENT

3.1 INTRODUCTION

3.1.1 This chapter lists the different effects which will occur to the qualifying interest features of the Humber Estuary SAC, SPA and Ramsar site from the AMEP proposals.

3.1.2 *Section 3.2* focuses on those effects from AMEP where it has been agreed that either a likely significant effect will occur, or it is not possible to conclude that no likely significant effect will occur. In either case Appropriate Assessment is required. Those impacts which have been considered and which on the basis of objective information can be excluded from further consideration as they will not have a likely significant effect on the European sites are listed together with a brief explanation. Further consideration is given towards the end of the chapter to the risk of in-combination effects (see *Section 3.8*), which includes other effects from AMEP that were agreed to have no likely significant effect on their own.

3.1.3 It has also been agreed also that assessing the effects of AMEP against the qualifying interests of the SAC and the SPA will ensure that the interests of the Ramsar site are taken into account due to the overlapping qualifying interest features. The only exception to this is the natterjack toad which is part of the Ramsar site interest alone. However, this species will not be affected by the AMEP proposals as its only location on the Humber Estuary is at Saltfleetby – Theddlethorpe Dunes SSSI in the outer estuary, approximately 30 km south of the AMEP site.

3.2 CONSERVATION OBJECTIVES OF EUROPEAN SITES[1]

SAC

3.2.1 *"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.*

(1) http://www.naturalengland.org.uk/ourwork/conservation/designatedareas/sac/conservationobjectives.aspx - accessed on 22 August 2012 and provided in Annex B of Natural England's Written Representations.

3.2.2 *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; and*
- *the distribution of qualifying species within the site."*

SPA

3.2.3 *"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.*

3.2.4 *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; and*
- *the distribution of the qualifying features within the site."*

3.3 PROJECT DESIGN ELEMENTS TAKEN INTO ACCOUNT IN THE SCREENING

3.3.1 The measures listed below will be included within the project design (*ie* embedded mitigation) to avoid the risk of significant effects arising in respect of qualifying interest habitats and species. These measures have been agreed by those signatories with a relevant remit.

- Good working practices (relating to timing, location and monitoring of disposals) will be implemented to avoid significant effects from suspended sediment concentrations (SSC), and on water and sediment quality. These will be incorporated into the Dredging Strategy, which is a requirement of the DCO.

- Disposal to land within the AMEP site of the dredged firm to stiff clay from capital dredging, which is not part of the current sediment budget.

- Light spill onto NKM will be limited as described in *Supplementary Information EX19.1 - Lighting Lux Plans*.

- Construction works at the compensation site at CCS will be undertaken outside the sensitive period for SPA birds as described in *EX 11.18 - Sensitive Time Periods for Birds at AMEP Compensation Site*.

- The existing public coastal footpath will be re-aligned behind the new sea defence embankment of the compensation site, and hides will be provided on the new embankments as described in *EX 11.18 - Sensitive Time Periods for Birds at AMEP Compensation Site*. These measures will reduce the risks of disturbance to SPA bird species.

Comments by the Agencies

3.3.2 NE agrees that the mitigation included in the project design, as described above, means that it is possible to conclude that there will be no significant effect from these impacts on the Humber Estuary designated sites.

3.3.3 The MMO concurs with the position of NE.

3.4 POTENTIAL EFFECTS FROM AMEP ON THE EUROPEAN DESIGNATIONS OF THE HUMBER ESTUARY

3.4.1 *Table 3.1* lists the effects which are predicted to occur from the AMEP development, and for each effect it is stated whether a significant effect is likely, or that a likely significant effect cannot be excluded on the basis of objective information (*ie* because the effect is uncertain). Further details of the areas of direct habitat loss, and indirect habitat losses over the medium to long term from AMEP, are contained in *Annex B*.

Table 3.1 Potential Effects AMEP Alone

No	Effect of AMEP	Source and Scale of Effect	Conservation Objective(s) Affected	Likely Significant Effect AMEP Alone
1	Permanent direct loss of estuarine habitat (H1130)	• 45 ha lost due to AMEP (31.5 ha mudflat, 13.5 ha sub-tidal) and 11.6 ha functional loss of mudflat for birds[1]). Will displace waterfowl using these habitats and may affect lamprey species.	• Avoid deterioration of the qualifying natural habitats and the habitats of qualifying species. • Maintain the extent and distribution of the habitats of the qualifying features. • Maintain the distribution of qualifying features within the site	✓
2		• Effects of capital and maintenance dredging	• Avoid deterioration of the qualifying natural habitats and the habitats of qualifying species. • Maintain the extent and distribution of the habitats of the qualifying features. • Maintain the structure and function of the habitats of the qualifying features. • Maintain the distribution of qualifying features within the site.	✓
3		• Construction and maintenance of the berthing pocket		X
4		• Effects of disposal of dredged material		✓
5	Permanent direct loss of intertidal mudflat (H1140)	• 31.5 ha lost due to footprint of new quay which supports a range of waterfowl. The loss for the pumping station is within the area where functional loss for birds occurs.	• Avoid deterioration of the qualifying natural habitats and the habitats of qualifying species. • Maintain the extent and distribution of the habitats of the qualifying features. • Maintain the distribution of qualifying features within the site.	✓
6		• Possible decline in bird numbers roosting at NKHP with loss of linked NKM feeding habitat.	• Maintain the structure and function of the habitats of the qualifying features. • Maintain the distribution of qualifying features within the site.	✓

(1) The habitat losses associated with the SPA include areas of functional loss and hence are greater than those areas lost from the SAC.

No	Effect of AMEP	Source and Scale of Effect	Conservation Objective(s) Affected	Likely Significant Effect AMEP Alone
7	Permanent direct loss of saltmarsh (H1330 / H1310)	• 2 ha lost at CCS for breach in existing seawall at RTE compensation site.	• Avoid deterioration of the qualifying natural habitats and the habitats of qualifying species. • Maintain the distribution of qualifying features within the site.	✓
8	Indirect effects on estuarine habitat (H1130).	• Transformation of existing estuarine habitats into saltmarsh due to changes in accretion from the presence of the new quay (see *Annex B*).	• Avoid deterioration of the qualifying natural habitats and the habitats of qualifying species. • Maintain the extent and distribution of the habitats of the qualifying features • Maintain the distribution of qualifying features within the site.	✓
9		• Loss of sub-tidal habitat used by lamprey.	• Avoid deterioration of the habitats of qualifying species. • Maintain the populations and distribution of qualifying species within the site. • Maintain the distribution of qualifying features within the site.	X
10		• Effect of AMEP on the hydrodynamics of the estuary and on estuarine habitats (assumed 5 ha of intertidal mudflat habitat changed to sub-tidal – see row 17 below) over 100 year timescale (Deltares, 2012[1]).	• Avoid deterioration of the qualifying natural habitats and the habitats of qualifying species. • Maintain the extent and distribution of the habitats of the qualifying features. • Maintain the distribution of qualifying features within the site.	✓
11		• Effects on water temperatures due to relocation of E.ON and Centrica outfalls.		X

(1) Report to the Environment Agency by Deltares in 2012 reviewing the longer term impacts of Green Port Hull and AMEP on the Humber Estuary.

No	Effect of AMEP	Source and Scale of Effect	Conservation Objective(s) Affected	Likely Significant Effect AMEP Alone
13	Indirect effects on intertidal mudflat (H1140)	• Long term localised transformation of estuarine habitats resulting in a conversion of of mudflat to saltmarsh due to accretion caused by the new quay (see *Annex B*).	• Avoid deterioration of the qualifying natural habitats and the habitats of qualifying species. • Maintain the extent and distribution of the habitats of the qualifying features. • Maintain the distribution of qualifying features within the site.	✓
14		• Formation of channels in the mudflats due to the discharge from the pumping station.	• Avoid deterioration of the qualifying natural habitats and habitats of qualifying species. • Maintain extent and distribution of qualifying natural habitats and habitats of qualifying species. • Maintain the distribution of qualifying features within the site.	X
15		• Erosion at the breach location on the compensation site.		X
16		• Effects from increased wave heights due to the new quay.		X
17		• Changes in habitat (assumed 5 ha of intertidal mudflat) over 100 year timescale (Deltares, 2012[1]) as described in row 10 above.	• Avoid deterioration of the qualifying natural habitats and the habitats of qualifying species. • Maintain the extent and distribution of the habitats of the qualifying features. • Maintain the distribution of qualifying features within the site.	✓
18	Indirect effects on saltmarsh (H1330 / H1310)	• Other estuarine habitat types transformed into saltmarsh due to changes caused by the new quay (see *Annex B*).	• Avoid deterioration of the qualifying natural habitats and the habitats of qualifying species. • Maintain the distribution of qualifying features within the site.	✓
19	Loss of terrestrial habitat	• Loss of farmland fields, predominantly grassland at North Killingholme, utilised by birds from the SPA/Ramsar site.	• Avoid the deterioration of the habitats of the qualifying features, and the significant disturbance of the	✓

(1) Report to the Environment Agency by Deltares in 2012 reviewing the longer term impacts of Green Port Hull and AMEP on the Humber Estuary.

No	Effect of AMEP	Source and Scale of Effect	Conservation Objective(s) Affected	Likely Significant Effect AMEP Alone
20		• Loss of arable fields at CCS utilised by birds from the SPA/Ramsar site and effects on birds on adjacent intertidal habitats.	qualifying features. • Avoid significant disturbance of the qualifying features. • Maintain the distribution of qualifying features within the site.	X
21	Disturbance to birds	• 11.6 ha of intertidal mudflat adjacent to the new quay will be affected by levels of disturbance from construction and operation that can be considered as permanent, resulting in functional loss for foraging or roosting birds.	• Avoid significant disturbance of the qualifying features. • Maintain the populations and distribution of qualifying species within the site.	✓
22		• Effects of lighting on birds on the remaining areas of NKM.		X
23		• Construction and operation of AMEP may cause disturbance to birds remaining on areas of NKM, at NKHP and also Mitigation Area A, due to noise (especially piling during construction), human presence and visual sources (*eg* movement of cranes, turbine towers, lighting).		✓
24	Disturbance to grey seals and river lamprey (S1364 and S1099)	• Construction will result in underwater noise, particularly from piling. • Effect on migratory routes because of the obstruction of the quay.		✓

✓ = likely significant effect

X = likely significant effect can be excluded on the basis of objective information.

3.4.2 None of the other habitat types listed as qualifying interests of the SAC/Ramsar will be affected.

3.5 SIGNIFICANCE OF LIKELY EFFECTS ON HUMBER ESTUARY SAC

Table 3.2 Significance of Effects on Humber Estuary SAC

No	Potential Effect	Significance of Effect on SAC Qualifying Interest Features
1	Permanent direct loss of estuarine habitat (H1130)	**Likely Significant Effect** due to losses of habitat under the footprint of the new quay, effects on lamprey and the effects of capital and maintenance dredging and disposal. Appropriate Assessment (AA) required.
2	Permanent direct loss of intertidal mudflat (H1140)	**Likely Significant Effect** predominantly due to losses caused by the new quay. Effects of dredging and disposal as per estuarine habitat above. AA required.
3	Permanent direct loss of saltmarsh (H1330 / H1310)	**Likely Significant Effect** due to loss of saltmarsh for breach on compensation site. AA required.
4	Indirect effects on estuarine habitat (H1130).	**Likely Significant Effect** with changes in the composition of the estuarine habitats present to the north and south of the quay. AA required.
5		**No Likely Significant Effect** has been concluded about the effects on sub-tidal habitat for lamprey, the effects of the compensation site at CCS on the hydrodynamics of the estuary and the effects on water temperatures of the relocation of the power station outfall pipes for reasons listed below.
6		No likely significant effects on lamprey due to the small indirect changes (see *Annex B*).
7		Relocation of the outfalls to the front of the new quay will change the thermal plume, but there will be no significant changes to the temperatures of the receiving water (*EX9.7 – Assessment of the Relocation of the E.ON and Centrica Outfalls on Thermal Recirculation*), The relocation has yet to be agreed with E.ON and Centrica, however, the receiving water will be no warmer with AMEP even if the outfalls remain in their current location.
8	Indirect effects on intertidal mudflat (H1140)	**Likely Significant Effect** predominantly due to changes in habitat to the north and south of the new quay and geomorphological changes due to rise in water levels. AA required.
9		**No Likely Significant Effect** has been concluded about the effects of erosion at the breach location of the compensation site at CCS and due to the discharge from the pumping station and increased wave heights due to the new quay,. The reasons are set out below.
10		Downstream of the breach at the compensation site, erosion and enlargement of the CCS Creek is predicted with increases predominantly in the depth of the creek and also its width closer to the breach, although it will remain unchanged at the *"downstream"* location (Black & Veatch, 2012[1]).
11		A channel will be initiated by dredging a short section of intertidal habitat seaward of the pumping station (see *Tables 12.2* and *12.3* of the SoCG for the ES), so there will be no significant erosion effects.
12		Increased wave heights due to the new quay will be small and localised and any erosion resulting will be offset by accretion resulting from the sheltering effect of the quay as described in *Supplementary Information EX 8.7 Modelling of Final Quay Design*.
13	Indirect effects on saltmarsh (H1330 / H1310)	**Likely Significant Effect** due to the transformation of existing habitat types into saltmarsh (see *Annex B*). AA required.

(1) Black & Veatch (2012) *Cherry Cobb Sands Compensation Site – Second Interim Report on Detailed Modelling*. B&V.

No	Potential Effect	Significance of Effect on SAC Qualifying Interest Features
14	Disturbance to grey seals and river lamprey (S1364 and S1099)	**Likely Significant Effect** as piling for the new quay construction will create underwater noise which could affect foraging range of grey seals and migratory movements of river and sea lamprey. Mitigation will be required. AA required.

Comments by the Agencies

3.5.1 NE agrees with assessment of impacts set out in *Table 3.2* and agrees that the relevant impacts have been identified for further assessment.

3.5.2 The MMO concurs with the position of NE.

3.6 SIGNIFICANCE OF LIKELY EFFECTS ON HUMBER ESTUARY SPA

3.6.1 All of those species listed in *Table 3.3* will be significantly affected as they occur in numbers ≥1% of the Humber Estuary population, and will be affected by loss / changes in habitat and / or disturbance as identified in *Table 3.1*. Details of the percentages affected are contained in *Annex E* of the sHRA submitted with the application in December 2011. The species identified in *Table 3.3* and *Paragraph 3.4.1* relating to the waterfowl assemblage, includes all species recorded, and not just those species listed on the SPA citation.

Table 3.3 Bird Species of Humber Estuary SPA Significantly Affected.

No	Effect	SPA Qualifying Interest Features					
		Internationally important Populations of Regularly Occurring Annex I Species			**Internationally Important Migratory Species**		**Other Species of Waterfowl Assemblage**
		Breeding	*Passage*	*Wintering*	*Passage*	*Wintering*	
1	Permanent direct loss of intertidal mudflat	-	-	Bar-tailed godwit	Black-tailed godwit, dunlin and redshank	Black-tailed godwit, dunlin, redshank and shelduck	Curlew, lapwing and ringed plover
2	Indirect changes in intertidal mudflat		-	Bar-tailed godwit	Black-tailed godwit, dunlin and redshank	Black-tailed godwit, dunlin, redshank and shelduck	Curlew, lapwing and ringed plover
3	Loss of terrestrial habitat	Marsh harrier	-				Curlew and lapwing
4	Disturbance to birds at NKM and NKHP	Avocet and marsh harrier	-	Avocet and bar-tailed godwit	Black-tailed godwit, dunlin and redshank	Black-tailed godwit, dunlin, redshank and shelduck	Curlew, lapwing, mallard, ringed plover, shoveler and teal

No	Effect	SPA Qualifying Interest Features					
5	Loss of NKHP as a roost site due to loss of intertidal mudflats at NKM	-	-	Bar-tailed godwit	Black-tailed godwit, dunlin and redshank	Black-tailed godwit, dunlin, redshank and shelduck	Curlew, lapwing and ringed plover

3.6.2 A conclusion of no likely significant effect has been drawn for the bird species listed below for the reasons stated (bird codes listed in *Annex C*).

- **Not recorded by Through The Tide Count surveys at NKM/NKHP –**AE, BI, HD, BY, BS, BV, DB, PB, CX, CN, CV, EG, E, EW, GY, GD, GE, GK, GJ, GN, GG, HH, JS, KI, LX, LN, AF, PG, PT, EB, RH, RS, UD, SS, SA, SP, NB, DR, WS, OD, WK.
- **Not reliant on habitats at NKM/NKHP –** BH, CM, CO, H, HG, GA, GB, LB, MU.
- **Species that although they occurred in numbers ≥ 1% their ecology makes them resilient to impacts (*eg* through their use of cover at NKHP) -** (MH, SN).
- **Only one or two birds recorded by TTTC, or percentage of Humber Estuary population recorded is so low as to be insignificant –** CG, CA, GP, GV, LG, ET, KN, MS, OC, PO, RU, SY, TU, TT, WA, WM, WN, YG.

3.6.3 Where in respect of the impacts listed in *Table 3.1* a likely significant effect on the birds in the SPA can be excluded, the reasons for those conclusions are given in the paragraphs below.

3.6.4 It was agreed that a likely significant effect could be excluded for the loss of sub-tidal habitat in respect of the SPA and the bird interests of the Ramsar site, as none of the bird species significantly affected are reliant on the sub-tidal habitat.

3.6.5 The location and effect of the lighting is shown on the figures in *Supplementary Information EX19.1 - Lighting Lux Plans*. On the basis of this information a likely significant effect could be excluded in respect of the effects of lighting on the remaining intertidal habitats at NKM.

3.6.6 A likely significant effect on birds can be excluded in respect of the construction of the compensation site at CCS and the loss of the arable fields as confirmed by NE (see *Paragraphs 31.4.3* and *31.5.4* of the SoCG for the ES and *Supplementary Information EX35.12Farmland Disturbance at Cherry Cobb Sands* and *Supplementary Information EX11.18 – Sensitive Time Periods for Birds at the Compensation Site*). This is on the basis that there will be no difference between the existing situation and the proposed situation (*ie* SPA birds still being able to utilise arable land adjacent to the compensation site) and work will only be undertaken between April to October when bird numbers are lowest and environmental conditions (food availability, daylight length and temperatures) most benign. Effects will be further mitigated by the diversion of the footpath, and the visual and acoustic

screening of the existing intertidal habitats provided by the existing embankment. Bird hides will be provided on the new embankments to facilitate bird watching.

Comments by the Agencies

3.6.7 NE agrees with assessment of impacts set out in *Table 3.3* and agrees that the relevant impacts have been identified for further assessment.

3.6.8 The MMO concurs with the position of NE.

3.7 SUMMARY - SCREENING

3.7.1 The AMEP proposals alone will have a likely significant effect on the Humber Estuary SAC, SPA and Ramsar site.

3.8 IN-COMBINATION

3.8.1 Those qualifying interest habitats affected by AMEP will all be significantly affected by AMEP alone and have been taken forward for Appropriate Assessment (see *Chapter 4 Appropriate Assessment*), and subsequent compensation as no mitigation is possible (see *Chapter 5 Compensation Measures*).

3.8.2 The remaining qualifying interest habitats listed on the Humber Estuary SAC citation (*eg* sandbanks which are slightly covered by the sea at all times and various dune communities) will not be affected at all by AMEP, and hence an in-combination assessment for them is not necessary.

3.8.3 *Paragraph 3.6.2* above identifies those bird species for which a likely significant effect has been excluded in respect of AMEP alone. The vast majority are species for which there will be no in-combination effects as they were not recorded as part of site specific surveys, and hence will not be affected at all by AMEP.

3.8.4 In-combination effects were also concluded not to occur for the remaining bird species for one of the following reasons:

- they were not reliant on the habitats lost (*eg* gull species recorded and others such as coot, heron and gadwall);
- there were only records of one or two birds; or

- they occurred in a such a small percentage of the Humber Estuary population as to be insignificant.

Further assessment is being undertaken to assess the impacts of capital and maintenance dredging in-combination with other proposals in the Humber Estuary.

Comments by the Agencies

3.8.5 NE agrees with the conclusion of the in-combination assessment, which includes the acknowledgement that further discussion is required on the impacts of capital and maintenance dredging.

3.8.6 The effects of capital and maintenance dredging and disposal on sub-tidal habitat and benthic communities are subject to ongoing discussions between the Applicant and the MMO, NE and EA.

3.9 SCOPE OF THE APPROPRIATE ASSESSMENT FOR THE EUROPEAN SITES

3.9.1 Under regulation 61(1) of the Conservation of Habitats and Species Regulations 2010 (as amended), a competent authority, before deciding to undertake, or give consent, permission or other authorisation for, a plan or project which is likely to have a significant effect on a European site and which is not directly connected with, or necessary to the management of that site, must make an appropriate assessment of the implications for that site in view of that site's conservation objectives. An appropriate assessment is intended to secure the main objective of the Habitats Directive, namely ensuring biodiversity through the conservation of natural habitats and of wild fauna and flora. The screening assessment has concluded that the issues listed below need to be assessed in more detail and form the scope of the Appropriate Assessment.

SAC

- The effects of permanent loss of estuarine habitat from the footprint of the development.
- The effects of capital and maintenance dredging on estuarine habitats and intertidal mudflats.
- The effects of disposal of dredged material on estuarine habitats and intertidal mudflats.
- The effects of the permanent direct loss of intertidal mudflat from NKM due to the footprint of the development.

- The effects of the permanent loss of saltmarsh.
- The effects of indirect habitat changes on qualifying habitats (estuarine habitat, intertidal mudflat and saltmarsh).
- The effects of underwater noise from piling on the feeding behaviour of grey seals and the migratory movements of river lamprey.

SPA

- The effects of the permanent direct loss of estuarine and specifically intertidal mudflats from NKM on waterfowl that it supports.
- The functional loss of 11.6 ha of mudflat habitat as a result of disturbance.
- The effects on the use of NKHP as a roost if the feeding areas on the mudflats at NKM are lost.
- The disturbance effects on birds due to piling activities during construction of the new quay.
- The disturbance effects on birds using NKHP from construction activities other than piling, and operation of AMEP.
- The effects of loss of terrestrial habitat within the AMEP site at North Killingholme which is used by SPA birds (predominantly curlew).

4 SHADOW APPROPRIATE ASSESSMENT

4.1 INTRODUCTION

4.1.1 The following sections summarise the findings of the shadow AA, and any mitigation which has been drawn up to minimise or cancel adverse effects on the European sites.

4.2 SHADOW APPROPRIATE ASSESSMENT FINDINGS SUMMARY – AMEP ALONE

Table 4.1 Shadow Appropriate Assessment SAC

No	Issue	Assessment
1	Effects on estuarine habitat (H1130)	• Permanent direct losses of 45 ha (31.5 ha of intertidal mudflat and13.5 ha of sub-tidal habitat) and medium and longer term changes to habitat arising from the quay presence (see *Annex B*). • The effects result in an adverse effect due to a reduction in the extent and distribution of habitat for which no mitigation is possible. • The effects of capital and maintenance dredging and disposal on sub-tidal habitat and benthic communities are subject to ongoing discussions. • The effects on the wider estuary have been assessed (Deltares, 2012). EA has indicated that an allowance should be made for the change of 5 ha of intertidal habitat to sub-tidal. AHPL's has therefore, taken a precautionary approach and accepted this view and included 10 ha of intertidal mudflat in the habitat provided as compensation taking account of the 2:1 ratio for compensatory mudflat (see *Table 5.1* and *Annex B*). • Migratory movements of lamprey will not be affected by the presence of the new quay as described in *Annex 10.2* of the ES
2	Effects on intertidal mudflat (H1140)	• Adverse effect concluded because of permanent direct loss for the new quay (31.5 ha), and in the longer term the indirect effects of the quay will result in the transformation of intertidal mudflat to saltmarsh (see *Annex B*). These effects result in a reduction in the extent and distribution of intertidal mudflat, for which no mitigation is possible. • The effects on intertidal mudflat as part of the effects on the wider estuary are as described above.
3	Effects on saltmarsh (H1330 / H1310)	• Adverse effect concluded as a reduction in the extent of saltmarsh (2 ha) occurs for which no mitigation is possible.
4	Disturbance to grey seals and river lampreys (S1364, S1095 and S1099)	• No adverse effect concluded with the implementation of the mitigation measures listed in *Section 4.4*.

Table 4.2 Shadow Appropriate Assessment SPA – AMEP Alone

No	Issue	Assessment
1	Effects on estuarine habitat (H1130)	• Adverse effect concluded on internationally important populations of regularly occurring *Annex I* species, migratory species and the waterfowl assemblage, due to the reduction in extent and distribution of the habitat supporting birds. No mitigation is possible
2	Effects on intertidal mudflat (H1140)	• Adverse effect concluded on internationally important populations of regularly occurring *Annex I* species, migratory species and the waterfowl assemblage, due to the reduction in extent and distribution of the habitat supporting birds. No mitigation is possible
3		• Cannot confirm the continued use of NKHP as a roost site by waders from NKM, particularly black-tailed godwit, once mudflats at NKM lost. The effect cannot be mitigated. Therefore, as scientific doubt remains as to the absence of adverse effects, the competent authority cannot be certain that the scheme will not adversely affect the integrity of the European site.
4	Loss of terrestrial habitat	• No adverse effect due to the provision of replacement foraging and roosting habitat in Mitigation Area A.
5	Disturbance effects on birds	• No adverse effect on birds within NKHP based on a commitment to achieve 55 dB(A) L_{Amax} at site boundary.
6		• No adverse effects on birds using Mitigation Area A based on commitments to the same noise limit described above for NKHP, and to distance limits and storage heights within the operational buffer.
7		• No adverse effects on birds at NKHP from lighting within the AMEP site as described in *Supplementary Information EX19.1 - Lighting Lux Plans.*
8		• No adverse effects from piling based on adoption of measures agreed in the piling methods statement, which are set out in *Section 4.3*.

Comments by the Agencies

4.2.1 NE agrees with the assessment of impacts for the SAC. With regards to disturbance impacts on NKHP and Mitigation Area A (SPA issues), we have not yet had time to consider the report sent through to us on 21 August 2012; therefore these issues are not yet agreed. However, it is anticipated that it will be possible to mitigate these impacts through the provision of requirements setting maximum noise limits and storage heights for containers.

4.2.2 The effects of capital and maintenance dredging and disposal on sub-tidal habitat and benthic communities are subject to ongoing discussions between the Applicant and the MMO, NE and EA.

4.3 MITIGATION MEASURES

4.3.1 The measures listed below have been designed taking into account the findings of the shadow AA and are over and above the embedded mitigation measures which form part of the project design.

- Provision of a greenfield terrestrial area on the south bank (covering approximately 48 ha (16.7 ha core with a 150 m surrounding buffer)), known as Mitigation Area A, to provide foraging and roosting habitat for birds from the SPA assemblage (predominantly curlew), to replace that lost to AMEP. Management and monitoring measures will be specified in the EMMPs, frameworks for which have been developed by NE (see Schedule 11 of the draft DCO, Requirement 14).

- Operational buffers will be used along the southern side of AMEP where it borders Mitigation Area A (60 m), and along the northern edge where it abuts NKHP (200 m). A noise limit of 55 dB_{LAmax} due to activities on AMEP will be met at the site boundaries of both NKHP and Mitigation Area A, to avoid disturbance to birds from the SPA. No containers will be stored within 200 m of NKHP or Mitigation Area A and the storage height in these areas will be restricted to 10 m.

- The location and effect of the lighting on NKHP as described in *Supplementary Information EX19.1 - Lighting Lux Plans*. Natural England will be consulted on the final lighting plans.

- Noise shrouds will be used around the pile to limit noise generated by percussive piling. When the piling gate is removed the noise shroud will extend to the water level.

- Method statement for piling works to avoid effects on grey seals, lamprey and SPA bird species including the measures listed below. The statement will be included within the Deemed Marine Licence (DML) in Schedule 8 of the DCO, and in the Code of Construction Practice (CoCP) required through Schedule 11 of the DCO.

    - 180 s soft start with a 100 m mitigation zone;
    - pile pads to be used at all times;
    - maximum pile diameter of 2.1m unless otherwise agreed;
    - no piling when Active Monitoring Buoy shows temperatures >21.5°C and/or DO is <5 mg/l;
    - noise to be monitored 24 hours, seven days a week;
    - a two week period of pre and post construction monitoring in order to establish baseline conditions, and the return to baseline conditions once construction activity has finished;
    - a log of the number and approximate location of piling rigs which are in operation on any given day;

- a cold weather strategy with no percussive piling (unless finishing pile already started when strategy enforced) shall take place following seven consecutive days of zero, or sub- zero temperatures (where the temperature does not >0^{o}c for more than six hours in any day or any other pre-agreed formula to define short periods of thaw);
- The restrictions will be reviewed as follows:
  - after 24 hours of above-freezing temperatures, the restrictions will be lifted on a "probationary basis", provided that the weather forecast (met office forecast location to be agreed) indicates that freezing conditions will not return within 5 days, and
  - after a further 5 clear days of above-freezing temperatures, the restrictions will be lifted entirely and the 'clock reset to zero';
- no percussive piling of marine piles between 7th April and 1st June inclusive in any one calendar year;
- restricted to 101 hours (one rig) or combined 168 hours (two plus rigs) between 2nd June and 22nd July inclusive in any one calendar year (within each four-week work-block);
- restricted to 25 hours (one rig) or combined 42 hours (two plus rigs) between 23rd July and 10th September inclusive in any one calendar year (within each week long work-block);
- restricted to 134 hours (one rig) or combined 224 hours (two plus rigs) between 11th September and 31st October inclusive in any one calendar year (within each four-week work-block);
- restricted to 336 hours (one rig) or combined 560 hours (two plus rigs) between 1st November and 6th April inclusive in any one calendar year (within each eight-week work-block); and
- no piling shall take place between 22:00 and 06:00.

Comments by the Agencies

4.3.2 NE agrees that most of the mitigation described above and incorporated into the DCO and DML is sufficient to avoid an adverse effect on site integrity for the listed impacts. We accept that the text is a summary of the proposals and the actual requirements will be specified within the DCO and DML. As these documents are not yet complete, NE will continue to work with the Applicant, the MMO and the EA to agree appropriate final wording. With regards to disturbance impacts on NKHP and Mitigation Area A (SPA issues), we have not yet had time to consider the report sent through to us on 21 August 2012; therefore these issues are not yet agreed. However, it is anticipated that it will be possible to mitigate these impacts through the provision of requirements setting maximum noise limits and storage heights for containers.

4.3.3 The MMO wishes to clarify that the text in *Section 4.3.1* is an outline summary of suggested requirements developed jointly between the MMO, NE and EA and to be placed upon the proposed scheme via the DCO and DML. Therefore, those requirements as specified within the DCO and DML should be considered the actual requirements to be applied. As final

acceptance of these requirements has yet to be received from the Applicant, the MMO therefore reserves the right to amend or update these requirements subsequent to further consultation with NE and EA.

4.4 IN-COMBINATION EFFECTS

4.4.1 Cumulative and in-combination effects are described in *Supplementary Information EX 44.1 - Cumulative and In-combination Effects.* Based upon the findings reported in the ES, the sHRA and the HRAs for other projects it is concluded that only minor cumulative impacts will occur. With mitigation measures implemented it is likely that cumulative / in-combination impacts across developments will be reduced to minor levels.

Comments by the Agencies

4.4.2 NE has not yet fully considered *EX44.1* and has also advised that further assessment of dredging alone and in-combination with other projects on the Humber Estuary is required. Therefore this assessment is not yet agreed.

4.4.3 The effects of capital and maintenance dredging and disposal on sub-tidal habitat and benthic communities are subject to ongoing discussions between the Applicant and the MMO, NE and EA.

4.5 SUMMARY – SHADOW APPROPRIATE ASSESSMENT

4.5.1 The residual effects of the AMEP proposals alone, taking account of the mitigation will have an adverse effect on the integrity of the Humber Estuary SAC, SPA and Ramsar site due to the reduction in the extent and distribution of qualifying interest habitats (estuarine habitats, intertidal mudflat and saltmarsh), and a deterioration in the quality of these habitats for qualifying bird species (see species listed in *Table 3.3*). In addition there will be significant disturbance to these bird species, and their populations and distribution will be affected.

Comments by the Agencies

4.5.2 NE agrees with the summary of the shadow appropriate assessment.

4.5.3 The MMO concurs with the position of NE.

4.6 ALTERNATIVES AND IMPERATIVE REASONS OF OVERRIDING PUBLIC INTEREST (IROPI)

4.6.1 AHPL has considered alternatives both in terms of location and design and these have been presented in *Chapter 7* of the shadow HRA which was submitted with the application in December 2011. The reasons why AHPL consider that the AMEP proposals constitute IROPI are set out in *Chapter 8* of the shadow HRA.

4.6.2 It is not part of the role of the signatory organisations to this SoCG to assess the alternatives, or to determine whether IROPI has been demonstrated. Hence the compensation measures which are contained within *Chapter 5* of this report have been drawn up taking account of advice from NE, EA and MMO and agreed subject to the Secretary of State being satisfied that the project is needed, there are no feasible alternatives and that the proposals are justified in terms of IROPI, and hence compensation is required.

5.1.1 AMEP will result in adverse effects on the integrity of European sites of the Humber Estuary and hence compensation measures are required. *Table 5.1* lists the compensation measures which have been developed by AHPL, and the extent to which they have been agreed with the other signatories to this SoCG.

Table 5.1 Compensation Measures

No	Issue	Compensation Measure
1	Permanent loss of estuarine habitat.	• Provision of new estuarine habitat at ratio of 1:1 through a managed realignment / Regulated Tidal Exchange (RTE) scheme at CCS. Sub-tidal loss (part of the estuary feature) will be replaced with estuarine habitat (Black & Veatch, 2012[1]).
2	Permanent loss of intertidal mudflat	• Provision of new intertidal mudflat based on an overcompensation target ratio of 2:1 (based on permanent direct loss and permanent functional loss for birds). The current design proposals demonstrate that the site could provide an initial area of c86 ha of which c66 ha remains after 5 years and c57 ha after 10 years (which >1:1) (Black & Veatch, 2012). Options for increasing the area of mudflat and for maintaining more of it in the longer term are the subject of ongoing discussions.
3		• The need for a roost site for waders such as black-tailed godwit close to the intertidal compensation site has been agreed in principle. This was originally to be at OLHF, however, discussions are ongoing to determine whether a site closer to the intertidal compensation site can be created.
4		• Overcompensation of intertidal mudflat is to be provided to help support SPA bird species and populations (see Measure 2 above). There will however be a time delay whilst the benthic populations mature in the intertidal mudflat. Given the importance of the black-tailed godwit population at NKM, it has been agreed in principle that an additional area(s) of wet grassland is required as OLHF has been shown to provide less wet grassland than previously predicted. This wet grassland will be created either within the application site, or outwith it, subject to obtaining the necessary consents, as the detailed design of OLHF has shown that it provides less than the 38 ha required. Options for creating islands and lagoons amidst the wet grassland to provide roosting habitat will also be considered.
5	Loss of functional value for birds from loss of intertidal mudflat south of quay	• Allowance has been made in the area of mudflat required in the compensation site at CCS to offset the loss.
An Ecological Management and Monitoring Plan (EMMP) will be drawn up which includes options for remedial actions if they are found to be necessary.		

(1) Black & Veatch (2012) Cherry Cobb Sands Compensation Site: Second Interim Report on Detailed Modelling August 2012. B&V.

Comments by the Agencies

5.1.2 NE has agreed the principles for the compensation measures, as set out in our written representation. It will be necessary to provide a compensatory ratio of at least 2:1 for the loss of intertidal mudflat, and a ratio of 1:1 for the loss of estuary (subtidal) habitat. This is not a standard requirement; there is no generic compensation ratio that would apply to all species and habitat types.

5.1.3 A 2:1 ratio is likely to be sufficient to meet the requirements of seven of the eight SPA species displaced (shelduck, ringed plover, dunlin, lapwing, bar-tailed godwit, curlew and redshank), albeit an element of uncertainty remains. For black-tailed godwits, however, it remains possible that 2:1 may not prove to be sufficient, which means that a strict monitoring programme will be required and details of this will be set out in the EMMP for the compensation site along with any necessary remedial action.

5.1.4 There are two factors for the Examining Authority to have regard to in respect of the timing of compensation. First, compensation should be available to birds for the same period of time as the area of lost habitat would have otherwise been present. In other words, the compensation should be like for like on a temporal basis, taking into account natural change. NE accepts that RTE provides a greater chance of maintaining mudflat for longer than a managed realignment site, however this type of scheme has not previously been used on the Humber Estuary, and therefore there are uncertainties about how this technique will work in such a sediment rich environment. Secondly, compensation should be available at the time that the habitat compensated for is lost. As the compensation site at CCS will not be an ecologically functioning mudflat for a number of years after the Killingholme Marshes foreshore is destroyed, the Applicant has offered to provide a wet grassland site whilst the managed realignment site develops benthic interest. However, it is NE's view that the proposed site at OLHF will not deliver a sufficient amount of wet grassland habitat to support the displaced birds.

5.1.5 At the current time, NE is unable to agree that the compensation measures are adequate to maintain the coherence of the network. Following a workshop with the Applicant on 17 August, where the details of the proposed compensatory measures were discussed, significant progress was made. We will continue to advise AHPL on the identification of an acceptable package of measures which is capable of adequately addressing the issues of extent, quality, timing and sustainability of the compensation. We hope that these outstanding issues will be resolved shortly.

5.1.6 The MMO is satisfied with the compensation measures required, as outlined in *Table 5.1* above, developed by AHPL in discussion with NE in their role as Statutory Nature Conservation Body and that an appropriate EMMP will be incorporated within the DML to require monitoring of the effects of the scheme, and to allow for remedial actions to be taken to ensure that the requirements of the Habitats Regulations are fulfilled.

6 SUMMARY

6.1 EFFECTS ON THE EUROPEAN DESIGNATIONS

- The shadow screening assessment concluded a likely significant effect on estuarine habitats, intertidal mudflats, lamprey species, a range of *Annex I* species, migratory species and the waterfowl assemblage which form part of the qualifying interests of the Humber Estuary SAC, SPA and Ramsar site, and hence a shadow Appropriate Assessment was required.

- It was concluded that AMEP would have an adverse effect on the integrity of the Humber Estuary SAC, SPA and Ramsar as effects occurred to estuarine habitats, intertidal mudflats and saltmarsh, and a range of *Annex I* species, migratory species and the waterfowl assemblage which could not be mitigated.

- If the Secretary of State is satisfied that the project is needed, there are no feasible alternative solutions, and that the project must be carried out for imperative reasons of overriding public interest, then compensation must be provided to secure the coherence of the Natura 2000 network.

- It is agreed that compensation measures must maintain the coherence of the Natura 2000 network and whilst further development of them is the subject of ongoing discussions, these are expected to be successfully concluded soon and agreement reached. Significant progress has been made to agreeing important elements of the compensation measures which will be confirmed as these discussions are concluded. These include the following matters.

    - A compensation site of 101.5 ha of intertidal habitat on the north bank of the Humber Estuary at CCS will be sufficient to compensate for the estuarine habitats which will be lost for AMEP.

    - The benthic communities on the intertidal compensation site will take approximately three years to mature and hence there is a need for further overcompensation for black-tailed godwit to supplement their foraging whilst the intertidal site matures.

    - The overcompensation will require the provision of an area of wet grassland, the size and timely provision of which is appropriate to provide the necessary functional support for foraging black-tailed godwit. This grassland will be accessible from the intertidal compensation site.

- Detailed design at OLHF has shown that the area of wet grassland it can provide is less than previously thought and less than that which is required to supplement the feeding of black-tailed godwits. Accordingly additional areas will need to be created either within the application site, or outwith it subject to obtaining the necessary consents.

- The roosting site which is required for birds foraging on the compensation site at CCS must be close enough to be accessible to the birds including during the moulting period for black-tailed godwit.

- An EMMP which when implemented will monitor the effects of AMEP, and which will contain options for remedial actions if the need arises.

6.2 EFFECTS ON SITES OF SPECIAL SCIENTIFIC INTEREST (SSSI)

6.2.1 Whilst this does not form part of the sHRA, *Section 28G* of the *Wildlife and Countryside Act 1981* (as amended) places legal obligations on certain authorities in relation to SSSIs. These authorities are known as *Section 28G* authorities. An authority to whom *Section 28G* of the *1981 Act* applies, has a duty in exercising its functions so far as their exercise is likely to affect the flora, fauna or geological or physiographical features by reason of which a SSSI is of special interest to:

- *"take reasonable steps, consistent with the proper exercise of the authority's functions, to further the conservation and enhancement of the flora, fauna or geological or physiographical features by reason of which the site is of special scientific interest*".

6.2.2 The SSSIs of relevance with regards this application are the Humber Estuary SSSI and North Killingholme Haven Pits SSSI, and therefore additional impacts on these SSSIs are considered here. AMEP will also affect some of the notified features of the SSSI, namely little ringed plover, a soke dyke at CCS and breeding shelduck. The effects on these interests and the measures taken to mitigate them are summarised below.

6.2.3 The AMEP proposals will remove land that was utilised by breeding little ringed plover (Percival, 2012). AHPL will create new breeding habitat for the plovers within NKHP through modifications to some of the existing islands / spits to create gravel toped nesting areas. The designs will be discussed and agreed with NE.

6.2.4 An existing soke dyke that lies within the designated site at CCS will be lost during creation of the compensation site. It will be replaced with a new soke dyke that will created behind the new flood defence embankment.

6.2.5 Shelduck breed at a number of locations within the terrestrial areas of the AMEP site including NHKP, ditches within agricultural land, and on the gravels in the northern part of the currently developed site. A loss of four pairs of shelduck was predicted as a consequence of the AMEP development (Percival, May 2012). These losses arise primarily from loss of nesting habitat (as the birds feed mainly on intertidal substrate), and particularly associated with the loss of the existing ditch system (which affects three territories). To mitigate for these losses additional nesting habitat in the form of nest boxes are proposed within the vegetated strips of the new ditch system, at NKHP and along the edge of Mitigation Area B. Shelducks are known to use nestboxes[1] and designs are readily available[2]. The number and location of boxes will be agreed with NE.

Comments by the Agencies

6.2.6 Natural England agrees that the impacts on the SSSIs can be mitigated as set out above.

6.2.7 The MMO concurs with the position of NE.

(1) Kear J (ed) (2005). *Ducks, Geese and Swans*. Oxford University Press (OUP).
(2) Dee Feu C (1993) *Nestboxes* BTO Field Guide No 23. BTO.

Annex A

Information Sent to Third Parties and Responses Received

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Our Ref: RC.LH.A.L12-0394

Date: 9th August 2012

By Email: Alex.Codd@hullcc.gov.uk

For the attention of Mr A Codd

Dear Mr Codd

PROPOSED ABLE MARINE ENERGY PARK (AMEP) ON THE SOUTH BANK OF THE RIVER HUMBER AT IMMINGHAM, NORTH LINCOLNSHIRE - SHADOW HABITATS REGULATIONS ASSESSMENT (SHRA) STATEMENT OF COMMON GROUND (SOCG)

As you may be aware from your involvement in the examination procedures to date, the Panel of Examining Inspectors (hereafter referred to as the "Panel") in their Notice of 31st May 2012 suggested that Able Humber Ports Ltd (as the applicant) should prepare a SoCG on the sHRA with Natural England (NE), the Environment Agency (EA) and the Marine Management Organisation (MMO) as the primary contributors.

In addition, the Panel suggested that it would be valuable if the following organisations could be party to the SoCG before the deadline for submission to the Panel of 24th August 2012:

- Royal Society for the Protection of Birds (RSPB);
- Lincolnshire Wildlife Trust (LWT); and
- Local authorities (Hull, North Lincolnshire and North East Lincolnshire Council).

The SoCG is in preparation, and a draft copy will be sent to you for comment on 17th August 2012. Should you be able to provide comments by 24th August 2012 we will include those comments in an Appendix to the SoCG.

If you are able to provide comments during the early part of the week commencing 20th August 2012 then we may be able to respond to those within the SoCG subject to discussions with NE, EA and the MMO.

Yours sincerely

[redacted]

RICHARD CRAM
Design Manager

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Our Ref: RC.LH.A.L12-0393

Date: 9th August 2012

By Email: ebiott@lincstrust.co.uk

For the attention of Elizabeth Biott

Dear Ms Biott

PROPOSED ABLE MARINE ENERGY PARK (AMEP) ON THE SOUTH BANK OF THE RIVER HUMBER AT IMMINGHAM, NORTH LINCOLNSHIRE - SHADOW HABITATS REGULATIONS ASSESSMENT (SHRA) STATEMENT OF COMMON GROUND (SOCG)

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Yours sincerely

[redacted]

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For the attention of Mr M Dixon

Dear Mr Dixon

PROPOSED ABLE MARINE ENERGY PARK (AMEP) ON THE SOUTH BANK OF THE RIVER HUMBER AT IMMINGHAM, NORTH LINCOLNSHIRE - SHADOW HABITATS REGULATIONS ASSESSMENT (SHRA) STATEMENT OF COMMON GROUND (SOCG)

As you may be aware from your involvement in the examination procedures to date, the Panel of Examining Inspectors (hereafter referred to as the "Panel") in their Notice of 31st May 2012 suggested that Able Humber Ports Ltd (as the applicant) should prepare a SoCG on the sHRA with Natural England (NE), the Environment Agency (EA) and the Marine Management Organisation (MMO) as the primary contributors.

In addition, the Panel suggested that it would be valuable if the following organisations could be party to the SoCG before the deadline for submission to the Panel of 24th August 2012:

- Royal Society for the Protection of Birds (RSPB);
- Lincolnshire Wildlife Trust (LWT); and
- Local authorities (Hull, North Lincolnshire and North East Lincolnshire Council).

The SoCG is in preparation, and a draft copy will be sent to you for comment on 17th August 2012. Should you be able to provide comments by 24th August 2012 we will include those comments in an Appendix to the SoCG.

If you are able to provide comments during the early part of the week commencing 20th August 2012 then we may be able to respond to those within the SoCG subject to discussions with NE, EA and the MMO.

Yours sincerely

[redacted]

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Design Manager

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Our Ref: RC.LH.A.L12-0392

Date: 9th August 2012

By Email: william.j.hill@northlincs.gov.uk

For the attention of Mr William Hill

Dear Mr Hill

PROPOSED ABLE MARINE ENERGY PARK (AMEP) ON THE SOUTH BANK OF THE RIVER HUMBER AT IMMINGHAM, NORTH LINCOLNSHIRE - SHADOW HABITATS REGULATIONS ASSESSMENT (SHRA) STATEMENT OF COMMON GROUND (SOCG)

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Yours sincerely

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Our Ref: RC.LH.A.L12-0391

Date: 9th August 2012

By Email: Mark.Williams@rspb.org.uk

For the attention of Mark Williams

Dear Mr Williams

PROPOSED ABLE MARINE ENERGY PARK (AMEP) ON THE SOUTH BANK OF THE RIVER HUMBER AT IMMINGHAM, NORTH LINCOLNSHIRE - SHADOW HABITATS REGULATIONS ASSESSMENT (SHRA) STATEMENT OF COMMON GROUND (SOCG)

As you may be aware from your involvement in the examination procedures to date, the Panel of Examining Inspectors (hereafter referred to as the "Panel") in their Notice of 31st May 2012 suggested that Able Humber Ports Ltd (as the applicant) should prepare a SoCG on the sHRA with Natural England (NE), the Environment Agency (EA) and the Marine Management Organisation (MMO) as the primary contributors.

In addition, the Panel suggested that it would be valuable if the following organisations could be party to the SoCG before the deadline for submission to the Panel of 24th August 2012:

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- Local authorities (Hull, North Lincolnshire and North East Lincolnshire Council).

The SoCG is in preparation, and a draft copy will be sent to you for comment on 17th August 2012. Should you be able to provide comments by 24th August 2012 we will include those comments in an Appendix to the SoCG.

If you are able to provide comments during the early part of the week commencing 20th August 2012 then we may be able to respond to those within the SoCG subject to discussions with NE, EA and the MMO.

Yours sincerely

[redacted]

RICHARD CRAM
Design Manager

1 INTRODUCTION

1.1 BACKGROUND

1.1.1 Able Humber Ports Ltd has made an application to the Infrastructure Planning Commission (IPC) applied for consent to develop a marine energy park. If consented, the development will be known as Able Marine Energy Park (AMEP). AMEP will incorporate a new quay together with facilities for the manufacture of marine energy components including offshore wind turbines. The development of AMEP, east of North Killingholme, will lie partly within the Humber Estuary Special Area of Conservation (SAC), Special Protection Area (SPAs) and Ramsar site (referred to collectively hereafter as the European sites).

1.1.2 It is a requirement under European law, as implemented in the UK by the Habitats Regulations (1), for competent authorities to determine whether a project such as AMEP, will have a likely significant effect on European sites, either individually or in-combination with other projects. If a significant effect is likely or there are uncertainties, then an Appropriate Assessment (AA) of the implications of the project (against the European site's conservation objectives) must be undertaken. The process is known as a Habitats Regulations Assessment (HRA).

1.1.3 Able Humber Ports Ltd prepared a shadow HRA report which accompanied the submission to the application as required by the IPC. This report concluded that AMEP would result in an adverse effect on the European sites and that compensation measures would be required, as there were not alternatives and that the development was of Imperative Reasons of Over-riding Public Interest (IROPI). Consultations with key stakeholders have been ongoing since the application was made about the reported findings of the assessment and the necessary compensation measures.

1.2 AIM OF THIS DOCUMENT

1.2.1 There is universal agreement between Able Humber Ports UK and the stakeholders that AMEP will result in both a likely significant effect and an adverse effect on the integrity of the European sites. It is also agreed that in order for the proposals to proceed, measures are required which compensate for the adverse effects of AMEP.

1.2.2 The Examining Authority welcomed Able Humber Ports UK's decision to produce a statement of common ground with interested parties on the matters relevant to the sHRA. This document set out the matters which are common ground and are agreed by all signatories to it (*ie* Able Humber Ports Ltd,

(1) *The Conservation of Habitats and Species Regulations 2010*. SI 2010 – 490 (as amended). The Stationary Office Ltd.

Natural England (NE), Environment Agency (EA) and Marine Management Organisation (MMO)). It also highlights any areas where there is still disagreement and states what actions are being taken to seek to reach agreement.

1.2.3 A draft version of this SoCG document was also issued to the following organisations, as the Examination Panel suggested that it would be valuable if the following organisations could be party to the SoCG before it was submitted[1]:

- Royal Society for the Protection of Birds (RSPB);
- Lincolnshire Wildlife Trust (LWT); and
- Local authorities (Hull, North Lincolnshire and North East Lincolnshire Council).

1.2.4 The Infrastructure Planning (Examination Procedure) Rules 2010, defines a statement of common ground (SoCG) as, "*a written statement prepared jointly by the Applicant and any interested party, which contains agreed factual information about the application*".

1.2.5 In 2010, the Department for Communities and Local Government issued, '*Planning Act 2008: Guidance for the examination of applications for development consent for nationally significant infrastructure projects*'. That guidance provides the following advice on the contents of a SoCG.

"63. The statement of common ground is a written statement prepared jointly by the Applicant and the main objectors, setting out the agreed factual information about the application. A statement of common ground is useful to ensure that the evidence at the examination focuses on the material differences between the main parties. Effective use of such statements is expected to lead to a more efficient examination process.

64. The statement should contain basic information on which the parties have agreed….. In addition to basic information about the application, agreement can often be reached on technical matters… The topics on which agreement might be reached in any particular instance will depend on the matters at issue and the circumstances of the case.

65. As well as identifying matters which are not in real dispute, it may also be useful for the statement to identify areas where agreement is not possible. The statement should include references to show where those matters are dealt with in the written representations or other documentary evidence. Agreement should also be sought before the examination commences about the requirements that any order granted should contain".

[1] In letter of 31 May 2012 from the Planning Inspectorate to Able Humber Ports Ltd

1.3 STRUCTURE OF THE DOCUMENT

1.3.1 *Chapter 2* summarises status and the statutory function of the relevant organisations in respect of the sHRA.

1.3.2 *Chapters 3* and *4* contain the conservation objectives, and list mitigation which is embedded within the project. They summarise the agreed positions on screening of effects and the Appropriate Assessment which resulted from the screening process, and summarise the position regarding in-combination effects with other plans and projects. In this document European sites refers to the Humber Estuary Special Area of Conservation (SAC), Special Protection Area (SPA) and Ramsar site.

1.3.3 *Chapter 5* sets out the measures which have been agreed to compensate for adverse effects on the European sites. *Chapter 6* summarises the agreed position overall in respect of the sHRA.

2 ROLES AND RESPONSIBILITIES

2.1 INTRODUCTION

2.1.1 The organisations which have signed this document have particular roles and responsibilities which have been set out in the following sections.

2.2 ABLE HUMBER PORTS LTD

2.2.1 Able Humber Ports Ltd is the applicant for the project.

2.3 NATURAL ENGLAND

2.3.1 Natural England is a statutory body established under the Natural Environment and Rural Communities Act 2006 (the "NERC Act"). Natural England is the statutory advisor to Government on nature conservation in England and promotes the conservation of England's wildlife and natural features. It is financed by the Department for Environment, Food and Rural Affairs ("Defra") but is a Non-Departmental Public Body, which forms its own views based on the best scientific evidence available.

2.3.2 Natural England works for people, places and nature, to enhance biodiversity, landscapes and wildlife in rural, urban, coastal and marine areas; promoting access, recreation and public well-being, and contributing to the way natural resources are managed so that they can be enjoyed now and by future generations.

2.3.3 Section 2 of the NERC Act provides that Natural England's statutory general purpose is:

"… to ensure that the natural environment is conserved, enhanced and managed for the benefit of present and future generations, thereby contributing to sustainable development."

2.3.4 Section 2(2) states that Natural England's general purpose includes –

- promoting nature conservation and protecting biodiversity;
- conserving and enhancing the landscape;
- securing the provision and improvement of facilities for the study, understanding and enjoyment of the natural environment;
- promoting access to the countryside and open spaces and encouraging open-air recreation; and
- contributing, in other ways, to social and economic well-being through management of the natural environment.

2.3.5 Natural England is also a statutory consultee in respect of (amongst other things) plans and projects subject to the requirements of the various Environmental Impact Assessment Regulations in England, proposals likely to damage any of the flora, fauna or geological or physiographical features for which a Site of Special Scientific Interest ("SSSI") has been designated, and plans or projects likely to have a significant effect on any EU site. EU sites include Special Protection Areas ("SPAs") and Special Areas of Conservation ("SACs") or sites listed under the 1971 Convention on Wetlands of International Importance ("Ramsar sites"). In addition, Natural England exercises additional duties with regards to SSSIs under the Wildlife and Countryside Act 1981(as amended) and in relation to Natura 2000 sites under the Habitats Regulations.

2.4 ENVIRONMENT AGENCY

[Text from EA]

2.5 MARINE MANAGEMENT ORGANISATION

[Text from MMO]

3 SCREENING

3.1 INTRODUCTION

3.1.1 This chapter lists the different effects which will to occur to the qualifying interest features of the Humber Estuary SAC, SPA and Ramsar site from the AMEP proposals.

3.1.2 *Section 3.2* focuses on those effects from AMEP where it has been agreed that either a likely significant effect will occur, or it is not possible to conclude that no likely significant effect will occur. In either case Appropriate Assessment is required. Those impacts which have been considered and where no likely significant effect has been concluded are listed. Further consideration is given towards the end of the chapter to the risk of in-combination effects (see *Section 3.8*), which includes other effects from AMEP that were agreed to have no likely significant effect on their own.

3.1.3 It has been agreed also that assessing the effects of AMEP against the qualifying interests of the SAC and the SPA will ensure that the interests of the Ramsar site are taken into account due to the overlapping qualifying interest features. The only exception is natterjack toad which is part of the Ramsar site interest alone. However, this species will not be affected by the AMEP proposals as its only location on the Humber Estuary is at Saltfleetby – Theddlethorp Dunes SSSI in the outer estuary, approximately 30 km south of the AMEP site.

3.2 CONSERVATION OBJECTIVES OF EUROPEAN SITES

SAC

3.2.1 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.

3.2.2 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; and
- the distribution of qualifying species within the site.

SPA

3.2.3 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.

3.2.4 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; and
- the distribution of the qualifying features within the site.

3.3 EMBEDDED MITIGATION

3.3.1 The hydrodynamic modelling has been used to help identify a design which serves both the required needs of AMEP and reduces the indirect effects on habitats. Physical loss of the SAC habitat for the footprint of the new quay cannot be mitigated, neither can the functional loss of intertidal habitat for foraging / roosting birds.

3.3.2 The measures listed below will be included within the project design (*ie* embedded mitigation) to avoid significant effects on qualifying interest habitats and species. These measures have been agreed by all signatories.

- Provision of a greenfield terrestrial area on the south bank (covering approximately 50 ha (17 ha core with a 150 m surrounding buffer)), known as Mitigation Area A, to provide foraging and roosting habitat for birds from the SPA assemblage (predominantly curlew), to replace that lost to AMEP. Management and monitoring measures will be specified in the EMMPs, frameworks for which have been developed by NE.

- Benthic survey of the intertidal mudflats at NKM and CCS will be undertaken prior to its loss to characterise the communities present and provide a measure against which to monitor future compensation.

- Noise shrouds will be used around the pile to limit noise generated by percussive piling. Where it is reasonably practicable to do so the noise shroud will extend to the water level.

- Good working practices will be implemented to avoid significant effects from suspended sediment concentrations (SSC), and on water and sediment quality. These will be secured as part of the Dredging Strategy in Schedule 8, and Schedule 11 of the DCO respectively.

- Use of silt curtains and aerators to prevent the dispersion of sediment.

- Dredging and disposal to avoid sensitive time periods for lamprey species.

- Monitoring to remove uncertainty.

- Alternative use of the dredged material (*ie* disposal to land to avoid terrestrial sourcing of material).

- The location and effect of the lighting as described in *Supplementary Information EX19.1 - Lighting Lux Plans*.

- Soke dyke that is lost within designated site at CCS compensation site will be replaced with a new soke dyke created behind the new flood defence embankment.

3.4 LIKELY EFFECTS FROM AMEP ON THE EUROPEAN DESIGNATIONS OF THE HUMBER ESTUARY

3.4.1 *Table 3.1* lists the effects which are predicted to occur from the AMEP development, and for each effect states whether a likely significant effect has been concluded, or that no likely significant effect cannot be concluded (*ie* the effect is uncertain). Significant or uncertain effects are all negative unless specifically stated (*eg* gain of saltmarsh, which is a likely significant but positive effect). The areas of immediate habitat loss in the table are consistent with those agreed in *Supplementary Report EX11.23 – Immediate Habitat Losses within the Designated Site*.

Table 3.1 Potential Effects

No	Effect of AMEP	Source and Scale of Effect	Conservation Objective(s) Affected	Likely Significant Effect
	Permanent loss of estuarine habitat (H1130)	• 56.6 ha lost due to AMEP (31.5 ha mudflat, 13.5 ha sub-tidal and 11.6 ha functional loss of mudflat for birds) including 45 ha to dredging for quay footprint. • Removal of dredged material from the Humber Estuary, rather than release at disposal site within the estuary. • Construction and maintenance of the berthing pocket	• Avoid deterioration of the qualifying natural habitats and habitats and the habitats of qualifying species. • Maintain the extent and distribution of the habitats of the qualifying features.	✓ X X

No	Effect of AMEP	Source and Scale of Effect	Conservation Objective(s) Affected	Likely Significant Effect
		• Smothering of habitats and benthic communities due to disposal of dredged sediments.		?
	Permanent direct loss of intertidal mudflat (H1140)	• 31.5 ha lost due to footprint of new quay. The loss for the pumping station is so small as to be negligible in the context of the development and within area where functional loss for birds occurs anyway.		✓
		• Decline in numbers of birds roosting at NKHP due to loss of linked feeding habitat at NKM.	• Maintain the structure and function of the habitats of the qualifying features.	✓
		• Loss of mudflat affecting mud burrowing life stages of lamprey species.		✓
	Permanent direct loss of saltmarsh (H1330 / H1310)	• 2 ha lost at CCS for breach in existing seawall at RTE compensation site.	• Avoid deterioration of the qualifying natural habitats and habitats and the habitats of qualifying species. • Maintain the extent and distribution of the habitats of the qualifying features	✓
		• Once compensation site is flooded, soke dyke behind the existing sea wall containing transitional brackish to freshwater habitat will be lost.	• Avoid deterioration of the qualifying natural habitats and habitats and the habitats of qualifying species. • Maintain the extent and distribution of the habitats of the qualifying features	X
	Indirect effects on estuarine habitat (H1130).	• 5.8 ha gained due to changes in accretion from the presence of the new quay creating new areas of saltmarsh.	• Avoid deterioration of the qualifying natural habitats and habitats and the habitats of qualifying species. • Maintain the extent and distribution of the habitats of the qualifying features	✓
		• Loss of sub-tidal habitat used by lamprey.	• Avoid deterioration of the habitats of qualifying species. • Maintain the populations and distribution of qualifying species within the site.	X

No	Effect of AMEP	Source and Scale of Effect	Conservation Objective(s) Affected	Likely Significant Effect
		• Effect of compensation site at CCS on the hydrodynamics of the estuary. • Effects on water temperatures due to relocation of E.ON and Centrica outfalls.	• Avoid deterioration of the qualifying natural habitats and habitats and the habitats of qualifying species. • Maintain the extent and distribution of the habitats of the qualifying features	X X
	Indirect effects on intertidal mudflat (H1140)	• 1.6 ha lost due to changes caused by the new quay. • New quay causes erosion of mudflats in front of NKHP. • Erosion of channels in the mudflats due to the discharge from the pumping station. • Erosion at the breach location on the compensation site. • Effects from increased wave heights due to the new quay. • 5ha loss due to geomorphological changes identified by rise in water levels, as described in the Deltares report..	• Avoid deterioration of the qualifying natural habitats and the habitats of qualifying species. • Maintain the extent and distribution of the habitats of the qualifying features. • Maintain the populations and distribution of qualifying species within the site.	✓ X X X X X
	Indirect effects on saltmarsh (H1330 / H1310)	• 5.8 ha gain due to changes caused by the new quay.	• Avoid deterioration of the qualifying natural habitats and habitats and the habitats of qualifying species. • Maintain the extent and distribution of the habitats of the qualifying features.	✓

No	Effect of AMEP	Source and Scale of Effect	Conservation Objective(s) Affected	Likely Significant Effect
	Loss of terrestrial / aquatic habitat	• Loss of farmland fields, predominantly grassland at North Killingholme, and arable fields at CCS, supporting birds from the SPA/Ramsar.	• Avoid the deterioration of the habitats of the qualifying features, and the significant disturbance of the qualifying features. • Avoid significant disturbance of the qualifying features.	✓
	Disturbance to birds	• 11.6 ha of intertidal mudflat adjacent to the new quay will be affected by levels of disturbance from construction and operation that can be considered as permanent, resulting in functional loss for foraging or roosting birds.	• Avoid significant disturbance of the qualifying features. • Maintain the populations and distribution of qualifying species within the site.	✓
		• Effects of lighting on birds on the remaining areas of NKM.		X
		• The displacement of birds from existing arable fields at CCS onto adjacent arable fields to allow creation of the compensation site.		X
		• Creation of the compensation site at CCS could disturb birds on existing mudflats within designated area,		X
		• The re-alignment of the public footpath inland around the landward toe of the new floodbank of the compensation site.		X
		• Construction and operation of AMEP may cause disturbance to birds remaining on areas of NKM, at NKHP and also Mitigation Area A, due to noise (especially piling during construction), human presence and visual sources (*eg* movement of cranes, turbine towers, lighting).		X

No	Effect of AMEP	Source and Scale of Effect	Conservation Objective(s) Affected	Likely Significant Effect
	Disturbance to grey seals and sea and river lamprey (S1364, S1095 and S1099)	• Construction will result in underwater noise, particularly from piling		✓
		• Relocation of the E.ON and Centrica outfalls		X

✓ = likely significant effect
? = cannot conclude no likely significant effect (ie uncertain).
X = no likely significant effect

3.4.2 None of the other habitat types listed as qualifying interests of the SAC/Ramsar will be affected.

3.5 SIGNIFICANCE OF LIKELY EFFECTS ON HUMBER ESTUARY SAC

Table 3.2 Significance of Effects on Humber Estuary SAC

No	Potential Effect	Significance of Effect on SAC Qualifying Interest Features				
		Estuary	*Atlantic Salt Meadows*	*Mudflats and Sandflats*	*Grey Seal*	*Lamprey*
	Permanent direct loss of estuarine habitat (H1130)	**Likely Significant Effect** predominantly due to losses caused by the dredging and subsequent footprint of the new quay. Appropriate Assessment (AA) required. Impacts of berthing pocket (see *EX10.6 Impact of Berthing Pocket Construction)* not significant along with the effects of dredging outwith the quay as temporary and habitats will recover. Disposal effects uncertain.				
	Permanent direct loss of intertidal mudflat (H1140)	**Likely Significant Effect** predominantly due to losses caused by the new quay, but also effects on roosting birds at NKHP if links to foraging areas at NKM lost, and on mud-burrowing life stages of lampreys. AA required. Effects of dredging and disposal as per estuarine habitat above.				
	Permanent direct loss of saltmarsh (H1330 / H1310)	**Likely Significant Effect** due to loss of saltmarsh for breach on compensation site. AA not required.				
	Indirect effects on estuarine habitat (H1130).	**Likely Significant Effect** but **positive** due to gain of saltmarsh. AA not required. No likely significant effects on lamprey due to the small changes (0.5 ha indirect loss of sub-tidal), nor on the wider estuary due to the creation of the compensation site [add ref]. Relocation of the outfalls to the front of the new quay will resulting in lower water temperatures than current and hence no likely significant effects (*EX9.7 – Assessment of the Relocation of the E.ON and Centrica Outfalls on Thermal Recirculation*).				

No	Potential Effect	Significance of Effect on SAC Qualifying Interest Features
	Indirect effects on intertidal mudflat (H1140)	**Likely Significant Effect** predominantly due to losses caused by the new quay and AA required. No likely significant effects due to erosion from the pumping station as mudflat will be re-distributed and benthic communities are likely to increase on margins of channel. Similarly the breach at the compensation site is not predicted to cause significant erosion [ref]. Increased wave heights due to the new quay are small and localised and any erosion resulting will be offset by accretion resulting from the sheltering effect of the quay.
	Indirect effects on saltmarsh (H1330 / H1310)	**Likely Significant Effect** but **positive** due to gains of saltmarsh. AA required.
	Disturbance to grey seals and river and sea lampreys (S1364, S1095 and S1099)	**Likely Significant Effect** as piling for the new quay construction will create underwater noise which could affect foraging range of grey seals and migratory movements of river and sea lamprey. Mitigation will be required. AA required.

3.6 *SIGNIFICANCE OF LIKELY EFFECTS ON HUMBER ESTUARY SPA*

3.6.1 All of those species listed in *Table 3.3* will be significantly affected as they occur in numbers ≥1% of the Humber Estuary population, and will be affected by loss / changes in habitat and / or disturbance as identified in *Table 3.1*. Details of the percentages affected are contained in *Annex E* of the sHRA.

Table 3.3 Bird Species of Humber Estuary SPA Significantly Affected (bird codes listed in Annex XX).

No	Effect	SPA Qualifying Interest Features					
		Internationally important Populations of Regularly Occurring Annex I Species			**Internationally Important Migratory Species**		**Other Species of Waterfowl Assemblage**
		Breeding	*Passage*	*Wintering*	*Passage*	*Wintering*	
	Permanent direct loss of intertidal mudflat	-	-	BA	BW,DN, RK	BW, DN, RK, SU,	CU, L, RP
	Permanent direct loss of saltmarsh habitat	-	-	-	-	-	-
	Indirect loss / gain of intertidal mudflat		-	BA	BW, DN, RK	BW, DN, RK, SU	CU, L, RP
	Indirect loss / gain of saltmarsh	-	-	-	-	-	-
	Loss of terrestrial / aquatic habitat	MR	-				CU, L
	Disturbance to birds	AV, MR	-	AV, BA	BW, DN, RK	BW, DN, RK, SU	CU, L, MA, RP, SV, T

3.6.2 A conclusion of no likely significant effect has been drawn for the bird species listed below for the reasons stated.

- **Not recorded by TTTC surveys at NKM/NKHP –**AE, BI, HD, BY, BS, BV, DB, PB, CX, CN, CV, EG, E, EW, GY, GD, GE, GK, GJ, GN, GG, HH, JS, KI, LX, LN, AF, PG, PT, EB, RH, RS, UD, SS, SA, SP, NB, DR, WS, OD, WK.
- **Not reliant on habitats at NKM/NKHP –** BH, CM, CO, H, HG, GA, GB, LB, MU.
- **Species that although they occurred in numbers ≥ 1% (MH, SN) their ecology makes them resilient to impacts (*eg* through their use of cover at NKHP**.
- **Only one or two birds recorded by TTTC, or percentage of Humber Estuary population recorded is so low as to be insignificant –** CG, CA, GP, GV, LG, ET, KN, MS, OC, PO, RU, SY, TU, TT, WA, WM, WN, YG.
- **Numbers affected were insignificant (ie < 1% of Humber Estuary population)**

3.6.3 It was agreed that no likely significant effect could be concluded for the loss of sub-tidal habitat in respect of the SPA and the bird interests of the Ramsar site, as none of the bird species significantly affected are reliant on the sub-tidal habitat.

3.6.4 The above species list takes account of the agreed view that that no likely significant effect on birds has been concluded for the construction of the compensation site at CCS (see Paragraph 31.5.2 of the SoCG for the Environmental Statement and *EX11.18*).

3.6.5 The species identified in *Table 3.3* and *Paragraph 3.4.1* relating to the waterfowl assemblage, includes all species recorded (as requested by NE and RSPB) and not just those species listed on the SPA citation.

3.7 SUMMARY

3.7.1 The AMEP proposals alone will have a likely significant effect on the Humber Estuary SAC, SPA and Ramsar site.

3.8 IN-COMBINATION

3.8.1 Those qualifying interest habitats affected by AMEP will all be significantly affected by AMEP alone. The remaining qualifying interest habitats listed on the Humber Estuary SAC citation will not be affected at all by AMEP, and hence an in-combination assessment for them is not necessary.

3.8.2 *Paragraph 3.6.2* above identifies those bird species for which no likely significant effect has been concluded for AMEP alone. The vast majority are species for which there will be no in-combination effects as they were not

recorded as part of site specific surveys and hence will not be affected at all by AMEP.

3.8.3 In-combination effects were also concluded not to occur for the remaining species as the bird species affected for one of the following reasons:

- they were not reliant on the habitats lost (*eg* gull species recorded and others such as coot, heron and gadwall);
- there were only records of one or two birds; or
- they occurred in a such a small percentage of the Humber Estuary population as to be insignificant.

3.9 SCOPE OF THE APPROPRIATE ASSESSMENT FOR THE EUROPEAN SITES

3.9.1 The screening assessment has concluded that the issues listed below need to be assessed in more detail and form the scope of the Appropriate Assessment.

SAC

- The effects of permanent loss of estuarine habitat from the footprint of the development.

- The effects of the permanent direct loss of intertidal mudflat from NKM due to the footprint of the development.

- The effects of indirect habitat losses / gains of estuarine habitats and intertidal mudflats.

- The effects of the permanent loss of the existing benthic community and sub-tidal habitat due to disposal activities.

- The effects of underwater noise from piling on the feeding behaviour of grey seals and the migratory movements of river and sea lamprey.

SPA

- The effects of the permanent direct loss of estuarine and specifically intertidal mudflats from NKM on waterbirds that it supports.

- The effects on the use of NKHP as a roost if the feeding areas on the mudflats at NKM are lost.

- The disturbance effects on birds due to piling activities during construction of the new quay, and the need for any seasonal restrictions.

- The disturbance effects on birds using NKHP from construction activities other than piling, and operation of AMEP.

4 APPROPRIATE ASSESSMENT

4.1 INTRODUCTION

4.1.1 The following sections summarise the findings of the AA, and mitigation which has been drawn up to avoid adverse effects on the European sites.

4.2 APPROPRIATE ASSESSMENT FINDINGS SUMMARY

Table 4.1 Appropriate Assessment SAC

Issue	Agreement Reached
Effects on estuarine habitat (H1130)	• Adverse effect concluded due to reduction in extent and distribution of estuarine habitat for which no mitigation is possible.
Effects on intertidal mudflat (H1140)	• Adverse effect concluded due to both permanent direct loss and indirect effects, causing a reduction in the extent and distribution of intertidal mudflat, for which no mitigation is possible.
Effects on saltmarsh (H1330 / H1310)	• No adverse effect concluded as despite the direct loss in the extent of saltmarsh for which no mitigation is possible, AMEP provides overall net gain in saltmarsh due to indirect effects.
Disturbance to grey seals and river and sea lampreys (S1364, S1095 and S1099)	• No adverse effect concluded with the implementation of the mitigation measures listed in *Section 4.2*.

Table 4.2 Appropriate Assessment SPA

Issue	Agreement Reached
Effects on estuarine habitat (H1130)	• Adverse effect concluded on internationally important populations of regularly occurring Annex I species, migratory species and the waterfowl assemblage, due to the reduction in extent and distribution of the habitat supporting birds. No mitigation is possible
Effects on intertidal mudflat (H1140)	• Adverse effect concluded on internationally important populations of regularly occurring Annex I species, migratory species and the waterfowl assemblage, due to the reduction in extent and distribution of the habitat supporting birds. No mitigation is possible

Issue	Agreement Reached
Disturbance effects on birds	• Cannot confirm the continued use of NKHP as a roost site by waders from NKM, particularly black-tailed godwit, once mudflats at NKM lost. Adverse effect assumed as a precaution and effect cannot be mitigated. • No adverse effect on birds within NKHP based on a commitment to achieve 55 dB(A) L_{Amax} at site boundary. • No adverse effects on birds using Mitigation Area A based on commitments to types of operational activity that will take place within the operational buffer. • No adverse effects from piling based on adoption of measures agreed in the piling methods statement.

4.3 MITIGATION MEASURES

- Method statement for piling works to avoid effects on grey seals and lamprey including which will be included within the Deemed Marine Licence (DML) and in the Code of Construction Practice (CoCP) in Schedule 11 of the DCO:

  - 180 s soft start with a 100 m mitigation zone;
  - pile pads to be used at all times;
  - maximum pile diameter of 2.1m;
  - no piling when Active Monitoring Buoy shows temperatures >21.5°C and/or DO is <5 mg/l;
  - noise to be monitored 24 hours, seven days a week;
  - a two week period of pre and post construction monitoring in order to establish baseline conditions, and the return to baseline conditions once construction activity has finished;
  - a log of the number and approximate location of piling rigs which are in operation on any given day;
  - a cold weather strategy with no percussive piling (unless finishing pile already started when strategy enforced) shall take place following seven consecutive days of zero, or sub- zero temperatures (where the temperature does not >0°c for more than six hours in any day or any other pre-agreed formula to define short periods of thaw);
  - no percussive piling of marine piles between 7th April and 1st June inclusive in any one calendar year;
  - restricted to 101 hours (one rig) or combined 168 hours (two plus rigs) between 2nd June and 22nd July inclusive in any one calendar year (within each four-week work-block);

- restricted to 25 hours (one rig) or combined 42 hours (two plus rigs) between 23rd July and 10th September inclusive in any one calendar year (within each four-week work-block);
- restricted to 134 hours (one rig) or combined 224 hours (two plus rigs) between 11th September and 31st October inclusive in any one calendar year (within each four-week work-block);
- restricted to 336 hours (one rig) or combined 560 hours (two plus rigs) between 1st November and 6th April inclusive in any one calendar year (within each four-week work-block); and
- no piling shall take place between 22:00 and 06:00.

- A noise limit of 55 dB_{LAmax} will be met at the site boundaries of both NKHP and Mitigation Area A, to avoid disturbance to birds from the SPA.

4.4 ALTERNATIVES AND IMPERATIVE REASONS OF OVERRIDING PUBLIC INTEREST (IROPI)

4.4.1 Able Humber Ports Ltd has considered alternatives both in terms of location and design and these have been presented in the Environmental Statement and in written representations since.

4.4.2 It is not part of the role of the signatory organisations to this SoCG to assess the alternatives, or to determine whether IROPI has been demonstrated. Hence the compensation measures which are contained within *Chapter 5* of this report have been agreed on the assumption that that no alternatives and IROPI are accepted by the IPC.

5.1.1 AMEP will result in adverse effects on the European sites of the Humber Estuary and hence compensation measures are required. *Table 5.1* lists the compensation measures which have been developed by Able Humber Ports Ltd, and the extent to which they have been agreed with the other signatories to this SoCG.

Table 5.1 Compensation Measures

Issue	Agreement Reached
Permanent loss of estuarine habitat.	• Provision of new estuarine habitat at ratio of 1:1 through RTE scheme at CCS. Sub-tidal loss replaced with estuarine habitat (Black & Veatch, 2012[1]).
Permanent loss of intertidal mudflat	• Provision of new intertidal mudflat at ratio of 2:1 (based on permanent direct loss and permanent functional loss for birds) with objectives of RTE achieving an initial area of c86 ha of which c66 ha remains after 5 years and c57 ha after 10 years (which >1:1) (Black & Veatch, 2012). • RTE to create areas of standing water to use as roost sites for waders such as black-tailed godwit. • Re-establishment of former roost immediately west of RTE within designated site by NE • Supplementary foraging for waders, especially black-tailed godwit at OLHF (see *Supplementary Environmental Information EX28.2 - Old Little Humber Farm: Wet Grassland Creation, Management and Monitoring Plan*).
Loss of functional value for birds from loss of intertidal mudflat south of quay	• Allowance has been made in the area of mudflat required in the compensation site at CCS to offset the loss.

[1] Black & Veatch (2012) Cherry Cobb Sands Compensation Site: Second Interim Report on Detailed Modelling August 2012. B&V.

6 SUMMARY

6.1 EFFECTS ON THE EUROPEAN DESIGNATIONS

- The shadow screening assessment concluded no likely significant effect on estuarine habitats, intertidal mudflats, lamprey species, a range of *Annex I* species, migratory species and the waterfowl assemblage which form part of the qualifying interests of the Humber Estuary SAC, SPA and Ramsar site, and hence a shadow Appropriate Assessment was required.

- It was concluded that AMEP would have an adverse effect on the integrity of the Humber Estuary SAC, SPA and Ramsar as effects occurred to estuarine habitats, intertidal mudflats and a range of *Annex I* species, migratory species and the waterfowl assemblage which could not be mitigated.

- As no alternative solutions are available and the project is necessary for imperative reasons of overriding public interest, compensation must be provided before it can proceed.

- The compensation package will provide the necessary compensation measures and functional value to replace the habitats lost and the fauna species which will be lost as result.

6.2 EFFECTS ON THE SSSIS

TBC

Hull City Council

Your Ref: TR030001
My Ref: 10015509
Tel: 01482 612387
Fax: 01482 612382
Email: alex.codd@hullcc.gov.uk

Date: 24th August 2012

JONATHAN MONK
AHP Marine Energy Park
Able UK Ltd
Able House
Billingham Reach Industrial Estate
Billingham
Teesside TS23 1PX

Dear Jonathan

AMEP
Draft Statement of Common Ground (Shadow Habitats Regulation Assessment)

Hull City Council welcome the opportunity to comment on the draft Statement of Common Ground (SoCG) produced for the 17th August 2012 regarding the Shadow Habitats Regulation Assessment. Following conversations with you today I understand further revisions are being made to the document following discussions with the signatories to the SoCG. Therefore it is possible the points raised below may have been dealt with during these discussions.

Throughout the examination of the AMEP proposal Hull City Council's interest has been focused on the Habitats Regulation Assessment and the need to ensure a consistent approach is taken to discharging these responsibilities by the Infrastructure Planning Commission with regard to the AMEP application, to that of DCLG who ultimately determined the Greenport Hull consents.

Through discussions the Council have held with the Environment Agency, Marine Management Organisation and Natural England (the signatory organisations) the council are adamant they should apply a consistent methodology to dealing with both applications. The Council is concerned this is not evident within the draft SoCG.

Areas of Concerns

1. Lack of inclusion of Alternatives and IROPI within the SoCG

The only reference to alternatives and IROPI is within section 4.4. Paragraph 4.4.2 confirms that it is not a role of the signatory organisations to assess alternatives or determine if IROPI has been demonstrated. This differs to the approach undertaken with the Greenport Hull proposal. When dealing with the consents for Greenport Hull (GPH) the Marine Management Organisation undertook an IROPI test for their consents as did

Hull City Council for our planning applications. Both competent authorities worked closely together on discharging these responsibilities, it would therefore seem appropriate for the SoCG to confirm whether the signatory organisations support the alternatives and IROPI methodology or not. Whilst it is ultimately the role of the IPC to complete the Habitats Regulations Assessment in its entirety including assessment of; Alternatives, IROPI, Mitigation and Compensation this should be informed by the views of other relevant organisations.

2. Legal Agreement & Planning Conditions.

The SoCG should also confirm how the mitigation and compensation measures will be secured, whether this is through the use of planning conditions or legal agreements. With GPH a detailed list of planning conditions and a complex Section 106 agreement was required to deliver the requirements of the Habitats Regulations Assessment the Council expect the IPC will require similar provisions for the AMEP site and this should be confirmed within the SoCG.

3. Mitigation Measures

Within paragraph 2.32 (bullet 3) reference is made to noise shrouds being used around piles, when determining the GPH application noise shrouds and the in-combination effects of the percussive piling of marine piles was raised as an issue. Condition 19 of the section 73 application for the GPH planning permission requires the submission of a further noise reduction scheme to be submitted if AMEP and GPH are both being constructed at the same time. It would seem appropriate for a similar condition to also be included on the AMEP proposal.

In addition to prevent in-combination percussive piling impacts Hull City Council have required ABP to confirm they will not undertake any percussive piling of marine piles for the Hull Riverside Bulk terminal at the same time as percussive piling of marine piles at GPH. The Council considers it may be necessary to prevent this possible in-combination effect and that a restriction is placed on the AMEP development to prevent percussive piling of marine piles occurring at the same time as GPH.

Within section 4.3 mitigation measures regarding piling are covered, Hull City Council had lengthy discussions with the Environment Agency and Natural England regarding the detailed restrictions needed regarding percussive piling of marine piles. The restrictions entered into as planning conditions reflect a more restrictive pattern of piling for GPH over AMEP than is identified within the draft SoCG. These restrictions were considered necessary by the relevant organisations and seem to be more restrictive even though the amount of percussive piling required for GPH is much less than for AMEP. It is essential a similar level of restriction is applied. The Council is concerned that:

a. a maximum pile diameter of 2.1m is proposed for AMEP over 1.8m on GPH
b. Longer hours of operation for the percussive piling of marine piles exists for AMEP than GPH:
    i. 2nd June-22nd July 168 hours at AMEP and 120 hrs at GPH
    ii. 23rd July -10th September 42 hours at AMEP and 30 hours at GPH

iii. 11th September – 31st October 224 hours at AMEP and 160 hours at GPH
iv. 1st November – 6th April 560 hours at AMEP and 560 hours at GPH

The reasons for these differences cannot be agreed with the SoCG and this is something which needs examining at the specific hearing sessions and to ensure consistency it would seem appropriate to have similar levels of percussive piling of marine piles restrictions on both proposals akin to that agreed for works between the 1st November and 6th April.

The Council considers these issues should be considered in more detail on the 11th and 12th of September 2012.

Yours sincerely

Mr Alex Codd
City Planning Manager

Lincolnshire Wildlife Trust

Mr Richard Cram
Design Manager
Able UK Ltd
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By email to: rcram@ableuk.com

24 August 2012

Dear Mr Cram

PROPOSED ABLE MARINE ENERGY PARK (AMEP) ON THE SOUTH BANK OF THE RIVER HUMBER AT IMMINGHAM, NORTH LINCOLNSHIRE - SHADOW HABITATS REGULATIONS ASSESSMENT (SHRA) STATEMENT OF COMMON GROUND (SOCG*)*

Thank you for inviting Lincolnshire Wildlife Trust to comment on the draft version of the Statement of Common Ground (SoCG) for the shadow Habitats Regulations Assessment dated 17 August 2012. As you are aware the Trust has not been party to the discussions regarding this SoCG and so this has been the first opportunity that we have had to see the document. The draft that we were emailed by Andy Coates, Technical Director at ERM, on Friday 17 August 2012 was incomplete with Section 6.2 Effects on the SSSIs just stating 'TBC' and various sections highlighted. It is therefore difficult to comment on the document when it is clear that certain sections are obviously still under discussion between the signatories and are likely to change whilst others are still to be completed.

Whilst we appreciate the opportunity to comment on this draft we will not be submitting comments on it for the reasons given above. However, we propose to submit comments in response to the final document once it has been signed by Natural England, the Environment Agency and the Marine Management Organisation.

Yours sincerely

[redacted]

Elizabeth Biott
Conservation Officer

From: Andrew Taylor [mailto:Andrew.Taylor@northlincs.gov.uk]
Sent: Friday, August 24, 2012 5:34 PM
To: Andy Coates
Cc: alex.codd@hullcc.gov.uk; ebiott@lincstrust.co.uk; Emma.Hawthorne@naturalengland.org.uk; Jonathan Monk; Mark.Williams@rspb.org.uk; martin.dixon@nelincs.gov.uk; rcram@ableuk.com; Walter Bruton; William J Hill; Richard Cram; Ian Goldthorpe; darren.clarke@humberinca.co.uk
Subject: Re: Draft SoCG sHRA

Andy

For various reasons, I have not been able to spend as much time on this as I would have liked.

However, in summary, my comments are as follows:

- North Lincolnshire Council agrees with the Background, Aims and Responsibilities as set out.
- There are various typos and editing errors of varying levels of importance. For example, section 3.4 (Rather than 3.2)sets out the effects. Importantly, section 6.1 should state that likely significant effects were recorded.
- The embedded mitigation seems OK.
- It is not clear to me why the soke dyke issue is part of the HRA. If effects on the Soke dyke would lead to effects on designated features, this should be spelled out.
- Similarly, it is not clear why some of the bird disturbance effects in the table have been deemed not to be significant.
- Acronyms such as RTE and the British Trust for Ornithology species codes require explanation. For that reason I am not in a position to agree with the lists of species affected.
- On the whole, the document seems to be a fair summary of the issues at stake, save for the details described above. However, Natural England as nature conservation adviser will have looked at this in more detail than me. I defer to Natural England on matters of detail and for the overall decision as to whether the compensation, mitigation, avoidance and enhancement measures presented are sufficient to avoid and adverse effect on the integrity of the International Nature Conservation Sites.

Regards

Andrew Taylor
Project Officer (Ecologist)
01724 29737

Annex B

Immediate Habitat Losses and Medium and Long Term Habitat Changes

SPA Habitat Losses and Changes

	HABITAT TYPE			
	Saltmarsh	Intertidal Mudflat	Sub-tidal (Estuary)	
IMMEDIATE IMPACTS				
Direct	-2	-31.5 2	-13.5	
Functional Loss		-6		
TOTAL	-2	-35.5	-13.5	
Direct Compensation	2	71	13.5	86.5
MEDIUM TERM (0-30 YEARS)				
Local Mudflat creation		7.88	-7.88	
TOTAL	-2	-27.62	-21.38	
Direct Compensation + reduction by Indirect mudflat creation	2	55.24	21.38	78.62
Local Mudflat Conversion to Saltmarsh	10.35	-10.35		
TOTAL	8.35	-37.97	-21.38	
Direct Compensation + reduction by Indirect mudflat creation + Indirect mudflat conversion to saltmarsh	0	75.94	13.5	89.44

	HABITAT TYPE			
	Saltmarsh	Intertidal Mudflat	Sub-tidal (Estuary)	
IMMEDIATE IMPACTS				
Direct Physical Loss		-31.5	-13.5	
Direct Change	-2	2		
Functional Loss		-11.6		
TOTAL	-2	-41.1	-13.5	
Direct Compensation	2	82.2	13.5	97.7

11.6 ha functional loss partially offset by 2 ha gain

	HABITAT TYPE			
	Saltmarsh	Intertidal Mudflat	Sub-tidal (Estuary)	
MEDIUM TERM (0-30 YEARS)				
Direct Loss		-31.5	-13.5	
Direct Change	-2	2		
Functional Loss Due to AMEP		-8.9		
TOTAL	-2	-38.4	-13.5	
Compensation	2	76.8	13.5	
Local Functional Mudflat creation - North side of AMEP		0	0	
Local Functional Mudflat creation - South side of AMEP		0.5	-0.5	
TOTAL	-2	-37.9	-14	
Direct Compensation + reduction by Indirect mudflat creation	2	75.8	14	
Local Functional Mudflat Conversion to Saltmarsh - North	0	0		
Local Functional Mudflat Conversion to Saltmarsh - South	1.1	-1.1		
Creation of saltmarsh in the disturbance zone	4.7			
TOTAL	3.8	-39	-14	
Direct Compensation + reduction by Indirect mudflat creation + Indirect mudflat conversion to saltmarsh	0	78	13.5	91.5

Functional loss reduced by predicted accretion to saltmarsh

8.9 ha functional loss partially offset by 2 ha gain

	HABITAT TYPE			
	Saltmarsh	Intertidal Mudflat	Sub-tidal (Estuary)	
LONG TERM IMPACTS				
Direct Loss		-31.5	-13.5	
Direct Change	-2	2		
Functional Loss Due to AMEP		-8.9		
TOTAL	-2	-38.4	-13.5	
Compensation	2	76.8	13.5	
Local Functional Mudflat creation - North		0	0	
Local Functional Mudflat creation - South		0.5	-0.5	
TOTAL	-2	-37.9	-14	
Direct Compensation + reduction by Indirect mudflat creation	2	75.8	14	
Local Functional Mudflat Conversion to Saltmarsh - North	0	0		
Local Functional Mudflat Conversion to Saltmarsh - South	1.1	-1.1		
Creation of saltmarsh in the disturbance zone	4.7			
TOTAL	3.8	-39	-14	
Direct Compensation + reduction by Indirect mudflat creation + Indirect mudflat conversion to saltmarsh	0	78	13.5	
LONG TERM (0-100 YEARS)				
Indirect - WL Change (Deltares)		-5	5	
TOTAL	3.8	-44	-9	
Direct + Indirect + EA Compensation	0	88	13.5	101.5

SAC Habitat Losses and Changes

	HABITAT TYPE			
	Saltmarsh	Intertidal Mudflat	Sub-tidal (Estuary)	
IMMEDIATE IMPACTS				
Direct	-2	-31.5 2	-13.5	
Functional Loss				
TOTAL	-2	-29.5	-13.5	
Direct Compensation	2	59	13.5	74.5
MEDIUM TERM (0-30 YEARS)				
Local Mudflat creation		7.88	-7.88	
TOTAL	-2	-21.62	-21.38	
Direct Compensation + reduction by Indirect mudflat creation	2	43.24	21.38	66.62
Local Mudflat Conversion to Saltmarsh	10.35	-10.35		
TOTAL	8.35	-31.97	-21.38	
Direct Compensation + reduction by Indirect mudflat creation + Indirect mudflat conversion to saltmarsh	0	63.94	13.5	77.44

	HABITAT TYPE			
	Saltmarsh	Intertidal Mudflat	Sub-tidal (Estuary)	
IMMEDIATE IMPACTS				
Direct Physical Loss		-31.5	-13.5	
Direct Change	-2	2		
Functional Loss			-7.7	
TOTAL	-2	-29.5	-21.2	
Direct Compensation	2	59	21.2	82.2

11.6 ha functional loss partially offset by 2 ha gain

	HABITAT TYPE			
	Saltmarsh	Intertidal Mudflat	Sub-tidal (Estuary)	
MEDIUM TERM (0-30 YEARS)				
Direct Loss		-31.5	-13.5	
Direct Change	-2	2		
Functional Loss Due to AMEP			-7.7	
TOTAL	-2	-29.5	-21.2	
Compensation	2	59	21.2	
Local Mudflat creation - North side of AMEP		5.6	-5.6	
Local Mudflat creation - South side of AMEP		2.2	-2.2	
TOTAL	-2	-21.7	-29	
Direct Compensation + reduction by Indirect mudflat creation	2	43.4	29	
Local Mudflat Conversion to Saltmarsh - North	4	-4		
Local Mudflat Conversion to Saltmarsh - South	6	-6		
TOTAL	8	-31.7	-29	
Direct Compensation + reduction by Indirect mudflat creation + Indirect mudflat conversion to saltmarsh	0	63.4	21.2	84.6

Functional loss reduced by predicted accretion to saltmarsh

8.9 ha functional loss partially offset by 2 ha gain

	HABITAT TYPE			
	Saltmarsh	Intertidal Mudflat	Sub-tidal (Estuary)	
LONG TERM IMPACTS				
Direct Loss		-31.5	-13.5	
Direct Change	-2	2		
Functional Loss Due to AMEP			-7.7	
TOTAL	-2	-29.5	-21.2	
Compensation	2	59	21.2	
Local Mudflat creation - North		5.6	-5.6	
Local Mudflat creation - South		2.2	-2.2	
TOTAL	-2	-21.7	-29	
Direct Compensation + reduction by Indirect mudflat creation	2	43.4	29	
Local Mudflat Conversion to Saltmarsh - North	4	-4		
Local Mudflat Conversion to Saltmarsh - South	6	-6		
TOTAL	8	-31.7	-29	
Direct Compensation + reduction by Indirect mudflat creation + Indirect mudflat conversion to saltmarsh	0	63.4	21.2	
LONG TERM (0-100 YEARS)				
Indirect - WL Change (Deltares)		-5	5	
TOTAL	8	-36.7	-24	
Direct + Indirect + EA Compensation	0	73.4	21.2	94.6

Annex C

BTO Bird Codes

Abbreviated code list

Standard naming and coding of species and subspecies regularly found in Britain and Ireland (long list)

BTO

Mute Swan	*Cygnus olor*	MS	MUTSW
Bewick's Swan	*Cygnus columbianus*	BS	BEWSW
Whooper Swan	*Cygnus cygnus*	WS	WHOSW
Bean Goose	*Anser fabalis*	BE	BEAGO
Bean Goose (Taiga)	*Anser fabalis fabalis*	XF	
Bean Goose (Tundra)	*Anser fabalis rossicus*	XR	
Pink-footed Goose	*Anser brachyrhynchus*	PG	PIFGO
White-fronted Goose	*Anser albifrons*	WG	WHFGO
White-fronted Goose (Greenland)	*Anser albifrons flavirostris*	NW	
White-fronted Goose (European)	*Anser albifrons albifrons*	EW	
Greylag Goose	*Anser anser*	GJ	GREGO
Greylag Goose (domestic)	*Anser anser*	ZL	
Snow Goose	*Anser caerulescens*	SJ	SNOGO
Canada Goose	*Branta canadensis*	CG	CANGO
Barnacle Goose	*Branta leucopsis*	BY	BARGO
Brent Goose	*Branta bernicla*	BG	BREGO
Brent Goose (Dark-bellied)	*Branta bernicla bernicla*	DB	
Brent Goose (Light-bellied)	*Branta bernicla hrota*	PB	
Brent Goose (Black Brant)	*Branta bernicla nigricans*	BB	
Egyptian Goose	*Alopochen aegyptiaca*	EG	EGYGO
Ruddy Shelduck	*Tadorna ferruginea*	UD	RUDSH
Shelduck	*Tadorna tadorna*	SU	SHELD
Mandarin Duck	*Aix galericulata*	MN	MANDA
Wigeon	*Anas penelope*	WN	WIGEO
American Wigeon	*Anas americana*	AW	AMEWI
Gadwall	*Anas strepera*	GA	GADWA
Teal	*Anas crecca*	T.	TEAL.
Green-winged Teal	*Anas carolinensis*	TA	GRWTE
Mallard	*Anas platyrhynchos*	MA	MALLA
Mallard (domestic)	*Anas platyrhynchos*	ZF	
Pintail	*Anas acuta*	PT	PINTA
Garganey	*Anas querquedula*	GY	GARGA
Shoveler	*Anas clypeata*	SV	SHOVE
Red-crested Pochard	*Netta rufina*	RQ	RECPO
Pochard	*Aythya ferina*	PO	POCHA
Ring-necked Duck	*Aythya collaris*	NG	RINDU
Ferruginous Duck	*Aythya nyroca*	FD	FERDU
Tufted Duck	*Aythya fuligula*	TU	TUFDU
Scaup	*Aythya marila*	SP	SCAUP
Eider	*Somateria mollissima*	E.	EIDER
Long-tailed Duck	*Clangula hyemalis*	LN	LOTDU
Common Scoter	*Melanitta nigra*	CX	COMSC
Surf Scoter	*Melanitta perspicillata*	FS	SURSC
Velvet Scoter	*Melanitta fusca*	VS	VELSC
Goldeneye	*Bucephala clangula*	GN	GOLDE
Smew	*Mergellus albellus*	SY	SMEW.
Red-breasted Merganser	*Mergus serrator*	RM	REBME
Goosander	*Mergus merganser*	GD	GOOSA
Ruddy Duck	*Oxyura jamaicensis*	RY	RUDDU
Red Grouse	*Lagopus lagopus scotica*	RG	REDGR
Ptarmigan	*Lagopus muta*	PM	PTARM
Black Grouse	*Tetrao tetrix*	BK	BLAGR
Capercaillie	*Tetrao urogallus*	CP	CAPER
Red-legged Partridge	*Alectoris rufa*	RL	RELPA
Grey Partridge	*Perdix perdix*	P.	GREPA
Quail	*Coturnix coturnix*	Q.	QUAIL
Pheasant	*Phasianus colchicus*	PH	PHEAS
Golden Pheasant	*Chrysolophus pictus*	GF	GOLPH
Lady Amherst's Pheasant	*Chrysolophus amherstiae*	LM	LAAPH
Red-throated Diver	*Gavia stellata*	RH	RETDI
Black-throated Diver	*Gavia arctica*	BV	BLTDI
Great Northern Diver	*Gavia immer*	ND	GRNDI
Little Grebe	*Tachybaptus ruficollis*	LG	LITGR
Great Crested Grebe	*Podiceps cristatus*	GG	GRCGR
Red-necked Grebe	*Podiceps grisegena*	RX	RENGR
Slavonian Grebe	*Podiceps auritus*	SZ	SLAGR
Black-necked Grebe	*Podiceps nigricollis*	BN	BLNGR
Fulmar	*Fulmarus glacialis*	F.	FULMA
Cory's Shearwater	*Calonectris diomedea*	CQ	CORSH
Great Shearwater	*Puffinus gravis*	GQ	GRTSH

Abbreviated code list

Standard naming and coding of species and subspecies regularly found in Britain and Ireland (long list)

Sooty Shearwater	*Puffinus griseus*	OT	SOOSH
Manx Shearwater	*Puffinus puffinus*	MX	MANSH
Balearic Shearwater	*Puffinus mauretanicus*	YQ	BALSH
Wilson's Petrel	*Oceanites oceanicus*		WILPE
Storm Petrel	*Hydrobates pelagicus*	TM	STOPE
Leach's Petrel	*Oceanodroma leucorhoa*	TL	LEAPE
Gannet	*Morus bassanus*	GX	GANNE
Cormorant	*Phalacrocorax carbo*	CA	CORMO
Cormorant (Continental)	*Phalacrocorax carbo sinensis*		
Shag	*Phalacrocorax aristotelis*	SA	SHAG.
Bittern	*Botaurus stellaris*	BI	BITTE
Night-heron	*Nycticorax nycticorax*	NT	NIGHE
Little Egret	*Egretta garzetta*	ET	LITEG
Great White Egret	*Ardea alba*	HW	GRWEG
Grey Heron	*Ardea cinerea*	H.	GREHE
Purple Heron	*Ardea purpurea*	UR	PURHE
White Stork	*Ciconia ciconia*	OR	WHIST
Glossy Ibis	*Plegadis falcinellus*	IB	GLOIB
Spoonbill	*Platalea leucorodia*	NB	SPOON
Honey-buzzard	*Pernis apivorus*	HZ	HONBU
Black Kite	*Milvus migrans*	KB	BLAKI
Red Kite	*Milvus milvus*	KT	REDKI
White-tailed Eagle	*Haliaeetus albicilla*	WE	WHTEA
Marsh Harrier	*Circus aeruginosus*	MR	MARHA
Hen Harrier	*Circus cyaneus*	HH	HENHA
Montagu's Harrier	*Circus pygargus*	MO	MONHA
Goshawk	*Accipiter gentilis*	GI	GOSHA
Sparrowhawk	*Accipiter nisus*	SH	SPARR
Buzzard	*Buteo buteo*	BZ	BUZZA
Rough-legged Buzzard	*Buteo lagopus*	RF	ROLBU
Golden Eagle	*Aquila chrysaetos*	EA	GOLEA
Osprey	*Pandion haliaetus*	OP	OSPRE
Kestrel	*Falco tinnunculus*	K.	KESTR
Red-footed Falcon	*Falco vespertinus*	FV	REFFA
Merlin	*Falco columbarius*	ML	MERLI
Hobby	*Falco subbuteo*	HY	HOBBY
Peregrine	*Falco peregrinus*	PE	PEREG
Water Rail	*Rallus aquaticus*	WA	WATRA
Spotted Crake	*Porzana porzana*	AK	SPOCR
Corncrake	*Crex crex*	CE	CORNC
Moorhen	*Gallinula chloropus*	MH	MOORH
Coot	*Fulica atra*	CO	COOT.
Crane	*Grus grus*	AN	CRANE
Oystercatcher	*Haematopus ostralegus*	OC	OYSTE
Black-winged Stilt	*Himantopus himantopus*	IT	BLWST
Avocet	*Recurvirostra avosetta*	AV	AVOCE
Stone-curlew	*Burhinus oedicnemus*	TN	STOCU
Little Ringed Plover	*Charadrius dubius*	LP	LIRPL
Ringed Plover	*Charadrius hiaticula*	RP	RINPL
Kentish Plover	*Charadrius alexandrinus*	KP	KENPL
Dotterel	*Charadrius morinellus*	DO	DOTTE
American Golden Plover	*Pluvialis dominica*	ID	AMGPL
Golden Plover	*Pluvialis apricaria*	GP	GOLPL
Grey Plover	*Pluvialis squatarola*	GV	GREPL
Lapwing	*Vanellus vanellus*	L.	LAPWI
Knot	*Calidris canutus*	KN	KNOT.
Sanderling	*Calidris alba*	SS	SANDE
Little Stint	*Calidris minuta*	LX	LITST
Temminck's Stint	*Calidris temminckii*	TK	TEMST
White-rumped Sandpiper	*Calidris fuscicollis*	WU	WHRSA
Pectoral Sandpiper	*Calidris melanotos*	PP	PECSA
Curlew Sandpiper	*Calidris ferruginea*	CV	CURSA
Purple Sandpiper	*Calidris maritima*	PS	PURSA
Dunlin	*Calidris alpina*	DN	DUNLI
Buff-breasted Sandpiper	*Tryngites subruficollis*	BQ	BUBSA
Ruff	*Philomachus pugnax*	RU	RUFF.
Jack Snipe	*Lymnocryptes minimus*	JS	JACSN
Snipe	*Gallinago gallinago*	SN	SNIPE
Woodcock	*Scolopax rusticola*	WK	WOODC
Black-tailed Godwit	*Limosa limosa*	BW	BLTGO

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BTO

Bar-tailed Godwit	*Limosa lapponica*	BA	BATGO
Whimbrel	*Numenius phaeopus*	WM	WHIMB
Curlew	*Numenius arquata*	CU	CURLE
Spotted Redshank	*Tringa erythropus*	DR	SPORE
Redshank	*Tringa totanus*	RK	REDSH
Greenshank	*Tringa nebularia*	GK	GRESH
Lesser Yellowlegs	*Tringa flavipes*	LY	LESYE
Green Sandpiper	*Tringa ochropus*	GE	GRESA
Wood Sandpiper	*Tringa glareola*	OD	WOOSA
Common Sandpiper	*Actitis hypoleucos*	CS	COMSA
Turnstone	*Arenaria interpres*	TT	TURNS
Red-necked Phalarope	*Phalaropus lobatus*	NK	RENPH
Grey Phalarope	*Phalaropus fulicarius*	PL	GREPH
Pomarine Skua	*Stercorarius pomarinus*	PK	POMSK
Arctic Skua	*Stercorarius parasiticus*	AC	ARCSK
Long-tailed Skua	*Stercorarius longicaudus*	OG	LOTSK
Great Skua	*Stercorarius skua*	NX	GRESK
Mediterranean Gull	*Larus melanocephalus*	MU	MEDGU
Little Gull	*Hydrocoloeus minutus*	LU	LITGU
Sabine's Gull	*Larus sabini*	AB	SABGU
Black-headed Gull	*Chroicocephalus ridibundus*	BH	BLHGU
Ring-billed Gull	*Larus delawarensis*	IN	RIBGU
Common Gull	*Larus canus*	CM	COMGU
Lesser Black-backed Gull	*Larus fuscus*	LB	LBBGU
Herring Gull	*Larus argentatus*	HG	HERGU
Yellow-legged Gull	*Larus michahellis*	YG	YELGU
Caspian Gull	*Larus cachinnans*	YC	
Iceland Gull	*Larus glaucoides*	IG	ICEGU
Glaucous Gull	*Larus hyperboreus*	GZ	GLAGU
Great Black-backed Gull	*Larus marinus*	GB	GBBGU
Kittiwake	*Rissa tridactyla*	KI	KITTI
Sandwich Tern	*Sterna sandvicensis*	TE	SANTE
Roseate Tern	*Sterna dougallii*	RS	ROSTE
Common Tern	*Sterna hirundo*	CN	COMTE
Arctic Tern	*Sterna paradisaea*	AE	ARCTE
Little Tern	*Sternula albifrons*	AF	LITTE
Black Tern	*Chlidonias niger*	BJ	BLATE
White-winged Black Tern	*Chlidonias leucopterus*	WJ	WWBTE
Guillemot	*Uria aalge*	GU	GUILL
Razorbill	*Alca torda*	RA	RAZOR
Black Guillemot	*Cepphus grylle*	TY	BLAGU
Little Auk	*Alle alle*	LK	LITAU
Puffin	*Fratercula arctica*	PU	PUFFI
Rock Dove	*Columba livia*	DV	ROCDO
Feral Pigeon	*Columba livia*	FP	
Stock Dove	*Columba oenas*	SD	STODO
Woodpigeon	*Columba palumbus*	WP	WOODP
Collared Dove	*Streptopelia decaocto*	CD	COLDO
Turtle Dove	*Streptopelia turtur*	TD	TURDO
Ring-necked Parakeet	*Psittacula krameri*	RI	RINPA
Cuckoo	*Cuculus canorus*	CK	CUCKO
Barn Owl	*Tyto alba*	BO	BAROW
Little Owl	*Athene noctua*	LO	LITOW
Tawny Owl	*Strix aluco*	TO	TAWOW
Long-eared Owl	*Asio otus*	LE	LOEOW
Short-eared Owl	*Asio flammeus*	SE	SHEOW
Nightjar	*Caprimulgus europaeus*	NJ	NIJAR
Swift	*Apus apus*	SI	SWIFT
Alpine Swift	*Apus melba*	AI	ALPSW
Kingfisher	*Alcedo atthis*	KF	KINGF
Bee-eater	*Merops apiaster*	MZ	BEEEA
Hoopoe	*Upupa epops*	HP	HOOPO
Wryneck	*Jynx torquilla*	WY	WRYNE
Green Woodpecker	*Picus viridis*	G.	GREWO
Great Spotted Woodpecker	*Dendrocopos major*	GS	GRSWO
Lesser Spotted Woodpecker	*Dendrocopos minor*	LS	LESWO
Short-toed Lark	*Calandrella brachydactyla*	VL	SHTLA
Woodlark	*Lullula arborea*	WL	WOODL
Skylark	*Alauda arvensis*	S.	SKYLA
Shore Lark	*Eremophila alpestris*	SX	SHOLA

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Sand Martin	*Riparia riparia*	SM	SANMA
Swallow	*Hirundo rustica*	SL	SWALL
Red-rumped Swallow	*Cecropis daurica*	VR	RERSW
House Martin	*Delichon urbicum*	HM	HOUMA
Richard's Pipit	*Anthus richardi*	PR	RICPI
Tawny Pipit	*Anthus campestris*	TI	TAWPI
Tree Pipit	*Anthus trivialis*	TP	TREPI
Meadow Pipit	*Anthus pratensis*	MP	MEAPI
Red-throated Pipit	*Anthus cervinus*	VP	RETPI
Rock Pipit	*Anthus petrosus*	RC	ROCPI
Water Pipit	*Anthus spinoletta*	WI	WATPI
Yellow Wagtail	*Motacilla flava*	YW	YELWA
Yellow Wagtail (Blue-headed)	*Motacilla flava flava*		
Yellow Wagtail (Grey-headed)	*Motacilla flava thunbergi*		
Grey Wagtail	*Motacilla cinerea*	GL	GREWA
Pied/White Wagtail	*Motacilla alba*	PW	PIEWA
Pied Wagtail (yarrellii)	*Motacilla alba yarrellii*		
White Wagtail (alba)	*Motacilla alba alba*	WB	
Waxwing	*Bombycilla garrulus*	WX	WAXWI
Dipper	*Cinclus cinclus*	DI	DIPPE
Wren	*Troglodytes troglodytes*	WR	WREN.
Dunnock	*Prunella modularis*	D.	DUNNO
Robin	*Erithacus rubecula*	R.	ROBIN
Nightingale	*Luscinia megarhynchos*	N.	NIGAL
Bluethroat	*Luscinia svecica*	BU	BLUTH
Bluethroat (White-spotted)	*Luscinia svecica cyanecula*		
Bluethroat (Red-spotted)	*Luscinia svecica svecica*		
Black Redstart	*Phoenicurus ochruros*	BX	BLARE
Redstart	*Phoenicurus phoenicurus*	RT	REDST
Whinchat	*Saxicola rubetra*	WC	WHINC
Stonechat	*Saxicola torquatus*	SC	STOCH
Wheatear	*Oenanthe oenanthe*	W.	WHEAT
Wheatear (Greenland)	*Oenanthe oenanthe leucorhoa*		
Ring Ouzel	*Turdus torquatus*	RZ	RINOU
Blackbird	*Turdus merula*	B.	BLABI
Fieldfare	*Turdus pilaris*	FF	FIELD
Song Thrush	*Turdus philomelos*	ST	SONTH
Redwing	*Turdus iliacus*	RE	REDWI
Mistle Thrush	*Turdus viscivorus*	M.	MISTH
Cetti's Warbler	*Cettia cetti*	CW	CETWA
Grasshopper Warbler	*Locustella naevia*	GH	GRAWA
Savi's Warbler	*Locustella luscinioides*	VI	SAVWA
Aquatic Warbler	*Acrocephalus paludicola*	AQ	AQUWA
Sedge Warbler	*Acrocephalus schoenobaenus*	SW	SEDWA
Marsh Warbler	*Acrocephalus palustris*	MW	MARWA
Reed Warbler	*Acrocephalus scirpaceus*	RW	REEWA
Icterine Warbler	*Hippolais icterina*	IC	ICTWA
Melodious Warbler	*Hippolais polyglotta*	ME	MELWA
Blackcap	*Sylvia atricapilla*	BC	BLACA
Garden Warbler	*Sylvia borin*	GW	GARWA
Barred Warbler	*Sylvia nisoria*	RR	BARWA
Lesser Whitethroat	*Sylvia curruca*	LW	LESWH
Whitethroat	*Sylvia communis*	WH	WHITE
Dartford Warbler	*Sylvia undata*	DW	DARWA
Subalpine Warbler	*Sylvia cantillans*		SUBWA
Greenish Warbler	*Phylloscopus trochiloides*	NP	GSHWA
Arctic Warbler	*Phylloscopus borealis*	AP	ARCWA
Pallas's Warbler	*Phylloscopus proregulus*	PA	PALWA
Yellow-browed Warbler	*Phylloscopus inornatus*	YB	YEBWA
Radde's Warbler	*Phylloscopus schwarzi*		RADWA
Dusky Warbler	*Phylloscopus fuscatus*	UY	DUSWA
Wood Warbler	*Phylloscopus sibilatrix*	WO	WOOWA
Chiffchaff	*Phylloscopus collybita*	CC	CHIFF
Willow Warbler	*Phylloscopus trochilus*	WW	WILWA
Goldcrest	*Regulus regulus*	GC	GOLDC
Firecrest	*Regulus ignicapilla*	FC	FIREC
Spotted Flycatcher	*Muscicapa striata*	SF	SPOFL
Red-breasted Flycatcher	*Ficedula parva*	FY	REBFL
Pied Flycatcher	*Ficedula hypoleuca*	PF	PIEFL
Bearded Tit	*Panurus biarmicus*	BR	BEATI

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Long-tailed Tit	*Aegithalos caudatus*	LT	LOTTI
Long-tailed Tit (Northern)	*Aegithalos caudatus caudatus*		
Marsh Tit	*Poecile palustris*	MT	MARTI
Willow Tit	*Poecile montana*	WT	WILTI
Crested Tit	*Lophophanes cristatus*	CI	CRETI
Coal Tit	*Periparus ater*	CT	COATI
Coal Tit (Continental)	*Periparus ater ater*		
Blue Tit	*Cyanistes caeruleus*	BT	BLUTI
Great Tit	*Parus major*	GT	GRETI
Nuthatch	*Sitta europaea*	NH	NUTHA
Treecreeper	*Certhia familiaris*	TC	TREEC
Golden Oriole	*Oriolus oriolus*	OL	GOLOR
Red-backed Shrike	*Lanius collurio*	ED	REBSH
Great Grey Shrike	*Lanius excubitor*	SR	GRGSH
Woodchat Shrike	*Lanius senator*	OO	WOOSH
Jay	*Garrulus glandarius*	J.	JAY..
Magpie	*Pica pica*	MG	MAGPI
Chough	*Pyrrhocorax pyrrhocorax*	CF	CHOUG
Jackdaw	*Corvus monedula*	JD	JACKD
Rook	*Corvus frugilegus*	RO	ROOK.
Carrion Crow	*Corvus corone*	C.	CARCR
Hooded Crow	*Corvus cornix*	HC	HOOCR
Carrion/Hooded Crow hybrid	*Corvus corone x cornix*	HB	INTCR
Raven	*Corvus corax*	RN	RAVEN
Starling	*Sturnus vulgaris*	SG	STARL
Rose-coloured Starling	*Sturnus roseus*	OE	ROCST
House Sparrow	*Passer domesticus*	HS	HOUSP
Tree Sparrow	*Passer montanus*	TS	TRESP
Chaffinch	*Fringilla coelebs*	CH	CHAFF
Brambling	*Fringilla montifringilla*	BL	BRAMB
Serin	*Serinus serinus*	NS	SERIN
Greenfinch	*Carduelis chloris*	GR	GREFI
Goldfinch	*Carduelis carduelis*	GO	GOLDF
Siskin	*Carduelis spinus*	SK	SISKI
Linnet	*Carduelis cannabina*	LI	LINNE
Twite	*Carduelis flavirostris*	TW	TWITE
Common Redpoll	*Carduelis flammea*	FR	COMRE
Lesser Redpoll	*Carduelis cabaret*	LR	LESRE
Common Redpoll (Mealy)	*Carduelis flammea flammea*		
Common Redpoll (Greenland)	*Carduelis flammea rostrata*		
Redpoll (Common/Lesser)	*Carduelis flammea/cabaret*	FQ	REDPO
Arctic Redpoll	*Carduelis hornemanni*	AL	ARCRE
Common Crossbill	*Loxia curvirostra*	CR	CROSS
Scottish Crossbill	*Loxia scotica*	CY	SCOCR
Parrot Crossbill	*Loxia pytyopsittacus*	PC	PARCR
Common Rosefinch	*Carpodacus erythrinus*	SQ	SCARO
Bullfinch	*Pyrrhula pyrrhula*	BF	BULLF
Hawfinch	*Coccothraustes coccothraustes*	HF	HAWFI
Lapland Bunting	*Calcarius lapponicus*	LA	LAPBU
Snow Bunting	*Plectrophenax nivalis*	SB	SNOBU
Yellowhammer	*Emberiza citrinella*	Y.	YELHA
Cirl Bunting	*Emberiza cirlus*	CL	CIRBU
Ortolan Bunting	*Emberiza hortulana*	OB	ORTBU
Rustic Bunting	*Emberiza rustica*		RUSBU
Little Bunting	*Emberiza pusilla*	LJ	LITBU
Reed Bunting	*Emberiza schoeniclus*	RB	REEBU
Corn Bunting	*Emberiza calandra*	CB	CORBU
Black Swan	*Cygnus atratus*	AS	
Bar-headed Goose	*Anser indicus*	HD	
Muscovy Duck	*Cairina moschata*	MY	MUSDU
Wood Duck	*Aix sponsa*	DC	WOODU
Chukar	*Alectoris chukar*	KR	
Indian Peafowl	*Pavo cristatus*	PX	

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