

ABLE MARINE ENERGY PARK TR030001

SUMMARY OF CASE AT 12-13 NOVEMBER 2012 HEARINGS

1. This is a summary of the case presented by the applicant, Able Humber Ports Ltd, at the hearings that took place in Grimsby on 12 and 13 November.
2. Annexed documents are as follows:
 - a. Table of correspondence with MMO, EA and NE;
 - b. Evidence of Immingham Outer Harbour being operational around 10 months before breach;
 - c. Comparison of affected area, compensation areas, ratios and time lags with other comparable projects;
 - d. Bathside Bay CEMMP;
 - e. Current draft CEMMP;
 - f. Current draft Terrestrial EMMP;
 - g. Current draft Marine EMMP;
 - h. Freedom of Information requests for ABP compensation details, and
 - i. MarLIN sensitivity assessment.

Day 1, 12 November 2012

1. The effectiveness of the proposed Regulated Tidal Exchange scheme at Cherry Cobb Sands and the proposed wet grassland scheme

Introduction

3. The applicant will initially provide mudflat at a 2:1 ratio for that being lost directly and indirectly, making 88 hectares, plus estuarine habitat at a 1:1 ratio, making a total of 101.5 hectares. In common with other schemes, the applicant is aware that the majority of the part of the compensation site that is managed realignment will gradually convert to saltmarsh, but unlike other schemes, its managed Regulated Tidal Exchange (RTE) scheme will ensure that the remainder does not fall below 60 hectares of mudflat resource. Feeding across this RTE mudflat resource would be available over at least 45 hectares on any tide (save for during short periods of management activity in the period April to June when it will be little used, which would reduce the area available for feeding to 30 hectares per tide for about 20 days out of the year).
4. This is comparable with, although better than, the Immingham Outer Harbour arrangement (appended to the applicant's response to relevant representations), where initial compensation of 2:1 was offered, with a requirement that it must not fall below 1:1 in the long term.
5. The applicant does not agree that 'no reasonable scientific doubt' taken from the *Waddenzee* case (ECJ ref C-127/02) is the correct test for the level of certainty required that a compensation scheme will succeed in its aims before the Secretary of State can approve a project. That test was applied in *Waddenzee* to the first sentence of Article 6(3) of the Habitats Directive which provides that:

“Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site’s conservation objectives.”

6. Paragraphs 43 and 44 of that judgment explain that:

“It follows that the first sentence of Article 6(3) of the Habitats Directive subordinates the requirement for an appropriate assessment of the implications of a plan or project to the condition that there be a probability or a risk that the latter will have significant effects on the site concerned.

In the light, in particular, of the precautionary principle, which is one of the foundations of the high level of protection pursued by Community policy on the environment in accordance with the first subparagraph of Article 174(2) EC, and by reference to which the Habitats Directive must be interpreted, such a risk exists if it cannot be excluded on the basis of objective information that the plan or project will have significant effects on the site concerned. Such an interpretation of the condition to which the assessment of the implications of a plan or project for a specific site is subject which implies that in case of doubt as to the absence of significant effects such an assessment must be carried out makes it possible to ensure effectively that plans or projects which adversely affect the integrity of the site concerned are not authorised, and thereby contributes to achieving, in accordance with the third recital in the preamble to the Habitats Directive and Article 2(1) thereof, its main aim, namely ensuring biodiversity through the conservation of natural habitats and of wild fauna and flora.”

7. The judgment in Waddenzee clearly applies specifically to the interpretation of the first sentence of Article 6(3). The context is important because where there is doubt about the effects of the plan or project on a protected site, this will not act as an automatic bar to it proceeding, but rather it will ensure that an appropriate assessment necessary. This ensures that the significant environmental effects are examined. The appropriate assessment also determines whether or not the proposed plan or project would have an adverse effect on the integrity of the conservation objectives of the protected site. If the outcome of the assessment is that it will, then consent can only be granted if there are no alternatives and IROPI is satisfied. Thus even where the appropriate assessment concludes that there will be adverse effects, this will not be an automatic bar to the plan or project proceeding: it will simply mean that the requirements of Article 6(4) will need to be satisfied before it can be approved. That is context in which the question of compensation needs to be considered i.e. where it is accepted that there will be harm to the integrity of the site, where there are no alternatives and where there is an *overriding* reason of public importance.
8. However, to apply the ‘no reasonable scientific doubt’ test to the question of whether the compensation measures will succeed (as the RSPB proposes) would mean that where there were even a modicum of reasonable doubt, the project could not proceed, even though it

was necessary for imperative reasons of overriding public interest and there were no alternative solutions.

9. Paragraphs 59 – 60 of the judgment continued:

“Therefore, pursuant to Article 6(3) of the Habitats Directive, the competent national authorities, taking account of the conclusions of the appropriate assessment of the implications of mechanical cockle fishing for the site concerned, in the light of the site’s conservation objectives, are to authorise such activity only if they have made certain that it will not adversely affect the integrity of that site. That is the case where no reasonable scientific doubt remains as to the absence of such effects (see, by analogy, Case C-236/01 Monsanto Agricoltora Ital and Others [2003] ECR I-8105, paragraphs 106 and 113).

Otherwise, mechanical cockle fishing could, where appropriate, be authorised under Article 6(4) of the Habitats Directive, provided that the conditions set out therein are satisfied.”

10. The applicant accepts that pursuant to Article 6(3), the correct approach is to carry out an appropriate assessment of a plan or project unless it can be said with certainty that it will not adversely affect the integrity of the site and that such a conclusion can only be reached where there is no reasonable scientific doubt as to the absence of such effects. This is made clear by the Waddenzee judgment, and by guidance issued by the European Commission¹. As far as the applicant is aware, there are no cases or guidance documents, however, which apply the same test to the consideration of the efficacy of compensation proposals.
11. It is not appropriate to take a test which applies to one part of Article 6 of the Habitats Directive and apply it indiscriminately to other parts of that Directive. Clearly it is beneficial to carry out an assessment of a plan or project where there is any level of doubt as to whether it will be adversely affected by a plan or project. Such an assessment will reveal the extent to which the site will be adversely affected and inform the decision maker as to whether the plan or project can be approved without more, or will need to satisfy the requirements in the derogation provision in Article 6(4).
12. It should not be forgotten that by the time a competent authority comes to consider the efficacy of a compensation package, it will already have determined that the plan or project must be carried out for imperative reasons of overriding public interest, and that there are no alternative solutions.
13. The applicant’s case is that approval can be granted provided that the decision maker has the ‘requisite degree of confidence’ that the compensation proposals will succeed in ensuring that the overall coherence of Natura 2000 is protected.

¹Paragraph 1.2.1. of the *Guidance document on Article 6(4) of the ‘Habitats Directive’ 92/43/EEC*, (2007/2012) issued by the European Commission, and

14. While the RSPB now claims that the test is that of ‘no reasonable scientific doubt’, it should be noted that in its written summary of the September hearings, it argued that the relevant test was that of ‘requisite confidence’ (see paragraphs 40 - 43). In paragraph 42 it claimed that the test was one of ‘confidence: *“The **legal test for confidence in the compensation is not met here**”* (emphasis added). Nowhere, in that document (or any other that we are aware of) did it refer to a test of ‘no reasonable scientific doubt’.
15. In distinguishing the present case from that of Bristol, the RSPB explained (paragraph 43) that *“At Bristol, all the nature conservation advisers including the RSPB had **confidence** (due to the impacts being accepted early on in the discussions between all the parties and the detailed information presented to them) that the compensation proposals would work – on the facts there they did not need to see the fully worked up compensation proposals to be satisfied”* (emphasis added).
16. It is difficult to accept that all the nature conservation bodies could have been satisfied that there was no reasonable scientific doubt that the compensation package would work without even having seen the fully worked up compensation proposals. However, the RSPB was able to have confidence that the compensation scheme would work: confidence being the relevant test to be satisfied.
17. In the hearings the RSPB through Mr Forsdick asserted that a test of ‘no reasonable scientific doubt’ may have been applied in the Secretary of State’s decision in the Dibden Bay Harbour Revision Order application. An examination of both the Inspector’s report and the Secretary of State’s decision letter reveals that no such test was applied in assessing the compensation package proposed by the applicant in that case, ABP.
18. The other case referred to by RSPB through Mr Forsdick was that of Monsanto Agricoltura SpA and others v Presidenza del Consiglio dei Ministri and others (C-236/01). That case considered the interpretation and validity of a particular provision of Regulation (EC) No 258/97 concerning novel foods and novel food ingredients. That case bears no analogy to the present case and provides no authority for the proposition that the Secretary of State can only grant this DCO if he is satisfied that there is ‘no reasonable scientific doubt’ that the compensation package will succeed in offsetting the harm caused by the development.
19. The applicant’s position that the Secretary of State can grant this DCO provided he has the requisite confidence that the compensation measures will work is supported by the European Commission guidance on article 6(4) of the Habitats Directive². That guidance explains (at paragraph 1.5.2) that:

“The feasibility and effectiveness of compensatory measures are critical to the administration of Article 6(4) of the Habitats Directive in agreement to the precautionary principle and good

² Guidance document on Article 6(4) of the ‘Habitats Directive’ 92/43/EEC 2007/2012

practice. In ensuring effectiveness, technical feasibility must go hand in hand with the appropriate extent, timing and location of the compensatory measures.

Compensatory measures must be feasible and operational in reinstating the ecological conditions needed to ensure the overall coherence of the Natura 2000 network (i.e. the ecological structure and functions impaired and the habitats and species involved). The estimated timescale and any maintenance action required to enhance performance should be known and/or foreseen right from the start in view of the implementation of the measures. This must be based on the scientific knowledge available, complemented with specific investigations for the precise location where the compensatory measures will be implemented.

Measures for which there is no reasonable guarantee of success should not be considered under Article 6(4), and the likely success of the compensation scheme should influence the final approval of the plan or project in compliance with the preventative principle.

In addition, the most effective option, which allow for the greatest chances of success must be chosen when it comes to deciding between different possibilities for compensation.

[...]

Measures showing in practice a low level of effectiveness in contributing to the objectives should be modified accordingly. (Emphasis added).

20. The guidance states that measures for which there is no reasonable guarantee of success should not be considered under Article 6(4). This is uncontroversial. However, it also makes it clear that there is a sliding scale of confidence rather than one single immutable standard (of ‘no reasonable scientific doubt’): the greater the degree of likelihood that the compensation package will succeed, the greater the chances that the DCO can be approved. This militates against the type of ‘yes’ or ‘no’ test proposed by the RSPB. On their interpretation, where there was even a scintilla of scientific doubt as to the compensation package, the application would automatically fail; where there was no such doubt (provided the other requirements of the Habitats Directive were satisfied) it would succeed.
21. In August 2012 Defra issued for consultation guidance on the application of Article 6(4) of the Habitats Directive³. Paragraph 22 of the guidance provides that

“The competent authority (liaising with the statutory nature conservation body and others as necessary) must have confidence that the compensatory measures will be sufficient to offset the harm. This can be a complex judgment and requires consideration of factors including:

- *Distance from the affected site: in general compensation close to the original site will be preferable, but there may be instances where a site further away will be better suited, in*

³ Habitats Directive: guidance on the application of article 6(4) (August 2012)

which case it should be selected. This judgment must be based solely on the contribution of the compensatory measures to the coherence of the network of European sites.

- *Time to establish the compensatory measures to the required quality.*
- ***Whether the re-creation / restoration methodology is technically proven or considered reasonable.***
- ***If there is uncertainty or a time lag between harm to the site and the establishment of compensatory measures, a larger area of compensation may be needed, coupled with a monitoring and management strategy that would require the applicant to take action if the compensation is not successful.*** (Emphasis added)

22. The guidance makes it clear that the competent authority must 'have confidence' that the compensation measures will be sufficient to offset the harm. Certain matters should be considered in assessing whether the measures proposed will be sufficient to offset the harm. One of those is whether the methodology is 'technically proven or considered reasonable'. Even where the methodology is not technically proven, the guidance makes it clear that provided it is considered reasonable, this may suffice. That does not accord with the interpretation which the RSPB would seek to impose: that the compensation package can only be accepted where there is no reasonable scientific doubt that it will succeed in replacing the ecological function lost.

23. The guidance also acknowledges that some uncertainty as to the effectiveness of the compensation package will not necessarily be fatal. Such uncertainty can be addressed through the provision of overcompensation and a monitoring and management strategy requiring the applicant to take action if the compensation is not successful.

24. It is relevant to note (as D.McGillivray does in his article *Compensating Biodiversity Loss: The EU Commission's Approach to Compensation under Article 6 of the Habitats Directive*) that

"three positive opinions [issued by the European Commission, having been notified of proposed compensatory measures] have been given even though the compensation measures had not been finalised. This was the case in Bothnia, where the view of the Commission was said to be conditional 'on a comprehensive and realistic compensation package' being submitted for the Commission's evaluation and approval before the execution of the project. It was also the case in Trebel and Recknitz, where the Opinion spoke of 'possible compensatory areas'. In the third, Muhlenberger Loch, there has been ex post evaluation. This – from 2008 – reached the uncomfortable finding that '[r]emediation measures were started in 2001, but have not yet been completed. It is actually not clear if the remediation measures will ever be completed, and if they are, which form they will take and which results they will have'."

25. The fact that the compensation measures had not even been finalised by the time they came before the Commission suggests that they cannot have been finalised at the time they were being considered by the competent authorities in the relevant Member State. Without finalisation of the details, it is difficult to see how those Member States could have had concluded that there was 'no reasonable scientific doubt' that the compensation proposals would work. This serves to strengthen the applicant's argument that the test suggested by the RSPB is not the correct one.

26. The context of both the quality and certainty required of the compensation package must be applied in accordance with the particular facts of the case. There is expected to be a reduction in the foreshore at North Killingholme Marshes over time. This means that if the current development did not go ahead the habitat of the BTG would be materially reduced. There is no suggestion that this habitat will be replaced.

27. The question asked by Robert Upton on 12 November 2012 was

“Yes, I think, again, that the question, it is a question in my mind, is the implications for certainty and indeed therefore the level of risk and therefore any test that one might apply. If the prognosis for the Black-tailed Godwits on that site without further intervention is not very good, then does that mean one should perhaps accept a lower level of certainty in terms of the compensation proposal? Because it might be argued at least you have a scheme, at least you have targets at least you have people who have the commitment to implementing it. You have a people who are then acting as active champions for the Black-tailed Godwits.”

28. The applicant is not providing any less replacement habitat because the original habitats will be reduced by passage of time. However, the fact that the existing habitats will otherwise be materially decreased is material to the degree of confidence required for the compensation package. This gives more confidence that sufficient replacement habitat is being provided.

29. The RSPB, through Mr Forsdick, accepted that the reduction of North Killingholme foreshore would affect the Panel’s analysis of the compensation package, but he asserted that the applicant’s claim in this regard was not supported by any scientific evidence. He said:

“I’ve accepted the point if there was a strong scientific evidence that you were going to lose some of it anyway, it would affect your analysis but Able has not done so.”

30. Dr Dearnaley, for the applicant, responded in the following way

“Dr Dearnaley: Yes. We produced a drawing to illustrate where we’ve caught the plus 2.5 meter OD contours would be in the future and in 11-24, what Able have done is to calculate the area inside that contour and to take a reasonable approach, I think, of saying that let’s assume that about half of the area there could be salt-marsh, about 2.5, and leaving us with some mudflat above 2.5 as well. So, at the moment, we’ve got relatively rapid accretion on North Killingholme Marshes, and that accretion may be such that salt marshes developing as easily as it can, it may be out pacing the ability to salt-marsh grow, but in the future the accretion will slow and at that point salt-marsh will continue to spread and where we see salt-marsh at the moment, at the southern end of the marsh, the mudflat next to HIT, that’s stable there, we’re going to expect that to expand from that area.

Robert Upton: Right that is your view?

Dr Dearnaley: Yes

Robert Upton: As an expert from HR Wallingford?

Dr Dearnaley: Yes.”

31. Without prejudice to the foregoing, if the test for compensation is one of “no reasonable scientific doubt” it must be applied to the context and facts of the particular case (this was accepted by RSPB in oral exchange). In the present case, the full compensation package would meet the legal requirement of securing the coherence of the Natura 2000 site(s) without there being any “reasonable scientific doubt”. The question of what is reasonable must be assessed having regard to all the circumstances of the particular case.

Provision of mudflat

32. In terms of the amount of mudflat being provided, document EX23.3 Part 3 shows that 60 hectares of mudflat will normally be provided, dropping to 45 hectares during a neap tide, where one of the four fields will have water impounded in it such that is too deep for black-tailed godwits (BTG) to use as a feeding resource.
33. The 60 hectare figure is arrived at by the four fields each being of 18 hectares, as shown in EX28.3 Part 3 section 8, but that up to 1.5 hectares of each field will be taken up by the channels and ponded areas, and a further 1.5 hectares of each field are expected to be of reduced function as a result of being intensively disturbed during the previous year through bed levelling activities. Dredging activities will be restricted to the channels and ponded areas and will not therefore directly affect the functionality or extent of the mudflat resource.
34. The 60ha will therefore be supplemented by the functioning of the 6ha of the area of the fields recovering from recent bed levelling activity and will be supplemented by the mudflat provided from the managed realignment part of the compensation site. In our assessment we have presumed that this area will quickly reduce to only a small amount of mudflat over time (assumed to be of the order 2ha long-term), due to sedimentation. However, we note the EA claim (evidence of Ms Manson on 12 November 2012) that at Paull Holme Strays the realignment site currently provides some 33ha of mudflat, well over the target of 12.4ha required to be created within the approximately 80ha site.
35. Natural England's analysis is that if enough mudflat of the required quality is provided then that would be sufficient. But equally, if the mudflat was supporting the target number of birds then this would be adequate regardless of the quality of the mudflat in terms of providing food for BTG. Similarly, the coherence of the Natura 2000 site(s) would be maintained if the BTG chose to roost and feed in the Humber estuary site or nearby.

Sustainability of the North Killingholme Marshes Foreshore

36. The Panel noted the applicant's response to Question 7 of their Rule 17 letter dated 1 November, submitted to them on 8 November 2012. This recorded the applicant's assessment that 12.5 to 37.5 ha of the existing North Killingholme Marshes foreshore was likely to convert to saltmarsh over the next 20 years. In response, RSPB asserted that the assessment was unscientific, as it appeared to have been calculated by Mr Cram. Dr Dearnaley responded to this, providing the following information:
 - Under instruction from the applicant, HR Wallingford had undertaken a comprehensive review of the development of the North Killingholme Marshes (NKM) foreshore between 2000 and 2010, earlier in 2012; this work is reported in EX8.9. (This work responded to comments raised by the Environment Agency in respect of Section 5.2 of ES Annex 8.3, in a letter to the applicant dated 13 March 2012).
 - Whilst undertaking the work (that is in June 2012) HR Wallingford had been asked by the applicant to project the future development of the foreshore and they had produced a drawing at that time. This drawing had been included in an HRW

presentation to EA, MMO and NE in June 2012. The projection was informed by the historical analysis of LiDAR data and was based on professional judgement by HR Wallingford which Dr Dearnaley fully endorsed. The information had not previously been submitted in support of the application.

- In responding to Question 7, the applicant had calculated the intertidal area between the 2.5 mOD contour and the sea wall, projected by HR Wallingford, to be 40 ha. Mr Cram and Dr Dearnaley had discussed a draft response to Q7 (at a meeting held on 7 November), and the information provided to the Panel was fully in accordance with those discussions.

37. Whilst the RSPB suggested that any scientific response should be based upon computer-aided modelling work, Dr Dearnaley disagreed, making it clear that with the rich data sources available and reported in EX8.9, computer modelling was not appropriate for the long-term prediction requested by the Panel.
38. It is therefore the applicant's case that the recent historical data reviewed in EX8.9 (HR Wallingford, 2012) shows, beyond any doubt at all, that the NKM foreshore is undergoing long term changes and that the rate of change shows no sign of reducing; for ease of reference, paragraph 6.3 of EX8.9 is reproduced below.

'The changes on the intertidal in response to HIT appear to be continuing 9-10 years after construction. The rate of increase in area above the -2m ODN contour has begun to slow down but the vertical accretion rates within this zone have not. The changes provide a useful picture of likely longer-term change to intertidal northwest of AMEP. The changes indicate a stable form northwest of AMEP would not be reached for many years, and would ultimately take the form of a new low water line coming off the end of the quay/dredged sideslopes and extending parallel and seawards of the existing low water line up to HST. Beyond HST, the future evolution is less predictable, because the presence of HST may influence the longer term morphology so long as it is operational.'

39. It is in any event a matter of record that RSPB's position is that saltmarsh should be assumed to develop on any land in the estuary above MHWN. It will therefore also be seen from EX8.9: Table 3, that, as at 2010, the area of land along the North Killingholme foreshore above MHWN has increased by 15.7ha since the development of HIT. On that basis alone, RSPB would have to agree that at least 19 ha of saltmarsh would be created in the long term in the absence of AMEP, but this position would ignore the fact that the accretion is demonstrably continuing.
40. Mr Dixon, on behalf of RSPB further asserted that the assessment was not credible because the assessment of the 2.5 mOD contour led to the development of a 'cliff' of mud and that such a feature is not possible. The drawing produced by HR Wallingford and included in the response to Q7 has been reviewed and, in fact, the depths of accretion predicted in the future are no greater than those that have already occurred elsewhere on the foreshore. Accordingly the applicant does not accept the validity of Mr Dixon's remarks, the prediction does not result in a 'cliff' of mud.

Food resource for birds

41. The applicant will target a minimum ash free dry weight (AFDW) of 4 grams per square metre, as below that level, populations of black-tailed godwit are likely to reduce, but its primary objective will be 5.4 grams per square metre, which is the amount shown to be available at North Killingholme Marshes.
42. Larvae and juvenile food sources will be brought in by the tide during the warping and operational periods through the sluices into the RTE fields. The mudflat in the fields would develop rapidly and provide a habitat for larvae and juveniles to develop and multiply. Over time larvae and juveniles would be sourced from both within the RTE field and via the sluices. Although no RTE of this type has been built in the UK before, there are comparables in terms of transport through sluices and in tidal lagoons.
43. The RSPB's witness Mark Dixon accepted that there was no data on this issue rather than there being negative data. Sean Leake responded that saying whilst there are no direct observational data associated with RTEs there are a suite of analogous environments and studies which indicate larval transport will result in the colonisation of the provided mudflats. While there is no data specifically for RTEs, there is ample data on tidal lagoons, managed realignment and sluice-controlled systems.
44. The RSPB conceded that it had made a major miscalculation in respect of the wet to dry conversion rates. Its advocate asserted that this significant miscalculation did not affect its case, but the RSPB argument did not appear to appreciate that the conversion factors from wet weight to ash free dry weight varied by species (e.g. worms have a higher factor than bivalves as they have a higher water content).
45. Natural England had also used the incorrect conversion factor. NE's calculation was based on the application of the wrong conversion factor to a single site. The site chosen was on the transect in the zone which contains the highest black-tailed godwit counts, and the site on that transect chosen was the highest peak for the worm *Hediste diversicolor*. This is no more appropriate than choosing the site with the lowest numbers.
46. The applicant had already accepted Natural England's proposal to conduct a benthic survey of North Killingholme Marsh in the September before construction and this would be included in the Compensation EMMP.
47. Additional assertion was made by Richard Saunders that the application of a 20% increase in biomass to account for the fluctuation between May, when the survey of NKM was conducted, and September when the peak biomass would be found would result in a wet weight biomass of 136g/m² which would in turn convert to an ash free dry weight of 30gm². This was rebutted by Sean Leake who highlighted that again the conversion factors had been misapplied with Richard Saunders applying the conversion factors for bivalves (5.8) rather than the accepted conversion factor for polychaetes (16) or indeed the species specific conversion factor for *Hediste diversicolor* (15.8). The result is a threefold over-calculation of the AFDW value for the worm *Hediste diversicolor* at NKM.

Regulated Tidal Exchange operation

48. The RTE fields would each be filled via three fully open inlet sluices (which also function as outlet sluices) during the 'warping' stage. The drainage of the fields would be via these

three inlet/outlet sluices and three additional outlet sluices during the warping phase. During the warping phase the maximum water levels attained in the fields would be reduced compared to water levels in the realignment part of the site. To further impound a single field on the peak of spring tides, the three additional outlet sluices could be operated in inlet mode (as described in para 4.7.6 of EX28.3, Part 3) and this would achieve a higher water level in the field. The aim of the warping phase was to rapidly achieve infill of about 100mm across the RTE fields. Once the mud had accreted to 100mm in depth the applicant's witness Sean Leake was confident that the biomass of the mud in the RTE scheme would be fully functional in no more than 18 months after the warping was complete. Prey species for black-tailed godwit would start to arrive within weeks of the start of warping, so the biomass would not be forming from nothing at the end of warping. This was based on comparable proxies such as natural tidal lagoons.

49. In terms of areas of the RTE fields, each field would be an average of 18 hectares in size. It was calculated that 1.5 hectares of this would be taken up by channels and ponded areas which would largely contain water and a further 1.5 hectares of each field are expected to be of reduced mudflat function as a result of being intensively disturbed within the last year through bed levelling activities associated with managing sedimentation within the site, leaving 15 hectares in each field as functioning mudflat. 60ha would therefore be available most of the time, reducing to 45 hectares when one field was impounded with deeper water from peak spring tides to the end of the neap tide period (typically 8 days out of each 14, but varying from 0 days to 11 days depending on tidal range of the neap tide period) to keep the other fields wet over the neap tide period.
50. The RSPB asserted that the less intensively dredged area would also be affected in terms of the biomass and faunal community. Sean Leake confirmed that whilst there would be a disturbance factor associated with this it had been accounted for in the associated impact assessment and provided the example of *Macoma balthica* having a moderate tolerance to this type of disturbance which would in turn result in a low sensitivity when assessed using the Institute of Ecology and Environmental Management accepted assessment methodology outlined by MarLIN. Additional detail regarding this has been provided at Annex (i).
51. The bed levelling and dredging techniques would be developed through adaptive management. If terrestrial based plant were utilised then the total area of each RTE field impacted by levelling whilst removing of the order of 4,000m³ into the pond areas for subsequent removal by dredging could be restricted to 1.5ha per field. If floating techniques were used a larger area of the surface could be affected, although as stated in EX28.3, Part 3, Section 7 it would be practical to undertake the levelling so that only a proportion of this area (~40%) is considered to be disturbed intensively to the point that the recovery of benthos takes more than a few months.
52. It is anticipated that once bed levels rise to about +2.2m OD, that bed levelling and dredging will be required on a regular basis. The starting assumption is that this activity would take place in each field each year on a little and often basis. However, this approach would be kept under review based on the results of monitoring and be adapted accordingly, one of the advantages of the adaptive management process.
53. Much of the activity of the managed RTE scheme would be to limit sedimentation and thus the development of saltmarsh. Since this was an artificial scheme it was not the height above sea level that was important but the amount of time that the mud was covered by

water. The RTE fields would have the equivalent of over 600 tidal inundations per year on average regardless of whether the fields were at +2.1m OD or +2.4m OD. This degree of inundation arises from the storage of water in the fields on spring tides that enables transfer and storage of water in the fields over neap tides. The degree of inundation would therefore limit the growth of saltmarsh. Any saltmarsh that did develop would do so slowly and control measures to remove any such colonisation (e.g. hand removal of plants) would be undertaken.

54. RSPB's witness Mark Dixon said that the theory of the RTE scheme 'sounds great' but that there may be problems holding water and transferring it during windy conditions. In response, Dr Dearnaley said that there was sufficient height differential between fields to allow water transfer in windy conditions. The transfer of water from a reservoir field to an adjacent field would typically be made with a head difference between fields in excess of 300mm. Some seepage of water into the underlying soils and through the bunds from the RTE fields during inundation is to be expected however, this would tend to reduce with time because of the presence of clay sized particles in the field which over time would block any pores in the underlying soils and soils forming the bunds. During the warping up phase trial impoundments can be undertaken and monitored.
55. In response to questions from ABP regarding the ability to supply sufficient water to the reservoir field during spring tides to act as the water supply to the other fields over neap tides Dr Dearnaley said that detailed design may involve the size or number of sluices being changed if the capacity to supply water to a single field during the spring tide period was insufficient, but this was simply a matter of detailed design. As stated above in paragraph 48 it is considered that there is adequate capacity for this supply by using the three additional outlet sluices as additional inlet capacity for this operation. However, the overall sluice design will be the subject of detailed design and the details and combinations of the sluices may be further refined. The intent is that the sluicing arrangement is identical for each field. The greatest volumes of exchange between the realignment and the RTE fields will take place during the warping phase on spring tides. During operations the effect of additional discharge into a single field on the total discharge into all the fields whilst impounding a single reservoir field on spring tides will be less than that occurring on flood tides during spring tide warping periods. There would be no increased erosional effects from this impoundment as the impounded water will be run-off back into the realignment over a number of neap tides rather than as a single event
56. The fields will generally be impounded on the rising tide with water of a salinity typically higher than the average occurring at that location in the estuary over the full tidal cycle. Rainfall into an impounded field will reduce salinity but not typically below what could naturally occur over the mudflat. Rainfall onto a drained RTE field will run off into the perimeter channel and ponded areas and will be little different to rainfall on a normal exposed mudflat. The spring-neap cycle of operations of the RTE fields will mean that no drained field is exposed to rainfall for more than 24 hours before it can be inundated with 100mm or so of saline estuarine water. This is different to a period of heavy rainfall over a neap tide period which could leave the upper intertidal mudflat exposed to rainfall for periods of up to 5 days or so on occasions.
57. The applicant accepts the findings of the Royal Haskoning review commissioned by Natural England, and acknowledges that the creation of sustainably functioning compensation

mudflat in the Humber Estuary requires considerable engineering and an ongoing investment in water and sediment management. It is the applicant's case that the provision of this form of compensation mudflat is one of its major benefits in ensuring its success over schemes where no intervention or ability to adapt the scheme is included. The confidence in this managed RTE scheme being able to provide a sustainable extensive area of mudflat must be greater than that for any other type of scheme.

Birds

58. The RSPB stated that the applicant was not putting forward a case that the SPA had spare carrying capacity (or, in other words, spare food resources) and had made a specific assumption that the estuary did not have any spare capacity. In support of this statement, the RSPB directed parties to paragraph 1.7.5 of EX28.3: Part 2, which is reproduced in full below.

'There is some possibility of increased use of sector A, and parts of sector B in response to the loss of other sectors. It is also possible that given the natural variability in numbers of birds occurring each year and the large area of intertidal (9 384 ha) within the Humber SPA that displacement effects may be absorbed within the wider estuary. In this respect, it is noted that the peak bird population of the estuary as a whole ranged between 125 257 and 187 065 during the period 2004/05- 2008/09. However, as the carrying capacity of the Estuary is unknown, a precautionary approach has been adopted and it is assumed displacement will impact on the population of the species. Accordingly, a compensation package that would meet the needs of the displaced birds has been developed, (emphasis added).

59. The above abstract is therefore very specific in its application and is intended to be read narrowly. In short, the applicant has simply made an assumption, purely in terms of the *design* of the compensatory measures, that the estuary cannot absorb birds displaced by the development. This is the appropriate precautionary approach for the design of the compensation package, since if it did not provide sufficient functional habitat in the long term, the impacts of the scheme might be irreversible. However, it is the applicant's case that alternative approaches are appropriate where the consequences of other project risks were of a different spatial or temporal scale, and in particular where potential impacts were reversible. This would be the case where short term population declines of species within the Humber Estuary SPA might occur but that effect was reversible because the long term prognosis was equal to, or better than, that pertaining at the present time.
60. The RSPB further argued that if displacement of black-tailed godwits from North Killingholme Marshes foreshore to Cherry Cobb Sands foreshore did occur, then, on a precautionary basis, it must be assumed that those birds currently using the Cherry Cobb Sands mudflats would, in turn, be displaced by the influx of black-tailed godwits. Furthermore, it was asserted, it could not simply be assumed that those displaced species would then find any other feeding grounds available to them within the SPA; the applicant had, they said, to demonstrate that other areas had the capacity to accommodate those birds and they had not done so.
61. The applicant's case is that the issue of carrying capacity is difficult and complex. Some important contributors to the debate (W.G Hale, 2000) have questioned if winter quarters

determine population levels at all, or if, in the alternative, the mechanisms are really driven primarily by conditions in the breeding grounds during spring. This is well illustrated by the Icelandic populations of greylag and pink-footed geese. Both populations winter almost exclusively in Britain. Greylag geese numbers increased by 8.1 per cent in 2011, with the proportion of juveniles being 19.6 per cent. Pink-footed geese populations however declined by 17.2 per cent with juvenile production of just 8.5 per cent.

62. It is the applicant's case that any quantitative assessment of the 'carrying capacity' of a very large estuary like the Humber, which supports a broad variety of invertebrates and hundreds of bird species, that are all subject to annual variation, is simply not possible. The natural variation in the number of over-wintering birds using the Humber Estuary is recorded in annual WeBS Reports to be in the range 81,633 to 217,799, as shown in Table 1 below. Invertebrate sampling over 10,000 ha of mudflat can only ever provide a broad overview of the foraging resource. As such, the only realistic option of predicting effects in such an environment is the use of qualitative expert opinion. Any argument to the contrary is simply not credible and would paralyse any proportionate decision-making process.
63. Pertinent to this matter therefore, is that the usage of the estuary by black-tailed godwits in very large numbers is a relatively recent phenomenon, as illustrated in Table 2 below. Therefore, it is possible to take a view on whether the rise in black-tailed godwits on the Humber Estuary, and on NKM foreshore in particular, has been accompanied by a decline in other species use of the NKM foreshore.

YEAR	5 Year Mean Peak Assemblage	5 Year Mean Peak Black-tailed Godwit
1992/93 to 1996/97	Average:166,834 Range: Not provided	Average: 172 Range: 57 - 544
1996/97 to 2000/01	Average: 153,934 Range: 81,633 – 192,589	Average: 1,064 Range: 544 – 1,685
2001/02 to 2005/06	Average: 177,322 Range: 159,720 – 217,799	Average: 1,499 Range: 921 – (2488)
2006/07 to 2010/11	Average: 144,163 Range: 123,306 – 168,245	Average: 4,351 Range: 3,828 – 5,323

Table 1: Growth in Black Tailed Godwit Numbers from 1992/3 to 2010/11

(Source: <http://www.bto.org/volunteer-surveys/webs/publications/annual-reports>)

Year	2004/05	2005/6	2006/7	2007/8	2008/9	2009/10	2010/11
Assemblage	163,062	171,097	168,245	149,622	126,712	152,931	123,306
black-tailed godwit	(629)	(2,848)	5,323	4554	3828	3981	4069

Table 2: Black Tailed Godwit Numbers in relation to the Assemblage

(Source: <http://www.bto.org/volunteer-surveys/webs/publications/annual-reports>)

64. It is seen from the above data, that the most significant increase in black-tailed godwit numbers on the Estuary has been recorded since 2005/06, after which a relatively stable population in the range of 4,000-5,000 birds has been present. It is common ground that these birds show fidelity to the NKM foreshore during their autumn moult. This increase in black-tailed godwit numbers on the North Killingholme Marshes foreshore has not, however, resulted in the displacement of species that have historically used the foreshore in significant numbers, as evidenced by Table 3 below which is principally based on information contained in the sHRA report submitted with the application. The only species that has shown possibly reduced usage of the NKM foreshore since the influx of BTGs is the lapwing, but the carrying capacity of the estuary for lapwing exceeds 90,000 which was the exceptional number recorded in 1994-95 (English Nature Research Report 339, pg 46); the current 5 year mean peak is 18,756 (ES, Table 11.8).

SPECIES	LW 1998/9 ENRR 339: Pt2 ¹ (pg 82-87) ²	LW 2003/04 ENRR 656 ³ (pg 152-153)	Max 2010-2011 TTTC
Shelduck	26	30	109 (sHRA Table 6.2)
Ringed Plover	167	5	210 (sHRA Table 6.3)
Lapwing	647	875	291 (sHRA Table 6.4)
Dunlin	330	233	1029 (sHRA Table 6.5)
Black-tailed godwit	436	961	2566 (sHRA Table 6.6)
Bar tailed Godwit	2	0	123 (sHRA Table 6.7)
Curlew	54	77	158 (sHRA Table 6.8)
Redshank	138	100	540 (sHRA Table 6.9)

¹English Nature Research Report 339 Part 2, Humber Estuary Low Tide Counts 1998/9

²Max sum from ISJ1 and ISJ2 occurring in the same month

³English Nature Research Report 656, Humber Estuary Low Tide Counts 2003/4

Table 3: Change in Numbers of Bird Species Using North Killingholme Marshes Foreshore in Significant Numbers between 2003/04 and 2010/11

65. Of course, it may well be that the recent development of the North Killingholme Marshes foreshore, as described in EX8.9, has made the area more abundant in invertebrates than previously, but that change is demonstrably on-going and conversion to saltmarsh is already beginning.
66. Although the RSPB case is that the birds leave NKM foreshore because the food stocks have become too low, this is only a probable reason and not a proven one.
67. The RSPB also raised the possibility that BTGs would not choose to forage close to structures or in 100mm of standing water. The applicant's case, through Mr Hatton, was clear that black-tailed godwits were content to feed in such areas and thus the RTE would be functional. The argument that birds are intimidated by large structures and enclosed situations is difficult to reconcile with the evidence from areas such as North Killingholme Haven Pits (see Plate 1 below).



Plate 1: BTGs Roosting in shallow water within NKHP



Plate 2: BTG Foraging in Shallow Water

68. Sean Leake provided evidence that the expected sensitivity of the species would be considered moderate, that is a recovery post dredging impact would be expected to take between 1-10 years according to the MarLIN sensitivity assessment methodology. Sean Leake then provided further species and site specific evidence which showed that in shallow embayments *Macoma balthica* was seen to have a partial recovery of abundance within a few months, and a full recovery to the same level of abundance as the surrounding (non-impacted) in 1 year. This suggests that the assignment of **moderate** is appropriate but that site specific information highlights that the sensitivity of *Macoma balthica* is at the lowest end of that spectrum. Other species are considered to have similar or faster recovery times. Written evidence was also provided to the RSPB prior to the hearing which detailed the full justification for the sensitivity of each of the key species/receptors to each of the predicted impacts associated with the development and management of the RTE at CCS. This has been included as an annex to this document (Annex (i)).
69. The term wading bird tends to have some relevance for this species' ability to feed in deep water, and with a leg length in excess of 100mm this ability is unsurprising. Given that birds will regularly feed both in tidal and non-tidal situations in deep water it would be surprising if they would be incapable of doing so on the Humber.
70. The supplementary note "Summary of MarLIN sensitivity Rationale" provides the detailed assessment process defined and presented by MarLIN and used within this assessment. The recovery of the areas impacted by bed levelling will occur in three ways: initial slumping of material and benthos from adjacent areas into the area affected; migration of benthos into the area; and settlement of larvae or juveniles into the area.
71. The applicant has agreed to provide the roost and the wet grassland at Cherry Cobb Sands for as long as necessary. However, if the mudflat is fully functional and supporting at least the desired number of birds and the wet grassland or roost, or both, were not being used by significant numbers, then there would be no reason to continue to provide them and so they should be able to be returned to agricultural use.

Stone Creek

72. To Mr Taylor and Mrs Osgerby, the applicant responds as follows:
73. The applicant has submitted to the Panel a Statement of Common Ground (SoCG) that has been agreed with the following three Internal Drainage Boards (IDBs):
- a. Thorngumbald IDB
 - b. Keyingham level IDB
 - c. Ottringham IDB
74. The SoCG contains the following statement,

'8. It is agreed that the risk of increased siltation preventing the free outfall of surface water into Stone Creek can be mitigated by implementing an appropriate Monitoring Plan. The Monitoring Plan will be agreed with the Environment Agency, EYRC and the 3 IDB's. AHPL understands the IDB's will procure external support from Design / Engineering Consultants in relation to agreeing the Monitoring Plan. AHPL is prepared to make a contribution towards these costs to a maximum limit of £2,000. AHPL will reimburse the IDB's retrospectively upon the provision of verified receipts demonstrating that costs have been defrayed.

9. *It is agreed that AHPL will undertake the monitoring and report to the drainage boards.*
10. *It is agreed with the 3 IDBs that the implementation of these mitigation measures would result in no residual significant negative impact on the drainage network.*
11. *By studying historic siltation and rainfall rate data at Stone Creek outfall, an average rate of siltation will be identified to provide a baseline for the assessment of the future impact that Cherry Cobb Sands has on the outfall.*
12. *If the development of Cherry Cobb Sands is found to be causing siltation above the baseline AHPL agrees to make a proportional contribution towards the routine dredging activity i.e. if the siltation rate increases by 20% as a direct result of the Cherry Cobb Sands development, AHPL will contribute 20% towards the routine dredging costs.'*
75. The applicant considers the above agreement to be proportionate and reasonable.
76. The applicant will conclude an agreement with the Environment Agency to provide a better level of flood protection at Cherry Cobb than is presently available. The applicant has made a qualitative assessment of the change in flood risk to property on the north and this is reported in EX36.3. In short, the improved standard of defence provided by the new flood defence structure will be partly offset by the fact residential properties will be closer to any potential breach of them. However, combining these two factors results in the overall flood risk to be no different.
77. Richard Arnold for the applicant confirmed that any abstraction from Keyingham Drain would be timed to avoid periods when there is salt water in the drain. This will be achievable because there is a large volume of fresh water running through the drain and there is only an occasional need to abstract water from the drain. It was later confirmed that the Environment Agency no longer use salt water to flush out the creek; instead they use fresh water which is held back behind the sluice at high tide and then let go at low tide.

Day 2, 13 November 2012

78. Mr Hatton's evidence was that birds may respond to habitat loss in a variety of ways including feeding more intensively at the remainder of the existing sites on the Humber, or feed for longer, or feed at other sites. The provision of a new secure roost site close to invertebrate rich mudflats such as those at Cherry Cobb sands (CCS) would provide an opportunity for birds to exploit alternative resources without incurring increased energy demands.
79. Dr Prater for the RSPB suggested that if black-tailed godwits fed on the CCS foreshore this could bring them into conflict with up to 4,000 Red Knot, a *Macoma* specialist.
80. Red Knot itself is abundant on the Humber Estuary; they are highly mobile but predominantly use the Outer Estuary where they are widely distributed over a large expanse of mudflat. In the period 2006/07 to 2010/11, the number of Knot counted within the Humber Estuary varied between 17,552-41,772 (Annual WeBS Report, 2010/11); the lower value being recorded as an incomplete count. In 2003/04 over 50,000 individuals were counted; the highest in recent times. The applicant notes that '*The Humber Estuary: A comprehensive review of its Nature conservation Interest*', (English Nature Research Report 542, 2005) states (at page 167) that the, '*large fluctuations (in numbers of Knot) can occur*

between years in the national and Humber populations, due to variability in breeding success in the high arctic (Lack 1986)'. The applicant's case therefore is that increased predation short term of the knots less used foraging areas is unlikely to have any deleterious effects on the population of that species. Once the compensatory habitat is fully functional there will be no impact.

81. This issue needs to be understood in the context of the known ability of the estuary to support knot. The current five year mean peak is 41 772 (ES, Table 11.8). WeBS data for the Cherry Cobb Sands area 2004/05-2008/09 indicates high natural variability in total bird numbers (all species), with the range of the Autumn peak being 9,640 - 16,807 (a natural of 7,167), and that in winter varying between 15,656 - 44,122 (a natural range of 28,466). Equivalent Spring counts, when bird numbers are generally much lower on the Humber produced a peak count of 6,509, which may suggest that even after a full season of predation the benthic resource is substantial.
82. Dr Prater also dismissed the information contained in '*An assessment of temporal variation of benthic invertebrate communities in the Humber Estuary*' (Allen, 2006). The report provides data regarding the abundance (numbers) of *Macoma balthica* and *Hediste diversicolor* as being significantly higher during the period 1989-2003, than North Killingholme Marshes has currently. The biomass (weight) is not available but given the correlation between biomass and abundance it would seem reasonable that the biomass was also of a high level. Whilst data is not available in the interim, Dr Prater confirmed in his evidence that Cherry Cobb Sands has high densities of *Macoma balthica*, so high in fact that they attract an important population of Red Knot, a specialist *Macoma balthica* feeder.
83. In response to Simon Gibbs' query about nutritional value; the biomass as calculated and presented within the North Killingholme Marshes baseline shows an appropriate characterisation of the nutritional value of the site at the time of year the survey was conducted. Whilst a further study will be carried out to provide an up to date baseline of the biomass at North Killingholme Marshes, Richard Saunders for Natural England suggested that a reasonable upscaling would be the assumption that the winter period resulted in a decline in biomass by 20%. This would require a mean biomass target to be an increase of 20% on the current mean biomass (High 31.08 wet weight (WW) gm²), (Mid shore 18.58 WW gm²), (Lower shore 4.17 WW gm²) to approximately 37.30 WW gm²; 22.30 WW gm²; 5 WW gm² respectively.
84. During the period 1989-2002 CCS was known to support significant numbers of *Macoma balthica* and *Hediste diversicolor*, this is supported by the 2006 Allen report. Whilst data have not been collected since, and it is recommended that this be done prior to development, other intertidal surveys of the same mudflat suggest that during the interim period the mudflat has been broadly stable in terms of the community present. This is evidenced by the *control* stations (stations on the mudflat rather than inside the site) at Paull Holme Strays being broadly stable over an 8 year period. Dr Prater confirmed that the CCS mudflat site supports a significant population of knots which are a specialist feeder of the bivalve *Macoma balthica*. This bivalve is considered to be a primary target for inclusion within the CCS RTE community and will provide both a food resource *in situ* but also a very important resource for larval transport into the MR and RTE sections of the CCS compensation site development.

85. The nutritional value in terms of the correct species in the required abundance and biomass will need confirmation through a pre-construction survey but current qualitative evidence suggests that it is available.

2. The possible impacts of the two schemes

86. Natural England said that they shared the Environment Agency's concerns about mapping and modelling of sediment, but had no other issues.

87. The Environment Agency had four concerns: that the warping phase would cause greater erosion at Cherry Cobb Sands creek than the previous design of 1.8 metres per year – where would the material go (shared by the MMO). Secondly, what effect the wet grassland site would have on the pointing doors at Keyingham Drain (Mrs Osgerby shared this concern). The applicant will need an abstraction licence from the Environment Agency before any abstraction takes place. The conditions of the licence will be agreed to ensure there are no significant impacts on the pointing door operation. There will only be a need to abstract water from the drain occasionally and in limited quantities so we are confident that an agreement can be reached and the Environment Agency have inferred the same confidence during the hearing and outside. Thirdly, given the risk of erosion of the flood defence, they would wish it to contain armour along its length. The applicant considers it appropriate to review this requirement at detailed design stage, as the need will be largely dependent on flow velocities at different locations. Finally, whether the effects of larger/more sluices would have any environmental effects.

88. The MMO wished to know where erosion of the drainage creek within the managed realignment site had been assessed.

89. In response the applicant records that this aspect is briefly considered in the ES. The erosion of material from the Compensation Site is assessed in Chapter 33 of the ES; paragraphs 33.6.16, which cross refers to paragraph 33.6.3 (though text wrongly refers to paragraph 33.6.2), and paragraph 33.7.3 which considers cumulative impacts. Mitigation is addressed in paragraphs 33.8.4 and 33.8.5. These paragraphs describe the main effects of erosion from the drainage channel.

90. The MMO also wished to know where the breach of the flood defence and deposits within the site had been assessed in the ES. In response the applicant would direct parties to the following references:

- Paragraphs 32.6.2-4 briefly describe the works to be carried out and what will happen.
- Section 33.6, especially paragraphs 33.6.3-5 consider the effects on water quality, with paragraphs 33.8.5-6 considering mitigation.
- Paragraphs 34.6.1-2 consider the effects of saltmarsh removal on aquatic ecology, and 34.6.8 potential effects of increases in suspended sediment when the site is breached. Para 34.9.1 identifies a minor residual impact on the saltmarsh from excavation of a channel.

91. Mr Hickling was concerned about the suitability of the material to be used for the flood defences. In response the applicant recorded that lime modification testing had been

undertaken on soil samples taken from Cherry Cobb Sands site and had been shown to be suitable for treatment. The test results had been provided to the EA who had confirmed their agreement in August.

92. The model set-up and calibration is described in EX 32.2. The model extends over Foul Holme Sand and the full length of Cherry Cobb Sands Creek. All model simulations of the realignment site including those presented in EX28.3, Part 3, include for joining up of the drainage creek in the realignment site with the Cherry Cobb Sands Creek low water channel via the breach area.
93. Section 5 of EX28.3, Part 3 presents the results of modelling the RTE scheme during the warping up phase and Section 6 presents the results of modelling the RTE scheme during the operational phase. In the operational phase the fields have accreted as a result of warping up and the amount of exchange through the sluices is reduced compared to the warping up phase. The results are presented for tides of spring tide range. The flow model results are used to assess where erosion or accretion may occur. The low water drainage channel of the realignment creek is assessed to erode rather than accrete during the warping phase (paragraph 5.3.8 of EX28.3, Part 3). Where the drainage creek from the realignment site joins Cherry Cobb Sands Creek vertical erosion is predicted of up to 1.8m a year (paragraph 5.3.9 of EX 28.3, Part 3) which is 20 per cent greater than assessed in the EIA (paragraph 3.3.4 of EX32.6). Further downstream in Cherry Cobb Sands Creek erosion potential from the increased discharge of water reduces. The changes in discharge are restricted to Cherry Cobb Sands Creek as a result of the height of Foul Holme Sands.
94. The predicted erosion rate in Cherry Cobb Sands Creek would be at its greatest during the warping phase for the RTE scheme with a reduction in rate during the operational phase as a result of reduced exchanges of water. For the realignment scheme assessed in the EIA the erosion would have been at an initial reduced rate compared to the RTE scheme but would then continue for longer at a higher rate until accretion in the realignment site reduced volumes of water exchanged on each tide to the amounts exchanged with the RTE fields during operation. The overall effect would therefore be similar. The erosion in Cherry Cobb Sands Creek was considered further in the Section 4 of the Second Interim Report on detailed modelling of Cherry Cobb Sands Compensation Site (refer to the Applicant's Comments on the Written Representations, Appendix WR9.1) Here it was shown that rather than a simple vertical increased in depth of the creek with no increase in width the creek cross section would enlarge (see Figure 20 of WR9.1).
95. Over time the creek would be expected to stabilise to a new regime in response to the change in tidal flux. The changes associated with the RTE field would be greater in the first few years than for the scheme considered in the 2nd Interim Report but would then in the first years of operation (say 5-10 years) be reduced compared to that assessed. Ultimately with the RTE operations the creek profile would stabilise in response to the sustained uniform tidal exchange associated with the RTE operations. With the scheme considered in the 2nd Interim Report the creek would be expected to expand (as described above) and then gradually reduce in cross-section as over time the tidal exchange would reduce in response to siltation and loss of tidal volume in the compensation site leading to an unmanaged reduction in cross section of the creek. The enlarged and deepened creek will reduce the low water level in Cherry Cobb Sands Creek and will over time ameliorate the risk of a

reduced period for which the discharge from the Keyingham Drain into Stone creek can occur.

96. On adequacy of consultation, it is important to note that the wet grassland at Cherry Cobb Sands does not form part of the project for which development consent is sought. Furthermore, in relation to the entire compensation package, the applicant relies on the decision in *Humber Sea Terminals*, in which Ouseley J explained that a change in the proposed compensatory measure does not change the project so as to require a revised environmental statement [paragraph 52]. Notwithstanding this, the applicant has publicised the compensation proposals in accordance with Regulation 17 of the EIA regulations: details of the proposals were advertised on 4 and 11 October 2012, providing an opportunity for all interested parties to comment. The applicant made supplementary material available on 12 October 2012, setting out the details of the revised compensation package. Interested parties had until 9 November 2012 to comment on the material, and further hearing dates were arranged on 12 and 13 November to enable the interested parties to comment upon the current proposals, and to enable the ExA to assess them in detail.
97. In *Humber Sea Terminals* there was a compensation package embodied in an agreement between ABP, English Nature, the Environment Agency, RSPB and others, in June 2003 which provided for the realignment of the river in two places through works which would lead to the creation of intertidal mud. The effect of that realignment was not covered in the ES. The works were not described, nor was their location identified. No data was given so that their effect could be identified and no alternative compensation measures were considered.
98. Ouseley J noted [paragraph 46] that the two realignment schemes both required planning permission and explained "*English Nature's evaluation of them as effective compensation pointed that out and said that it believed in consequence that they did not need to be evaluated as part of the original application.*"
99. On the facts of that case it was found that the ES covered the remedial measures which the applicant was proposing. The fact that the proposed remedial measures had changed as the discussions reached a conclusion (so that the ES did not reflect the most up-to-date proposals) did not nullify the ES [paragraph 52]. Nor did it mean that the project had changed to become a different project. Ouseley J said that it was in this context that the distinction between the project applied for and the compensatory measures had force (rather than in the sense of providing a complete answer at the outset of the ES process, and permitting a relevant and known remedial measure to be consciously omitted from the ES). He explained: "*a change in the compensatory measures does not change the project so as to require consideration of a revised ES.*"
100. Where proposed compensatory measures have changed over time, such that the revised proposals are not included in the ES, this will not necessarily invalidate the ES or require that it be updated. The making of an environmental assessment is a dynamic process which does not end with the ES (*R (on the application of Burkett) v Hammersmith and Fulham LBC* [2003] EWHC 1031 Admin; [2004] ELR 30).

101. The applicant stated that they had met with the NE, MMO and EA on 2 October, having provided them with a draft version of EX28.3. The meeting was attended by Able, Black and Veatch, ERM, HR Wallingford and IECS at the DEFRA offices in York. Following submission of the application, further meetings had been offered by the applicant to all three Regulators but those offers had all been declined. A brief record of correspondence with the three public bodies is attached at Annex (a). It is noted as well that key personnel from the EA and MMO were either sick or on annual leave during the 28 day consultation period.
102. The applicant is, in any event, bound to work within the six month examination period as were all parties. It has responded within the deadlines set for all requests for information, requests to answer questions and requests to make comments on others' representations and responses whenever these had been made and by the deadlines that had been set.
103. The written process under the Planning Act and its fixed timescale necessarily involves a large amount of information within a constrained period of time. By means of comparison, by 13 November 811 documents were available on the PINS website under the AMEP project, whereas 2283 documents had been produced during the examination of the Hinkley Point C nuclear power station in around the same length of time. Parliament had seen fit to impose the timescales and to place an emphasis on written material, and the applicant had duly worked within such constraints. If the applicant was not expected to deal with representations made by interested parties then there would be no reason to make them other than to support the approval or rejection of the project as originally submitted.
104. The applicant utterly rejects ABP's contention that there has been a fundamental failure to comply with the legal framework of the Planning Act regime. Many affected parties, ABP being one of them, only became active participants in the process once the application was made, as evidenced by their lengthy Written Representation (at 336 pages, the most voluminous of all WRs) which included a number of detailed reports.
105. It is noteworthy that ABP has declined the opportunity to respond or participate in various aspects of the process, see for example its refusal to make any written responses on the section 106 agreement or the EMMPs.
106. The amendments made to the compensation package were advertised etc in accordance with the EIA Directive, albeit that the information was provided voluntarily. It is noteworthy that no allegation has been made that there has been any failure to advertise and produce the necessary information in accordance with the EIA directive even though it was produced by the applicant on a voluntary basis.
107. Although the MMO and the EA claim that in respect of the latest round of amendments that they had not had adequate consultation it is difficult to see any substance to this claim given the limited degree to which the EA and MMO have concerns about the proposed project. The fact that the regulatory bodies may feel that their resources are limited and the time scales imposed by the Planning Act process places pressure on their ability to respond does not mean that the process was legally unfair or the consultation inadequate.
108. The applicant's case is therefore the reverse – it has fully complied with the requirements of the Planning Act 2008 by providing complete responses whenever

requested. In this respect is noted that the Panel thanked all parties at the start of the Hearing for the thoroughness of their responses to date, noting that this had been of great help to them.

109. Natural England referred to the effect of erosion of the Cherry Cobb Sands Creek on the foreshore as a potential additional Habitats Regulation Assessment issue. As described under paragraph 93 above the creek is predicted to deepen and increase in cross-sectional area as a result of the increased discharge to and from the compensation scheme. The deepening will not convert the creek to sub-tidal, albeit that the creek at low water will continue to have a small ebb tide discharge until the flooding tide enters the creek and raises water levels. Changes in the form of the creek will be monitored through the EMMP.

4. The requirement for (further) over-compensation

110. Although this agenda item was headed 'over-compensation', and referred to the East Halton Marsh site, the applicant's case was that the wet grassland at Cherry Cobb Sands is also over-compensation, as that was only being provided to address any uncertainty with respect to the long term performance of the MR/RTE scheme. If there was a higher degree of certainty with regard to the functional development of that habitat because, for example, it had been proven by experience, there would no need for any compensation over and above the MR/RTE site; that design should fully replace the habitat lost together with its functional value. Moreover, an active management proposal will maintain the habitat in optimal condition. By comparison, the habitat being lost has an uncertain future but its functional performance is likely to deteriorate naturally over the next 20 years.

111. The position with Cherry Cobb Sands wet grassland was made clear by the applicant, through Mr Jones, at the hearing on 13 November 2012, in the following way:

"the position in respect to Cherry Cobb fields wetland grassland, we see that as having two functions. One is to provide additional assurance in respect of the success or otherwise and the speedy success of the mudflats RTE compensation. So, if the RTE works, and fully works, then that would be, in the long term, adequate compensation of itself. The Cherry Cobbs wet grassland is provided as overcompensation to deal with two issues. One, to meet any concerns of regulators about uncertainty, and certainly, we've been guided by, I think, a document you referred us to, sir, at the outset of the inquiry, the draft Defra guidance. And also the commission's guidance which Mr. Forsdick referred to the 2007 version, as well as the 2012 guidance on particularly article 6(4). And there's also the guidance we're all familiar with as well, Natura 2000 guidance which, I think, paragraph 5.4.2 on compensatory measures.

So, guided by those documents, we see the Cherry Cobb fields dealing with regulatory bodies concerns over certainty which can lead, somebody has made clear in the Defra guidance, to further compensation being provided. And also, to provide, although it won't be fully functional during the interim period, but to provide some additional feeding opportunities during the interim period before it and the RTE are fully worked up. And also to deal with an over compensate if there are any interim losses during any period before the RTE is fully worked up. That is, to have, as a target, meeting the duty that there should be no

irreversible, quoting from the commission's guidance, irreversible damage to the Natura 2000 site.

So, with the aim to avoid irreversible damage. So, that's just, I said in context, Cherry Cobb's fields we see as providing overcompensation to deal with those matters and, so far, then, as the site on the south side is concerned, I suppose it certainly was offered as a contingency if the view was of the Secretary of State yet further compensation was necessary. We don't think it is. Our submission is that the compensation package is more than sufficient. But we know that certainly, in various discussions with the regulators, see it as a benefit and since we can offer it, we've offered it"

112. The site being offered at East Halton Marsh on the south bank of the Humber was therefore further environmental overcompensation which is being offered on a contingent basis. The applicant's case is that the compensation sites on the north bank are a sufficient compensation package to address the impact on the Natura 2000 site caused by the project including any uncertainty, but if the Secretary of State is minded to grant consent only if this further site is provided, then the applicant will do so.
113. The site would provide additional feeding opportunities before the RTE scheme was fully functional and would thus be available to limit any potential interim losses. It would benefit a range of bird species, including BTGs, and on a precautionary basis its provision would reduce overall pressure on the SPA. The East Halton Marsh site is therefore possible further over-compensation.
114. Since October 2012, both East Halton Marsh and Cherry Cobb Sands wet grassland – both already in the applicant's ownership – were being seeded with grass and agricultural use had ended.⁴ The land at East Halton Marsh was to have been used for storage as part of the Able Logistics Park application, but the applicant would defer the development of that land if it was found to be necessary for AMEP compensation. Vermiculture plugs were also an option but these had not been implemented yet.
115. The RSPB 'never say no to additional bird habitat' so would prefer this land to be included. The evidence of Mr Hatton for the applicant was that black-tailed godwit had used this site in the past in small numbers when it was in arable production and therefore sub-optimal. To include it in this compensation package would ensure that it was not converted to storage while it was needed to compensate for AMEP.
116. RSPB stated that the south shore at East Halton was in fact of little value to black-tailed godwits as a roost site because there was little mudflat on that side of the estuary and little use of it by black-tailed godwits. This observation by the RSPB actually serves to endorse the appropriateness of the choice of the compensation site, which is close to an existing mudflat resource, rich in invertebrates.
117. If the Secretary of State were minded to include the East Halton Marsh land as part of the compensation package then he could either
- a. insert a requirement in the DCO that [up to 38] hectares of land be provided at East Halton Marsh as compensatory habitat or
 - b. amend requirement 17 in Schedule 11 of the DCO to the effect that the Compensation EMMP must include [up to 38] hectares of land at East Halton Marsh.

⁴ Note that only 9 hectares of Cherry Cobb Sands were being seeded since the remainder required earthworks to provide the wet grassland habitat and so seeding now would become redundant

3. The implementation process

118. The applicant presented a timeline derived from its evidence, which will be supplied to the panel in answer to its recent Rule 17 request.
119. The time for the wet roost at Cherry Cobb Sands to become functional was based on it filling over winter from rain, but this could be accelerated if the applicant sought and received an abstraction licence to fill it from Keyingham Drain (30,000 m³ of water was needed). The wet roost will be functional in advance of any marine works starting, to provide an alternative roost to North Killingholme Haven Pits, should the black-tailed godwits abandon that roost because a major part of the feeding grounds on North Killingholme Marshes are lost or disturbed. Once functional, the wet roost would provide a platform from which black-tailed godwits can most efficiently exploit the rich feeding grounds on the north bank of the estuary.
120. In this respect, it is noted that the increase in black-tailed godwit numbers during the 1990's (before which time they were virtually absent) was characterised by large flocks at Saltend on the north bank, where a maximum count of 725 was recorded in 1997. At that time, the black-tailed godwits were also using North Killingholme Haven Pits as a high tide roost (English Nature Research Report 547, pg 194), moving back and forth across the estuary to feed. There is therefore no certainty that the black-tailed godwits will simply abandon their North Killingholme Haven Pits (NKHP) roost simply because they partially lose the benefit of an immediately adjacent feeding resource. It is the applicant's case therefore that the provision of an alternative roost is therefore precautionary but addresses a particular uncertainty of the effects of the project on NKHP.
121. The applicant's case was that the Cherry Cobb Sands grassland would take 2-4 years to develop full functionality, based on the Van Eekeren report⁵. It is specifically noted that the site is not to be developed as wet grassland but as damp grassland that can be probed by BTGs seeking buried invertebrates. The Van Eekeren report demonstrated that c.50g/m² earthworm biomass can be achieved two years after conversion of arable to grassland. This level of earthworm biomass is comparable to natural grasslands. The report is based on work in Belgium (the researchers are Dutch). The study site is less than 250 miles from Cherry Cobb Sands and the climate, altitude and soils at the study site are similar. The type of grassland in the study is normal, agricultural grassland which included clover. The proposed CCS grassland will be similar or better than the study grassland in that it will be damp but unflooded and contain a greater diversity of plant species, including legumes. The results of the Van Eekeren report are therefore applicable to the Cherry Cobb Sands Wet Grassland Site and two to four years is a sound estimate of time taken for the grassland to become functional.
122. The Environment Agency were seeking a longer period between completion of construction of the new flood defence and the breach of the old flood defence. The applicant agrees with the need to ensure that the new flood defence has sufficient

⁵ Nick van Eekeren, Lydia Bommel , Jaap Bloem, Ton Schouten, Michiel Rutgers, Ron de Goede, Dirk Reheul, Lijbert Brussaard, Soil biological quality after 36 years of ley-arable cropping, permanent grassland and permanent arable cropping, *Applied Soil Ecology*, Volume 40, Issue 3, November 2008, Pages 432-446, ISSN 0929-1393, 10.1016/j.apsoil.2008.06.010.
(<http://www.sciencedirect.com/science/article/pii/S0929139308001042>)

resistance to erosion. The programme presented to the Panel at the Hearing allows two years from the start of the works until the breach is made. This period may well allow enough time and may not result in any prolongation of the programme. If necessary alternative options would include the use of armourflex or a zone of rock fill to protect the lower part of the bank where tidal current erosion is most likely.

123. On the issue of a time lag between harm to the Natura 2000 site (June 2014 on the timeline) and the RTE scheme becoming fully functional (December 2018), the applicant's case is supported by draft Defra guidance, and European Commission guidance on the Article 6(4) of the Habitats Directive (updated in 2012).

124. The 2012 Commission guidance on article 6(4) deals with the timing of compensation in paragraph 1.5.6, where it explains:

"Timing the compensatory measures demands a case-by-case approach, where the schedule adopted must ensure the continuity of the ecological processes essential for maintaining the biological structure and function that contribute to the overall coherence of the Natura 2000 network. This requires a tight coordination between the implementation of the plan or project and the implementation of the measures, and relies on issues such as the time required for habitats to develop and/or for species populations to recover or establish in a given area. In addition, other factors and processes must also be considered:

- *A site must not be irreversibly affected before compensation is in place.*
- *The result of compensation should be effective at the time the damage occurs on the site concerned. **Under certain circumstances where this can not be fully achieved, overcompensation would be required for the interim losses.***
- *Time lags might only be admissible when it is ascertained that they would not compromise the objective of 'no net losses' to the overall coherence of the Natura 2000 network.*
- *Time lags must not be permitted, for example, if they lead to population losses for any species protected in the site under Annex II of Directive 92/43/EEC or Annex I of Directive 79/409/EEC, requiring particular attention when it entails priority species.*
- *It may be possible to scale down in time compensatory measures according to whether the significant effects would presumably arise in the short, medium or long term."*
(Emphasis added)

125. The Defra guidance issued for consultation in August 2012 explains (paragraphs 24 and 25) that

*"Compensation must be secured before damage occurs. This includes ensuring all legal, technical and financial arrangements are in place. **Compensation measures should normally be delivered before the adverse effect on the European site occurs, as this reduces the chance of harming the network of sites and also ensures there is no loss during the period before the compensatory measures are implemented.***

In certain situations damage to European sites may necessarily occur before the compensatory measures are fully functioning. There may also be circumstances where the compensatory measures will take a long time to become fully-functioning (e.g. re-creation of

woodland). In such circumstances it may be acceptable to put in place measures which do not provide a complete functioning habitat before losses occur, provided undertakings have been made that the measures will in time provide such a habitat and additional compensation is provided to account for this. Such cases require careful consideration by the competent authority in liaison with statutory conservation bodies.” (Emphasis added).

126. Both the Commission and the Defra guidance envisage circumstances in which time lags will be permitted between the damage to a site occurring and the compensatory measures becoming effective. While compensation measures should ‘normally’ be delivered before damage to the site occurs, it is recognised that this will not always be possible. In those circumstances the guidance suggests that over-compensation should be provided.
127. Over-compensation is not provided to ensure that there is no time lag, but precisely because there is a time lag. Simultaneity is not always necessary to ensure that the coherence of the Natura 2000 network is maintained. References to ‘recovery’ of species recognise that there may be interim losses. The guidance documents recognise that there will be circumstances in which the coherence of Natura 2000 will not be impaired by there being a time lapse between the loss of habitat and its replacement.
128. Examples of consented projects which included a time lag between the functionality of the compensation package and the losses occurring to the designated site include the Immingham Outer Harbour development to the south. This harbour was actually operational around 10 months before the flood wall was breached at the compensation site, refer to Annex (b). The Bathside Bay legal agreement, on which the agreement provided by the applicant is based, allows for up to 27 months (and even that is only subject to reasonable endeavours) between the construction starting on the Natura 2000 site and the breach of the flood wall at the compensatory managed realignment site. In contrast, there would only be a 15 month gap at AMEP between works starting at the Natura 2000 site and the breach occurring. A summary comparison of the AMEP proposals with Bathside Bay, Bristol, Immingham/Hull and London Gateway Port is appended at Annex (c).
129. The decision on the Immingham Outer Order was challenged in the High Court in *Humber Sea Terminals Ltd v Secretary of State for Transport* [2005] EWHC 1289; [2006] Env.L.R.4. One of the grounds of challenge was that the compensatory measures agreed between ABP and various statutory bodies did not achieve the object of ensuring the coherence of Natura 2000. The agreement became binding on ABP on the grant of a satisfactory HRO and provided as follows (cl. 5.1 and 5.2):

“Not to commence the development of the Outer Harbour or Quay 2005 until

- (a) It has sufficient proprietary interest in the relevant land required for either the Outer Harbour or Quay 2005 Habitats Scheme as appropriate to enable it to carry out the works described in the Implementation Plan; and*
- (b) and consents which are required for the implementation of the relevant Habitats Schemes have been issued with the exception of the consent required for Chowder Ness which shall be secured by ABP as soon as reasonably practicable.*

To deliver subject to Appropriate Assessment the relevant Habitats Schemes in accordance with the implementation Plan and the conditions of this Agreement.”

130. The agreement did not provide a start date for the compensation scheme. Nor was there any trigger for those works to start: something usually achieved by a prohibition on development until the compensation measures are in place. All that was required by the agreement was that the land ownership and consents be secured before the development commenced. The sites had to go through an appropriate assessment and at the time the agreement was entered into, it was not possible to say what the outcome of that would be. What was missing, argued the Claimant, was an enforceable obligation to carry out the works.

131. Ouseley J's judgment records [paragraph 59] that

"It was submitted without any specific evidence from the claimant that it was critical that the replacement habitat be available before, or at the latest at the same time as, the destruction of the existing habitat."

132. In the following paragraph Ouseley J noted that

"There was material in the English Nature assessment of the compensation sites that recognised a time lag between the start of works and the replacement reaching its full potential."

133. He accepted [paragraph 67] that

"The specific point about the time lag has led to the increase in area of compensation land over that of the land lost."

134. In fact, the Defendant had made it clear that the compensation land had been increased to its present size to take account both of risks and of possible time lags between work starting and the replacement reaching its full potential.

135. In dismissing this ground of challenge, Ouseley J explained [paragraphs 65 – 68] that

"I do not think that reg.53 means – and it was not so contended – that the compensation measures themselves had to be in place before the consent was granted. It is that the duty to secure them then arose. But it cannot be said that the Secretary of State had already failed at the moment when the consent was issued because that simply was the earliest moment at which any duty could arise. The timing of the measures he has to secure depends on the timing of the events which would detract from the coherence of Natura 2000. It is not even necessary for there to be an agreement in place at all with anyone before he issues consent. He could lawfully conclude that he would acquire land himself or use land under his control to secure the compensation measures at that time."

It is correct that the means chosen here for the securing of that duty is the agreement between ABP and others. But even if it could be shown that that would inevitably fail, that

would not go far enough to show an absence of power on the Secretary of State's part to consent, unless it could be said that he would be disabled thereby from performing his duty. If the claimant cannot go that far and the Secretary of State may yet be able to perform his duty, it is difficult to see how it could be said that he was in breach of his duty to secure the coherence of Natura 2000 when he issued the consent, which is the point in time upon which this argument has to focus."

136. In that case a challenge to the compensatory measures was dismissed even though there was no binding obligation on ABP to implement the compensatory measures before the damaging the protected site occurred. All ABP had to do prior to commencing its Outer Harbour development, was secure ownership of the compensation land and gain any consents required. It was bound, subject to appropriate assessment, to implement the compensation scheme, but there was no obligation to implement those measures by any specified time, and no mechanism to ensure the compensation was effective prior to the damage occurring. In spite of this, English Nature was satisfied with the compensation offered by ABP.

137. Each situation should be analysed and decided on its own merits, but the same principles and duties must be applied in every c The overall target duty is that the the coherence of the Natura 2000 network must be maintained following the functioning of the compensation package. This means that the impact upon the coherence of the network should not be irreversible. This does not mean that there should not be an irreversible impact at the particular project site in question – otherwise no time lag could ever be allowed, when it was patently operating in several cases in the UK. Its concept of irreversibility arises in two respects. First the guidance makes clear that normally before irreversibility damage is done to a site the compensation package should be in place (NB this does not mean that the compensation package must be fully functional it means that the compensation package has been secured). Normally the compensation package should be fully functionally before damage is done but the guidance recognises that this will not always be possible. The overall target therefore is that once the compensation package has taken effect there will be no overall loss to coherence of the Natural 2000 network.

138. The European Commission updated guidance of 2012 explains (paragraph 1.4.3) that

"as a general principle, a site should not be irreversibly affected by a project before compensation is indeed in place. However, there may be situations where it will not be possible to fill this condition. For example, the recreation of a forest habitat would take many years to ensure the same functions as an original one negatively affected by a project. Therefore, best efforts should be made to assure compensation is in place beforehand and in the case this is not fully achievable, the competent authorities should consider extra compensation for the interim losses that would occur in the meantime."

139. At paragraph 1.5.6 the guidance explains that

“Timing the compensatory measure demands a case-by-case approach, where the schedule adopted must ensure the continuity of the ecological processes essential for maintaining the biological structure and functions that contribute to the overall coherence of the Natura 2000 network. This requires a tight coordination between the implementation of the plan or project and the implementation of the measures, and relies on issues such as the time required for habitats to develop and/or for species populations to recover or establish in a given area.”

140. It is clear from the guidance that the principle aim of the compensatory measures is to ensure the continuity of the ecological processes essential for maintaining the biological structure and functions that contribute to the overall coherence of the Natura 2000 network.

141. Paragraph 1.5.6 goes on:

“In addition, other factors and processes must also be considered:

- *A site must not be irreversibly affected before compensation is in place.*
- *The result of compensation should be effective at the time the damage occurs on the site concerned. Under certain circumstances where this can not be fully achieved, overcompensation would be required for the interim losses.*
- *Time lags might only be admissible when it is ascertained that they would not compromise the objectives of ‘no net losses’ to the overall coherence of the Natura 2000 network.”*

142. The guidance distinguishes between a site being ‘irreversibly affected’ and a site being ‘damaged’: while it should not (paragraph 1.4.3) or must not (paragraph 1.5.6) be irreversibly affected before compensation is in place, there are circumstances in which it can be damaged before effective compensation is in place. The third bullet point in paragraph 1.5.6 explains that time lags may be permissible where they would not compromise the objectives of ‘no net losses’ to the overall coherence of Natura 2000. This supports the view that while there must be no irreversible impact to the coherence of the network as a whole before compensation is in place, there may be circumstances in which damage to a site will not irreversibly affect the coherence of the Natura 2000 network.

143. Defra guidance draws a distinction between securing the compensation and that compensation becoming effective. While compensation must be secured before the damage occurs to a site (paragraph 24), compensation measures should normally be delivered before the adverse effect on the European site occurs, “as this reduces the chance of harming the network of sites and also ensures there is no loss during the period before the compensatory measures are implemented.” This guidance makes it clear that the aim is to ensure the ‘network of sites’ is not irreversibly harmed.

144. The Defra guidance acknowledges (paragraph 25) that

“In certain situations damage to European sites may necessarily occur before the compensatory measures are fully functioning. There may also be circumstances where the compensatory measures will take a long time to become fully functioning (e.g. recreation of woodland). In such circumstances it may be acceptable to put in place measures which do not provide a complete functioning habitat before losses occur, provided undertakings have been made that measures will in time provide such a habitat and additional compensation is provided to account for this.”

145. The damage to the site at North Killingholme foreshore will not irreversibly affect the coherence of the Natura 2000 network, in light of the compensation measures proposed.
146. Other parties have observed that the particular facts of this case include the presence of a very substantial number of a single species of bird (BTGs) on the development site, and that this means a greater level of confidence is required in the outcome of the compensatory measures. It is the applicant’s case that the location of the compensation site is optimal, being especially proximate to the area of loss and that no other party has identified an alternative location that would be better for BTGs. A substantial amount of engineering expertise has been focussed on developing sustainable compensatory habitat, far more technical effort than would normally be expected at this stage of a project, so providing greater technical certainty of the outcome. Furthermore, the compensation provided at the outset overcompensates by providing an alternative wet roost and a substantial area of wet grassland; this habitat is over and above the ‘like for like’ compensation of mudflat which is provided at a multiple of 2:1 for compensation:loss. In doing so the two principal uncertainties have been addressed, viz.
- The existing BTG roost at NKHP may not be fit for the purposes of BTGs when foraging at the MR/RTE site, a closer roost may be needed and has therefore been provided.
 - Scientific monitoring of other RTE sites is not available to underpin the applicant’s assessment of its functional development, alternative grassland habitat is therefore provided which is a known alternative foraging resource for BTGs and has certainty of delivery.
147. Accordingly, it is the applicant’s case that no greater degree of certainty in the outcome of the compensatory measures can be provided.
148. The intensity of the effect on a large proportion of birds also needs to be set against the reversibility of the effect of any interim decline in population of the Humber Estuary SPA caused by the interim reduction in habitat. The world population of Icelandic black-tailed godwits continues to increase after a brief period of stability from 2005/06-2008/09 (Holt et al, 2012. *Water birds in the UK 2010/11: The Wetland Bird Survey*). The flyway population estimate was revised upwards by 30 per cent in 2012, with these trends being attributed partly to improved breeding success. The bird has a typical lifespan of 18 years (the longevity record is over 23 years). The possibility that the SPA cannot absorb displaced birds in the interim appears, in broad overview, remote. But if the SPA does not have such spare capacity, any short term impact is fully expected to be reversible.
149. Specifically, the applicant’s case on ‘irreversibility’ was on the effect on the coherence of the Natura 2000 network, not an irreversible impact at the particular project

site in question – otherwise no time lag could ever be allowed, when it was patently operating in several cases in the UK.

150. Finally under this topic, the MMO noted that some activities in the future would need further marine licences. This is unavoidable given the time-limited nature of the deemed marine licence as requested by the MMO and consistent with its policy in other cases and the applicant acknowledges this.

5. The operation of the Environmental Monitoring and Management Plan

151. The Compensation Environmental Monitoring and Management Plans (CEMMP) was required to be produced and signed off by Natural England before development could commence, and had to be implemented as approved, by virtue of requirement 17 in Schedule 11 of the DCO. It is a criminal offence not to comply with a DCO, by virtue of section 161 of the Planning Act 2008.

152. Technically the CEMMP could not be signed off until after the DCO had been granted, as it required consultation with the Environment Agency and the relevant planning authority, but in the words of Robert Upton as one heading for this agenda item, ‘the implementation mechanisms are complete’.

153. The applicant had been given a skeleton CEMMP by Natural England to use as a basis for the AMEP CEMMP, and the applicant had duly drafted it on that basis. At the hearing, Natural England made various criticisms of the CEMMP that were derived from its own skeleton and is not therefore at fault for producing the CEMMP in this way. Furthermore, the applicant was provided with the Bathside Bay CEMMP as an example, and this contains a similar level of detail to the current draft AMEP CEMMP (see Annex (d)).

154. The applicant is of course keen to conclude the CEMMP with Natural England and has rapidly worked on a new draft in line with the comments made by Natural England at the hearing. This is now provided at Annex (e), with the Terrestrial EMMP and Marine EMMP at Annex (f) and (g) respectively. The applicant will continue to work with Natural England and other regulators to finalise the CEMMP so that it is ready to be signed off once consent is granted.

155. As can be seen from the latest draft, the CEMMP has been reformed to refer to objectives and targets, triggers and feedback loops as requested.

156. The applicant would welcome the MMO and local representatives becoming members of the Environmental Steering Group.

157. Provided the Secretary of State has the requisite degree of confidence that the compensation measures will prove effective, his duty to ensure the coherence of the Natura 2000 network will have been discharged. The development and implementation of the CEMMP is principally a matter for NE (as well as the EA and MMO). The EMMPs all require the approval of those bodies and the DCO is contingent on that approval. There is no requirement for the RSPB (or ABP) to be involved in the development or implementation of the CEMMP, and a failure to involve them in that process would certainly not amount to a breach of natural justice. In any event, both the RSPB and ABP were provided with the draft EMMPs on 12 October 2012. While ABP chose not to make any comments on those drafts, the RSPB did make suggestions, which have largely been taken on board in the current drafts. Both ABP and the RSPB also had the opportunity of commenting on the documents in the hearing of 13 November 2012.

6. The operation of the legal agreement

158. This was another example of the applicant trying to be helpful but suffering from inconsistency from the regulators and Natural England in particular. Natural England raised the possibility of a legal agreement in the first place, supplied an example which it had previously signed up to, being Bathside Bay, which the applicant then used as a precedent, and which at the hearing was then criticised by Natural England.
159. The applicant is willing to enter into such an agreement, but unlike the other applications where one has been entered into, the agreement is not necessary for the guarantee that compensation will be provided for AMEP.
160. In all the other examples, which were before the Planning Act 2008 allowed 'associated development' to be included in applications, the application for the main development did not include any compensation proposals. In order to comply with guidance that compensation was deliverable at the time of the main consent, it was necessary for those other projects to enter into a legal agreement to guarantee that the compensation was delivered.
161. In this case, however, environmental compensation is included in the main application, and has been worked up to a considerable degree of detail. As the Royal Haskoning report commissioned by Natural England states, the RTE proposals include "*quite comprehensive engineering detail for this stage of the site's development*". Thus given the guarantees in the DCO that the compensation site will be delivered, in contrast with other projects there is much more certainty in this case about what the compensation package will involve at the time of grant of the main development.
162. In terms of the drafting of the legal agreement, the applicant has no issue with removing the publicity and confidentiality restrictions that Natural England signed up to in respect of Bathside Bay.
163. Whilst Counsel for ABP was highly critical of the confidentiality clause contained in the draft agreement, the applicant noted that this clause had been taken directly from the Bathside Bay document. The applicant was surprised by the criticisms, given the effort that ABP has previously made to prevent the applicant obtaining a copy of ABP's own agreements in relation to its compensation sites on the Humber Estuary.. The applicant sought copies of these agreements from Natural England in 2011; was forced to resort to making Freedom of Information Act requests; then forced to make an appeal to an initial decision not to disclose, and was eventually provided with a complete copy of one agreement and a heavily redacted version of another. A copy of all relevant correspondence is included in Annex (h). In the circumstances, the criticisms are hypocritical and belie ABP's own actions.
164. The delivery of compensation outside the red line boundary of the application (e.g. the Cherry Cobb Sands wet grassland) is guaranteed via the CEMMP, which requires sign off from Natural England before any development can commence, and must be implemented at risk of criminal sanctions.
165. Natural England referred to a bond for delivery of the compensation site, but in fact the DCO already addresses this point in article 14, where delivery and maintenance of the compensation site is subject to the same safeguards as funding for compulsory purchase compensation.

166. The suggestion that the legal agreement could cover points that are not agreed between the applicant and Natural England for the CEMMP is not necessary, since the DCO requires the CEMMP to be signed off by Natural England before development can commence, which ensures that such disagreements must be resolved.