The Planning Inspectorate
Yr Arolygiaeth Gynllunio

The Planning Act 2008

Navitus Bay Wind Park

Examining Authority's Report of Findings and Conclusions

and

Recommendation to the
Secretary of State for Energy and Climate Change

Ava Wood, Jim Claydon, Peter Braithwaite
and Stuart Cowperthwaite

Examining Authority

Date: 11 June 2015

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Examining Authority's findings and conclusions and recommendation in respect of Navitus Bay Wind Park and connection works.

File Ref EN010024

The application, dated 10 April 2014, was made under section 37 of the Planning Act 2008 and was received in full by The Planning Inspectorate on 10 April 2014.The applicant is Navitus Bay Development Limited. The application was accepted for examination on 8 May 2014.The examination of the application began on 11 September 2014 and was completed on 11 March 2015.

The development proposed comprises up to 194 wind turbine generators and associated onshore and offshore infrastructure, with an installed capacity of up to 970 MW (the Project). The Project would be located on the bed of the English Channel approximately 17.3 km off Scratchell's Bay (south of the Needles on the Isle of Wight) and 14.4 km from Durlston Head (on the Isle of Purbeck). The Turbine Area occupies an area of 153 km^2.

The Turbine Area Mitigation Option (the TAMO) proposed during the examination comprises up to 105 wind turbine generators and associated onshore and offshore infrastructure, with an installed capacity of up to 630 MW. The TAMO would be located on the bed of the English Channel approximately 21.6 km off Scratchell's Bay (south of the Needles on the Isle of Wight) and 18.8 km from Durlston Head (on the Isle of Purbeck). The TAMO turbine area comprises an area of 79 km^2.

Summary of Recommendation:

The Examining Authority recommends that the Secretary of State should withhold consent for the Project and the TAMO. If however the Secretary of State decides to give consent to one or both options then the Examining Authority recommends that the Order, or Orders, should be in the form attached at Appendix A.

Report Contents

Appendices Contents

ERRATA SHEET – Navitus Bay Wind Park – Ref. EN010024

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Corrections agreed by the Examining Authority prior to a decision being made

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4	Report Contents	"EMF, AIR QUALITY AND OTHER HEALTH"	"EMF, AIR QUALITY AND OTHER HEALTH ISSUES"
9	1.3.2	"Issue specific hearings……"	"Issue specific hearing……"
10	1.3.5	"…22 September 2015.."	"…22 September 2014.."
25	3.4	"…UK RGULATIONS"	"…UK REGULATIONS" (and indent)
37	4.0.6	"(TAMO"	"(TAMO)"
55	5.2.12	"..would be not significant."	"..would be "not significant."
83	Heading	Split heading at foot of page	Move to next page
123	7.2.64	"..even SNH 2104.."	"even SNH 2014.."
124	7.3 Heading	No indentation	Indentation
153	7.3.161	"..of the coast of island.."	"..of the coast of the island.."
155	Sub-heading	Split over two pages	Place on one page
171	7.3.258	"..and is likely to have.."	"..and are likely to have.."
171	Heading	"CONLCUSIONS"	"CONCLUSIONS"
188	8.2.3	"..High Directional Drilling.."	"..Horizontal Directional Drilling.."
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193	8.3.21	"..development consent in.."	"..development in.."
203	8.4.15	"..substation site. But observe.."	"..substation site however we observe.."
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227	10.3	"CONLCUSIONS"	"CONCLUSIONS"
228	10.3.7	"..Conditions.."	"..Condition.."
237	10.7.30	"..Laid out be H E Peto.."	"..Laid out by H E Peto.."
242	11.3.3	"..moderate and significant.."	"..moderate and therefore significant.."
314	14.1.5	"The Panel concludes that while	"The Panel concludes that, while the construction of the wind farm

		there are adverse impacts from the construction of the wind farm involving the introduction of greater risks to navigation of boats and aircraft. While the applicant has and would be providing mitigation sufficiently to meet standards set by statute and statutory bodies, the risk to navigation carried weight against making the DCO."	involves the introduction of greater risks to navigation of boats and aircraft, the applicant has provided mitigation sufficient to meet standards set by statute and statutory bodies. Nevertheless, the risk to navigation carried weight against making the DCO."
317	15.1.1	"..communities is.."	"..communities are.."
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405	20.4.16	"..wqas.."	"..was.."
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487	22.4.26	"..the Offshore Substation.."	"..the Onshore Substation.."
514	24.0.5	"..does not exist.."	"..do not exist.."

1 INTRODUCTION

1.0 BACKGROUND TO THE APPLICATION

1.0.1 The application, dated 10 April 2014, was made under section 37 of the Planning Act 2008 (PA2008) and was received in full by the Planning Inspectorate on 10 April 2014.

1.0.2 Navitus Bay Development Limited (NBDL) is a British company registered in the UK formed following a joint venture between Eneco Wind UK Ltd. and EDF Energy to develop the Project.

1.0.3 The application was accepted for examination on 8 May 2014. The examination of the application began on 11 September 2014 and was completed on 11 March 2015.

1.0.4 The Project comprises both offshore elements and associated onshore infrastructure with the offshore element located off the Dorset and Hampshire coasts, to the west of the Isle of Wight and the onshore element being in the counties of Hampshire and Dorset.

1.0.5 The Offshore Development Area comprises the Turbine Area and Offshore Export Cable Corridor. The Offshore Development Area would be capable of accommodating up to 194 Wind Turbine Generators(WTG) and associated foundations, up to three Offshore Substation Platforms (OSP), all associated Export, Inter-array and Inter-substation cabling, and up to one Meteorological Mast (met mast). This would occupy an area up to 153 km^2 (59 square miles or 44.6 square nautical miles (NM)) and would be up to 14.6 km (9.1 miles) wide in the north to south direction and 12.8 km (7.7 miles) wide in the east to west direction at its widest point. Water depths across the turbine area range from 33.5 m to 52.8 m with average water depths of 38 m, relative to the Lowest Astronomical Tide (LAT).

1.0.6 The onshore elements of the Project are the Landfall (at Taddiford Gap, Barton-on-Sea), an Onshore Cable Corridor of approximately 35 km (22 miles), including associated access and temporary compounds, and a new Onshore Substation at Three Legged Cross, north of Ferndown.

1.1 STRUCTURE OF REPORT

1.1.1 This Report sets out the main features of the proposed development, the legal and policy context, identifies the principal issues examined and, in turn, sets out the findings of the examination by topic, including the Habitats Regulation Assessment (HRA), concluding with the Panel's recommendations in respect of the application, compulsory acquisition and the Development Consent Order (DCO). Given that all the application and examination material has been published online, the Report

does not contain extensive summaries of all the representations although regard has been had to them in the conclusions reached by the Panel. The Panel has considered all matters which are important and relevant and the Report sets out our recommendations to the Secretary of State for Energy and Climate Change against the tests required in s104 of the Planning Act 2008 as amended (PA2008).

1.1.2 The contents of the report are set out ahead of the Introduction in Chapter 1 of this Report that introduces the application and sets out in summary the examination and procedures.

1.1.3 Chapter 2 sets out in summary the main features of the proposed development and changes made to it during the course of the examination.

1.1.4 Chapter 3 identifies and summarises the legal and policy context applicable to the application and its consideration and the Panel's recommendations.

1.1.5 Chapter 4 sets out the principal issues identified by the Panel at the beginning of the examination, assesses the adequacy of the Environmental Statement (ES) supplied by the applicant and considers the applicant's assessment of alternatives to the scheme proposed.

1.1.6 Chapters 5 to 19 set out the Panel's main findings on the merits of the development in relation to specific topics. These topics are drawn from, but do not repeat exactly, the principal issues identified at the beginning of the examination.

1.1.7 Chapter 20 sets out the findings in relation to HRA to inform the competent authority in making her assessment.

1.1.8 Chapter 21 brings together the findings of the examination, weighs the case for development against the criteria contained in the National Policy Statements (NPSs) and makes recommendations to the Secretary of State with regard to the outcome of the application for development consent.

1.1.9 Chapter 22 investigates the applicant's case for compulsory acquisition and related matters including the Panel's recommendation on compulsory acquisition.

1.1.10 Chapter 23 sets out the DCO recommended by the Panel and explains the alterations to it from the original submission by the applicant, in relation to both the Application Project and the Turbine Area Mitigation Option (TAMO), should the Secretary of State choose to allow the development.

1.1.11 Chapter 24 is a summary of the Panel's conclusions and recommendations to the Secretary of State.

1.1.12 A series of appendices are attached which set out the Development Consent Orders, the examination library, including a library of the relevant representations, the events of the examination, a list of abbreviations and a list of requests to become interested parties .

1.2 APPOINTMENT OF THE EXAMINING AUTHORITY

1.2.1 On 25 June 2014 the Secretary of State for Communities and Local Government appointed the following Panel of four Examining Inspectors as the Examining Authority (ExA) for the application under section 65 of the Planning Act 2008 as amended (PA2008) [PD-003]:

- Ava Wood Dip Arch MRTPI
- Jim Claydon BSc DipTP MSc MRTPI
- Stuart Cowperthwaite BSc(Eng) CEng ACGI MIStructE MICE
- Peter Braithwaite BSc MSc DIC CEng CEnv FICE MCIWM

1.2.2 This document is the ExA's Report to the Secretary of State for Energy and Climate Change (SoS). It sets out the Panel's findings, conclusions and recommendations, as required by section 83 (1) of the PA2008.

1.2.3 Having regard to the information submitted to the examination, the Panel is satisfied that the proposed Navitus Bay Wind Park is a nationally significant infrastructure project (NSIP) as defined by section 14 and section 15 of the PA2008.

1.2.4 The application is also an Environmental Impact Assessment (EIA) development as defined by the Infrastructure Planning (Environmental Impact Assessment) Regulations 2009. It was accompanied by an Environmental Statement (ES) which in the view of the Panel meets the definition given in Regulation 2(1) of these Regulations. In reaching the recommendation, the environmental information, as defined in Regulation 2(1) (including the ES and any other information on the environmental effects of the development), has been taken into consideration in accordance with Regulation 3(2) of these Regulations.

1.2.5 The accepted application was advertised by the applicant and 2659 valid Relevant Representations were received [REP-0015 to REP-2673].

1.3 THE EXAMINATION PROCEDURE

1.3.1 A Preliminary Meeting was held on 11 September 2014 at which the applicant and all other interested parties and statutory parties were able to make representations about how the application should be examined. The timetable for the examination, a procedural decision of the ExA under Rule 8 of the Infrastructure Planning (Examination Procedure) Rules 2010 (EPR), was issued to interested parties on 22 September 2014 [PD-005]. The ExA's

first written questions [PD-006] and the note of the Preliminary Meeting were published on 22 September 2014 [HE-003]. Other procedural decisions, including those to vary the timetable, are explained below.

1.3.2 As set out in the timetable for the examination [PD-005], and as a result of requests made, as notified on 15 September 2014 [HE-04] and 24 October 2014 [HE-15] the following hearings were convened:

- Issue specific hearing on issues relating to introduction of the Mitigation Option submitted for Deadline III, marine and coastal processes, commercial fisheries, air quality, water quality and drainage, noise, vibration and EMF, held on 18 November 2014 at the Marriott Hotel, Bournemouth.

- Issue specific hearing on noise, biodiversity, biological environment, ecology - onshore and offshore, held on 19 November 2014 at the Marriott Hotel, Bournemouth.

- Issue specific hearing on highways, traffic and transportation, operational and navigational safety, the DCO and DML, held on 20 November 2014 at the Marriott Hotel, Bournemouth.

- Issue specific hearing on offshore seascape, landscape and visual impacts, onshore landscape and visual impacts, offshore and onshore archaeology and other heritage assets, held on 25 November 2014 at the Wessex Hotel, Bournemouth.

- Issue specific hearing on world heritage site, design and socio-economics, tourism and recreation, held on 26 November 2014 at the Wessex Hotel, Bournemouth.

- Issue-specific hearing on the DCO, management plans and protocols, community compensation, Planning Performance Agreement (PPA), s106, the benefit of the Order, held on 27 November 2014 at the Wessex Hotel, Bournemouth.

- Issue specific hearings on the DCO was held on 21 January at the Marriot Hotel, Bournemouth.

- Issue specific hearing relating to the Mitigation Option submitted at Deadline III, and further detailed at Deadline IV was held on 22 January 2015 at the Marriott Hotel, Bournemouth.

1.3.3 As required under s93 of PA2008, following requests from interested parties, open floor hearings were held on 14 October 2014 at the Tregonwell Hall, Bournemouth International Centre,

Bournemouth and on 2 December 2014 at Cowes Yacht Haven, Cowes, Isle of Wight.

1.3.4 As required under s92 of PA2008, following a request from an affected person, a compulsory acquisition hearing was held on 22 January 2015 at the Marriott Hotel, Bournemouth.

1.3.5 The Panel issued a first round of written questions on 22 September 2015 [PD-006] and a second round on 14 January 2015 [PD-011]. A request for further information and written comments under Rule 17 of the Examination Procedure Rules was issued on 21 November 2014, which generated an amendment to the examination timetable [PD-007].

1.3.6 Under Regulation 5(2)(g) of the Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 (APFP), where required, an application must be accompanied with sufficient information to enable the relevant Secretary of State to meet her statutory duties as the competent authority under the Habitats and Marine Regulations relating to European Sites. A Habitats Regulations Assessment (HRA) Report [APP-060] was therefore submitted with the application.

1.3.7 In order to inform the Panel's Report and recommendation to the Secretary of State on the application under s74 of PA2008, and to provide standalone information for her statutory duties, the Panel requested as part of its first written questions [PD-006] that the applicant provide the necessary screening and integrity matrices for some sites, where they had not been provided in the application documents. The Report on Implications for European Sites (RIES) compiles, documents and signposts the information received with the application and during the examination of the application and was published on 20 February 2015 [PD-014].

1.3.8 All interested parties were provided with an opportunity to comment on the RIES by 5 March 2015, as set out in the timetable for the examination [PD-005]. A number of comments on the RIES were received and these are available to the Secretary of State through the Examination Library appended to this Report [REP-4022, REP-4060 and REP-4072]. This information would enable the Secretary of State to carry out Appropriate Assessment (AA), if required, as part of her statutory duties as the competent authority under the Habitats and Marine Regulations.

1.4 SITE VISITS

1.4.1 Onshore and offshore inspections were undertaken of sites to which the application relates. These were carried out in the company of the applicant’s representatives and interested parties on 3 and 4 December 2014 [HE-055].

1.4.2 Several unaccompanied site visits were carried out including visits on 23, 24 July 2014, 12,13, 14 August 2014, 7, 8 October 2014, 16 October 2014, 1, 2 December 2014, 23 January 2015, 11 and 12 February 2015.

1.4.3 The Panel visited the area of the onshore application site, the coastal viewpoints (including night time visits) from which the offshore development would be seen, the proposed onshore cable corridor and substation site [HE-053, HE-054, HE-075 and HE-076]. Members of the Panel additionally viewed offshore wind farms at locations off the Kent and Essex coast.

1.5 OTHER CONSENTS REQUIRED

1.5.1 In addition to consent under PA2008, a list of the other consents required was provided, by the applicant, as part of the application [APP-061]. The Panel's consideration of the likelihood that such consents would be forthcoming is reported within relevant Chapters of this Report.

1.6 REQUESTS TO BECOME AN INTERESTED PARTY

1.6.1 The ExA has exercised its power to make a number of persons, interested persons (IPs) under s102ZA (PA2008). A list of IPs can be found at appendix F.

1.7 UNDERTAKINGS/OBLIGATIONS GIVEN TO SUPPORT APPLICATION

1.7.1 Paragraph 4.1.8 of National Policy Statement (NPS) EN-1 indicates that the decision maker may take into account any development consent obligations that an applicant agrees with local authorities on the basis that they "*must be relevant to planning, necessary to make the proposed development acceptable in planning terms, directly related to the proposed development, fairly and reasonably related in scale and kind to the proposed development, and reasonable in all other respects*."

1.7.2 The applicant has submitted two documents that require consideration in relation to this policy provision:

- a development consent obligation in the form of an agreement concluded under s174 of the PA2008 (which engages s106 of the Town and Country Planning Act 1990) with Hampshire County Council, Dorset County Council, New Forest National Park Authority, Christchurch Borough Council, East Dorset District Council, New Forest District Council, Bournemouth Borough Council, Borough of Poole and Isle of Wight Council and landowners. [REP-4083]
- a development consent obligation in the form of a Unilateral Undertaking (UU) made under the same legislation in favour of all of the above local authorities, and with the addition of Purbeck District Council. [REP-4084]

1.7.3 In REP-4082 the applicant explained that the development consent agreement and UU were completed on 10 March 2015. The documents were engrossed in counterpart but a single document was being circulated for signature by all parties. The version provided in counterpart is legally enforceable but the Secretary of State may receive a later version in a single document for easier reference. The obligations covenant to provide a number of items (described below) and apply to the Application Project as well as the TAMO.

1.7.4 The applicant prepared a schedule demonstrating how each of the obligations complies with the tests set out in NPS EN-1 [REP-4051].

THE AGREEMENT WITH THE LOCAL AUTHORITIES

1.7.5 The agreement makes a number of provisions contingent upon consent and implementation of the proposed DCO. The broad provisions relate to the following:

- **Biodiversity**: a fund of £134,400 (plus an administration fund of £5,000) for the purpose of improving the non-statutory site network or other natural habitats, as identified by the Hampshire Biodiversity Committee and a fund of £65,000 (plus an administration fund of £5,000) for the purpose of improving the non-statutory site network or other natural habitats, as identified by the Dorset Biodiversity Committee.
- **Landscape**: three landscape funds have been established to be spent by the relevant local authorities on "*initiatives which seek to enhance the landscape character of the area*." [REP-4030, Part 1]. The funds are allocated as follows:
    - The Isle of Wight Landscape Fund (£300,000, paid as a single payment).
    - The Dorset Landscape Fund (£1.18 million, paid in ten equal instalments).
    - The New Forest Landscape Fund (£525,000, paid in five equal instalments).
- **Skills**: the Skills Fund of £4.3 million would be paid in four instalments (with some monies paid prior to Implementation) in order to fund initiatives that would maximise the benefits of the Project in terms of skills.
- **Supply Chain**: Supply Chain Engagement Fund of £4.3 million would be paid in four instalments (with some monies paid prior to Implementation) in order to fund initiatives that would maximise the benefits of the Project in terms of supply chain.
- **Heathland Habitat Enhancement Scheme**: to include works within Hurn Forest, West Moors Plantation or Ringwood Forest North to enhance heathland habitats and

additional heathland creation, to be funded by the developer.

THE UNILATERAL UNDERTAKING

1.7.6 The obligations in the UU relate to tourism and provide for a tourism fund of £15 million to be paid in ten equal instalments. The authorities would agree (via the Tourism Liaison Group) how those monies are to be spent, in accordance with a Tourism Strategy which is to be prepared.

STATUS OF THE DEVELOPMENT CONSENT OBLIGATIONS

1.7.7 The appropriateness and necessity for the Agreement are discussed further in Chapters 6, 7, 12 and 23 of this Report. The UU is also considered in Chapters 12 and 23.

1.7.8 The applicant also stated that a community benefits package was being considered and was continuing to work with local authorities and stakeholders to determine an appropriate scheme. However, the applicant emphasised that "*a community benefits scheme is not necessary in order to make the Project acceptable in planning terms; rather to recognise the community hosting the development*" [REP-4030]. The community benefit package does not form part of any of the legal agreements submitted and the Panel was not provided details of what is intended. It has not had any bearing on our considerations.

2 MAIN FEATURES OF THE PROPOSAL AND SITE

2.0 THE APPLICATION AS MADE

DETAILS OF THE APPLICANT AND THE APPLICATION

2.0.1 The application was made by Navitus Bay Development Limited (NBDL), a British company registered in the UK formed following a joint venture between Eneco Wind Energy Ltd. and EDF Energy, for development consent to construct a new offshore wind farm and associated offshore infrastructure with a total installed capacity of up to 970 MW. The Project would be located off the Dorset and Hampshire coasts, to the west of the Isle of Wight and comprise up to 194 three bladed, horizontal axis wind turbines and associated infrastructure.

2.0.2 The Crown Estate Zone 7 lies to the west of the Isle of Wight, off the coast of Dorset and Hampshire. Navitus Bay Development is proposing to develop the Offshore Array wholly within the Zone, and it would cover 153 km^2 of the total Zone area.

2.0.3 There would be a cable landfall at Taddiford Gap where the offshore export cables will connect to the onshore cables, which would run underground for a length of 35 km (22 miles) to a new substation at Three Legged Cross, north of Ferndown.

PRINCIPAL WORKS DESCRIBED

2.0.4 The principal works that are proposed, and for which development consent is required, are identified as Work No. 1 in the recommended DCO (Schedule 1, Part 1, Authorised Development). Work No. 1 is described in the recommended DCO and the Environmental Statement [APP-040 & APP-062 to APP-063].

2.0.5 Work No. 1(a) would comprise an offshore wind turbine generating station with a gross electrical output capacity of up to 970 MW, the array consisting of up to 194 wind turbine generators (WTG) each fixed to the seabed by one of three foundation types (namely, gravity base foundation, steel monopile foundation, space frame foundation.

2.0.6 Work No. 1(b) would comprise one meteorological mast fixed to the seabed by one of three foundation types (namely, gravity base foundation, steel monopile foundation, space frame foundation).

2.0.7 Work No. 1(c) would comprise a network of cables laid underground or on the sea bed within the yellow hatched area on the works plan [APP-012] between the wind turbine generators WTGs and the meteorological mast and Work No. 2, for the transmission of electricity and electronic communications

between these different structures, and including one or more cable crossings.

ASSOCIATED DEVELOPMENT DESCRIBED

2.0.8 Associated development proposed is identified as Work No. 2 to Work No. 75 of the recommended DCO (Schedule 1, Part 1, Authorised Development).

2.0.9 The proposed offshore associated development would consist of up to three offshore substations, comprising Work No. 2, fixed to the seabed by gravity base foundation or space frame foundations. A connection or connections between the offshore substation platforms comprising Work No. 2 and between Work No. 2 and Work No. 3B consisting of up to six cables laid underground along routes within the order limits seaward of MHWS including one or more cable crossings. Work Nos. 3B to 75 comprise the onshore elements: onshore connection works, trenchless installations, vehicular accesses, temporary construction compounds, landscaping works and the Onshore Substation.

2.0.10 The proposed onshore associated development would principally consist of up to six underground cables laid from mean low water at Taddiford Gap, between Barton-on-sea and Milford-on-sea and a new substation at Three Legged Cross.

ANCILLARY WORKS DESCRIBED

2.0.11 Proposed ancillary works are set out in Schedule 1, Part 2 of the recommended DCO, and would include temporary landing places or other means of accommodating vessels in the construction and/or maintenance of the authorised development; buoys, beacons, fenders and other navigational warning or ship impact protection works; and temporary works for the benefit or protection of land or structures affected by the authorised development.

DEVELOPMENT DESCRIBED IN THE ENVIRONMENTAL STATEMENT

2.0.12 For the purpose of the Environmental Impact Assessment (EIA), the project was assessed against a maximum development envelope of 194 WTGs on one or more of three foundation types namely: gravity base foundation, steel monopile foundation, space frame foundation.

2.0.13 It should be noted that although indicative locations for the offshore structures have been developed and assessed as set out in the ES, the recommended Order would preserve flexibility in the final project design by applying the 'Rochdale Envelope' principle. This is set out in the Explanatory Memorandum [APP-041]. The 'Rochdale Envelope' approach is one in which detailed

design is reserved as a matter of detail for post consent discharge of relevant requirements and Deemed Marine Licence (DML) conditions.

2.0.14 The 'Rochdale Envelope' approach is a familiar one in relation to offshore wind farm applications. Its use has presented challenges in the case of this application, where the location of the turbine array and substations may be visible from a densely populated urban coastline and where there may be landscape and visual implications on a range of receptors. The seascape, landscape and visual impacts (offshore and onshore) are assessed in Chapters 7 and 8.

2.0.15 The Design Envelope was determined based on project design parameters, which in turn was used to assess the maximum adverse scenarios for each receptor (the Worst Case Scenario). The Worst Case Scenarios for the Project were further refined using engineering design details available at this stage to provide a Realistic Worst Case Scenario (RWCS).The RWCS differs from topic to topic and was based on the full range of design options. The offshore elements would comprise up to 194 wind turbines of 5MW, 6MW or 8 MW output.

2.0.16 The constructed Project could contain turbines of a single class size or a combination of different size classes within the defined parameters:

- up to 198 foundations and associated scour protection where necessary;
- up to three Offshore Substation Platforms;
- up to one met mast;
- offshore cabling comprising inter-array cables, inter-substation cables and export cables.

2.0.17 The key design parameters for the onshore works are as follows:

- Landfall:
  - up to six offshore cables;
  - up to six transition joint bays;
  - two temporary construction compounds.
- Onshore Cable Corridor
  - working width of generally 40 m;
  - up to six cable circuits and fibre optics in six trenches;
  - four temporary construction compounds.
- Onshore Substation
  - electrical footprint of approximately 3 ha;
  - maximum height of electrical equipment – 11 m;

- maximum height of gas insulated switchgear (GIS) building – 14 m;
- maximum height of lightning masts – 19 m;
- ground raising above Existing Ground Level (EGL) – up to 1 m;
- one temporary construction compound.

KEY LOCATION MAPS AND PLANS

2.0.18 The applicant submitted the plans with the application documents, including the Location Plan, the Land Plan Key Plan, the Offshore Land Plans, Special Category Land Plans, and Works Plans (offshore and onshore) [APP-005 to APP-039].

2.1 TURBINE AREA MITIGATION OPTION (TAMO)

2.1.1 During the examination the applicant submitted a Turbine Area Mitigation Option (TAMO) at Deadline III, as appendix 43 of its submission for that deadline [REP-3248]. This was submitted within the context of the original application primarily to propose the reduction of the significant impacts identified in the Seascape, Landscape and Visual Impact Assessment (SLVIA). The option includes:

- a generating capacity of up to 630 MW;
- maximum turbine numbers of 76 x 8 MW or 105 x 6 MW;
- a reduction of the turbine area from 153 km^2 to 79Km^2, and
- a proposal to move the turbine area further south of the north west and north east boundaries of the application turbine area.
- the full onshore 40m working width would still be required along the trenched cable route but wherever possible would be reduced to 34m.

2.1.2 Subsequent to this submission, the applicant submitted a written response to Deadline IV on 17 November 2014 (Part 1) [REP-3273]. Paragraph 5 of the summary to this document explained that; "*While the scheme as submitted remains the applicant's preferred proposal, and will continue to be promoted through the examination in the usual way, the provision of information relating to the Turbine Area Mitigation Option is intended to enable the Secretary of State to approve a reduced number of turbines should* [*s*]*he consider that this is necessary as a matter of planning judgement*."

2.1.3 The applicant's Response to a Rule 17 request [PD-007] for further information was submitted on 11 December 2014 (Deadline IV) [REP-3429]. The covering letter made clear that the response to the Rule 17 request was intended to update and replace Appendix 43. The letter went on to state; "*For the purposes of responding on the Mitigation Option documentation, Interested Parties are (therefore) directed to both the (enclosed)*

Response to the Rule 17 Request and the Response to Deadline IV (Part 1)."

2.1.4 The parameters for the mitigation option were set out in tabulated form in Appendix 9 to Deadline IV (Part 1) [REP-3310].

2.1.5 In its procedural decision issued on 13 January 2015 [PD-009], the ExA decided that the TAMO would amount to a material change but not to the point of constituting a new application. In making this procedural decision, the ExA took account of NPS EN-1 and EN-3, as well as the guidance in paragraphs 105 to 107 of the DCLG Guidance for the examination of applications for development consent. The ExA also took account of the statement by Bob Neill MP in his letter to the IPC, dated 28 November 2011.

2.1.6 Paragraph 105 of DCLG Guidance accepts that applicants may need to change a proposal after an application has been accepted for examination. The reasons for the change promoted by the applicant in this case did not fall within the categories cited in the guidance. It was recognised that the list was neither exhaustive, nor intended to preclude other circumstances that might lead to changes. Given the extent of reduction in the number of turbines, and in installed capacity, the ExA accepted that the proposal for the TAMO constituted a material change. The ExA did not consider that the materiality of the change applied for was of such a degree that it constituted a new application. The TAMO fell within the scope of the design and ES envelope of the submitted application, but the ExA has considered it alongside the original and not as a replacement scheme.

2.1.7 The TAMO was included in the examination and additional information relevant to it was requested in the second round of questions. To enable affected and interested persons (IPs) to fully engage with the process, the timetable was modified by extending the deadline by which they could respond to any issues concerning the TAMO.

2.1.8 The Secretary of State therefore has before her two schemes (the Application Project and the TAMO) with two corresponding DCOs. Having regard to the consultation carried out at the time by the ExA, it is considered that all interested parties were provided with an adequate opportunity to comment upon the changes proposed by the applicant before the close of the examination. Subsequent representations by a number of IPs refer to the lack of time accorded to them to respond fully to the TAMO. However, the ExA modified the timetable to allow for IPs to submit additional representations on the TAMO. A request by Poole and Christchurch Bays Association to the Secretary of State to extend the examination was rejected but the ExA is of the view that there was sufficient opportunity for IPs to fully engage with the

process, as evidenced by the number of representations made at Deadline VI, VIa and VII stages of the examination.

3 LEGAL AND POLICY CONTEXT

3.0.1 This Report sets out in detail all the important and relevant matters in the context of the legislation and policy described below. The applicant sets out the legal and policy context in a number of documents including:

- ES Chapter 3 – Legislation and Policy Volume A [APP-064], Volume B [APP-069] and Volume C [APP-088] and accompanying figures [APP-107]
- Consents and licences required under other legislation [APP-061]

3.0.2 It should be noted that various other documents submitted by the applicant contain reference to the policy and legislative context of the application. Interested parties (IPs) have also discussed the legal and policy context in relation to the application, and policy reviews were included in Local Impact Reports (LIRs) which are discussed in this Chapter.

3.1 PLANNING ACT 2008 (AS AMENDED)

3.1.1 The application is for a Nationally Significant Infrastructure Project (NSIP), namely an offshore generating station with electrical output capacity of 970MW comprising up to 194 wind turbine generators. The Panel finds that the proposal falls within the terms of s14(1)(a) in that it consists of the construction of a generating station, and within s15(3) as the capacity exceeds 100 MW. The Turbine Area Mitigation Option (TAMO) with an output of up to 630MW also qualifies as an NSIP under the same criteria.

3.1.2 S104(1) of PA2008 applies in relation to an application for an order granting development consent if a National Policy Statement (NPS) has effect in relation to development of the description to which the application relates. NPS EN-1, EN-3 and EN-5 have effect in relation to this application, and therefore s104 of PA2008 applies.

- S104(2) PA2008 sets out the matters to which the Secretary of State must have regard in deciding an application submitted in accordance with PA2008. In summary, the matters include any relevant NPS, any appropriate marine policy documents, any local impact report and any other matters the Secretary of State thinks are both important and relevant to the decision.
- S104(3) of PA2008 requires the Secretary of State to decide the application in accordance with any relevant NPS, except to the extent that the Secretary of State is satisfied that doing so would:

  (a) lead to the United Kingdom being in breach of its international obligations;

(b) lead to the Secretary of State being in breach of any duty imposed on her under any enactment;
(c) be unlawful under any enactment;
(d) the adverse impact of the proposed development would outweigh its benefits, or;
(e) that any prescribed condition for deciding the application, otherwise than in accordance with a NPS, would be met.

3.1.3 This Report sets out the Panel's findings and conclusions and recommendation taking these matters fully into account.

3.1.4 The Panel has taken into account decisions, where relevant, made by the Secretary of State in other Offshore Wind Farm (OWF) development consent order applications under the PA2008.

3.2 NATIONAL POLICY STATEMENT

3.2.1 The NPSs most relevant to this application are EN-1 'Overarching National Policy Statement for Energy', EN-3 'National Policy Statement for Renewable Energy Infrastructure', and EN-5 'National Policy Statement for Electricity Network Infrastructure' which were designated by the Secretary of State on 19 July 2011 in accordance with s5 of PA2008. The NPSs provided the primary basis for the Panel's examination of the application.

OVERARCHING NPS FOR ENERGY (EN-1)

3.2.2 This NPS sets out national policy for energy infrastructure, including the role of offshore wind which is expected to provide the largest single contribution towards the 2020 renewable energy targets. Part 4 of EN-1 makes clear that the assessment of applications for energy NSIPs should start with a presumption in favour of granting consent and sets out the assessment principles to be applied. The Panel has applied the tests set out in EN-1 as one of the primary basis for its examination of the application.

3.2.3 Section 4.2 of NPS EN-1 sets out the policy principles applicable to the use of a Rochdale envelope approach in energy development consenting. It states: *"[w]here some details [of a proposal] are still to be finalised the ES should set out, to the best of the applicant's knowledge, what the maximum extent of the proposed development may be in terms of site and plant specifications, and assess, on that basis, the effects which the project could have to ensure that the impacts of the project as it may be constructed have been properly assessed*." Paragraphs 2.0.12-2.0.17 of this Report discuss the project as assessed in the ES.

3.2.4 NPS EN-1 (paragraph 5.3.5) summarises the government's biodiversity strategy objectives as follows:

"*A halting, and if possible a reversal, of declines in priority habitats and species, with wild species and habitats as part of healthy, functioning ecosystems,*" and;

"*The general acceptance of biodiversity's essential role in enhancing the quality of life, with its conservation becoming a natural consideration in all relevant public, private and non-governmental decisions and policies.*"

3.2.5 NPS EN-1 goes on to suggest that decision-makers should consider these objectives in the context of climate change, where, "*failure to address this challenge will result in significant adverse impacts to biodiversity*." This policy direction is relevant to a renewables/low carbon generation project such as the proposal considered in this Report.

3.2.6 Further aspects of NPS EN-1 are referred to as relevant throughout this Report.

NPS FOR RENEWABLE ENERGY INFRASTRUCTURE (EN-3)

3.2.7 This NPS sets out additional policy specific to renewable energy applications, including proposed offshore wind generation stations exceeding 100MW. Section 2.6 of EN-3 sets out detailed assessment principles for offshore wind proposals, and these have been applied by the Panel as one of the primary bases for its examination of the application.

3.2.8 Section 2.6 of NPS EN-3 goes on to consider the implications of the Rochdale Envelope approach in the context of renewable energy development. As a matter of policy, NPS EN-3 makes clear that certain matters may not be specified precisely in an application, these matters include the:

- precise location and configuration of turbines and associated development;
- foundation type;
- exact turbine tip height;
- cable type and cable route, and
- exact locations of offshore and/or onshore substations.

3.2.9 The NPS provides these matters as an example, but does not seek to closely prescribe which matters must be precisely assessed and which matters are capable of assessment within a more flexible Rochdale Envelope based approach.

3.2.10 NPS EN–3 sets out more detailed considerations relevant to offshore wind farms. It makes clear that mitigation should be considered in terms of the careful design of the development itself and of the construction techniques employed. Ecological monitoring is likely to be appropriate, both to enable the better management of the proposal itself and also given the lack of

scientific knowledge to provide further useful information relevant to the management of future projects.

3.2.11 In terms of impacts on birds, NPS EN-3 policy considerations relevant to this project include, at paragraph 2.6.101, effects relating to:

- collisions between birds and rotating blades;
- bird disturbance due to construction activities;
- bird displacement during the operational phase, resulting in the loss of foraging areas; and
- impacts on bird flight-lines and associated increased energy use by birds.

3.2.12 In terms of impacts on marine mammals, NPS EN-3 policy considerations relevant to this project include, at paragraph 2.6.92, effects relating to:

- feeding areas;
- migration or commuting routes;
- baselines noise levels;
- predicted construction and operation noise levels; and
- the duration of any potentially disturbing activity.

ELECTRICITY NETWORKS INFRASTRUCTURE (NPS EN-5)

3.2.13 This NPS (paragraph 1.8.1 and 1.8.2) sets out policy relevant to electricity transmission (400Kv and 275Kv) and distribution systems from transmission systems to the end user (130Kv to 230Kv). It also covers substations and converter stations. The NPS is therefore relevant to this application insofar as it applies to subsea interconnecting cables, subsea export cables, onshore undergrounded cables and offshore substations. EN-5 section 2 sets out additional considerations related to the following generic impacts:

- biodiversity and geological conservation;
- landscape and visual, and
- noise and vibration.

EN-5 also provides a simplified route map for dealing with electro-magnetic fields (EMF), identifying that evidence should be provided that the line complies with the International Commission on Non-Ionizing Radiation Protection (ICNIRP) limits at the nearest residential property.

3.2.14 The above aspects of NPS EN-5 have been taken into account by the Panel with regard to the specific elements of the project listed above.

3.3 MARINE AND COASTAL ACCESS ACT 2009

UK MARINE POLICY STATEMENT

3.3.1 The UK Marine Policy Statement (MPS) was prepared and adopted for the purposes of s44 of the Marine and Coastal Access Act 2009 and was published on 18 March 2011 by all UK administrations as part of a new system of marine planning being introduced across UK seas.

3.3.2 The MPS is the framework for preparing Marine Plans and taking decisions affecting the marine environment. It contributes to the achievement of sustainable development in the UK marine area. The UK marine area includes the territorial seas and offshore area adjacent to the UK, which includes the area of sea designated as the UK Exclusive Economic Zone (the Renewable Energy Zone until the Exclusive Economic Zone comes into force) and the UK sector of the continental shelf. It includes any area submerged by seawater at mean high water spring tide, as well as the tidal extent (at mean high water spring tide) of rivers, estuaries and creeks.

3.3.3 The MPS is the framework for marine planning systems within the UK. It provides the high level policy context, within which national and sub-national Marine Plans will be developed, implemented, monitored, amended and will ensure appropriate consistency in marine planning across the UK marine area. The MPS also sets the direction for marine licensing and other relevant authorisation systems.

3.3.4 The MPS has provided the overarching marine policy context for the ExA's consideration of the application offshore works and deemed Marine Licences (DML).

SOUTH INSHORE AND SOUTH OFFSHORE MARINE PLANS

3.3.5 The proposed development area is within the designated South Inshore and South Offshore Marine Plan areas. At the time of the examination these plans were in their early stages of preparation and no policies had been produced. However in June 2014 the South Plans Analytic Report was produced, in July 2015 the Draft Vision and Objectives was consulted on and reported in October 2014, and in February 2015 an Options Report was produced. In its Written Response to Deadline II [REP-3018]. the applicant stated that the project conformed with the draft objectives of the South Marine Plans Draft Vision. No evidence from MMO was forthcoming to contradict this view.

3.4 EUROPEAN REQUIREMENTS AND RELATED UK RGULATIONS

RENEWABLE ENERGY DIRECTIVE 2009

3.4.1 The Renewable Energy Directive sets out legally binding targets for Member States with the expectation that by the year 2020, 20% of the European Union's energy mix and 10% of transport energy will be generated from renewable energy sources. The UK's contribution to the 2020 target is that by then 15% of energy will be from renewable sources. The UK Renewable Energy Strategy 2009 (Renewable Energy Strategy) sets out how the UK proposes to meet the targets.

3.4.2 The targets within the Renewable Energy Directive have been taken into account by the Panel.

HABITATS DIRECTIVE (COUNCIL DIRECTIVE 92/43/EEC)

3.4.3 The Habitats Directive (together with the Council Directive 79/409/EEC on the conservation of wild birds (Wild Birds Directive) (Birds Directive)) forms the cornerstone of Europe's nature conservation policy. It is built around the Natura 2000 network of protected sites and the strict system of species protection. The directive protects over 1000 animals and plant species and over 200 habitat types (for example: special types of forests, meadows, wetlands; etc.), which are of European importance.

Birds Directive (Council Directive 2009/147/EC)

3.4.4 The Birds Directive is a comprehensive scheme of protection for all wild bird species naturally occurring in the European Union. The directive recognises that habitat loss and degradation are the most serious threats to the conservation of wild birds. It therefore places great emphasis on the protection of habitats for endangered as well as migratory species. It requires classification of areas as Special Protection Areas (SPAs) comprising all the most suitable territories for these species. Since 1994 all SPAs form an integral part of the Natura 2000 ecological network.

3.4.5 The Birds Directive bans activities that directly threaten birds, such as the deliberate killing or capture of birds, the destruction of their nests and taking of their eggs, and associated activities such as trading in live or dead birds. It requires Member States to take the requisite measures to maintain the population of species of wild birds at a level which corresponds, in particular, to ecological, scientific, and cultural requirements while taking account of economic and recreational requirements.

3.4.6 The applicant submitted a Habitat Regulations Assessment Screening Report with the application [APP-059] that identified sites and species to be included in the assessment, of which

further consideration is given in Chapter 20 of this Report. In relation to SPAs and Ramsar sites these include:

(i) Sites designated for breeding seabird populations.
(i) Sites designated for breeding colonies.
(ii) Sites designated for wintering/passage seabird populations.

CONSERVATION AND SPECIES REGULATIONS 2010 (AS AMENDED) THE HABITATS REGULATIONS

CONSERVATION OF HABITATS AND SPECIES (AMENDMENT) REGULATIONS 2012

3.4.7 The Conservation of Habitats and Species Regulations 2010 is the principal means by which the Habitats Directive is transposed in England and Wales.

3.4.8 The Regulations apply in the terrestrial environment and in territorial waters out to 12 nm. The EU Habitats and Wild Birds Directives are transposed in UK offshore waters by separate regulations – The Offshore Marine Conservation (Natural Habitats &c.) Regulations 2007 (as amended).

3.4.9 The Conservation of Habitats and Species (Amendment) Regulations 2012 amend the Habitats Regulations. They place new duties on public bodies to take measures to preserve, maintain and re-establish habitat for wild birds. They also make a number of further amendments to the Habitats Regulations to ensure certain provisions of Directive 92/43/EEC (the Habitats Directive) and Directive 2009/147/EC (the Wild Birds Directive) are transposed clearly.

3.4.10 This has relevance to consideration of impacts on Sites of Special Scientific Interest (SSSIs) and on protected species and habitats.

3.4.11 The Terrestrial and Freshwater Ecology Chapter of the applicant's ES provides a list of statutory designated sites [APP-095] that are located within 1.5km of the onshore development area.

3.4.12 Further consideration is given to these matters in Chapter 6 of this Report

OFFSHORE MARINE CONSERVATION (NATURAL HABITATS, ETC.) REGULATIONS 2007 (AS AMENDED) (THE 2007 OFFSHORE REGULATIONS)

OFFSHORE MARINE CONSERVATION (NATURAL HABITATS ETC.) (AMENDMENT) REGULATIONS 2012

3.4.13 The Offshore Marine Conservation (Natural Habitats, etc.) Regulations 2007 (as amended) transpose Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (Habitats Directive) and Council Directive

79/409/EEC on the conservation of wild birds (Wild Birds Directive) into national law. They came into force on 21 August 2007. These regulations apply to the UK's offshore marine area which covers waters beyond 12 nm, within British Fishery Limits and the seabed within the UK Continental Shelf Designated Area. The Habitats Regulations form the legal basis for the implementation of the Habitats Directive and Birds Directive in terrestrial areas of the UK and territorial waters out to 12 nm.

3.4.14 The Offshore Habitats Regulations fulfil the UK's duty to comply with European law beyond inshore waters and ensure that activities regulated by the UK that have an effect on important species and habitats in the offshore marine environment can be managed. Under the Regulations, any competent authority has a general duty, in the exercise of any of their functions, to have regard to the EU Habitats and Wild Birds Directives.

3.4.15 The Offshore Marine Conservation (Natural Habitats, etc.) (Amendment) Regulations 2012 came into force on 16 August 2012.They amend the 2007 Offshore Regulations. They place duties on competent authorities in relation to the offshore marine area, to take steps to meet the objective of preserving, maintaining and re-establishing habitat for wild birds, and use all reasonable endeavours to avoid any pollution or deterioration of habitats for wild birds. They also provide for a duty on the Secretary of State to take such steps to encourage research and scientific work relating to the offshore marine area as she considers necessary for the purpose of the protection, management and use of wild bird populations.

3.4.16 Further consideration is given to these matters in Chapter 6 of this Report.

WATER FRAMEWORK DIRECTIVE

3.4.17 On 23 October 2000, the Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy or, in short, the EU Water Framework Directive (the WFD) was adopted.

3.4.18 The Directive was published in the Official Journal (OJ L 327) on 22 December 2000 and entered into force the same day. Some amendments have been introduced into the Directive since 2000[1].

3.4.19 Twelve "Water notes" which intend to give an introduction and overview of key aspects of the implementation of the Water Framework Directive are available to download.[2]

[1] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:02000L0060-20090625:EN:NOT

3.4.20 NPS EN-1 at paragraph 5.15.3 states that an ES should describe:

"*Existing physical characteristics of the water environment (including quantity and dynamics of flow) affected by the proposed project and any impact of physical modifications to these characteristics; and any impacts of the proposed project on water bodies or protected areas under the Water Framework Directive*."

3.4.21 The applicant describes and justifies their water quality data in ES Chapter 6 Offshore Water Quality [APP-115]. The Panel has given further consideration to these matters in the Drainage and Water Quality Chapter of this Report.

EUROPEAN MARINE STRATEGY FRAMEWORK DIRECTIVE

3.4.22 The Marine Strategy Framework Directive (MSFD) forms the environmental pillar of the Integrated European Marine Policy which aims to provide a coherent legislative framework for the joined-up governance of the marine environment. It sets a primary aim of achieving 'good environmental status' of European Seas by 2020.

3.4.23 The MSFD is transposed into UK legislation through the Marine Strategy Regulations 2010. Key requirements of the legislation are the:

"*establishment of a monitoring programme to measure progress towards Good Environmental Status (as defined by 11 high level descriptors) by July 2014 and; establishment of a programme of measures for achieving Good Environmental Status by 2016."*

3.4.24 The Panel has therefore had regard to the MSFD in its examination of the application.

3.5 OTHER LEGAL AND POLICY PROVISIONS

NATIONAL POLICY AND LEGISLATION

3.5.1 The National Planning Policy Framework (NPPF) does not contain policies specific to NSIPs, but does re-affirm the requirement in PA2008 that NSIPs should be determined in accordance with the PA2008 and relevant NPS. The NPPF however may be considered as a matter both important and relevant to the application, as set out in NPPF paragraph 3. Several core principles set out in the NPPF are relevant, including the importance of sustainable growth and development, and of preserving the natural and built environment.

[2] http://ec.europa.eu/environment/water/participation/notes_en.htm

3.5.2 The NPPF was published after the 2011 Scoping Opinion on the application was issued [APP-314] and before the application was made in April 2014, and it is considered where relevant in subsequent chapters.

3.5.3 The National Planning Policy Guidance (NPPG) was published on 6 March 2014 and cancels and replaces various circulars and guidance documents. The publication of the NPPG occurred during the examination and therefore the NPPG is capable of being an important and relevant consideration.

3.5.4 Other relevant Government policy has been taken into account by the ExA, including -

- Energy White Paper: Meeting the Challenge (May 2007);
- UK Low Carbon Transition Plan (2009);
- National Strategy for Climate and Energy (July 2009);
- UK Renewable Energy Strategy (July 2009);
- Planning our electric future: a White Paper for secure, affordable and low carbon electricity (July 2011);
- The National Infrastructure Plan 2011;
- The National Infrastructure Plan update 2012, and
- The National Infrastructure Plan 2013.

INTERNATIONAL POLICY

3.5.5 The UK government is a State Party to the United Nations Educational, Scientific and Cultural Organisation (UNESCO) concerning protection of the World Cultural and Natural Heritage 1972 (known as the World Heritage Convention). The World Heritage Convention was ratified by the UK in 1984. The Dorset and East Devon Coast World Heritage Site (Jurassic Coast WHS) was inscribed on the World Heritage List in 2001. The governing document for WHSs is the World Heritage Convention signed by 190 countries.

3.5.6 Article 4 of the World Heritage Convention places a duty on each State Party to; "*ensure the identification, protection, conservation, presentation and transmission to future generation of the cultural and natural heritage on its territory.*" The Panel has given due consideration to the obligations under the Convention in Chapters 9 and 21.

THE NATIONAL PARKS AND ACCESS TO THE COUNTRYSIDE ACT 1949

3.5.7 The Act provides the framework for the establishment of National Parks and Areas of Outstanding Natural Beauty (AONBs). It also establishes powers to declare National Nature Reserves (NNRs), to notify Sites of Special Scientific Interest (SSSIs) and for local authorities to establish Local Nature Reserves (LNRs).

3.5.8 A National Park has statutory protection in order to conserve and enhance the natural beauty of its landscape. National Parks are designated for their landscape qualities. The purpose of designating a National Park is to conserve and enhance its natural beauty; including landform, geology, plants, animals, landscape features and the rich pattern of human settlement over the ages.

3.5.9 Section 5 of the Act requires that -

(1) The provisions of this Part of this Act shall have effect for the purposes of:

(a) conserving and enhancing the natural beauty, wildlife and cultural heritage of the areas specified in the next following subsection; and

(b)promoting opportunities for the understanding and enjoyment of the special qualities of those areas by the public.

3.5.10 The Panel has given consideration to the effects of the proposed application on the New Forest National Park, both in terms of landscape value and ecological matters. The biodiversity matters and the landscape value issues are detailed in Chapters 6, 7 and 8 of this Report.

3.5.11 In relation to the application it is noted that part of the onshore cable route falls within the boundaries of the New Forest National Park. The New Forest National Park Authority (NFNPA) is the statutory planning authority for the National Park area and was a party in the examination.

THE WILDLIFE AND COUNTRYSIDE ACT 1981 (AS AMENDED)

3.5.12 The Wildlife and Countryside Act 1981 is the primary legislation which protects animals, plants, and certain habitats in the UK. The Act provides for the notification and confirmation of SSSIs. These sites are identified for their flora, fauna, geological or physiographical features by the countryside conservation bodies (in England, Natural England). The Act also contains measures for the protection and management of SSSIs.

3.5.13 The 'Terrestrial Ecology' section of the applicant's ES provides a list of statutory designated sites at Table 10.6 [APP-096]. It lists the SSSIs that are located within the proposed onshore development area.

3.5.14 The impact on SSSIs and protected species and habitats is considered in detail in Chapter 6 of this Report.

THE COUNTRYSIDE AND RIGHTS OF WAY ACT 2000

3.5.15 The Countryside and Rights of Way Act brought in new measures to protect Areas of Outstanding Natural Beauty (AONBs), with new duties for the boards set up to look after AONBs. These included meeting the demands of recreation, without compromising the original reasons for designation and safeguarding rural industries and local communities.

3.5.16 The role of local authorities was clarified, to include the preparation of management plans to set out how they will manage the AONB asset. There was also a new duty for all public bodies to have regard to the purposes of AONBs. The Act also brought in improved provisions for the protection and management of SSSIs.

3.5.17 This is relevant to the examination of effects on, and mitigation in relation to, impacts on Dorset and Isle of Wight AONB, which the applicant lists in the 'Seascape, Landscape and Visual' section of the ES [APP-079], as affected by the proposed development. The impacts on the AONB will be further considered under landscape and visual effects in Chapter 7 of this Report.

NATURAL ENVIRONMENT AND RURAL COMMUNITIES ACT 2006

3.5.18 The Natural Environment and Rural Communities Act (NERC) made provision for bodies concerned with the natural environment and rural communities, in connection with wildlife sites, SSSIs, National Parks and the Broads. It includes a duty that every public body must, in exercising its functions, have regard so far as is consistent with the proper exercising of those functions, to the purpose of biodiversity. In complying with this, regard must be given to the United Nations Environment Programme Convention on Biological Diversity of 1992.

3.5.19 This is of relevance to biodiversity, biological environment and ecology and landscape matters in the proposed development, reported in Chapters 6, 7 and 8 of this Report.

3.6 HABITAT REGULATIONS ASSESSMENT (HRA)

3.6.1 Section 4.3 of EN-1 specifies the approach that needs to be taken by the decision-maker in relation to the Habitats and Species Regulations 5, which implement the relevant parts of the Habitats Directive and the Birds Directive in England and Wales.

3.6.2 HRA was fully engaged in this examination by virtue of the potential impacts on international and European nature conservation designated sites, and the applicant submitted a HRA Screening Report [APP-059] and HRA Report [APP-060].

3.6.3 This matter is considered in detail in Chapter 20 of this report, and section 20.5 explains how agreement was reached on which European sites qualified under HRA.

3.7 TRANSBOUNDARY EFFECTS

3.7.1 Regulation 24 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2009 (EIA Regs), transposes Article 7 of EU Directive 85/337/EEC (as amended) into UK Law as it applies to the PA2008 regime. On the basis of the information available from the applicant, the Secretary of State for Communities and Local Government (SSCLG) was of the view that the proposed development was likely to have significant effects on the environment in another European Economic Area (EEA) State.

3.7.2 In reaching this view the SSCLG applied the precautionary approach (as explained in the Planning Inspectorate Advice Note 12: Transboundary Impacts Consultation). Transboundary issues consultation under Regulation 24 of the EIA Regulations was therefore considered necessary in relation to Belgium, France, Spain and The Netherlands: SACs (marine mammals), Natura 2000 sites (birds), commercial fisheries, and shipping and navigation.

3.7.3 In accordance with Regulation 24 of the EIA Regulations, the Planning Inspectorate (on behalf of the SSCLG) published a notification in the London Gazette on 7 August 2012 which provided information to EEA States, including Belgium, The Netherlands, France and Spain, about the proposed project and its likely significant effects. The EEA States were asked to indicate by 18 September 2012 whether or not they wished to participate in the procedure for examining and determining the application under PA2008 and Regulation 24 of the EIA Regulations.

3.7.4 Letters were also sent to the relevant bodies in the countries listed above. A reply was received from The Netherlands stating that they did not wish to participate in the procedure for examining the application for the proposed development, should it proceed to the application stage and be accepted for examination.

3.7.5 In accordance with its notification letter to the EEA States, the Secretary of State assumed that the States who did not respond to the notification letter did not wish to participate in the procedure under Regulation 24 of the EIA Regulations in relation to the proposed development.

3.7.6 Although France had been notified of the proposed wind farm by the Secretary of State under Regulation 24 of the EIA Regulations, the ExA also specifically invited France to participate in the examination [PD-004]. This was because of the proximity

of the proposed wind farm to France and because the HRA Screening Report [APP-059] identified a number of European sites in France with gannets as qualifying features and these were within the gannet mean max foraging range from the proposed wind farm. The ExA also directed a first written question to the EEA State to give them opportunity to comment on potential impacts of the proposed wind farm. No response was received at any point during the examination.

3.7.7 As a result of the consultation, the Secretary of State determined not to undertake Stage 2 consultation with the notified States listed above.

3.7.8 On the basis of the information available from the applicant, the Panel is of the view that the proposed development is unlikely to have significant effects on the environment in another EEA State.

3.8 LOCAL IMPACT REPORTS

3.8.1 In deciding the application the Secretary of State, under s104(2)(b) PA2008, must have regard to any Local Impact Report (LIR).

3.8.2 There is also a requirement under s60(2) of PA2008 to give notice in writing to each local authority falling under s56A inviting them to submit a LIR. This notice was given via the Rule 8 letter on 22 September 2014 [PD-005].

3.8.3 LIRs were submitted by:

- Borough of Poole [REP-2675];
- Bournemouth Borough Council [REP-2676];
- Christchurch Borough Council [REP-2677];
- Dorset County Council [REP-2678];
- East Dorset District Council [REP-2679];
- Hampshire County Council [REP-2680];
- Isle of Wight Council [REP-2674];
- New Forest District Council [REP-2681] ;
- New Forest National Park Authority [REP-2682];
- Purbeck District Council [REP-2683] ;

3.8.4 The Panel has had regard to all matters raised in the LIRs, as referred to and considered in the relevant sections of this Report.

3.9 THE DEVELOPMENT PLAN

3.9.1 Paragraph 4.1.5 of NPS EN-1 indicates that the decision-maker may consider Development Plan Documents (DPDs) or other documents in the Local Development Framework (LDF) both important and relevant to decision-making.

3.9.2 Paragraph 3.4.5 of ES Volume A Chapter 3 Legislation and Policy [APP-064] confirms that the onshore cable route falls under the

jurisdiction of Christchurch Borough Council, East Dorset District Council, New Forest National Park Authority, New Forest District Council, Hampshire County Council and Dorset County Council. Each of the LIRs from the councils above refer to relevant local plans and strategies, which comprise:

- Christchurch and East Dorset Local Plan Part 1 – Core Strategy (2014).
- The saved policies of The Borough of Christchurch Local Plan (2001).
- The saved policies of The East Dorset District Local Plan (2002)
- Poole Core Strategy 2009.
- The Bournemouth Local Plan: Core Strategy, 2012.
- Bournemouth Town Centre Area Action Plan.
- New Forest District Local Plan Part1: Core Strategy (adopted 2009).
- New Forest District Local Plan Part 2: Sites and Development Management (adopted 2014).
- Purbeck Local Plan Part 1 (adopted 2012).
- The Island Plan Core Strategy (adopted 2012).
- The Hampshire Minerals and Waste Plan (2014).

3.9.3 Strategies and management plans referred to in the LIRs comprise:

- The Dorset AONB Partnership Management Plan (2014-2019).
- Transforming Dorset: The Strategic Economic Plan (SEP) (2014/15-2021).
- European Structural and Investment Funds Strategy (ESIF).
- Dorset Coast Strategy (2011-2021).
- Dorset Sustainable Community Strategy.
- Bournemouth, Dorset and Poole Renewable Energy Strategy.
- The Shoreline Management Plan.
- Dorset Biodiversity Strategy.
- Dorset Local Enterprise Partnership: Dorset European Structural and Investment Fund Strategy (ESIF) 2012-2020 (May 2014).
- Purbeck Economic Development Strategy (adopted 2013).
- The World Heritage Site Management Plan.
- Isle of Wight management plan 2014 to 2019.

3.9.4 Where relevant the Panel took these documents into consideration.

THE SECRETARY OF STATE'S POWER TO MAKE A DCO

3.9.5 The Panel was aware of the need to consider whether changes to the application meant that the application had changed to the point where it was a different application and whether the Secretary of State would have power therefore under s114 of

PA2008 to make a DCO having regard to the development consent applied for. This matter is considered above in Chapter 2. In addition the Panel concludes that all the changes proposed to the DCO by the applicant during the course of the examination were minor and the Panel did not regard them as engaging s114 of the Act.

4 PRINCIPAL ISSUES, ADEQUACY OF THE ENVIROMENTAL STATEMENT AND CONSIDERATION OF ALTERNATIVES

4.0 IDENTIFICATION OF PRINCIPAL ISSUES

4.0.1 The Panel has considered all the application documents, including the Environmental Statement (ES), supporting information and representations which are important and relevant.

4.0.2 The Panel made an initial assessment of the principal issues in accordance with s88(1) of PA2008. These were issued to all interested parties and the applicant, together with the Rule 6 letter giving notice of the Preliminary Meeting [PD-003].

4.0.3 The principal issues set out in Annex C of the Rule 6 letter were as follows:

- DCO, Assessment Approach and Policy Background
- Biodiversity, Biological Environment and Ecology
- Commercial Fisheries and Fishing
- Marine and Coastal Physical Processes: Sediment Dynamics, Waste and Debris
- Noise, Vibration, Electro-magnetic Field and Health Impacts
- Offshore Water Quality, Offshore and Onshore Air Quality
- Operational and Navigational Safety
- Offshore and Onshore Heritage and Built Environment including World Heritage Site (WHS)
- Landscape, Seascape, Visual Impacts
- Design
- Highways, Traffic, Transportation
- Drainage and Water Supply
- Socio – Economic Impacts
- Transboundary Impacts
- Compulsory Powers

4.0.4 The prospect of including sense of place and policy issues as principal considerations was raised at the Preliminary Meeting by interested parties and persons (IPs). The Panel noted the points raised but did not identify them as principal issues to be considered separately in the examination, as the matters fell within one or other of the topic headings identified.

4.0.5 The key issues to emerge from the submissions made are covered by the topics listed above and informed the conduct of the examination. To avoid repetition, the DCO and policy background are either considered within the listed topics or addressed elsewhere in the Report. The 'socio-economic impact' chapter includes matters relevant to tourism. Recreation, onshore landscape and visual impact, and World Heritage Site are covered as separate topics.

4.0.6 In its representation at Deadline VII the Poole and Christchurch Bays' Association (PCBA) expanded on a theme it raised at the issue-specific hearing on 22 January. Its representation concerned the status of the Navitus Bay project within the context of what it referred to as the 'Government's Round 3 Offshore Wind Energy Programme' and the effectiveness of the programme against NPS objectives. However, the matter is not relevant to consideration of the acceptability of the Application Project or the Turbine Area Mitigation Option (TAMO. Equally, IPs seeking to question the need for offshore wind farms to meet the Government's renewable energy targets are irrelevant to the Panel's considerations, as the matters raised relate to the merits of policy set out in national policy statements (s87(3)(b) of the PA2008). The climate change and renewable energy benefits identified in a number of IPs' submissions have not been set out in any detail in the Report, as the issues reflect the overarching objectives of NPSs on renewable energy.

4.0.7 Chapters 5 to 20 of this Report comprise the Panel's detailed consideration of each of the subject matters identified above in relation to the Application Project and the Turbine Area Mitigation Option (TAMO). The Panel's findings and conclusions are based on the relevant legal and policy framework, plus consideration of issues arising from Local Impact Reports (LIRs), written submissions and those made orally at the hearings, as required by s104 of PA2008.

4.1 THE PRINCIPLE OF THE DEVELOPMENT

4.1.1 The application qualifies as a NSIP by virtue of s15 of PA2008, and is designed to meet the policy objectives specified in NPS EN-1, EN-3 and EN-5, as set out in paragraph 3.1.1.

4.1.2 The applicant's Planning Statement [APP-321] summarises the case for the Application Project as follows:

- The significant benefits of the Project include the important contribution it can make to the mitigation of climate change, delivery of energy security and the delivery of urgently required new electricity generating capacity.
- The Project could contribute some 4.5% of the UK's urgent need to replace 22GW of existing electricity generation infrastructure.
- Technical, economic and environmental considerations have been evaluated to enable the viable electricity generating Project to be located within Zone 7 of the nine offshore wind farm zones within the national plan/programme Round 3.
- The majority of assessments presented in the ES conclude that there will be no significant environmental impacts on the relevant receptors.

- In some limited circumstances, including the seascape, landscape and visual impacts of the offshore wind turbines, some localised significant impacts are predicted.
- Through reductions in the scale of the Project (prior to submission of the application), and changes to the Project boundaries, NBDL has limited these impacts so far as is reasonably practicable.
- Adequate safeguards have been incorporated within the Project to minimise and control impacts on identified receptors.
- Grant of development consent for the Project would not lead to a breach of any international or statutory obligation and would not undermine the integrity of the designated areas within which some locally significant impacts are predicted.
- Grant of development consent for the Project would be in accordance with advice in NPS EN-1, EN-3 and EN-5, with the Marine Policy Statement, with the policies of the Development Plan Frameworks for the Development Area of local planning authorities and with all other relevant policies.
- The significant benefits of the Project would outweigh the identified adverse impacts and there are no other conditions prescribed for determining the application other than in accordance with the relevant NPSs.

4.1.3 While the Application Project remains the applicant's preferred scheme, the TAMO is intended to enable the Secretary of State to approve a reduced number of turbines if that is considered necessary as a matter of planning judgement. The case for the reduced option can be summarised as follows:

- The mitigation option is primarily proposed to reduce the significant impacts on seascape, landscape and visual receptors but will benefit most of the other offshore EIA topics.
- The reduced offshore impacts are detailed in the applicant's written response to Deadline IV [Rep-3313] and range from reductions in impacts on noise, ornithology, marine mammals, fish, shellfish, WHS and navigation.
- The onshore environment would benefit from reduced effects as the number of cable circuits would be reduced to a maximum of four (instead of six) and working widths could be reduced to 34m (from 40m).
- While the level of public benefit that would arise from the additional generating capacity would be greater with the Application Project, that does not alter the extent to which need is established for the TAMO for its renewable generating capacity.

4.1.4 The applicant emphasised that the urgent need for new renewable energy generating capacity is established by NPS EN-1. The need related to all modes of generating capacity covered by the NPS, which would include the Application Project and the

TAMO. Both are nationally significant projects to which the NPS applies and need is established by national policy in both cases.

Mitigation measures

4.1.5 In addition to the TAMO, possible mitigation measures were considered throughout the examination. The Schedule of Mitigation prepared by the applicant and submitted with the application, comprising document APP-315, identified securing mechanisms in the DCO. Additional measures were proposed as a result of the examination. The note on 'Requirement and Conditions in the draft DCO' [REP-3315] provided details of the plans and protocols to be deployed to capture the range of measures proposed.

4.1.6 The completed development consent obligations in the form of an agreement and a unilateral undertaking [REP-4083 & 4084] contain provisions to compensate and/or mitigate the impacts of the proposal and is applicable to the Application Project and the TAMO. The Panel has addressed the obligations in the relevant chapters of this Report.

4.2 ENVIRONMENTAL STATEMENT AND ENVIRONMENTAL IMPACT ASSESSMENT (EIA)

ADEQUACY OF THE ENVIRONMENTAL STATEMENT

4.2.1 Section 4.2 of NPS EN-1, the Overarching National Policy Statement for Energy, sets out the need for and the tests of adequacy of the Environmental Statement.

4.2.2 The applicant submitted a substantial ES [App-062 to APP-312] plus a non-technical summary [App-313]. During the examination a large amount of supplementary information was submitted, including visualisations from additional viewpoints and comparison visualisations [REP-3228 to 3231]. Challenge Navitus described it as "…*a confusing patchwork of the original application and numerous updates and additions*."[REP-4019]. The Panel agreed and, in response to the Panel's request, the applicant submitted a schedule [REP-3676], to signpost the changes or additions to the ES.

4.2.3 As the TAMO scheme would fall within the scope of the design and ES envelope of the submitted application, the Panel did not consider it necessary for a new ES to be submitted. Nevertheless, to enable a full assessment of the TAMO to be carried out, further information relating to that option was requested in the second round of questions [PD-011].

4.2.4 Much of the detail in the ES was challenged. However, given the extent of information supplied with the original ES, as well as the

additional material presented during the examination, the Panel considers that the overall package is adequate for the purposes of this Report and recommendations, and in turn for the Secretary of State to make her decisions regarding the Application Project and the TAMO.

4.3 CONSIDERATION OF ALTERNATIVES

THE POLICY CONTEXT AND BACKGROUND

4.3.1 Section 4.4 of EN-1 sets out the requirement to consider alternatives in relation to the ES and the Habitats Regulations. EN-1 paragraph 4.4.1 obliges applicants to include in their ES, as a matter of fact, information about the main alternatives they have studied.

4.3.2 EN-1 also expects potential alternatives to a proposed development to be, wherever possible, identified before an application is made. However it goes on to say that; "[*f*]*rom a policy perspective this NPS does not contain any general requirement to consider alternatives or to establish whether the proposed project represents the best option*."

4.3.3 EN-3 section 2.6 lists a range of factors influencing site selection and design, and applicants are expected to set out how they have drawn on the Government's Offshore Energy Strategic Environmental Appraisal (OESEA). Water depth, bathymetry and geological conditions are recognised as important considerations for the selection of sites and affect the design of the foundations of the turbines, the layout of turbines within the site and the siting of the cables exporting the electricity. Other statutory or policy factors that might potentially require alternatives to be considered could include habitats considerations, biodiversity or geological conservation (EN-1 paragraph 5.3.7), flood risk (in relation to the sequential and exception tests EN-1 paragraphs 5.7.13 and 5.7.16) and landscape impacts upon a National Park (EN-1 paragraph 5.9.10).

4.3.4 EN-5 identifies a number of factors in relation to new electricity network infrastructure; these include location of the existing network, land ownership and environmental considerations such as noise, landscape and visual impact and biodiversity.

4.3.5 The offshore and onshore alternatives have been considered in ES Volume B Chapter 4 [APP-070] and Volume C Chapter 4 [APP-090], respectively.

4.3.6 A number of representations deal with the choice of location for the turbine array and its distance from the mainland and Isle of Wight coastlines. Although these matters are concerned more with site selection and design of the offshore wind farm, they are nevertheless important considerations in the 'offshore alternatives' debate and we report on it below.

4.3.7 Specific issues in relation to habitats and landscape and visual impacts upon the New Forest National Park (NFNP) are considered later in this Report but the applicant's consideration of onshore alternative cable routes and sub-station location are considered below. The choice of onshore cable route and location of the sub-station raised a variety of concerns, so it is appropriate to consider the extent to which the applicant explored other options.

4.3.8 The Habitats Regulations require the competent authority (in this case the Secretary of State as decision-maker) before authorising a project likely to have a significant effect on a European site "*to make an appropriate assessment of the implications for that site in view of that site's conservation objective*s." The award of Zone Development Agreements (ZDAs) amounts to a plan within the meaning of the Offshore Marine Regulations Conservation (Natural Habitats, &c.) 2007.

4.3.9 The applicant's HRA Report [APP-060] states that an assessment of alternatives has not been addressed as part of the Project, as the applicant does not intend to rely on arguments regarding Imperative Reasons of Overriding Public Interest (IROPI) [paragraph 1.2.6. APP-060]. The applicant has relied on this approach on the basis that the Project would not have a significant adverse effect on any European site and therefore alternatives did not need to be considered. The matter was tested at examination and our findings are reported in Chapter 20 of this Report.

OFFSHORE ALTERNATIVES

The applicant's site selection and turbine layout design process

4.3.10 In this section we have confined our considerations to the turbine layout part of the offshore elements of the Project, as the extent and location of the offshore 'associated development' are determined by the positioning of the turbine array.

4.3.11 ES Volume B Chapter 4 'Offshore Alternatives' [APP-070] sets out the site selection and design evolution process undertaken for the offshore element of the Application Project. It describes the Crown Estate's zone selection methodology, the iterative process leading to identification of the Round 3 zones and demarcation of Zone 7, within which the Application Project is located. As the competent authority for the Round 3 plans, the Crown Estate undertook a full HRA at a planning level including an Appropriate Assessment before awarding the Zone Development Area to the applicant. The exclusions and restrictions shaping the extent and location of Zone 7 were also documented in the ES Chapter.

4.3.12 The applicant drew attention to the suitability of zones for offshore wind farms in economic, environmental and technical respects as assessed by DECC through the Offshore Energy Strategic Environmental Assessment (OSEA) process. The most recent OESEA published in 2011 (OESEA2) and the previous 2009 OESEA (OESEA1) were said to be the subject of full public consultations and OESEA2 allowed for an installed capacity of up to 33 GW of new offshore wind capacity in the UK Renewable Energy Zone. The plan for deployment was adopted by Government in 2011. The applicant accepted that the deployment was subject to spatial considerations and a requirement to assess and mitigate potential impacts at project level.

4.3.13 During the more detailed Zone Appraisal and Planning stage the engineering and environmental constraints generated a series of spatial considerations and informed identification of the Original Turbine Area within Zone 7. The applicant explained that the southern boundary of the site was constrained by the presence of the Wight Barfleur SAC.

4.3.14 The Original Turbine Area was characterised by a maximum installed capacity of 1,200 MW and up to 333 turbines. In 2012 a boundary change led to reduction in the turbine area (known as the PEI3[3] Turbine Area) to 218 turbines [Figure 4.16, APP-070]. The primary driver for the change was to minimise potential impacts on shipping vessels accessing the Solent from the west with impacts on seascape, landscape and visual receptors also being a primary consideration. The design envelope parameter for PEI3 reduced the uncertainty in impact predictions and provided a basis for stakeholder consultation.

4.3.15 Feedback from the s42 consultation in September 2013 and the findings of the EIA resulted in a further reduction in the size of the turbine area in February 2014. The reduced scheme formed the basis for the Application Project [Figure 4.17, APP-070]. The change was made principally for reasons of seascape, landscape and visual receptor impacts. At that time the scheme was considered by the applicant to represent the greatest impacts reduction possible while maintaining an economically viable project. Subsequently, and at Deadline III stage, the applicant introduced a further design change in the form of the TAMO.

4.3.16 The Panel's second round of questions [PD011] further enquired of the applicant what the implications would be for the viability of the project if the exclusion zone were to be extended to 12 nm [PD-011]. The response [REP-3643] indicated that the turbine

[3] Preliminary Environmental Information

area would reduce to 46 m^2 (290MW) for a true 12 nm buffer from the coastline or 20 km^2 (126 MW) for the 12 nm limit of territorial sea [REP-3643, Figure showing Turbine Area and 12 nm limit]. No further capacity could be gained by moving further south, due to the presence of the Wight Barfleur SAC. The applicant anticipated that a project of such reduced scales and outside the 12 nm buffer may not be viable, due to a range of variable factors and same fixed costs as a larger scheme for a lower output.

Panel's reasoning and conclusion on offshore alternatives

4.3.17 There was criticism from Interested Parties (IPs) of the zone identification process. The criticisms ranged from lack of consultation on the Round 3 plan [REP-2936], limitation of the identification method [REP-2936] and flaws in the process as the Crown Estate did not take account of local responses to the 2009 OESEA consultation exercise [REP-2950]. It was said that the work was carried out a national strategic level and did not engage or utilise local knowledge or skills base. Furthermore, the zone boundaries were finalised in July 2009 - a month after the consultation responses to OESEA2 were published. It was claimed that flaws in the Round 3 and Zone selection processes brings into question the basis for identification of the Project development areas.

4.3.18 The Panel agrees with the claim made by some IPs [REP-3005, for instance] that the ES Chapter on offshore alternatives is largely an account of the Round 3 selection process and the methodology deployed. It further describes the iterative processes that led to identification of Zone 7 and development of the Application Project. The document is by no means an exposition on alternative locations studied.

4.3.19 However, Zone 7 had already been identified as part of the Round 3 offshore wind leasing programmes, in accordance with the requirements of Government policy, plans and associated SEA work. In other words, the work in selecting zones suitable for offshore wind development had already been done at UK level. For the developer to consider alternatives to Zone 7 under those circumstances would have been contrary to the EN-1 (paragraph 4.4.30) principle of carrying out such considerations in a proportionate manner.

4.3.20 Another factor to bear in mind is that Zones have been assessed as part of a plan, with their own alternatives. So, alternatives at project level should fit within the plan parameters. The methodology/process used to determine the zones fall outside the remit of this Panel's considerations.

4.3.21 As for alternatives within Zone 7, the ES Chapter on 'Offshore Alternatives' details the process by which the Original Turbine

Area was identified with reference to engineering and environmental considerations, as well as consultations, and then scaled down to reduce impacts. The information in the ES along with the scaling down and reshaping of the turbine area from the Original Turbine Area, to PEI3, the Application Project and the TAMO provides sufficient evidence of the applicant's willingness to consider options and respond to consultations. It may not be to the extent wished for by a large number of IPs, but goes a long way to demonstrate that options were explored, albeit within the parameters of Zone 7.

4.3.22 In response to the TAMO, a number of IPs pointed to the applicant's reluctance, until recently, to reduce the turbine area. Indeed, in responding to the Panel's line of questioning at the first round of questions [PD-006], the applicant explained that reduction in the number of turbines would not be forthcoming, as it would have a direct impact on viability and generating capacity [REP-3018, paragraphs 1.12.1 to 1.12.6]. Nevertheless, in November 2014 the TAMO was introduced into the examination with reductions in the numbers in the range of turbines and in output.

4.3.23 The matters influencing the decision to develop the TAMO were articulated in writing by the applicant at Deadline VI stage [REP-3643] and examined at the issue-specific hearing held on 22 January 2015. Essentially, further evaluation and a range of factors led the applicant to the conclusion that it was possible for a reduced capacity layout to achieve the same level of viability as the Application Project. The Panel's question "*whether it was possible that an offer to reduce the number of turbines would be made*" was cited as one of the factors leading to submission of the TAMO to the examination.

4.3.24 The Panel sees no reason to dispute the applicant's reasons for latterly taking a different view in relation to the feasibility and viability of the reduced option. The TAMO was accepted into the examination for reasons explained in Chapter 2.

4.3.25 In line with a number of IPs' observations we also explored the question why the applicant chose not to follow the OESEA2 recommendation to site the "…*bulk of this new generation capacity away from the coast, generally outside 12 nautical miles (22km)*." The applicant's detailed responses were given at the issue-specific hearing held on 25 November 2015 and articulated in writing [REP -3176 and REP-3313].

4.3.26 As noted by the applicant, the purpose of OESEA was to inform decisions on the licensing/leasing programme, not to shape decision-making, which is subject to a bespoke policy regime (NPS). Both OESEA1 and OESEA2 recognise the relative sensitivity of multiple receptors and coastlines and refer to the 12 nm buffer. Recommendation 4 of the OESEA2 post-consultation

report states that "…*the recommendation is not intended to exclude OWF from this area, since there may be scope for a further offshore wind development within this area"* and that*;* "[t]*he environmental sensitivity of coastal areas is not uniform, and in certain cases new offshore wind farm projects may be acceptable closer to the coast*." On the other hand, it also recognises that "*siting beyond 12 nm may be justified for some areas/developments*" adding the proviso: *"detailed sites specific information gathering and stakeholder consultation is required before the acceptability of further wind farm projects close to the coast can be assessed."* In other words, a detailed site-specific assessment is needed in each case.

4.3.27 OESEA2 and EN-1/EN-3 were developed around the same time (January 2011 and July 2011 respectively), and Round 3 sites were finalised in 2009. IPs therefore question the extent to which Government policy in the form of the NPS and development of the Round 3 programme took account of the OESEA2 information. However, while there is reference in OESEA1 to siting the new generation capacity outside the 12 nm distance (well away from the coast), it goes on to explain that the buffer zone is not intended as an exclusion zone.

4.3.28 It is not the Panel's intention to question why the NPS did not reflect the 12 nm OESEA recommendations, but notes that a request to place a block on licensing within that range was rejected in the post-consultation report to OESEA2 [REP-3313]. The fact is that Zone 7 has been identified in accordance with due processes, albeit preceding completion of the OESEA2. That much of it (64% in the applicant's evidence) lies within the 12 nm distance from the coast is neither here nor there, provided that development within that zone is subject to 'detailed site-specific information gathering', 'stakeholder consultation' and a site-specific assessment of the project to establish its acceptability. Evolution of the Application Project through evaluation, extensive engagement with a wide range of stakeholders and the examination fulfil those requirements.

4.3.29 We can see no merit in the proposition that the application fails to accord with Government policy solely on the basis of not falling within 12 nm. Equally, as agreed by the applicant in response to the Panel's questioning, an area identified for licensing purposes does not necessarily make it acceptable in decision-making terms. There still remains a requirement to assess and mitigate potential impacts at project level. The examination and this Report form part of that process.

4.3.30 NPS EN-1 does not contain any general requirement to consider alternatives or establish whether the proposed project represents the best option. Nevertheless, the applicant has included information in the ES about the main alternatives studied, albeit within the parameters of Zone 7 and considered alternatives

where required by policy or legislation. The Panel is satisfied that the requirements to consider offshore alternatives have been fulfilled to the extent expected in NPS.

ONSHORE ALTERNATIVES

The applicant's selection process

4.3.31 ES Volume C Chapter 4 'Onshore Alternatives' [APP-090] provides details of the main alternatives studied by the applicant and the reasons for the choices made in relation to the onshore element (i.e. the Cable Landfall, Onshore Cable Corridor and Onshore Substation) of the Application Project. Nevertheless, the Panel pressed the applicant (at the issue-specific hearing and in the first round of questions) to explain the regard given to the New Forest National Park and the Dorset and Hampshire Green Belt in the site selection process.

4.3.32 The grid connection point is described as a key element of the onshore search process. Selection of a grid connection point is the responsibility of National Grid Electricity Transmission (NGET). NGET identified three existing substations at Chickerell, Fawley and Mannington [REP-2785, Appendix 1]. NGET conducts assessments on the technical and economic feasibility of various options before offering a specific location to a developer. As there were already substations in the locality with sufficient capacity to accommodate the demand, the applicant chose not to seek a greenfield site to locate a new substation with pylons and associated infrastructure. The applicant carried out further detailed feasibility studies into the three potential connection locations between mid-2010 and March 2011.

4.3.33 Of the three substations identified, Mannington (near Three Legged Cross) 20 km inland was selected. The substations at Chickerell and Fawley were discounted for the following reasons:

4.3.34 Chickerell:

- Environmental impact of the offshore cable corridor passing between two areas of dSAC.
- Lack of onshore cable corridor options.
- Lack of feasible onshore substation options.
- Significant upgrades at the National Grid substation.
- Engineering risks on the offshore export cable corridor was the main reason for rejecting this option. Unprecedented levels of anchoring and cable protection would be required, due to the significant lengths of hard bedrock assessed as 'extremely challenging'. Given the potential environmental impact there was no certainty that such a route could feasibly be constructed or consented.

4.3.35 Fawley:

- The entirety of the cable route to a new onshore substation and to the National Grid substation (approximately 20 km) would be within the New Forest National Park.
- Potential to require closure of the Western Solent while installing cables and the associated consenting concerns.
- Health and safety concerns relating to the closure requiring all vessels to divert around the Isle of Wight.
- Landfall designations include SPA, SAC, SSSI and Ramsar.
- The key reason was the engineering risks associated with laying cables between Hurst Point and the Isle of Wight, due to extreme changes in bathymetry, steep slopes, high currents and exposed bedrock. Lack of width to install six cables rendered the export cable option unviable.

4.3.36 Mannington presented the following risks:

- Consenting of a new onshore substation on Green Belt land.
- Part of the cable route passing through the New Forest National Park.
- Long onshore cable route with international, national and local environmental designations to overcome.
- Restricted landfall options, of which one was considered viable.

4.3.37 The applicant explained that the risks identified were not insurmountable. Impact on the National Park was considered to be less with the Mannington than the Fawley option, as with the latter the entire cable route and the substation would be within the National Park. The Dorset and Hampshire Green Belt is so extensive in the area that it could not be excluded from the search area. Locating a substation within the Green Belt was considered by the applicant as a significant consenting risk to be weighed against other constraints for the Chickerell and Fawley options.

4.3.38 With regard to choice of landfall, the applicant pointed to the key constraints of the built-up nature of the coast as well as natural features such as Hurst spit and estuaries. Of the five sites initially studied, Southbourne and Highcliffe Castle were discounted early on for engineering and environmental reasons. The possibility at Milford-on-sea was discounted, given the technical difficulties associated with significant bathymetric variation along the offshore export cable route.

4.3.39 The potential to avoid approximately 8-10 km of additional cable route, of which 4 km would be within the National Park, led to the applicant to continue assessing the Chewton Bunny landfall in 2011. The decision to remove the site from consideration was based on the findings that a trenchless installation may be feasible for three circuits but not six. Use of the site would also have had a potentially significant impact on adjacent properties, compared to other sites. Taddiford Gap (Barton-on-sea) was

regarded as the most optimal site, for a number of reasons, and identified as the landfall site.

4.3.40 At the outset the applicant committed to undergrounding of the onshore cables. Identifying the route of the Onshore Cable Corridor involved three stages of: identifying a search corridor; defining a cable route and identifying the cable corridor. The ES explained that the cable routes would need to cross the outer edges of the National Park whichever of the three landfalls of Milford, Chewton Bunny and Taddiford Gap were selected. The ES also described the applicant's commitment to measures minimising potential impacts. These include use of trenchless techniques, reinstating lost features and avoiding the New Forest SPA. Similarly, the objectives for siting the cable route is listed - these range from avoiding or minimising harm to designated areas, sensitive habitats and private properties to reducing engineering constraints.

4.3.41 Table 4.7 of the ES Chapter 4 on 'Offshore Alternatives' set out the key routing options considered as well as the rationale for discounting them. These included risks of going through potential mineral extraction sites, engineering difficulties, environmental and residential amenity concerns. The ES explained that the 40m working width applied for in the Application Project was identified having regard to: the six cable circuits; separation distance between circuits and to allow for a temporary haul road as well as adequate working/storage space during construction. It was said that the width of the cable corridor was comparable with other offshore wind projects and was necessary in the interest of works being carried out in a timely and efficient manner [REP-3313].

Issues arising from other representations

4.3.42 The proposed cable route would run through 6 km of the southern part of the National Park. The New Forest National Park Authority (NFNPA) emphasises in its submissions [REP-3348] that all of the areas within the New Forest National Park boundary merit inclusion and are afforded the highest level of protection in relation to its landscape and scenic beauty. The weight accorded to the national park status by the applicant in developing the Project was questioned by the NFNPA, given that 'passing through the grounds of a five star hotel' and 'crossing the railway line' provided the reasoning in the ES for not selecting the Chewton Bunny landfall route and avoiding the New Forest. There was also insufficient justification for discounting the route shown on Figure 4.6 of ES Volume C Chapter 4 'Onshore Alternatives' with the cable clipping the south west corner of Burton Common and passing to its west outside of the National Park.

4.3.43 The merits of a grid connection at Fawley were set out in REP-3443 by Mr Lambon. He considered that decommissioning of that

power station provides opportunities for the Project to connect to that readymade facility. It is said the option was too readily dismissed in favour of an environmentally destructive alternative.

Panel's reasoning and conclusions on onshore alternatives

4.3.44 EN-1 does not contain any general requirement to consider alternatives or to establish whether the proposed project represents the best option, unless there are specific legislative requirements. In addressing this matter the Panel has had due regard to the legal and policy tests applying to developments in the National Park, which include an assessment of: need for the development; the cost and scope of developing outside the designated area or meeting the need in some other way. The matters are considered in detail in subsequent sections of this Report. For present purposes we looked only at the applicant's approach to site selection. In other words, whether the options of avoiding designated areas were adequately explored and whether the reasons for discounting them properly justified.

4.3.45 The siting and location of the main elements of the onshore development are to a large extent dependent on the grid connection point. The applicant has demonstrated to the Panel's satisfaction that feasible and practical alternatives were explored as part of the wide site search. The Mannington location was less burdened with technical and engineering difficulties than the Chickerell or Fawley sites. In addition to which, a number of environmental considerations such as the extent to which the cable route and the substation would occupy the National Park and landfall locations affecting designated SPA, SAC, SSSI and dSAC sites collectively weighed against the Fawley and Chickerell options. Focussing the search on existing substations obviated the need to explore greenfield sites, so removing the potential for further environmental incursions.

4.3.46 There is no other detailed or cogent evidence before the Panel to enable an assessment to be made of the suitability of the discounted sites over the Mannington grid connection point. The Mannington option would not preclude environmental intrusions into designated sites. But the final choice of connection is a matter of balancing extent of harm and potential for mitigation against the engineering and economic feasibility of the three options. That has been done against the background of an area where large swathes of land are either intensively developed, lie within the Green Belt or subject to a wide range of other protective legislative and policy designations.

4.3.47 The evidence shows that technical constraints drove the landfall location. These are documented in the ES and summarised above. The validity of IPs' submissions regarding cliff stability at the Taddiford Gap landfall site [REPS-2733, 2905, 3194 & 3849 for instance] is considered in Chapter 5 of this Report. However in

itself the issue should not divert attention from the applicant's ES and additional representations [REP-3313] outlining the main alternatives studied and the reasons why the Taddiford Gap site was selected. With regard to the Chewton Bunny landfall option, Table 4.7 of the ES [APP-090] lists a range of reasons besides disruptions to a five star hotel and a railway line for rejecting that option.

4.3.48 The cable route would pass through the New Forest National Park with each of the three most likely landfall options. Whether exceptional circumstances exist, and matters relating to the need for the development and effect on the environment, landscape and recreational opportunities (EN-1 paragraph 5.9.10) fall to be assessed later in this Report. For the purposes of policy requirements relevant to consideration of alternatives, the Panel accepts that the scope for developing outside the National Park is limited. The applicant's evidence also shows that the route to south west of Burton Common was rejected on the advice of Natural England and for reasons of the potential effect on a SANG[4] provided for the Christchurch urban extension [REP-3313].

4.3.49 The Panel finds that the applicant has satisfactorily considered a range of site and route options for the various elements of the onshore aspect of the Navitus Bay project. The task was carried out over a period of time and the level of investigative work exploring the options was proportionate and in accord with policy expectations. The legislative requirements are addressed in the Chapters dealing with flooding, biodiversity and landscape impacts.

[4] Suitable Alternative Natural Greenspace

5 PHYSICAL PROCESSES

5.0 THE POLICY CONTEXT

NATIONAL POLICY STATEMENTS

5.0.1 NPS EN-1 advises that the decision-maker should be satisfied that the proposed development will be resilient to coastal erosion and deposition, taking account of climate change, during the project's operational life and any decommissioning period. New development in areas of dynamic shorelines where the proposal could inhibit sediment flow or have an adverse impact on coastal processes at other locations should not normally be consented. Impacts on coastal processes must be managed to minimise adverse impacts on other parts of the coast. Applicants should have restoration plans for areas of foreshore disturbed by direct works and will undertake pre- and post-construction coastal monitoring arrangements with defined triggers for intervention and restoration.

5.0.2 In relation to subtidal impacts, NPS EN-3 requires the decision-maker to be satisfied that proposed activities take into account sensitive subtidal environmental aspects.

THE DEVELOPMENT PLANS AND CORE STRATEGIES

5.0.3 Local policies have been summarised in the LIR and ES, including:

- Christchurch and East Dorset Local Plan Part 1 - Core Strategy (2014) Policy ME1 Safeguarding Biodiversity and Geodiversity, Policy ME5 Sources of Renewable Energy [REP-2677];
- New Forest District Local Plan Part 1: Core Strategy (2009) Policy DM6 – Coastal Change Management Area [REP-2681];
- New Forest District Local Plan Part 2: Sites and Development Management Plan (2014) Policy DM2 - Nature conservation, biodiversity and geodiversity [REP-2681].

5.1 INTRODUCTION AND BACKGROUND

5.1.1 The applicant's assessment was set out in ES Volume B Offshore Chapter 5 Physical Processes [APP-071] and Volume C Onshore Chapter 5 Ground Conditions and Contaminated Land [APP-091]. These were supported by a number of appendices that contained technical reports and details of surveys and data collection.

5.1.2 Throughout the course of the examination issues were identified and addressed in a number of representations, Statements of Common Ground (SoCG), the Panel's written questions and issue-specific hearing (ISH) [REP-3676 tables 2 and 18]. The main issues included:

- Offshore
- scour and cable protection;
- sediment concentrations;
- cable burying in chalk;
- wave energy and coastal erosion;
- waste disposal;
- horizontal directional drilling (HDD) in the intertidal area;
- sediment transfer along the coastline;
- Onshore
- disruption to coastal morphology at landfall;
- ground instability.

5.2 OFFSHORE PHYSICAL PROCESSES

THE APPLICANT'S OVERALL ASSESSMENT

5.2.1 Section 5.4 of the ES [APP-071] described the baseline environment for physical processes within the application project and section 5.5 detailed the impact assessment during construction, operation, maintenance and decommissioning. Cumulative impacts resulting from other projects and proposed development were assessed in section 5.7 and a summary of the whole impact assessment was provided in Table 5.23 and for cumulative impacts in Table 5.24.

5.2.2 The applicant concluded [APP-071, tables 5.23 and 5.24] that the impacts would not be significant and there would be no requirements for additional mitigation measures above those incorporated into the project as part of the design process and other measures considered as best practice.

STATEMENTS OF COMMON GROUND (SOCG)

5.2.3 In the SoCG for ecology, excluding fish and shellfish between the applicant and Natural England (NE) [REP-3320] it was agreed that:

- an appropriate study area for the consideration of physical processes had been assessed;
- surveys and modelling undertaken, including sediment dispersion modelling, and methodology used were appropriate and sufficient to characterise the area in relation to physical processes;
- key parameters for assessment and the realistic worst case scenario (RWCS) were appropriate for assessing the potential maximum impacts upon physical processes during construction, operation and decommissioning and allows the full impact of the Application Project to be assessed;
- the ES presented a detailed and adequate assessment of potential impacts arising from the Application Project for the physical process pathways, effects and receptors identified;

- the level of sensitivity assigned to each physical process receptor was appropriate;
- impacts on all physical process pathways, effects and receptors identified and assessed would be negligible or minor and therefore not significant;
- the projects and plans considered in the cumulative assessment were relevant and appropriate and that it was appropriate to conclude that it was unlikely that there would be any significant impacts.

5.2.4 The applicant and the Marine Management Organisation (MMO), in the SoCG for physical processes [REP-3114] agreed that:

- the ES had considered and referred to all appropriate legislation, policy and guidance, relevant to the MMO, in relation to the potential impacts on physical processes in preparing the impact assessment undertaken;
- the information describing the baseline conditions within Volume B, Chapter 5 of the ES and supporting characterisation and assessment reports, were sufficient and provided an accurate representation of the physical processes environment of the study area, "*provided the modelling clarifications requested on 25th September are agreed with the MMO*" (see paragraph 5.2.12 below);
- the key parameters for assessment and the RWCS were appropriate for assessing the potential maximum impacts upon physical processes during construction, operation and decommissioning phases of the Project and allowed the full impacts of the proposals to be assessed, whilst acknowledging that there was some uncertainty regarding decommissioning;
- the Application Project had sufficiently considered all potential cumulative impacts to inform the assessment and that the cumulative impacts were appropriate.

5.2.5 The SoCG between the applicant and Dorset and East Devon Coast (Jurrasic Coast) World Heritage Site Steering Group (WHSSG) [REP-3110] agreed that there would be no "*significant adverse impact on the 'physical fabric' of the WHS (the stratigraphy, the fossils and the geomorphological features; the first, second, third and fourth attributes of the OUV) or any of the 'underlying geomorphological processes in the setting of the Site (the fifth attribute of the OUV)".*

SCOUR AND CABLE PROTECTION

5.2.6 The applicant in Volume B Chapter 5 of the ES [APP-071] assessed the impact of scour and cable protection on physical processes receptors to be not significant, but did acknowledge that scour protection would be evaluated at detailed design and a monitoring design plan would be agree with the MMO. The

applicant provided a clarification note [REP-3236], which provided engineering information in relation to cable burial, cable protection requirements and operational considerations.

5.2.7 NE, in its SoCG with the applicant [REP-3696], agreed that the cable protection requirements were provided in sufficient detail to allow potential impacts to be assessed. It was also agreed in the SoCG that further consideration of cable protection requirements would be taken once data from pre-construction benthic surveys and likely areas for cable protection would be identified in more detail as part of the Scour Protection Management and Cable Armouring Plan.

5.2.8 The MMO [REP-2992] responded to the Panel's question 2.1.5 of the first written questions [PD-006], requesting clarification of the extent of cable burial, stating that DML Condition 11(g) (i) provided for a cable plan and technical specification for offshore cables, and Condition 11(e) required a Scour Protection Management and Cable Armouring Plan. These are agreed in the SoCG between MMO and the applicant [REP-2705].

5.2.9 MMO also stated that the requirement for post construction cable surveys was secured in DMLs at condition 17(2) (a). While the MMO in its SoCG with the applicant [REP-3313] agreed with the wording for Condition 17(2)(a), "*one high resolution swath bathymetric survey across a representative sample area to be agreed with the MMO to assess changes in bedform topography, and such further monitoring as may be agreed to ensure that cable have been buried or protected*", it subsequently considered [REP-3703] that further monitoring as may be agreed " *should be strengthened to provide a robust condition within the post-construction requirements to ensure that the level of surveys is appropriate and acceptable*." However, the same wording appeared in the In Principle Monitoring Plan (IPMP) [REP-3680] to which the MMO agreed and is secured in the DMLs.

5.2.10 During the ISH the Panel asked for clarification of figures quoted by the applicant for cable protection as different documents had different figures and units. The applicant responded [REP-3643] that the figures had been updated in the DCO to provide maximum volumes for scour protection as requested by MMO [REP-3363] and NE [REP-3357].

CABLE BURYING IN CHALK

5.2.11 NE, in its Relevant Representation (RR) [REP-2461] and Written Representation (WR) [REP-2900] had concerns related to the viability of burying cables in chalk bedrock, based on other windfarm developments in similar environments, and considered there could be a need for greater volumes of cable protection than had been assessed by the applicant. The applicant [REP-3313, REP-3236] provided a clarification note on the potential

burial of cable within chalk which confirmed that any requirements for cable protection would fall within the maximum volume assessed within the ES. NE [REP-3357] confirmed that they were satisfied, but added "*If the area requiring protection turns out to be larger than anticipated, then a reassessment will be necessary in consultation with Natural England to understand the potential effects of scour protection on reef biodiversity and areas of high biodiversity*." Maximum volumes of scour protection, which have been agreed with NE in the SoCG, for cable protection have been secured in the DCO.

SEDIMENT CONCENTRATIONS

5.2.12 The applicant in Volume B Chapter 5 of the ES [APP-071] assessed that changes in suspended sediments on physical process receptors during construction would be not significant. However, MMO in its SoCG with the applicant [REP-3114] stated that the Centre for Environment, Fisheries and Aquaculture Science (Cefas) had required assurance with regard to how smaller, more mobile, sediments had been considered. The SoCG confirmed that further clarification had been provided by the applicant. MMO in its Deadline II response [REP-3363] confirmed that, in the event of gravity bases being selected for offshore wind turbines, the inclusion in the DMLs of a Coastal Management Monitoring Plan would satisfy its concerns. If other foundation types were used, then this requirement for this Plan was not necessary.

5.2.13 NE, in its RR [REP-2461], noted that the RWCS for suspended sediment concentrations was based on a maximum of two foundations being worked on at any one time and considered that this should be secured. NE also expressed concern in its WR [REP-2900] about the deposition of sediment plumes in areas of exposed bedrock reef during dredging for gravity base preparation. The applicant [REP-3176] confirmed that Condition 11(c) in the DMLs would ensure that construction practices were in line with what had been assessed in the EIA. NE [REP-3357] was content, provided that it was consulted in conjunction with the MMO, to ensure that a thorough assessment of potential impacts from disposal on the biodiversity within the site could be made. This was secured in Condition 11(c) of the DMLs.

5.2.14 Swanage Boat Charters Ltd, in its WR [REP-3407] expressed concern that due to dredging in Southampton Water during 2014, the seabed from the Isle of Wight to Portland would be covered in silt which was not present during the seabed surveys carried out by the applicant, and that piling activities may cause the fine silt to raise into the water column and degrade underwater visibility over a wide area. The applicant responded [REP-3643] by stating that any fine grained material presently in the vicinity of the Offshore Development Area (ODA) would continue to be naturally re-suspended, transported and dispersed irrespective of the

Application Project. The applicant considered that the localised action of piling would be unlikely to significantly increase the rate of re-suspension of such sediments beyond that already assessed.

5.2.15 Issues raised by IPs relating to potential sediments impacting the Wight-Barfleur Reef are discussed in section 20.5 of Chapter 20.

5.2.16 Dorset Wildlife Trust and Hampshire and Isle of Wight Wildlife Trust (DWT and HIWWT) in its WR [REP-2934] raised questions over the potential impacts associated with the creation of suspended sediment and physical disturbance of the seabed on the benthic community during the proposed construction phase and the need for monitoring. In response, the applicant stated [REP-3176] that pre- and post- construction seabed surveys secured in the DMLs would identify any changes that may result from constructed related sediments, and this is secured in the DMLs [PD-013].

5.2.17 NE in its SoCG [REP-3320] agreed that surveys and modelling undertaken, including sediment dispersion modelling, and methodology used were appropriate and sufficient to characterise the area in relation to physical processes.

5.2.18 With regards to maintenance activities, NE [REP-2900] considered that as final project design aspects had not yet been decided, the potential requirements for maintenance works (i.e. required array and cable structure maintenance) and protective measures (scour protection) have not been adequately explored. NE advised that an assessment should be carried out outlining the potential for maintenance works over the lifetime of the project to ensure that any associated environmental impacts were fully considered. The applicant included in Condition 11 (c) in the DMLs [PD-013], the requirement for a schedule of planned maintenance within a construction method statement to be updated every three years.

WAVE ENERGY AND COASTAL EROSION

5.2.19 The applicant in Volume B Chapter 5 of the ES [APP-071] assessed that changes in the wave regime due to the Application Project would not be significant.

5.2.20 In its SoCG [REP-3114] and Deadline IV WR [REP-3363], the MMO confirmed that it was in discussion with the applicant relating to modelling of wave heights near shore and coastal monitoring for a section of coast on the Isle of Wight due to predicted reductions in wave height. The applicant's RWCS was based on gravity base foundations and MMO determined that "*a Coastal Management Monitoring Plan should be undertaken at 2, 7 and 12 years following post-construction should Gravity Bases be selected*." The applicant [REP-3490] confirmed that it had

provided wording in the DMLs for the Application Project at Condition 11(l) which secures this commitment and satisfied the MMO.

5.2.21 Throughout the examination, the Borough of Poole [REP-3208, REP-3396, REP-4073] expressed concern regarding the potential adverse impacts of changes to littoral drift along the Poole coastline, the need for regular monitoring to establish if significant erosion was taking place and a request for financial contribution to beach replenishment. The applicant [REP-3220] stated that it had used regional-scale numerical modelling to assess a conservative RWCS in Volume B Chapter 5 of the ES [APP-071] which demonstrated that the Application Project would result in very small changes to the wave regime and be not significant. At the end of the examination agreement had not been reached between the Borough of Poole and the applicant on the need for monitoring or a financial contribution to beach replenishment.

5.2.22 The Panel in its first written questions [PD-006] questioned the lack of information relating to high magnitude low frequency waves in relation to impacts on the geomorphological processes of the Jurassic Coast. The applicant [REP-3176] responded that the magnitude and extent of any potential change would not be sufficient to result in a significant impact on the Outstanding Universal Value of the World Heritage Site, and this was agreed with the World Heritage Site Steering Group WHSSG in the SoCG [REP-3110].

WASTE DISPOSAL

5.2.23 The MMO [REP-1581] noted that the DMLs referred to the disposal of material, however stated that a characterisation report would be required to designate the Navitus offshore wind farm as a disposal site under the OSPAR convention.

5.2.24 The applicant produced a disposal site characterisation report [REP-3682] which confirmed that the applicant was applying to designate the area within the turbine area and offshore export cable corridor as a disposal site for material extracted during construction (e.g. drilling or bed preparation works). The characterisation report set out the details of the quantities of the material to be disposed of from the Project, the characteristics of that material and an assessment of the potential environmental effects as a result of sediment disposal.

5.2.25 The MMO [REP-3703] confirmed that permission to dispose of material was part of the application for development consent process to be decided by the Secretary of State. It confirmed that it had provided a disposal site reference and requested appropriate conditions for inclusion within the DMLs, to ensure that the UK fulfils its requirements under OSPAR to report

offshore disposal activities and to ensure the potential impacts of those activities are mitigated. The applicant [REP-3643] confirmed that the reference for the disposal site (WI093) was included in Part 1, paragraph 2(d) the DMLs.

5.2.26 In the SoCG for other matters between the applicant and the MMO [REP-3113] it was agreed that Cefas were also content for the area of the Application Project to be approved as a disposal site based upon the information provided.

5.2.27 Challenge Navitus [REP-3196] questioned the procedural approach taken towards this in the context of the Marine Licence procedures regime (2014), in that the offshore development areas (ODAs) use for waste disposal purposes required the effects of waste to be considered in conjunction with all the other environmental effects of the offshore wind farm. The applicant responded [REP-3490] that the MMO is content for the ODA to be licensed as a disposal site.

5.2.28 The requirements for disposal of inert waste material of natural origin arising from the Application Project are secured in Condition 9(5) of the DMLs. During the ISH, NE [REP-3357] sought to be consulted when disposal quantities were decided and following more detailed pre-construction benthic surveys to ensure a thorough assessment of potential impacts from disposal on the biodiversity within the ODA. This requirement was included in Condition 15(1) of the DMLs and NE had no further comment on this matter.

5.2.29 In the SoCG for other matters between the applicant and the MMO [REP-3113] it was agreed that Cefas had confirmed in October 2014 that they were content for the area of the Application Project to be approved as a disposal site based upon the information provided.

HORIZONTAL DIRECTIONAL DRILLING (HDD) IN THE INTERTIDAL AREA

5.2.30 NE in its WR [REP-2900] requested further clarification from the applicant on the assessment of shore platform erosion to help understand potential risk of cable exposure from offshore HDD leading to a need for scour protection and consequent potential impacts to coastal processes. The applicant responded [REP-3176] that the HDD approach described in Volume C Chapter 2 of the ES [APP-088] would ensure that the cable remains buried in near shore areas. The applicant provided to NE a clarification note dealing with this query [REP-3235], and NE agreed in the SoCG [REP-3696] that the use of HDD would remove the potential for cabling impacts arising in the intertidal area.

PANEL'S REASONING AND CONCLUSIONS

5.2.31 The Panel considers that the applicant has addressed the main areas of disagreement between the parties sufficiently for the purposes of NPS EN-1 and EN-3.

5.2.32 The DCO and DMLs now include modifications made by the applicant in response to the representations made by interested parties and as agreed in the SoCGs and raised by the Panel during the examination. The Panel is satisfied that the DCO and DMLs sufficiently mitigate the impacts on offshore physical processes.

5.2.33 The Panel is satisfied that the applicant has, over the period of the examination, provided sufficient details of scour protection to fully describe the Rochdale Envelope for scour and cable protection and to assess the potential impacts from the different types of scour protection, these impacts being not significant. We have also given consideration to the volumes of scour protection calculated by the applicant, including estimates for cable buried in chalk bedrock, and are content that the maximum volumes quoted in the DMLs are adequate. The Panel also notes that a scour protection management and cable armouring plan is required by Condition 11(e), and that both MMO and NE are required to be consulted.

5.2.34 The MMO in its SoCG agreed the baseline conditions for suspended sediments described within the ES "*provided the modelling clarifications requested on 25th September are agreed with the MMO*." During the examination the applicant did provide additional information and included in the DMLs requirements for a Coastal Management Monitoring Plan in the event that gravity bases were selected, which were sufficient to satisfy the MMO. The Panel is content that baseline conditions for suspended sediments has been fully explored and are accepted by all parties.

5.2.35 While some IPs questioned the effects that piling activities may have on suspended sediments, the Panel agrees with the applicant that the localised action of piling would be unlikely to significantly increase the rate of re-suspension of such sediments beyond that already assessed. With the requirement for pre- and post- construction seabed surveys secured in the DMLs, the Panel is satisfied that any changes that may result from construction related sediments would be identified and are in agreement with the applicant that issues related to suspended sediments may be considered as not significant.

5.2.36 There was disagreement between the Borough of Poole and the applicant throughout the examination in relation to wave heights and coastal erosion. The Panel has considered the evidence provided by both parties and other IPs. However, we agree with

the applicant's view that modelling demonstrates that the potential for littoral drift due to the presence of offshore wind turbines is small and that monitoring would not be able to separate drift solely caused by the presence of the Application Project from that due to natural causes.

5.2.37 As a point of clarification relating to waste disposal, the Panel confirms that it is the Secretary of State's responsibility rather than the MMO to grant approval for marine waste disposal arising from the Application Project as part of the NSIP application process. The Panel believes that some of Challenge Navitus' concerns arose from a misunderstanding of this responsibility, although we acknowledge that it also has concerns over the effects of waste disposal on the benthic habitats.

5.2.38 With regard to the granting of a waste disposal licence for inert materials arising from the Application Project, the Panel has given weight to the advice from both the MMO and NE. With the disposal site characterisation report and inclusion in the DMLs of a more detailed pre-construction benthic survey, to ensure a thorough assessment of potential impacts from disposal on the biodiversity, we consider that if a waste disposal licence was to be granted, this would not have a significant impact on the benthic conditions within the disposal site.

5.2.39 The Panel is content that the design of HDD within the tidal area would not give rise to any significant impacts and would remove the need for scour protection.

5.3 ONSHORE PHYSICAL PROCESSES

THE APPLICANT'S OVERALL ASSESSMENT

5.3.1 Section 5.4 of the ES [APP-091] described the baseline environment for ground conditions within the Application Project and detailed the impact assessment during construction, operation, maintenance and decommissioning. Section 5.7 concluded that no cumulative impacts would result from other projects or proposed developments that were detailed in Volume A, Chapter 5 of the ES [APP-066]. A summary of the whole impact assessment was provided in Table 5.5.

5.3.2 The applicant concluded [APP-091, Tables 5.5] that for the landfall the proposed design and location mitigates the principal effects associated with construction; and compliance with the Code of Construction Practice (CoCP) would result in impacts not being significant and there would be no requirements for additional mitigation measures over and above those described in the ES. For Landfall operation and maintenance and the Onshore Cable Corridor and Substation construction, operation and maintenance compliance with the CoCP would ensure that impacts would not be significant and there would be no

requirements for additional mitigation measures over and above those described in the ES.

DISRUPTION TO COASTAL MORPHOLOGY AT LANDFALL

5.3.3 Throughout the examination there was disagreement between a number of IPs and the applicant about the impacts on coastal morphology at Taddiford Gap, the cable landfall site. In particular PCBA [REP-2908, REP-3351, REP-3472, REP-3708, REP-4093] and Prof John Sharpe [REP-2733, REP-3366, REP-3595, REP-3849, REP-4080a] (also a member of PCBA) provided the greatest number of concerns and submitted a number of additional detailed reports and calculations relating to the physical condition of the cliffs at Taddiford Gap. The main points of concern were;

- cliff slipping and erosion due to construction activities which should be mitigated by introducing rock armouring;
- the entire cliff top disintegrating from the point of starting drilling down towards the cliff edge; and
- there should be provision of an independent report into the feasibility, impacts and solutions to provide additional details for IPs.

5.3.4 In response to these concerns, the applicant;

- referred to the SoCG between the applicant and New Forest DC, Christchurch BC and East Dorset DC [REP-3152] in which there was agreement that the cliff line at Taddiford Gap was undefended and naturally eroding and that there were no plans for active intervention for that stretch of cliff in the adopted Poole and Christchurch Bays Shoreline Management Plan (2011);
- referred to the SoCG between the applicant and New Forest DC, Christchurch BC and East Dorset DC [REP-3152] in which there was agreement that the proposed location of the HDD site onshore, at least 135m from the cliff edge, was beyond the predicted point of erosion for the next 100 years;
- provided additional details [REP-3325] of technical reports which covered previous investigations at the landfall, an installation method statement, potential vibration impacts associated with trenchless installation techniques and drilling fluid pressures for HDD at Taddiford Gap.

5.3.5 The Rt Hon Desmond Swayne MP [REP-2884] also requested the applicant to provide details of the engineering solution for the landfall where "*the cliff has been unstable and subject to erosion for generations*." The applicant responded [REP-3176] by confirming that erosion had been taken into account when specifying the proposed works.

5.3.6 In its WR NE [REP-2900] confirmed that a minimum setback distance of 135m was adequate but encouraged the applicant to adopt a distance of 250m based on the conclusions of the applicant's HDD clarification note [REP-3235]. In the note, the applicant states that although the HDD drill would start from a minimum of 135m from the current cliff face, this would likely be closer to 200m to allow additional space for drill setup. In the SoCG with the applicant [REP-3696], NE agreed that "*the impacts on all physical process pathways, effects and receptors identified and assessed ……. will be negligible or minor and therefore not significant*."

GROUND INSTABILITY

5.3.7 In its WR, PCBA [REP-2908] questioned the type of cable to be used under the River Avon floodplain and the South West mainline railway line. These points were repeated by Prof. John Sharpe [REP-2733], who also queried why no best available technique (BAT) assessment had been made.

5.3.8 The applicant [REP-3176] responded to PCBA and Prof. Sharpe that the proposed trenchless crossings of the River Avon floodplain and South West mainline railway had been considered appropriate by NE and Network Rail, respectively. On agreeing protective measures (DCO Schedule 12), Network Rail withdrew its earlier objections.

PANEL'S REASONING AND CONCLUSIONS

5.3.9 The Panel considers that the applicant has addressed the main areas of disagreement between the parties sufficiently for the purposes of NPS EN-1 and EN-3.

5.3.10 The DCO and DMLs include modifications made by the applicant in response to the representations made by interested parties and as agreed in the SoCGs and raised by the Panel during the examination. The Panel is satisfied that the DCO sufficiently mitigates the impacts for onshore physical processes.

5.3.11 The Panel has reviewed all of the reports and documentation from all parties in relation to the geotechnical and geomorphological aspects of the cliffs at Taddiford Gap and the proposed HDD landfall and visited the site.

5.3.12 The results of our deliberations are that we give weight to the adopted Poole and Christchurch Bays Shoreline Management Plan which has a policy of "*no active intervention*", allowing natural erosion of the cliff face to continue at this location. We, therefore, see no reason for requiring any toe protection at the base of the existing cliff, as this is counter to the shoreline policy. There is no dispute between the parties that over the next 50 years the cliff will erode some 135m behind the existing cliff edge. The applicant also states [REP-3235] that "*an additional setback*

distance from the 50 year erosion point is applied to ensure the cable will remain buried." Having viewed the site, the Panel is content that with a minimum of 135m setback from the cliff edge, there is no evidence to lead us to believe that the drilling entry works would contribute to the cliff top disintegrating.

5.3.13 Most of the debate has revolved around the possibility of HDD drilling instigating mobilisation of a slip plane within the Headon Hill Formation overlying the Becton Sand Formation of the Barton Group. The Headon Hill Formation is a series of grey and brown clays with layers of sand. A major area of disagreement related to the geometry of the cliff face and foreshore, which in turn has a major effect on slope stability calculations.

5.3.14 The Panel understands the geotechnical implications of HDD drilling through the geological formations below the cliffs and has concluded that based on Prof. Sharpe's cross-section showing the "*computed slip line*" [REP-4093] the HDD drill path would be approximately 10m below the slip line with no additional surface loading within the 40m of the slip plane at surface. We cannot, therefore, foresee any mechanism for the HDD drilling works to mobilise the potential slip plane identified by Prof Sharpe.

5.3.15 We have also reviewed the applicant's calculations, and based on the applicant's geometry we agree that the proposed methodology would not have a significant impact on cliff stability.

5.3.16 Similarly, the Panel is content that the proposed HDD crossings below the River Avon flood plain and South West mainline railway line are appropriate and would not have any significant impact.

5.3.17 Overall, the Panel is satisfied that the impacts on the onshore and offshore physical processes would not be significant and has carried this forward into its considerations of the planning balance in Chapter 21.

5.4 TURBINE MITIGATION OPTION (TAMO)

THE APPLICANT'S CASE

5.4.1 For physical processes the applicant stated that offshore impacts [REP-3429, Table 4] would be within those already assessed for the Application Project. The total number of individual construction phase impacts, the overall duration of construction phases and spatial extent would all be reduced and moved further offshore.

5.4.2 The main onshore impact [REP-3429, Table 5] identified by the applicant was a reduction in cable corridor working width, as only four cables, rather than the six for the Application Project, would be required. However, the applicant considered that the reduction in width would not be significant in terms of ground conditions.

5.4.3 The applicant concluded that all impacts associated with the TAMO for physical processes would be within those already assessed for the Application Project and which have been assessed as not significant.

OTHER REPRESENTATIONS

5.4.4 The MMO [REP-3363] and EA [REP-3568] were content with the TAMO and agreed that it was within the realistic worst case parameters set out in the Application Project. NE [REP-3581] was of the opinion that the reduced scale of the development was likely to reduce the scale of impacts.

5.4.5 PCBA [REP-3785] was of the view that the applicant's case for the TAMO based on new geotechnical information was not justified as PCBA did not consider the information provided demonstrated any new relevant information. In its REP-3472, PCBA considered that the TAMO did not change its views on any of its objections to the Application Project and these remained valid for the TAMO.

PANEL'S REASONING AND CONCLUSIONS

5.4.6 The Panel concludes that the potential impacts of the TAMO have been adequately assessed by the applicant. The mitigation of impacts for the Application Project has been covered sufficiently and is applicable to the TAMO. The measures have been incorporated in line with NPS requirements and captured in the DCO and DMLs satisfactorily. There are no significant implications for the DCO or DMLs were the TAMO to be adopted.

5.4.7 The Panel therefore concludes that the TAMO meets the requirements of NPS EN-1 and NPS-EN3 for physical processes. This conclusion is carried forward to Chapter 21.

6 BIODIVERSITY, BIOLOGICAL ENVIRONMENT AND ECOLOGY

6.0 THE POLICY CONTEXT

NATIONAL POLICY FRAMEWORK

6.0.1 Biodiversity and geological conservation are referred to in Part 5.3 of NPS EN-1. Paragraph 5.3.7 of the Policy states that as a general principle development should aim to avoid significant harm to biodiversity and geological conservation interests, including through mitigation and consideration of reasonable alternatives. Where significant harm cannot be avoided then appropriate compensation measures should be sought. Paragraph 5.3.8 states that the decision-maker should "*ensure that the appropriate weight is attached to designated sites of international, national and local importance; protected species; habitats and other species of principal importance for the conservation of biodiversity, and to biodiversity and geological interests within the wider environment.*"

6.0.2 Paragraph 5.3.11 of NPS EN-1 requires that where a development is likely to have an adverse effect on a Site of Special Scientific Interest (SSSI), development consent should not normally be granted. An exception to this should only be made "*where the benefits (including need) of the development at this site, clearly outweigh both the impacts that it is likely to have on the features of the site that make it of special scientific interest and any broader impacts on the national network of SSSIs.*" The decision maker "*should use requirements and/or planning obligations to mitigate the harmful aspects of the development and, where possible, to ensure the conservation and enhancement of the site's biodiversity or geological interest*."

6.0.3 Paragraph 5.3.16 requires the decision-maker to ensure that species and habitats that receive statutory protection, or have been identified as being of principal importance for the conservation of biodiversity, are protected from the adverse effects of development by using requirements or planning obligations. The decision-maker should "*refuse consent where harm to the habitats or species and their habitats would result, unless the benefits (including need) of the development outweigh that harm*." The decision-maker should "*give substantial weight to any such harm to the detriment of biodiversity features of national or regional importance which it considers may result from a proposed development*."

6.0.4 The Habitats Regulations provide statutory protection for those sites identified through international conventions and EU Directives. The Government requires that potential Special Protection Areas (pSPAs) and Ramsar sites should as a matter of policy receive the same protection. These internationally

designated sites are detailed in Chapter 20 Findings and Conclusions in Relation to Habitats Regulation Assessment.

6.0.5 Considerations relating to biodiversity, which are specific to offshore wind farms, are covered in section 2.6 of NPS EN-3. The decision maker must take regard of the effects of a proposal on fish, seabed habitats (intertidal and subtidal), marine mammals and birds.

6.0.6 For Marine Conservation Zones (MCZ), NPS EN-1 paragraph 5.3.12 states that the decision maker is "*bound by the duties in relation to MCZs imposed by sections 125 and 126 of the Marine and Coastal Access Act 2009.*"

6.0.7 In terms of mitigation, NPS EN-1 paragraph 5.3.19 states that where the applicant cannot demonstrate that appropriate mitigation measures will be put in place the decision maker should consider what appropriate requirements should be attached to any consent or planning obligation. Paragraph 5.3.20 requires the decision-maker to "*take account of what mitigation measures may have been agreed between the applicant and Natural England (or the Countryside Council for Wales) or the Marine Management Organisation (MMO), and whether Natural England (or the Countryside Council for Wales) or the MMO has granted or refused or intends to grant or refuse, any relevant licences, including protected species mitigation licences*."

6.0.8 Paragraph 5.3.15 requires the decision-maker to maximise such opportunities for building-in beneficial biodiversity features as part of good design, and use requirements or planning obligations where appropriate.

UK Marine Policy Statement

6.0.9 The UK Marine Policy Statement (MPS) paragraph 2.6.1.3 refers to the need to avoid harm to marine ecology and biodiversity through location, mitigation and consideration of reasonable alternatives. Paragraph 2.6.1.4 promotes caution "*within an overall risk-based approach, in accordance with the sustainable development policies of the UK Administrations. The marine plan authority should ensure that appropriate weight is attached to designated sites; to protected species; habitats and other species of principal importance for the conservation of biodiversity*."

THE DEVELOPMENT PLANS AND CORE STRATEGIES

6.0.10 Local policies have been summarised in the LIR and ES, including:

- Biodiversity Action Plan for Hampshire, Volume 1 (1998) [APP-097];
- Biodiversity Action Plan for Hampshire, Volume 2 (2000) [APP-097];

- Borough of Poole Core Strategy (2009) Strategic Objective 7: To Protect our Natural Environment, Policy PCS29: Poole Harbour SPA and Ramsar site [REP-2675];
- Bournemouth Local Plan: Core Strategy (2012) Policy CS30 Promoting Green Infrastructure [REP-2676];
- Christchurch and East Dorset Local Plan Part 1 - Core Strategy (2014) Policy ME1 Safeguarding Biodiversity and Geodiversity, Policy ME5 Sources of Renewable Energy [REP-2677];
- The Dorset AONB Partnership Management Plan Objective L1: Conserve and enhance the AONB and the character and quality of its distinctive landscapes and associated features, Objective CS1: Conserve and enhance the coast and marine environment of the AONB through integrated management that recognises the links between land and sea [REP-2678];
- Dorset Biodiversity Strategy (2003) [APP-097];
- Dorset Biodiversity Strategy – Midterm Review Summary (2010) [APP-097];
- East Dorset District Local Plan (2002) Saved Policy DES7 (loss of trees [REP-2679];
- Isle of Wight Island Core Strategy Policy DM12 – Landscape, Seascape, Biodiversity and Geodiversity [REP-2674];
- Nature in the New Forest: action for biodiversity (2012) Biodiversity Action Plan for Hampshire, Volume 1 (1998) [APP-096];
- New Forest Catchment: Water Improvement Plan (2012) Biodiversity Action Plan for Hampshire, Volume 1 (1998) [APP-097];
- New Forest District Local Plan Part 1: Core Strategy (2009) Policy CS1 – Sustainable development principles, Policy CS3 - Protecting and enhancing our special environment [REP-2681];
- New Forest District Local Plan Part 2: Sites and Development Management Plan (2014) Policy DM2 - Nature conservation, biodiversity and geodiversity [REP-2681];
- New Forest National Park Core Strategy and Development Management Policies DPD (2010) Policy CPs (water environment) and Policy DPs (water quality) [APP-093];
- New Forest District (outside the National Park) Core Strategy (2009) [APP-097];
- Purbeck District Local Plan (2012) Spatial Objective 3 – Conserve and enhance Purbeck's natural habitat [REP-2683].

6.1 INTRODUCTION AND BACKGROUND

6.1.1 The applicant's assessment was set out in ES Volume B Offshore Chapter 9 Benthic Ecology [APP-075], Chapter 10 Fish and Shellfish Ecology [APP-076], Chapter 11 Marine Mammals [APP-077], Chapter 12 Offshore Ornithology [APP-078] and Volume C Onshore Chapter 10 Terrestrial and Freshwater Ecology [APP-096], Chapter 11 Onshore Ornithology [APP-097]. These were

supported by a number of appendices that contained technical reports and details of surveys and data collection.

6.1.2 Throughout the course of the examination, issues were identified and addressed in a number of representations, SoCG, the Panel's Written Questions and issue-specific hearings (ISH) [REP-3676 tables 6, 7, 8, 9, 23 and 24]. The main issues included:

- Offshore
  - benthic survey methodology;
  - European Protected Species (EPS) licences;
  - Annex 1 habitats and stone (geogenic) reef habitats;
  - sediment plumes;
  - noise and EMF impacts on marine mammals and fish;
  - cumulative impacts on marine mammals;
  - assessment of phytoplankton;
  - ornithological surveys*;
  - displacement of ornithological species*;
  - collision risk monitoring (CRM)*;
  - cumulative impacts on birds*;
  - migratory bats;
- Onshore
  - ornithological survey methodology*;
  - cable EMF*,
  - cable heating;
  - EPS licences;
  - disturbance to nightjars*;
  - disturbance to merlin and hen harrier *;
  - lighting disturbance to gadwall and Bewick's swan;
  - disturbance to black-tailed godwit*;
  - designated sites;
  - cable trenching;
  - impacts on Hurst Forest;
  - cumulative impacts arising from St Leonards SSSI;
  - horizontal directional drilling (HDD) impacts;
  - habitat disturbance and improvements within heathland habitats*.

6.1.3 This section of the Report deals with onshore and offshore biodiversity, biological environment and ecology impacts. The issues marked by * are subject to HRA and are detailed in Chapter 20 below. As there is a high degree of overlap between the EIA and HRA process, where relevant, issues are cross-referenced to Chapter 20. Human receptor impacts from noise and vibration are addressed in Chapter 18 and from EMF in Chapter 17.

6.2 OFFSHORE BENTHIC, FISH AND SHELLFISH ECOLOGY, MARINE MAMMALS AND ORNITHOLOGY

THE APPLICANT'S OVERALL ASSESSMENT

Benthic Ecology

6.2.1 Section 9.5 of ES Volume B Chapter 9 [APP-075] described the baseline environment for benthic ecology within the Application Project and Section 9.6 detailed the impact assessment for the turbine area and cable corridors during construction, operation, maintenance and decommissioning. Cumulative impacts resulting from other projects and proposed developments were assessed in Section 9.10 and a summary of the whole impact assessment was provided in Table 9.13.

6.2.2 The applicant concluded that [APP-075, Table 9.13], with strict adherence to the Project Environmental Management Plan (PEMP) and Marine Pollution Contingency Protocol (MPCP), the impacts were not significant and there was no requirement for additional mitigation measures over and above design mitigation for EMF and heat emissions.

Fish and shellfish ecology

6.2.3 Section 10.4 of ES Volume B Chapter 10 [APP-076] described the baseline environment for fish and shellfish ecology within the Application Project and Section 10.5 detailed the impact assessment. Cumulative impacts resulting from other projects and proposed developments were assessed in Section 10.7 and a summary of the whole impact assessment was provided in Table 10.8.

6.2.4 The applicant concluded that with soft start piling and time-related restrictions on piling activities, the impacts were not significant and there was no requirement for additional mitigation measures [APP-076, Table 10.8].

Marine Mammals

6.2.5 Section 11.4 of ES Volume B Chapter 11 [APP-077] described the baseline environment and Section 11.5 detailed the impact assessment for marine mammals within the Application Project. Cumulative impacts resulting from other projects and proposed developments were assessed in Section 11.7 and a summary of the whole impact assessment was provided in Table 11.8.

6.2.6 The applicant concluded that with the adoption of the Joint Nature Conservation Committee (JNCC 2010) standard marine mammal mitigation protocol, the introduction of a Vessel Operation Protocol and a mutual agreement with other developers to avoid piling or seismic surveying simultaneously, the impacts were not

significant and there was no requirement for additional mitigation measures [APP-077, Tables 11.35 and 11.36].

Ornithology

6.2.7 Section 12.4 of ES Volume B Chapter 12 [APP-078] described the baseline environment and Section 12.5 detailed the impact assessment for offshore ecology within the Application Project. Cumulative impacts resulting from other projects and proposed developments were assessed in Section 12.7 and a summary of the whole impact assessment was provided in Table 12.50.

6.2.8 The applicant concluded that the impacts were not significant and there was no requirement for additional mitigation [APP-078, Table 12.50].

STATEMENTS OF COMMON GROUND (SOCG)

6.2.9 The SoCG between Natural England (NE) and the applicant for ecology excluding fish and shellfish [REP-3109, REP-3132, REP-3245, REP-3320, REP-3679] was continually updated during the examination as the two parties worked together to provide additional clarification or data and the final SoCG was submitted at Deadline VI [REP-3696]. In this, the only remaining point of difference was in the determination of no adverse effects on Atlantic salmon, which is discussed in Chapter 20. The main points of agreement from the SoCG are included in the following details of the main issues discussed during the examination.

6.2.10 The fish and shellfish ecology SoCG [REP-3134] between the applicant and the NE was not updated during the examination.

6.2.11 By the end of the examination, it was agreed in the SoCGs between the applicant and NE [REP-3134 and REP-3696] that the ES and subsequent information provided during examination had considered all appropriate legislation, policy and guidance in relation to the potential impacts on benthic ecology, fish ecology, marine mammals and megafauna and ornithology. It was also agreed that key parameters for assessment and the realistic worst case scenario (RWCS) were appropriate for assessing the potential maximum impacts upon benthic ecology, marine mammal and megafauna, fish and shellfish ecology and ornithological receptors during construction, operation and decommissioning and allowed the full impact of the Application Project to be assessed.

6.2.12 The SoCGs between the applicant and Marine Management Organisation (MMO) for fish and shellfish ecology [REP-3112] and benthic ecology [REP-3113], also agreed that the assessments undertaken for fish and shellfish ecology and benthic ecology examination had considered all appropriate legislation, policy and guidance in relation to the potential impacts and that the RWCS were appropriate.

6.2.13 There was disagreement between the applicant and Dorset Wildlife Trust and Hampshire and Isle of Wight Wildlife Trust (DWT and HIWWT) in the SoCG [REP-3117] on a number of issues. These included DWT and HIWWT not agreeing that;

- the method used to evaluate rocky reef habitats within the ES was appropriate. DWT and HIWWT viewed this method as being applicable to stony reefs only and was therefore wrongly applied which may have resulted in the conclusion of the impact assessment being incorrect.;
- pre and post construction monitoring of suspended sediments should not take place in order to validate the conclusions drawn within the impact assessment with regard to benthic and fish and shellfish receptors;
- the level of monitoring of benthic flora and fauna as outlined in Condition 17 of the DML for both transmission and generation assets was adequate;
- the subsea noise model outputs, and the interpretation of the outputs within the assessment, provided sufficient confidence to enable the conclusions of not significant within the fish and shellfish ecology assessment and the marine mammals assessment

6.2.14 These issues are discussed further below. However, DWT and HIWWT did agree in the SoCG that the ES provided a reasonable basis for assessing the potential impacts on bats.

OFFSHORE MAIN ISSUES

Benthic Survey methodology

6.2.15 Throughout the examination, Challenge Navitus maintained [REP-3370, REP-3603, REP-4021] that the applicant's survey methods, particularly marine surveys, were not adequate as they did not conform to industry guidelines as set out by Ware and Kenny (2011). The discussion of this issue is detailed in paragraphs 20.4.13 to 20.4.15 of Chapter 20, which addresses HRA. Poole Agenda 21 [REP-3199] observed that Challenge Navitus documentation "*contains no reference to the widely recognised habitat benefits of the sea-bed structures of the wind-farm*."

6.2.16 The resolution to this issue was provided by NE, in its SoCG with the applicant [REP-3696]. NE agreed that "*the benthic ecology survey was appropriate and of sufficient scale and timing to characterise the area in relation to benthic ecology*". It also agreed that the Offshore Development Area (ODA) including the turbine array and export cable corridor had been appropriately mapped with regard to biotope classification and valued ecological components. NE concluded by stating "*that the information presented to describe the baseline conditions within Volume B, Chapter 9 of the ES and supporting benthic ecology characterisation technical report at Appendix 9.1, provide an*

accurate representation of benthic ecology of the study area and utilises best available information, as agreed in writing with Natural England on 15th August 2013."

European Protected Species Licences

6.2.17 The applicant [APP-077] assessed potential impacts on harbour porpoise, bottlenose dolphins, harbour seals and grey seals and concluded that European Protected Species Licences (EPS) would be required for harbour porpoise and bottlenose dolphins. A number of IPs including Mr Alan Rayner [REP-2745], Mr Mike Sanderson [REP-2775], Friends of Durlston Executive Committee [REP-2882] and Challenge Navitus [REP-2939,REP-3196] raised concerns relating to the issuing of EPS licences for harbour porpoise and bottlenose dolphin, in particular the satisfying of the "*no satisfactory alternative*" test. The applicant provided a clarification note [REP-3254] in which it outlined the discussions it had with the MMO and NE with regard to marine mammals and provides the reasoning why it considered the statutory derogation tests, including the "*no satisfactory alternative*" test, have been met. The note states that "*these bodies have confirmed that there is no reason why an EPS licence for harbour porpoise and bottlenose dolphin would not be granted*."

6.2.18 The MMO is the authority responsible for issuing marine mammal EPS licences and while it did not issue a letter of no impediment during the examination, MMO did confirm in its SoCG with the applicant [REP-3113] that "*provided the design envelope for the Project remained the same and no material changes are made to the Application, an EPS licence would be granted prior to construction* " This position is supported by NE [REP-3357] in its response to a question by the Panel at the ISH.

Annex I habitats and stone (geogenic) reef habitats

6.2.19 The applicant, in the ES [APP-075], stated that no rocky reef with "*high resemblance*" to Annex I Habitat was present within the boundaries of the Offshore Development Area (ODA) but did note that there were other locations within the wider region where stony reefs occur. NE, in its Relevant Representation (RR) [REP-2461] recognised that there appeared to be a considerable amount of geogenic reef habitat extending throughout the southern half of the ODA, and that there was an inconsistency in the maps and text provided by the applicant. After the applicant provided further explanation [REP-3176], NE agreed in the SoCG with the applicant [REP-3134] that the methodology used to characterise the level of reef resemblance to Annexe I stony (geogenic reef) was appropriate and that no habitats of high resemblance to the definitions of Annex I stony reefs were identified within the boundaries of the ODA.

6.2.20 During the examination, Challenge Navitus [REP-3370] questioned the adequacy of the sampling and assessment methodologies adopted by the applicant, in particular relation to the Wight Barfleur SCI, and that "*NE and the MMO have not ensured that the environment is protected through proper application of the legal statutes, by agreeing to NBDL carrying out only a 'snapshot' survey*." The applicant responded [REP-3490] that the methods and results of the reef classification undertaken had been approved within the Evidence Plan process by both the MMO and NE [REP-3034].

6.2.21 The applicant [REP-3176] addressed DWT and HIWWT's [REP-3117] concerns regarding the appropriateness of the method used to evaluate rocky reef habitats by explaining that the method used had been agreed with NE and that in discussions with DWT & HIWWT the applicant had explained that a map showing all outcropping bedrock had been provided [REP-2934] which removed the necessity to discuss methodological disagreements. DWT and HIWWT made no further comment on this matter during the examination.

6.2.22 MMO [REP-3113] was in agreement that the method used to evaluate rocky reef habitats within the ES was appropriate. The applicant also highlighted [REP-3490] that "*pre-construction surveys for Annex I features are secured through Condition 15 (2) (a) of the DMLs, whilst mitigation for these features (that may for example include micro-siting of cable runs) is secured through Condition 11(i) of the DMLs*."

6.2.23 NE [REP-3357] sought monitoring of the impacts of cable installation in areas of reef habitat to determine recovery of biodiversity. Such monitoring requirements should, it considered, be agreed in consultation with MMO, Cefas and NE and was secured in the DCO/DMLs. The MMO [REP-3363] agreed that there was need for additional monitoring, stating that " *ongoing monitoring of cable burial depths etc, particularly on the export cable where there is no cable protection planned, will require post lay burial surveys and ongoing monitoring. Ongoing burial survey requirements must be informed by a burial risk assessment to determine the spatial and temporal extent of the survey and should be kept under review*". The applicant responded [REP-3313] by stating that Condition 17(2)(a) in the DMLs "*provides for one high resolution swath bathymetric survey across a representative sample area to be agreed with the MMO to assess any changes in bedform topography and such further monitoring as may be agreed to ensure that the cables have been buried or protected*."

6.2.24 The provision of a scour protection management and cable armouring plan was secured in Condition 11(e) of the DMLs.

6.2.25 By the close of the examination, the SoCGs between the applicant and NE [REP-3696] and the applicant and MMO [REP-3113] confirmed that the impacts on all benthic ecology receptors identified and assessed, including direct and indirect impacts, would be negligible or minor and therefore not significant.

Sediment plumes

6.2.26 The applicant, in the ES [APP-076], proposed to minimise disturbance from the potential impacts of sediment plumes in inshore shallow regions by, where possible, avoiding ploughing and jetting during the key sensitive period for fish species considered, however it did not identify the sensitive periods. The MMO in its RR [REP-1581] stated that *"the Applicant has considered the impacts of plough dredging and jetting along the cable corridor on cuttlefish during the peak spawning period and will, therefore, avoid such activities during this period (6.1.2.10; pages 70 & 71). This mitigation must be included as a condition with the DML (see section 4)."* However, the SoCG between the MMO and the applicant [REP-3112] states that "*it was agreed that a specific condition on this point is not required but that Cefas/MMO would like to stress the importance of this point and welcome the applicant's approach to consideration of cable installation programming.*"

6.2.27 NE also expressed concern in its WR [REP-2900] about the deposition of sediment plumes in areas of exposed bedrock reef during dredging for gravity base preparation. This issue is discussed under waste disposal, in Chapter 5.

6.2.28 The MMO in its SoCG with the applicant [REP-3113] confirmed that impacts of ploughing and jetting along the cable corridor and the resulting increased suspended sediment deposition would be minor and not significant.

Noise and electro-magnetic fields (EMF) impacts on marine mammals, fish and shellfish

6.2.29 The applicant in Volume B Chapter 11 of the ES [APP-077] arrived at a conclusion that for marine mammals impacts from underwater noise would not be significant providing the Joint Nature Conservation Committee JNCC (2010) Standard Marine Mammal Mitigation Protocol (MMMP) was adopted. For fish and shellfish, the applicant in Volume B Chapter 10 [APP-076] concluded that, with the mitigation of soft start piling and temporal restrictions on piling activities during sensitive periods for salmon, black bream and seahorse, there would be no significant impacts from underwater noise on either fish or shellfish receptors. Operational noise and EMF were also assessed as being not significant for marine mammals, fish and shellfish.

6.2.30 Question 2.1.4 [PD-006] of the Panel's first written questions requested confirmation from MMO and NE that soft start piling conditions referred to in the DCO and DML submitted with the application [APP-040] were sufficient to protect fish, shellfish and marine mammals from noise. The MMO [REP-2992] stated that if driven or part-driven pile foundations were proposed then DML condition 11(f) required a marine mammal mitigation protocol (MMMP) to be agreed in writing with the MMO in consultation with NE. The MMO would expect a soft start piling protocol to be included in the MMMP. NE [REP-3070] confirmed that soft start piling conditions were suitable for marine mammals and soft start procedures have subsequently been secured in the DMLs [PD-013].

6.2.31 In its RR, NE [REP-2461] sought clarification regarding cumulative impacts on marine mammals. The applicant provided a note "*Clarification of the cumulative impact assessment for marine mammals*" [REP-3132] which refined the realistic worst case scenario presented in Volume B Chapter 11 of the ES [APP-077] using more realistic values where they had become available since the original assessment. Following consultation with French OWF developers, which revealed that the St Brieuc wind farm would not start until 2020, and by adopting the UK Inter Agency Marine Mammal Working Group Management Unit, the clarification note demonstrated a reduction in worst case impact on harbour porpoise from 13% to a maximum of 1.1 -3.4% depending on the management unit adopted. In EIA terms, this level of impact was deemed to be of minor adverse significance.

6.2.32 The applicant confirmed [REP-3176] that it had entered into an agreement with Rampion Offshore Wind Farm to ensure that both projects work together to propose a joint approach to mitigation measures where necessary. This is confirmed in the SoCG with NE [REP-3696] but is not secured in the DMLs as cumulative impacts are not predicted to be significant.

Atlantic salmon

6.2.33 There was disagreement throughout the examination between the applicant, the EA, NE and a number of IPs in relation to the potential impacts of piling noise on adult salmon migrating to and from the River Avon and River Itchen and potential mitigation measures. This resulted in two sets of written questions [PD-006, PD-011] and a second Rule 17 request issued on 26 February [PD-015]. Details of impacts on salmon for HRA purposes are given in Chapter 20.

6.2.34 In Volume B Chapter 10 of the ES [APP-076] the applicant proposed mitigation for behavioural effects due to construction noise by temporal restrictions to piling activities, which was not agreed by NE and EA. In its WR [REP-2900] NE stated that it was

in discussion with EA and the applicant in order to seek suitable piling noise mitigation for adult salmon.

6.2.35 The EA [REP-3135] stated that it was appropriate to consider the impact of piling activities on Atlantic salmon behaviour at two points in their life cycle; their emigration to marine feeding grounds as smolts and during their return to their natal rivers as adults. These different life stages exhibit differing behaviours and the risks to them are different. Agreement was reached to extend the temporal restriction for pin piles and monopiles to between 7th April and 15th May to ensure that smolt are not prevented from leaving the mouth of the river. At the same time, the applicant removed a provision of a maximum piling period of 8 hours in 24 hours between 1st April and 14th April that had been included within the DCO [APP-040] submitted with the application. These revised piling restrictions were agreed in SoCGs with the MMO [REP-3112], NE [REP-3134] and EA [REP-3135], and are included as Condition 18 of both Deemed Marine Licences (DMLs) in the DCO.

6.2.36 Discussions relating to adult salmon included restricting the number of piling hours to ensure a notional exposure risk for adult salmon transiting the ODA, and also debate about the level of exposure risk. While it was agreed [REP-3679] that mitigation could be secured by limiting the level of piling activity within the sensitive period, the method of monitoring was not. The applicant proposed [REP-3681] to translate allowable hours of activity into setting a maximum number of foundations that may be installed in any of the relevant periods and revised the DCO (version 5) [REP-3644] to reflect this. On the other hand, the EA and NE [REP-3634] maintained that the mitigation should be expressed in the form of limits on noise risk piling hours, and set out a table of allowable noise risk hours.

6.2.37 With regard to exposure risk, the applicant [REP-3681] considered an exposure risk of 40% should be adopted, while NE and EA [REP-3634] argued for a 25% exposure risk level. While the applicant maintained that a 40% exposure risk provided enough precaution to offset uncertainties related to the actual effects on adult salmon, in its response to the Rule 17 request [PD-015] the applicant [REP-4055] stated "*The layering of precaution, in tandem with the inbuilt control provided by the design parameters of the steel piles themselves, which limits the amount of time any single pile can be driven into the seabed, will ensure that noise exposure risk levels will remain well within the 25% threshold required*."

6.2.38 At the end of the examination agreement had still not been reached on the approach to monitoring. The EA and NE in response to the Rule 17 request [REP-4085] maintained that the applicant's proposed wording of the DCO "*does not take into account the different levels of risks provided by the drive only*

and drive/drill/drive installation methods, we do not consider that it meets the ≤25% exposure risk threshold that the Applicant appears to be trying to meet." Having set out their reasoning for their concern, the EA and NE concluded that "*we remain convinced that the Schedule 13: Condition 19 wording we proposed in our Deadline VII response (reflecting Option 9 put forward by the Applicant), with piling quotas based on hours, provides the best balance between controlling piling activity, being robust to variations in the duration of tasks associated with piling and providing the applicant with operational flexibility*."

6.2.39 The MMO's response to the Rule 17 request [REP-4076] was based on its role as enforcing body and the need for practicality of enforcement and not on the need for mitigation. Its view was that it was aware that other proposed conditions had included a restriction limiting piling hours as opposed to number of piles. The MMO's preference was "*for the inclusion of the number of piles as, due to the simple nature, this is an easier metric to monitor for compliance. However, should the ExA, upon review of the issue, decide that hours are the appropriate metric the MMO is confident this could be enforced, subject to suitable wording.*"

6.2.40 With regard to EMF, Challenge Navitus [REP-3375] expressed concerns that a clear specification for cable protection was needed to ensure protection against EMF impacts. The applicant [REP-3326] stated that EMF produced by the electrical cables would be shielded through cable design (i.e. use of sheathing material) and that the magnetic fields produced would fall rapidly due to distance and depth of burial of cables. The applicant concluded [REP-3326] that EMF levels that may be experienced by Atlantic salmon would be low and highly unlikely to result in a barrier to movement. This was agreed by NE in the SoCG [REP-3696].

Seahorse

6.2.41 MMO [REP-3112] and DWT and HIWWT [REP-3117] expressed concerns in relation to subsea noise monitoring and modelling for mobile animals. In particular MMO questioned the fleeing response assumptions for fish. In the SoCG between MMO and the applicant "*[i]t was accepted by all parties that models need to make assumptions, however the assessment is accepted and no further work is required*."

6.2.42 MMO also questioned the assertion that sea bass and seahorse share similar hearing ability, maintaining that many of the assumptions that could be adopted for sea bass did not apply to seahorse. However, in the SoCG [REP-3112] MMO confirmed that additional clarification provided by the applicant stating that the proxy was only used in relation to the ability of the fish to detect and react to noise was sufficient. The applicant also provided in the SoCG additional references to demonstrate that dab is one of

the most sensitive flatfish species, and this clarification satisfied the MMO.

6.2.43 DWT and HIWWT did not agree with the subsea model outputs and their interpretation to produce conclusions of not significant for fish and shellfish. However, as agreement had been reached between the applicant and NE [REP-3134], EA [REP-3135] and MMO [REP-3112] that noise modelling was acceptable and allowed impacts of noise on marine mammals and fish to be undertaken.

6.2.44 While there are no proposed Marine Conservation Zones (MCZs) that are potentially affected by the Application Project, recommended MCZs (rMCZ) may potentially be impacted within the lifetime of the Project. In line with NE's suggestion [REP-2461], the Panel agree that it would be prudent to future proof any consent by considering potential impacts from the Studland Bay rMCZ, which we have below.

6.2.45 The applicant, in response to NE's concerns expressed in its RR [REP-2461] relating to the potential impacts of piling noise on long-snouted (hippocampus guttulatus) and short-snouted (hippocampus hippocampus) seahorse, provided a clarification note in the SoCG with NE [REP-3134] which explained the research which had resulted in the 75dBht (Species) threshold now being considered excessively over-precautionary. NE confirmed in the SoCG that, with regards to potential mortal or injurious effects to seahorse on migration to deeper water, the clarification provided appeared reasonable and sufficient to address the question raised. NE agreed that the level of uncertainty regarding seahorse migration, combined with the small area of impact would suggest the risk of impact is very low.

6.2.46 NE [REP-3134] acknowledged that there remained a paucity of evidence relating to seahorse numbers, but agreed that there would be no adverse effect on seahorse at the local population level. However, NE confirmed that it remained incumbent on the applicant to ensure that so far as possible it would not act in contravention of the relevant criminal offences under the Wildlife and Countryside Act 1981 when constructing and operating the proposed development.

6.2.47 With regards to potential impacts on seahorse migrating to seagrass beds and black bream arrival to nesting sites, it was agreed between NE and the applicant [REP-3134] that the prohibition on piling activities for both pin piles and monopiles during key sensitive periods, identified as 7th April to 15th May, as secured in the DCO, would provide appropriate protection.

6.2.48 In conclusion, the SoCGs between the applicant and NE [REP-3134] and MMO [REP-3112] agreed that noise modelling using appropriate species and proxy species where necessary had

provided sufficient information for the purposes of assessing noise impacts on fish, shellfish ecology and marine mammals. The SoCGs also agreed that, considering the mitigation measures proposed, the impacts on all marine mammal and megafauna receptors identified and assessed, including direct and indirect impacts, would be negligible or minor and therefore not significant, although NE acknowledged that there were uncertainties associated with understanding the impact significance of noise on marine mammals and a precautionary approach had been undertaken

Monitoring of marine mammals, fish and shellfish

6.2.49 In its WR, NE [REP-2900] encouraged the applicant to consider contributing to the Disturbance Effects on the Harbour Porpoise Population in the North Sea (DEPONS) monitoring work which was being carried out collaboratively in the North Sea. This would ensure access to the most up to date information on the effects of construction on harbour porpoise which could be used to inform NBDL's construction planning and implementation with Rampion OWF. The applicant [REP-3176] agreed to this and confirmed that the MMMP would provide for passive acoustic monitoring and marine mammal observers as appropriate.

6.2.50 In its RR, the MMO [REP-1581] had concerns that no monitoring was proposed to validate the assessment of the impacts of the Application Project on fish or shellfish communities. In particular the MMO was concerned that "*given the importance of the area for elasmobranchs (especially the undulate ray), the effects of electro-magnetic fields (EMF) from the export and inter-array cables should be verified to test the effectiveness of the proposed mitigation. Whilst it is not thought that specific surveys of elasmobranch populations is required, the Applicant should carry out low intensity information gathering (in conjunction with reports of fisheries catch data) within the Order limits in which construction works were carried out. This is to test predictions made in the ES concerning impacts to elasmobranchs from electromagnetic fields.*" The applicant's response [REP-3113] was to commit to mitigation measures to protect against EMF by burying all subsea cables or cover them with cable protection material.

6.2.51 The mitigation proposed includes the use of armoured cable for inter-array and export cables and burial at sufficient depth.

6.2.52 The applicant argued that as its mitigation provides for the requirements of NPS EN-3 (paragraph 2.6.76), and that "*such a condition is the standard approach to the matter of EMF and cable specifications in recently issued deemed Marine Licences (DMLs)*" it questioned the need for a new condition relating to gathering low intensity information to test predictions made in the ES, relating to impacts upon elasmobranchs from EMF. In the SoCG

between the applicant and the MMO [REP-3112] it was "*agreed by all parties that this provision is adequate and no further requirement is needed within the DML*."

6.2.53 In the SoCG between the applicant and NE [REP-3134] it was agreed "*that the DML for the project contained a provision at Condition 11(g), for a cable specification and installation plan, which would provide for a desk based assessment of the attenuation of EMF, shielding and details of cable burial depth in accordance with good practice; and at Condition 11((e) for a scour protection management and cable armouring plan, which would provide details of the need, type, sources, quantity and installation methods for scour protection*."

Assessment of phytoplankton

6.2.54 Throughout the examination, Challenge Navitus [REP-2940, REP-4022, REP-4065] considered that the applicant had failed to consider the potential impacts on the abundance and diversity of phytoplankton or zooplankton. Phytoplankton form one of the base levels of the food chain providing nutrient for the zooplankton on which many aquatic animals feed. In its response to Challenge Navitus, the applicant stated [REP-3490] that "*there is no requirement set out in NPS EN-3 regarding plankton surveys and as such this does not form part of the assessment for wind farm applications. No discussion has been held with relevant statutory consultees regarding the need for plankton surveys or the need to assess impacts on plankton as part of the EIA process*." In their SoCGs with the applicant NE [REP-3134] and MMO [REP-3112] agreed that planktonic surveys were not required. There was no further comment from either NE or the MMO throughout the examination.

Ornithological surveys

6.2.55 As detailed in Chapter 20, the assessment of impacts on bird species was supported by onshore and offshore ornithological surveys which were developed in consultation with a number of bodies including NE, RSPB, Dorset Wildlife Trust and Hampshire & Isle of Wight Wildlife Trusts [APP-078 and APP-097]. The results of the surveys were presented in APP-126 to APP-134 and APP-285 to APP-288. However, a number of IPs raised concerns relating to the adequacy of the applicant's surveys during the examination.

6.2.56 PCBA [REP-2907, REP-3351] and Dorset Bird Club [REP-2965, REP-3571] contended that the applicant failed adequately to consult local experts and that the survey methods for offshore ornithology were inadequate. Challenge Navitus [REP-3370, REP-3603, REP-4021] and DWT & HIWWT [REP-2934] also expressed concerns that the data gathered was not sufficiently robust to

identify the potential impacts on offshore and migratory bird species. These issues are discussed in Chapter 20.

6.2.57 While the Panel accepts that there remained differences between the applicant and PCBA and Challenge Navitus regarding the frequency of sampling and timing of ornithological surveys, the SoCG between the applicant and NE [REP-3696] states that the desk study and field survey information presented in the ES provided a suitable baseline to inform the impact assessment of the programme.

Migropath modelling

6.2.58 The applicant and NE agreed in the SoCG [REP-3696] that Migropath modelling was suitable for providing baseline information on which to base a collision risk assessment for common scooter, little egret, avocet, golden plover, grey plover, knot, black-tailed godwit and bar-tailed godwit. However, NE [REP-2900] considered that further work was required to augment the Migropath modelling for some species, using more local data to better inform migratory routes and passage numbers for subsequent CRMs. In particular NE considered that further consideration was required for dark-bellied brent geese, bar-tailed godwits, skuas and terns. The Applicant undertook further work to address these concerns and presented the results in the Migrant Apportionment Note [REP-3132]. NE [REP-2900] still had some concerns over the Biologically Defined Minimum Population Scale (BDMPS) populations and reference populations used to assess levels of impact. However, NE confirmed that "*we are content that these methodological issues do not change the conclusion that all increases to baseline mortality due to collisions for these species on migration remain below 1%*."

6.2.59 Additional discussion of other IPs concerns regarding Migropath modelling is included in paragraphs 20.6.31 to 20.6.34of Chapter 20.

Collision risk modelling (CRM)

6.2.60 NE confirmed [REP-2461] that the applicant's CRM focussed on Option 1 of the Band model (Band, 2012) (but with these outputs augmented by those from Options 2 and 3 of the Band model) and considered this to be an appropriate approach to assessing and presenting collision risk estimates. However, in its WR [REP-2900] NE identified a number of methodological issues and uncertainties in relation to CRM apportionment and the calculation of BDMPS values. NE was therefore "*unable to advise with certainty that the project would not have a significant impact on a number of EIA seabird species which include black-legged kittiwake, northern gannet, lesser black-backed gull, herring gull, great black-backed gull, common guillemot and razorbill*."

6.2.61 The resolution of these, and other IPs concerns regarding CRM, are detailed in paragraphs 20.4.18 to 20.4.22 of Chapter 20. The updated SoCG between the applicant and NE [REP-3696] confirmed that "*the approach to collision risk modelling used to inform the assessment is suitable following the provision of clarification*."

6.2.62 NE [REP-2900] expressed uncertainty over the CRM assessments for northern gannet, black-legged kittiwake, herring gull, great black-backed gull. It was concerned that regional populations used for assessments and the CRM mortalities for several species equated to more than 1% of baseline mortality which was not considered further through potential biological removal or population viability analysis (PBR/PVA) modelling. Whilst NE still had some concerns regarding the reference populations used, it noted that "*in our own calculations using what we consider to be the appropriate BDMPS methodology, the conclusions arrived at by the Applicant in the Update on Seabird BDMPS and CRM Assessments (clarification note 10) remain valid*."

Displacement of ornithological species

6.2.63 NE, in its RR [Rep-2461] considered that the displacement assessment for common guillemot and razorbill should be conducted at the worst case scenario of 70% displacement and 10% mortality across all seasons and the BDMPSs used by the applicant to assess population impacts was considered too precautionary. Cumulative assessments needed to be expanded to consider effects at the appropriate BDMPS scale. The applicant revised the assessments of the worst case scenario in the Auk Displacement note [REP-3132]. In its WR, NE [REP-2900] still had minor concerns regarding the methodology, but it was content that these methodological issues did not change the conclusion of no significant impact on guillemot and razorbill populations due to displacement. NE suggested no further work on this issue.

Cumulative impacts on birds

6.2.64 NE [REP-2900] also considered that cumulative assessments for northern gannet, black-legged kittiwake, herring gull and great black-backed gull needed to be expanded beyond just Rampion OWF for species where migratory pathways potentially take birds through other OWFs, particularly in the North Sea. The applicant provided NE with revised CRM outputs at Deadline II, in the SoCG [REP-3132]. This additional modelling resulted in NE agreeing that the Application Project would not make a significant contribution to cumulative impacts to birds at any relevant population scale.

Ornithological Monitoring

6.2.65 While a number of IPs, including PCBA [REP-3708] and Dorset Bird Club [REP-3367] considered that monitoring of bird movements post-construction should be implemented, NE [REP-3357] stated that there was no requirement for ornithological monitoring for areas under NE's remit. NE's reasoning was that while there was a paucity of empirical data, particularly for offshore birds, there are further studies due to be undertaken that have been agreed between offshore developers to try and quantify the bird avoidance rates for offshore wind farms.

6.2.66 As described in Chapter 20, the applicant did agree to a monitoring programme for the Alderney gannet colony.

Migratory bats

6.2.67 A number of IPs, including Mr David Gerry [REP-3593], Challenge Navitus [REP-2939] and PCBA [REP-2906, REP-3708, REP-3995], expressed concern that no bat survey had been carried out in the offshore area and that there is evidence that bats do migrate overseas. The applicant [REP-3176] drew attention to the fact that SoCGs with NE, DWT and HIWWT explicitly note the scoping out of potential impacts associated with bats and wind turbines was appropriate. In response to Written Question 1.8 from the Panel [PD-011], Mr Gerry provided [REP-3720, REP-3844] evidence to demonstrate the migratory nature of bats.

6.2.68 The applicant [REP-4030] considered that the pilot research quoted by Mr Gerry was the same as highlighted by the applicant and that no information published since submission of the Application Project contradicted the information provided in the ES. It advised [REP-3643] that the most recently published material published by BSG Ecology (Grant et al, 2014) accorded with the information within the ES. NE, in its response to the ISH [REP-3357], advised that the methodologies used by the applicant were appropriate to establish the presence of bats.

In principle monitoring plan (IPMP)

6.2.69 As detailed above, the MMO suggested in its RR [REP-1581] that the applicant should produce an IPMP to ensure that monitoring requirements were agreed prior to consenting. The applicant submitted a draft IPMP for Deadline III and the MMO provided comments at Deadline IV [REP-3363]. A revised IPMP was submitted by the applicant [REP-3680] at Deadline VI and in response to the Panel's second Written Questions. The EA confirmed that it had no further comments [REP-3634]. NE [REP-4072] and MMO [REP-4076] both commented on the IPMP and the applicant submitted its final agreed IPMP [REP-4039] at Deadline VII.

PANEL'S REASONING AND CONCLUSIONS WITH REGARDS

6.2.70 The Panel considers that the applicant has addressed the main areas of disagreement between the parties sufficiently for the purposes of NPS EN-1 and EN-3.

6.2.71 The DCO and DMLs include modifications made by the applicant in response to the representations made by interested parties and as agreed in the SoCGs and raised by the Panel during the examination. The Panel is satisfied that the DCO sufficiently mitigates the impacts on offshore benthic ecology, fish and shellfish ecology, marine mammals and ornithology.

6.2.72 The Panel accepts that differences remain between the applicant and Challenge Navitus regarding the frequency of sampling and timing of marine surveys. However, having followed the debate and carefully assessed the various documents both for and against the Application Project, the Panel is content that the applicant has complied with relevant legislation and guidance to the satisfaction of the regulators.

6.2.73 With reference to an EPS licence for harbour porpoise and bottlenose dolphin, the Panel, having given due regard to the derogation tests under the EPS licensing regime, is content that these tests can be met and therefore has no reason to believe that the licence will not be granted by the MMO. The MMO gave no indication that a licence would not be forthcoming.

6.2.74 While NE expressed some reservations regarding the applicant's methodology for mapping and assessing the possibility of Annex I reefs and habitat, NE's assessment overall was that there were no reef areas that would require designation as SAC within the ODA. The Panel accepts NE's submission that the UK's representation of reef habitat in SACs is sufficient and that whilst the ODA "*may represent an interesting complex of coarse sediment with outcropping bedrock its representivity as high quality 'reef' is low.*" The Panel accepts that with the provision of a scour protection management and cable armouring plan secured in the DMLs, temporary seabed habitat disturbance from preparation works and cable installation would not be significant.

6.2.75 Having given consideration to the evidence provided from all parties regarding the potential impacts of sediment plumes caused from offshore construction works, the Panel has given weight to the views of the MMO. The Panel is content that the applicant would minimise the potential impacts from sediment plumes during sensitive periods for fish, and in particular during cuttlefish spawning, by avoiding ploughing and jetting where possible. We also note that MMO do not require a specific condition for this in the DMLs, and we accept its advice on this point.

6.2.76 The Panel accepts the MMO's consideration that impacts of ploughing and jetting along the cable corridor and the resulting increased suspended sediment deposition would be minor and not significant.

6.2.77 The issue of noise and EMF impacts on mammals, fish and shellfish was widely debated during the examination. The Panel understands that the impacts of subsea noise on mammals, fish and shellfish is not fully understood and that a precautionary approach is needed in assessing impacts and mitigation measures. The Panel also acknowledges that NE, EA and the applicant worked together throughout the examination to try to reach agreement on the assumptions and level of precaution to be applied to modelling and assessments.

6.2.78 For marine mammals, the Panel is content with the views of the MMO and NE that by the introduction of a MMMP and soft start piling conditions secured in the DMLs, sufficient protection would be given to marine mammals to allow an assessment of not significant. The Panel is also content that cumulative impacts for harbour porpoise had been properly assessed, using the most up to date information, as being not significant

6.2.79 Having considered all of the evidence, including the submissions of other IPs such as PCBA [REP-3995] and Challenge Navitus [REP-3375, REP-3600, REP-4088] the Panel is of the view that there remains considerable uncertainty regarding the effects of piling noise on adult Atlantic salmon. The Panel is in agreement with NE and EA that the prudent approach to mitigation is by imposing a limit on hours, being mindful of MMO's comments relating to suitable wording in the DCO. This, we believe, will provide the best balance between controlling piling activity, being robust to variations in the duration of tasks associated with piling, providing the applicant with operational flexibility and protecting adult salmon. The Panel has, therefore, adopted the wording contained in the EA's REP-4079 and substituted it into the DCO.

6.2.80 The Panel accepts that there remains a paucity of evidence relating to seahorse numbers and uncertainties related to their migration. Once again, we have considered the precautionary approach to protecting seahorses from the impacts of subsea noise and have given weight to the views of NE in coming to our conclusion that the applicant’s assessment of not significant is appropriate. The Panel agrees that any potential impacts for seahorses in the Studland Bay rMCZ would not be significant.

6.2.81 The Panel welcomes the applicant contributing to the DEPONS monitoring work for harbour porpoise, and notes that the applicant’s contribution to data collection is secured in the MMMP.

6.2.82 With regard to potential impacts from EMF, the Panel is led by NPS EN-3 which states that “*where the mitigation set out in*

paragraphs 2.6.76 are proposed for offshore export cables to reduce EMF, the effects on sensitive species are not likely to be significant". The mitigation referred to includes the use of armoured cable for inter-array and export cables and burial at sufficient depth. The Panel is content that the applicant has provided for this mitigation in its design and is secured in the DCO, and as such is in agreement with a conclusion of no significant impacts to mammal, fish or shellfish communities.

6.2.83 While the Panel acknowledges the concerns of IPs regarding the protection of phytoplankton and zooplankton, as there is no requirement to carry out plankton surveys in NPS EN-3, we accept that the applicant has complied with the necessary legislation.

6.2.84 There was much discussion during the examination regarding offshore ornithology, and in particular the use of Migropath and CRM. The Panel has considered the evidence provided both by the applicant within the ES and subsequent modifications, and the evidence provided by the Regulators and IPs. We accept that there remain differences in views between the applicant and IPs on matters of approach and assessment. However, having carefully reviewed the evidence before us, and giving weight to that of NE in particular, we have arrived at the following conclusions;

- the desk study and field survey information presented in the ES for offshore ornithology provided a suitable baseline to inform the impact assessment of the Application Project;
- Migropath modelling was suitable for providing baseline information on which to base a collision risk assessment for common scooter, little egret, avocet, golden plover, grey plover, knot, black-tailed godwit, bar-tailed godwit, dark-bellied brent geese, skuas and terns. The conclusion from the modelling that all increases to baseline mortality due to collisions for these species on migration remain below 1% is accepted;
- while we accept that NE still had some concerns regarding the reference populations used by the applicant for CRM, these differences do not change the outputs for northern gannet, black-legged kittiwake, lesser black-legged gull, herring gull, great black backed gull, common guillemot and razorbill. We are in agreement that a conclusion for collision risk of not significant can be reached for these species
- additional views of the Panel in relation to CRM and HRA features is contained in Chapter 20;
- displacement of common guillemot, razorbill and auk may be considered as not significant;
- the Application Project would not make a significant contribution to cumulative impacts to birds at any relevant population scale.

6.2.85 Some IPs, in particular Mr Gerry, provided robust arguments for the assessment of the effects of collision risk associated with migratory bats. The Panel has considered the evidence provided by Mr Gerry and others as well as the responses from the Applicant and NE. We agree with the advice given by NE, that the methodologies used by the applicant were appropriate to establish the presence of bats and that no further assessment is required.

6.2.86 Some detailed issues, design matters and approvals remain to be resolved. The Panel is satisfied that these would be adequately addressed through application of the recommended DMLs, which include requirements for a construction and monitoring programme, PEMP, MMMP, scour protection management and cable armouring plan and a mitigation scheme for any features of ecological, biological and economic importance identified by pre-construction benthic surveys.

6.2.87 The Panel therefore concludes that the application meets the requirements of NPS EN-1 and NPS EN-3 for offshore benthic, fish and shellfish ecology, marine mammals and ornithology. The matter is carried forward into the planning balance in Chapter 21 of this Report.

6.3 ONSHORE ECOLOGY AND ORNITHOLOGY

THE APPLICANT'S OVERALL ASSESSMENT

6.3.1 Section 10.4 of Volume C Chapter 10 of the ES [APP-096] described the baseline environment for terrestrial and freshwater ecology within the Application Project and Section 10.5 detailed the impact assessment for the onshore project elements for the construction, operation, maintenance and decommissioning stages of the Application Project. Cumulative impacts resulting from other projects and proposed development were assessed in Section 10.7 and a summary of the whole impact assessment was provided in Table 10.28.

6.3.2 The applicant concluded [APP-096, Table 10.28] that by a combination of avoiding, protecting and restoring habitat, restoration of habitat post-construction, habitat creation and improvement outside of the Application Project, translocation of reptiles and provision of biodiversity funds, the impacts would not be significant and there would be no requirements for additional mitigation measures over and above those described in the ES.

STATEMENTS OF COMMON GROUND

6.3.3 As discussed in 5.2.9 above, the SoCG between NE and the applicant for ecology excluding fish and shellfish [REP-3109, REP-3132, REP-3245, REP-3320, REP-3679] was first submitted at Deadline II and was continually updated during the examination as the two parties worked together to provide additional

clarification or data; the final SoCG was submitted at Deadline VI [REP-3696]. The main points of agreement from the SoCG are included in the following details of the main issues discussed during the examination.

6.3.4 By the end of the examination, it was agreed in the SoCG between the applicant and NE [REP-3696], as the statutory nature conservation body, that the ES and subsequent information provided during examination had considered all appropriate legislation, policy and guidance in relation to the potential impacts on ornithology and terrestrial and freshwater ecology; and that key parameters for assessment and the realistic worst case scenario (RWCS) were appropriate for assessing the potential maximum impacts upon ornithological receptors during construction, operation and decommissioning to allow the full impact of the Application Project to be assessed.

6.3.5 A number of SoCGs with other parties also made reference to the potential impacts on onshore biodiversity. These included the relevant local authorities [REP-3150] and DWT and HIWWT [REP-3117] and are referenced below where appropriate.

ONSHORE MAIN ISSUES

European Protected Species Licences

6.3.6 At the time of application, the applicant confirmed [APP-061] that a draft EPS Licence regarding sand lizard and smooth snake had been submitted to NE for review. In response to a Written Question from the Panel [PD-006], NE [REP-3070] confirmed that the applicant was finalising an EPS application for these species which would enable NE to issue a letter of no impediment (LONI). The methodology for reptile avoidance and mitigation and the licence requirements would be secured in the Landscape and Ecological Management (LEMP), as part of the DCO.

6.3.7 Challenge Navitus [REP-3196] accepted that the applicant was in discussion with NE regarding these species, but raised concerns over the surveys undertaken for these species. It also considered that these discussions were only in relation to avoidance and mitigation methodologies and not the two remaining legal tests of imperative reasons of overriding public interest (IROPI) and no satisfactory alternative. The applicant was content that the three statutory tests had been met and submitted an explanatory note [REP-3254] providing the reasoning for meeting these tests at the ISH. A LoNI for sand lizard and smooth snake was subsequently issued by NE on 5 March 2015 [REP-4045].

6.3.8 Challenge Navitus [REP-2939] was also concerned that there were deficiencies in the surveys and assessment of effects on other terrestrial European Protected Species; otter, dormouse, great crested newt and bats. In response, the applicant [REP-

3176] stated that surveys had been carried out in suitable habitat across the Application Project area, and in particular that the great crested newt survey methods had been agreed as appropriate with NE, see paragraphs 6.3.24 to 6.3.27 for further details regarding surveys.

6.3.9 PCBA [REP-3995] also expressed concerns that a number of (unspecified) EPS had been noted in the Onshore Development Area and "*the Licences should be sought, tested and issued prior to the DCO being signed*." The applicant had previously explained [REP-3254] that no formal licence application had been made as no DCO had been granted and that a LoNI from NE or the MMO (or agreement within another form) would state that there is no reason why a licence would not be granted should the Application Project be consented.

6.3.10 At the ISH, NE advised [REP-3357] that the methodologies used by the applicant were appropriate in establishing the presence of protected species and establishing the likely effects on those species, other than smooth snake and sand lizard, as being not significant.

Designated Sites

6.3.11 The applicant's ES, Volume D Chapter 2 [APP-102] identified a number of ecologically designated sites at national, regional and local levels. In particular 56 National Conservation Designations were identified, including 44 Sites of Special Scientific Interest (SSSI) (many of which are components of identified SPAs which are detailed in Chapter 20), one National Park, one National Nature Reserve and four Areas of Outstanding Natural Beauty (AONB). 21 County Conservation Designations were identified, including five Sites of Importance for Nature Conservation (SINC), nine Sites of Nature Conservation Interest (SNCI), three Ancient Woodlands and four county landscape areas.

6.3.12 Potential impacts for terrestrial ecology and ornithology have been assessed by the applicant as being not significant for all of these sites.

St Leonards and St Ives Heath SSSI

6.3.13 NE, in its relevant representation [REP-2461], noted that 1.8ha (2%) of the St Leonards and St Ives Heath SSSI would be impacted by the proposed cable route, and that the effects of loss of habitat and ecological functionality to the SSSI during construction could potentially be significant. NE explained that part of the SSSI (around Hurn Forest) which is currently in 'unfavourable recovering' condition may move from recovering to 'unfavourable condition' for a period until restoration is achieved.

6.3.14 At Deadline II, the applicant proposed to cross the Hurn Forest section of St Leonards and St Ives Heath SSSI by HDD (see

paragraph 5.3.44 for further details). NE confirmed [REP-2900] that this measure, provided it would be deliverable and secured, would not have an adverse impact on habitats, species and functionality of the SSSI. DWT and HIWWT [REP-3117] and the local authorities (Dorset CC, Christchurch BC, East Dorset DC) [REP-3150] also confirmed HDD to be appropriate for avoiding impacts on the SSSI.

Moors River SSSI

6.3.15 The ES [APP-096] confirmed that a tributary channel of the Moors River would be crossed using open trenching, affecting approximately 0.18 ha (0.08% of the designated site).

6.3.16 NE [REP-2900] explained that they provided advice to the applicant about the physical conditions and restoration requirements for this area of the SSSI located on wet woodland on a peat substrate. The applicant modified the draft LEMP [REP-3035] to include a detailed vegetation survey and measurements of peat/peaty soil depth prior to construction commencing. The LEMP has been secured in the DCO.

Burton Common SSSI

6.3.17 Christshurch Harbour Ornithological Group (CHOG) [REP-2871, REP-3384] considered that the applicant had omitted to list Burton Common SSSI as being affected by the Application Project. CHOG identified a range of wildlife interest on the Common and expressed the view "*that the cable route should only be permitted if further studies clearly demonstrated that the important wildlife interests in this area would not be adversely affected by this development or the cumulative effects of this and other developments proposed in the vicinity*." The proposed cable route passes to the north and east of the SSSI, by CHOG's estimate, within 30m of the SSSI boundary.

6.3.18 Volume C Chapter 10 of the ES [APP-096] defines the applicant's approach to determining the study area for extended Phase 1 Habitat surveys as "*a broad corridor …. that encompasses the potential area through which the cable could have been routed (at the start of the design process)*." The ES identified Burton Common SSSI on Figure 10.3, however stated that "*the zone of influence is considered to be the area covered by the Onshore Development Area*"; by the applicant's definition, Burton Common SSSI would not qualify in the study area.

6.3.19 The applicant [REP-3490] confirmed that the cable route did not at any point go through Burton Common SSSI, and confirmed that consultation with Dorset CC, New Forest National Park Authority, New Forest DC, Christchurch BC, East Dorset DC, DWT and HIWWT and NE had "*led to the development of measures to*

ensure 'no net loss' of biodiversity and provide 'biodiversity gain' for the Project."

6.3.20 NE in its RR [REP-2461] did not identify Burton Common as a SSSI feature that may be affected by the Application Project and made no further comment on this issue during the examination. NE also agreed in its SoCG with the applicant [REP-3696] that marsh/marshy grassland, which is the main feature of the minor watercourse in the SSSI, could be scoped out of detailed assessment for ecological receptors determined to be of 'county' conservation value or greater.

6.3.21 The SoCG between the applicant and NE [REP-3696] confirmed that "*the definition of the study area described in Section 10.3 is of a suitable scale to enable the determination of the potential impacts of temporary habitat loss, degradation of adjacent habitats and disturbance of fauna due to the construction, operation and maintenance and decommissioning of the Project*."

6.3.22 CHOG [REP-2871, REP-3384] also expressed concern relating to the impacts of open trenching on the habitats through which the cables would pass and the species that rely on those habitats. Particular concerns included the potential impact on the hydrology of Burton Common SSSI in the event that additional drainage measures to avoid waterlogging of the trench were installed, as a minor watercourse crosses the SSSI and flows into the River Mude. The applicant responded [REP-3176] by stating that "*the quantum and delivery mechanisms outlined in the LEMP are appropriate*" and had been agreed with NE, no further measures where proposed. These mechanisms were explained in the SoCG with DWT and HIWWT [REP-3117] as "*providing adequate inputs to ensure that the construction, operation and decommissioning of the onshore infrastructure will not result in significant negative impacts on terrestrial and freshwater ecology receptors and that the Project provides the opportunities for biodiversity gain to be achieved*." There was no further response during the examination from CHOG on this matter.

6.3.23 Other ecological and ornithological issues which were raised during the examination in relation to designated sites are dealt with in the following sections.

Terrestrial Surveys

6.3.24 In its Appendix to its WR, CHOG [REP-2870] expressed concerns regarding the adequacy of survey coverage, as the applicant did not have access to the full cable corridor route. In response to a question raised by the Panel at the ISH on biodiversity, the applicant stated [REP-3313] that although surveys had not been carried out in areas where access had been restricted prior to October 2013, assumptions had been made based on extended Phase 1 survey data and desk-study results. Additional survey

work had subsequently been carried out and the Ecology Survey Report 2014 [REP-3036] noted that none of the survey results in the previously inaccessible areas contradicted the assessment provided in the ES.

6.3.25 As noted above, Challenge Navitus [REP-2940] also claimed that survey information for otter, dormouse and bat had significant gaps and that more data was required for smooth snake and sand lizard. The applicant [REP-3176] maintained that surveys for these species had been carried out in suitable habitat across the Onshore Development Area.

6.3.26 NE [REP-3696] advised that the great crested newt, reptile, bat, dormouse, badger, otter, water vole and aquatic invertebrate survey methodologies employed within suitable habitats within and adjacent to the Onshore Development Area were appropriate for identifying the presence of these species.

6.3.27 DWT and HIWWT, in their SoCG with the applicant [REP-3117] agreed that surveys undertaken were suitable for terrestrial and freshwater ecology and that further surveys would be undertaken during the detailed design phase in order to minimise impacts on biodiversity.

Cable Trenching

6.3.28 The applicant, in Volume C, Chapter 2 of the ES [APP-088] proposed to construct an onshore cable corridor for up to six transmission cables within a 40m wide corridor using either open trench or trenchless techniques, to a depth of approximately 1.5m. For watercourse crossings, the width of river bank and bed affected would be reduced to a maximum of 20m. Trenchless techniques, potentially using HDD was proposed at certain crossing locations identified in the Chapter (Table 2.5).

6.3.29 A number of issues were raised by the Panel and IPs in relation to the laying of cables in open trenches along the onshore cable corridor. Issues associated with trenchless HDD are detailed separately below.

6.3.30 A number of IPs, including PCBA [REP-2908] and Mr John Searle [REP-3705] raised the issue of the width of the cable corridor being excessive. The applicant [REP-4030] stated that the limits of the development were set in the Onshore Works Plan [APP-013] and that while the cable working width was generally 40m, "*this does not and cannot specify the width of the Order limits at all points along the cable route*." Volume C, Chapter 2 of the ES [APP-088] stated that in some locations the width may be marginally narrower or wider. In response to questions from the Panel about whether the cable corridor could be reduced as much as practicable in areas of significant environmental impact, the applicant [REP-3643] explained that in sensitive locations the

onshore working width could be reduced from 40m to 34m. It confirmed that the draft LEMP contained design principles including the consideration of corridor narrowing in ecologically sensitive areas and the need to provide justification as to why any decisions are taken (which will be discussed with NE and the relevant local authorities). The LEMP [REP-3035] also limited in-channel open trenching works at watercourse crossings to 20m.

6.3.31 As no significant impacts on terrestrial habitats had been identified, the applicant noted [REP-3643] that "*any corridor narrowing included within the detailed design is not required to reduce predicted effects to a level deemed not significant; rather the measure would be used to further reduce not significant effects, reduce the area and time necessary to restore habitats and to work constructively with landowners and local authorities in areas where they perceive particular local sensitivity*."

6.3.32 In response to questions over cable laying, the applicant [REP-3313] confirmed that that there is an agreement with NE, the Environment Agency (EA), the relevant local planning authorities and the local Wildlife Trusts that biodiversity gain could be delivered by the Application Project.

Cable routes through Hurn Forest

6.3.33 Throughout the examination, Hurn PC had concerns regarding the impacts on protected species and local wildlife of Hurn Forest from open trenching of the cable route. Hurn PC had commissioned a biodiversity audit, published in 2013 Hurn Forest Biodiversity Audit [REP-2854] which "*proved the widespread presence and use of a range of species and habitats of principal importance (NERC Act Section 41) within Hurn Forest*." In its WR [REP-2854], Hurn PC noted that "*outside of designated sites the method of cable installation is open trenching, through heathlands, grasslands, bog woodland and their associated fauna. These habitats are all of 'principal importance', as are some of the species they support*."

6.3.34 Hurn PC was concerned about a significant loss of woodland in these areas, and that "*in some areas it will result in the loss of woodland edge/transition habitats which have been developing ecological and landscape value in Hurn Forest*." The landscape issues are detailed in Chapter 8 of this report. In its response to the ISH [REP-3358] Hurn PC again stressed the loss of woodlands and pointed out that no woodland features in Hurn PC were to be safeguarded through the use of HDD. It requested that HDD be adopted at three additional sections of the cable route, which were most sensitive for landscape and biodiversity. The applicant [REP-3313] outlined the reasoning behind the deployment of trenchless crossings, noting that there was a balance struck between a reduction in temporary habitat loss, the potential for successful restoration, the potential lengthening of the

construction schedule, the habitat restoration schedule and the costs associated with delivery. It did not consider it necessary to provide further trenchless crossings within Hurn Forest; although it acknowledged that additional trenchless crossings could be accommodated within the DCO should any pre-construction survey identify further ecological constraints. The applicant further confirmed that NE agreed the approach within Hurn Forest was 'proportionate'.

6.3.35 Poole Agenda 21 [REP-2765] made the point that the cable corridor would be constructed as a rolling programme, with the land immediately restored, so minimising impacts.

6.3.36 Hurn PC [REP-3380, REP-3590] also suggested that the applicant had not taken into account impacts on biodiversity and amenity due to the loss of conifer plantation within Hurn Forest. The applicant provided a response [REP-3643] which stated that "*Natural England, the relevant local authorities and the Wildlife Trust all stated a view that coniferous plantation that would be lost within the Onshore Development Area should be restored, following construction, to heathland …… as one way in which biodiversity gain could result from the Project*." The applicant continued that biodiversity benefit would be provided to Hurn Forest "*through the restoration of previously afforested areas to a habitat type considered to be of Principle Importance in England by the UK Government*."

6.3.37 In response to Hurn PC's concerns [REP-2853], the applicant stated [REP-3490] that the working width of the corridor may be narrowed to a minimum of 25m along short sections, up to 100m length, or down to 30m for sections up to 200m, based on a balance between environmental benefit and risk and the ability to deliver the Application Project on programme.

6.3.38 In response to the Panel's second Written Questions regarding possible reductions in width to the cable corridor in areas of significant environmental impact, the applicant [REP-3643] considered that the LEMP would cover this, and any decisions taken would be discussed with NE and the relevant local authority. See also the discussion above on cable corridor widths.

6.3.39 Hurn PC continued to have objections at the end of the examination, and in its final submissions [REP-4007] expressed its concerns that the cable corridor would have "*huge detrimental impact*" on Hurn Forest. Hurn PC maintained that it was not party to and did not agree with some of the decisions made between conservation groups, local authorities and the applicant.

New Forest

6.3.40 In response to the applicant's Deadline IV submission, New Forest DC [REP-3471] expressed concerns about the possibility of

intrusive maintenance activities onshore over the Application Project lifetime. The applicant [REP-3643] referred to the ES [APP-265] which stated that once operational there would be a requirement for ongoing access along the cable corridor for planned maintenance inspections, but it was not expected that any plant would be required for these inspections. As the definition of "maintain" in the DCO is restricted by the activities assessed in the ES, any works beyond those would likely require further consents.

6.3.41 In its comments on the revised DCO [REP-4075] New Forest DC still considered that the redrafted powers relating to landside maintenance work was unclear. As detailed in Chapter 23, the Panel agrees with the applicant that the definition of 'maintain' should remain unchanged.

6.3.42 It was agreed between the applicant and the Forestry Commission, who has custody of Hurn Forest and West Moors Plantation, in their SoCG [REP-3122], that while the cable route does not follow the East Dorset Forest Design Plan 2009 (FDP) for Hurn Forest and West Moors Plantation, as the Application Project pre-dated the FDP, the chosen route minimises impacts on the Public Forest Estate as far as possible and was likely to lead to an overall biodiversity gain in the medium to long term.

Horizontal directional drilling impacts and suitability

6.3.43 HDD had been proposed by the applicant [APP-088] as the most predominant trenchless method to be used in areas of engineering or environmental constraint, in particular the cable landfall, road, rail and river crossings, ancient woodlands, Golden Hill Area of Public Open Space and Dorset Heaths SPA. Subsequent additions to the areas to be constructed using trenchless techniques were made by the applicant during the examination as a result of a number of IPs' concerns, including Hurn Forest PC [REP-3103, REP-3358]. The final extent of HDD was secured in the DCO with the following additions to the HDD proposed in the original application documents:

- extension of the crossing of the A338 to cross Avon Common Plantation;
- a new crossing within Hurn Forest within the St Leonards and St Ives Heath SSSI;
- extension of the crossing of the Dorset Heathlands SAC and Dorset Heathlands

6.3.44 Hurn PC [REP-2854] made a number of comments on the suitability of HDD as mitigation for certain habitats and designations. The applicant's response [REP-3176] was that the use of trenchless installation was an appropriate mitigation and had been agreed with NE, local authorities and local Wildlife Trusts in their SoCGs. In response to the Panel's second Written

Questions, the EA [REP-3634] confirmed that it was content with the information provided with regard to proposals and environmental protection for trenchless crossings. The viability of HDD as mitigation for certain habitats and designations is also discussed in Chapter 20.

Cable heating

6.3.45 Challenge Navitus [REP-2947], Trees for Dorset [REP-3426] and New Forest DC [REP-3412] raised doubts about the effects of heat emissions from onshore cables on soils and existing trees and hedgerows.

6.3.46 The applicant [REP-3490] stated that the underground cable systems proposed are similar to those installed across the UK for transmission of electricity as well as the connection of offshore and onshore wind farms. However, a clarification note on cable heating was provided by the applicant at Deadline V [REP-3490] covering both heating of the soil and potential effects on flora and tree roots. The note concluded that "*the risk that cable heating will have an adverse impact on the local environment surrounding the operational cables is negligible*."

6.3.47 The applicant [REP-4030] subsequently stated that measures that could be employed to limit cable heating would be determined by soil resistivity, cable design, cable separation and expected loading and would be set out in the detailed design. Where a risk of excessive cable heating was identified the applicant intended to adjust the cable design, for instance through specifying a larger cross sectional area of the cable conductor or using heat dissipating material around cable ducts to lower core temperatures. The applicant also stated that the majority of issues relating to heating do not apply to HDD due to the depth of installation. Any cable heating would dissipate well below any root system, and HDD ducts could be filled with heat dissipating material if any risk was considered to the operation of the cables.

Hydrological impacts of cable installation

6.3.48 Hydrological impacts were addressed in the ES [APP-091, APP-092, APP-093, APP-096] and were either scoped out or assessed as not significant after mitigation. However, Hurn PC [REP-3358] expressed concerns that, whether using open trenching or HDD, there was potential to affect the hydrological regime, either at the surface or sub-surface, while cable laying in areas where there were gradients and associated spring lines and valley bottoms. Challenge Navitus [REP-2947] also had concerns regarding potential impacts on drainage and hydrology arising from cable laying.

6.3.49 In response, the applicant [REP-3490] stated that the "*level of assessment provided is comparable to that provided for other*

similar projects such as the Rampion Offshore Wind Farm, East Anglia One Wind Farm and the Hornsea Offshore Wind farm on the basis that the design can take account for localised impacts on hydrology through the use of standard techniques (e.g. use of clay stankings and the use of sand fill material around ducts with a similar permeability to the local soils)." The scope of the assessment was agreed by NE [REP-3696], the relevant local authorities [REP-3150] and DWT and HIWWT [REP-3117].

6.3.50 The applicant [REP-3176] referred to Requirement 27 (Watercourse crossings) in the DCO which it considered would ensure that there would be no changes in hydrology or drainage, it also noted that, in this requirement, all method statements would be agreed by the EA. In response to a request made by the EA at the ISH, the applicant added text to this Requirement to ensure that watercourse crossing schemes must "*include details of monitoring of any environmental impacts on watercourse crossings during construction*."

Ornithological surveys

6.3.51 The assessment of impacts on ornithological features in the offshore area was supported by onshore ornithological surveys which were developed in consultation with a number of bodies including NE, RSPB, Dorset Wildlife Trust and Hampshire & Isle of Wight Wildlife Trusts [APP-078 and APP-097]. The results of the surveys were presented in APP-126 to APP-134 and APP-285 to APP-288.

6.3.52 A number of IPs raised concerns during the examination relating to the adequacy and findings of the applicant's surveys for both EIA and HRA species. Further details are provided in Chapter 20.

Ornithological displacement

6.3.53 The applicant considered in Volume C of Chapter 11 of the ES [APP-097] the possible impact of displacement of wintering birds from foraging and roosting areas in the Avon Valley. By prohibiting construction or decommissioning activities between November and February inclusive within 250m of the River Avon and by reducing disturbance in September, October and March the applicant assessed impacts as being not significant. This mitigation is secured in the LEMP [REP-3035].

6.3.54 Volume C of Chapter 11 of the ES [APP-097] also considered the potential impacts of displacement of nesting nightjar, woodlark and Dartford warbler due to visual and aural stimuli. The applicant proposed surveys prior to construction/decommissioning activities to establish nest site locations, and establish an exclusion zone around these sites to avoid any activities taking place that could lead to nest abandonment. With this mitigation, which is secured in the LEMP

[REP-3035], the impact was assessed by the applicant as not significant.

6.3.55 Temporary loss of breeding and/or foraging areas for nightjar, woodlark and Dorset warbler were also identified in the ES [APP-097] as having a potential impact. The applicant proposed to fell and manage areas of conifer plantation to establish heathland and grassland habitats prior to construction, and assessed the impact as not significant. The mitigation is secured in the s106 Agreement through the Heathlands Habitat Enhancement Scheme [REP-4083].

6.3.56 Dorset Bird Club [REP-3367] expressed concern that the applicant had not undertaken an assessment of the cumulative impacts on nightjar resulting from the combination of the loss of breeding territories during the construction of the onshore cable route and offshore collisions. NE in response to the Panel question [REP-3070], agreed with the applicant that there would be no significant effect on nightjar from offshore collisions and that the establishment of 12.5ha of habitat in Hurn Forest and 5ha of habitat in West Moors Plantation, secured in the s106 Agreement [REP-4083] would provide habitats suitable for nightjar to occupy during the construction period. For further details, see Chapter 20.

6.3.57 A number of IPs, including CHOG [REP-3384, REP-3564] and Dorset Bird Club [REP-3367, REP 3571] raised the issue of potential disturbance through construction works to breeding waders at the River Avon crossing. The applicant responded that disturbance of breeding waders within the flood plain grasslands was predicted to be negligible. Details of the issue and mitigation measures are presented in Chapter 20.

6.3.58 NE stated in its SoCG [REP-3696] that the implementation of measures within the LEMP would ensure that the potential to suppress the population of birds in the Offshore Development Area would be negligible and there was potential for bird populations to expand in habitats created as part of the Application Project. The population of species associated with the Avon Valley and Dorset Heathlands would not be challenged by the Application Project and therefore the impact is not significant.

Mitigation

6.3.59 Mitigation measures are secured in the various named plans in the DCO. The plans most relevant to securing mitigation for onshore terrestrial and ornithological receptors are: the construction environmental management plan (CEMP) (to be produced in accordance with the code of construction practice (CoCP) [REP-3692], as secured by Requirement 15 of the DCO; and the LEMP [REP-3035] (as secured by Requirement 20 of the DCO).

6.3.60 The draft LEMP [REP-3035] was agreed as suitable for "*providing biodiversity gain in the medium to long-term*" by NE [REP-3696], the EA [REP-3111], the relevant planning authorities [REP-3150] and the local Wildlife Trusts [REP-3117] in their SoCGs with the applicant. In response to the Panel's second Written Questions regarding the adequacy of the draft LEMP, NE [REP-3357] and Dorset CC [REP-3713] confirmed that it was adequate in establishing the framework for management and enhancement of biodiversity, and further detail would be added as the project progressed.

6.3.61 Christchurch BC and East Dorset DC [REP-3641] considered that the LEMP should set out HDD methodology comprehensively and that the cost offered by the applicant for compensatory planting was not adequate. The applicant [REP-4030] stated that details of trenchless installations would only be defined during detail design and considered that the information in the draft LEMP and relevant plans secured in the DCO provided sufficient detail at this stage. In relation to the biodiversity fund (secured in the s106 Agreement), the applicant did not agree to reviewing this and stated that the "*quantum of this fund had been agreed with NE, Wildlife Trusts and the Local Authorities who wished to be part of those discussions*."

6.3.62 The SoCG between the applicant and NE [REP-3696] agreed that once the mitigation discussed in this section was secured, the potential to reduce the extent and quality of habitats or supress populations of relevant species in the medium and long term would be negligible and the Application Project would provide biodiversity gain in the medium to long-term.

6.3.63 In the SoCG between the applicant and the EA for freshwater ecology [REP 3111] it was agreed that the implementation of measures adopted as part of the Application Project and mitigation and biodiversity gain measures outlined in the ES and draft LEMP would result in no negative significant effects on any freshwater ecology receptors.

6.3.64 New Forest DC, New Forest National park, Dorset CC, Christchurch BC, East Dorset DC and Hampshire CC in their SoCG with the applicant [REP-3150] agreed with the mitigation and biodiversity gain measures proposed subject to review of the draft LEMP.

6.3.65 In response to a Panel question at the ISH, New Forest DC [REP-3395] made additional comments requiring the visual tree appraisal to be undertaken in advance of the completion of the LEMP, and that the defined period for replacement planting obligations and establishment maintenance should be not less than 10 years, with a clear mechanism for agreeing responsibility for long-term maintenance beyond the initial 10 year period.

6.3.66 The applicant made no changes to the DCO on either of the two issues raised by New Forest DC. The matter however is addressed in Chapter 8 of this Report at paragraphs 8.3.56 and 8.3.57.

PANEL'S REASONING AND CONCLUSIONS WITH REGARDS TO ONSHORE ECOLOGY AND ORNITHOLOGY

6.3.67 The Panel considers that the applicant has addressed the main areas of disagreement between the parties sufficiently for the purposes of NPS EN-1 and EN-3.

6.3.68 The DCO includes modifications made by the applicant in response to the representations made by interested parties and as agreed in the SoCGs and raised by the Panel during the examination. The Panel is satisfied that the DCO sufficiently mitigates the impacts on onshore ecology and ornithology.

6.3.69 The Panel notes that NE has issued a LoNI for sand lizard and smooth snake, and is content with NE's assessment that the methodologies used by the applicant were appropriate in establishing the presence of protected species and establishing the likely effects on those species, other than smooth snake and sand lizard, as being not significant. We do not, therefore, see the need for any further EPS licence applications.

6.3.70 With regard to designated sites, the Panel welcomes the applicant's decision, during the examination, to extend HDD to cross the Hurn Forest section of St Leonards and St Ives Heath SSSI. We agree with NE, the local Wildlife Trusts and the local authorities that this mitigation would remove any adverse impacts on the SSSI.

6.3.71 For Moors River SSSI, we have considered the changes the applicant made to the draft LEMP to include a detailed vegetation survey and measurements of peat/peaty soil depth prior to construction commencing. The Panel is satisfied that these measures would provide sufficient information to determine the physical conditions and restoration requirements for the area of the SSSI located on wet woodland over a peat substrate.

6.3.72 CHOG expressed concerns relating to Burton Common SSSI and the Panel acknowledges that some of these concerns remained at the end of the examination. We accept that Burton Common SSSI was not part of the applicant's definition of zone of influence and have given weight to the fact that NE did not identify Burton Common as a SSSI feature that may be affected by the Application Project. We also accept the view of the applicant and NE that the provisions in the LEMP would not result in significant negative impacts on terrestrial and freshwater ecology receptors, which includes the minor watercourse which crosses the SSSI.

6.3.73 The Panel is content that with the mitigation measures adopted, the Application Project satisfies the requirements of Paragraph

5.3.211 of NPS EN-1 in relation to SSSIs, in that the decision maker "*should use requirements and/or planning obligations to mitigate the harmful aspects of the development and, where possible, to ensure the conservation and enhancement of the site's biodiversity or geological interest*."

6.3.74 The Panel accepts that differences remain between the applicant and Challenge Navitus regarding the lack or otherwise of surveys related to terrestrial European Protected Species. However, having assessed the various documents both for and against the Application Project, and given weight to the advice of NE, the Panel is content that the applicant has complied with relevant legislation and guidance.

6.3.75 There was much debate during the examination relating to the onshore cable corridor. The issue of the width of corridor being excessive, the impacts on terrestrial habitats and loss of woodland from open trenching was not resolved to the satisfaction of all IPs.

6.3.76 The Panel acknowledges and understands the concerns of Hurn PC, in particular, as the proposed corridor would cause disturbance to Hurn Forest. However, the LEMP does provide consideration for corridor narrowing in ecologically sensitive areas and the applicant would need to provide justification to NE and the relevant local authorities as to why any decisions relating to corridor width are taken. We also note the fact that the applicant acknowledged that further trenchless crossings could be accommodated within the DCO should any pre-construction survey identify further ecological constraints.

6.3.77 The Panel has carefully considered the potential impacts on protected species and local wildlife of Hurn Forest from open trenching and have given weight to the advice of NE, the relevant local authorities and the local Wildlife Trusts, all of whom agree that the approach the applicant has taken to mitigate impacts was proportionate, and also that 'net biodiversity gain' could result from the Application Project. We therefore conclude that the applicant's proposals for open trenching through Hurn Forest are appropriate and that, with the associated mitigation requirements within the DCO, they comply with regulatory requirements.

6.3.78 New Forest's concerns regarding intrusive maintenance activities associated with the onshore cable corridor, and the definition of 'maintain', have been considered by the Panel, and we agree with the applicant that the definition of 'maintain' should remain unchanged, for the reason explained in paragraph 23.1.4 of this Report.

6.3.79 The Panel recognises that the applicant's decision taken during the examination to add to the HDD locations would help to lessen impacts. The additional trenchless locations proposed are:

- extension of the crossing of the A338 to cross Avon Common Plantation;
- a new crossing within Hurn Forest within the St Leonards and St Ives Heath SSSI;
- extension of the crossing of the Dorset Heathlands SAC and Dorset Heathlands SPA/Ramsar site.

6.3.80 The issues of cable heating and hydrological impacts from cable installation have been considered, and the Panel concludes that the measures detailed by the applicant to be considered during detailed design are adequate. The Panel also acknowledges the addition the EA required in the DCO that any water crossing scheme must "*include details of monitoring of any environmental impacts on watercourse crossings during construction*." This is included in Requirement 27(2).

6.3.81 While the Panel believes that the applicant could have benefited from wider consultation with local ornithological groups, it is satisfied that the ornithological data and surveys are adequate. The Panel is content that the applicant has complied with relevant legislation and guidance to the satisfaction of the regulators.

6.3.82 Displacement of wintering birds and nesting birds due to construction activities was of a concern to a number of IPs. These issues are detailed in Chapter 20, and the Panel's conclusion is that any displacement would not be significant.

6.3.83 Mitigation measures are secured, mainly through the LEMP, for onshore terrestrial and ornithological receptors. The draft LEMP was not updated during the Examination but the Panel giving weight to NE and the EA's views, consider that it is adequate in establishing the framework for management and enhancement of biodiversity.

6.3.84 Some detailed issues, design matters and approvals remain to be resolved. The Panel is satisfied that these would be adequately addressed through application of the recommended DCO, including the In Principle Monitoring Plan and LEMP, and through proper enforcement of other regulatory regimes and enhancements.

6.3.85 The Panel therefore concludes that the application meets the requirements of NPS EN-1 and NPS EN-3 for onshore ecology and ornithology.

6.3.86 The conclusion in relation to onshore ecology and ornithology is carried forward into the planning balance in Chapter 21 of this Report.

6.4 TURBINE AREA MITIGATION OPTION (TAMO)

THE APPLICANT'S CASE

6.4.1 For biodiversity, biological environment and ecology the applicant stated that offshore impacts [REP-3429, Table 4] related to benthic ecology would be within those already assessed for the Application Project. The total area of seabed take would be reduced from 0.38km^2 to 0.25km^2 and cable protection material would remain unchanged. As turbines would be removed from the northern zone, the export cable would be proportionately longer, with an associated greater length of seabed disturbance during installation. This would be offset by the reduction of cables from six to four, resulting in a total of 199 km of export cable compared to 280 km for the Application Project. There would also be a reduction in inter-array cables from 296 km to 211 km.

6.4.2 The level of disturbance in relation to fish and shellfish would be reduced primarily due to the:

(1) reduction in number of foundations required;
(2) reduction in area required for structures;
(3) removal of monopiles as an option;
(4) reduction in total duration of piling works;
(5) reduction in area of seabed disturbed during cable installation;
(6) increase in distance from the coastline of piling activities and subsequent increase in separation distance from the boundaries of area ensonified by piling at noise levels of >75dBh

6.4.3 There would be a reduction in the beneficial effects to fish and shellfish resulting from the reduction in fishing pressure as a result of the physical presence of the wind farm, but the impact was deemed to be of negligible significance for the Application Project and the applicant stated [REP-3429] that this would be the same for the TAMO.

6.4.4 The reduction in the maximum number of turbines from 194 to 105 would result in a reduction on the impacts for marine mammals during construction, operation and maintenance and decommissioning of the TAMO. During construction, potential impacts would be reduced due to the decrease in the total number of foundations, cable laying, construction vessel movements and increased distance from coastal receptors. This would reduce potential disturbance from subsea noise, suspended sediments and collision risk. During operation and maintenance potential displacement due to the presence of turbines, noise generated and collision risk would also be reduced.

6.4.5 For offshore ornithology the reduced maximum number of turbines would reduce the level of impacts predicted for

disturbance or displacement, collision risk and the barrier effect, for all species.

6.4.6 The applicant stated that for onshore impacts [REP-3429, Table 5] the changes would be a slight reduction in the working width along the cable corridor, which would result in a reduction of temporary habitat loss of approximately 15% compared to the Application Project. Due to the reduction in the length of time required for cable installation at a given location, there would be reductions in the length of time between vegetation removal and habitat reinstatement and less disturbance to fauna.

6.4.7 The applicant concluded that all impacts associated with the TAMO for benthic ecology, fish and shellfish ecology would be within those already assessed for the Application Project and which have been assessed as not significant.

OTHER REPRESENTATIONS

6.4.8 The MMO [REP-3363] and EA [REP-3568] were content with the TAMO and agreed that it was within the realistic worst case parameters set out in the Application Project. NE [REP-3581] was of the opinion that the reduced scale of the development was likely to reduce the scale of impacts.

6.4.9 A number of representations, e.g. CHOG [REP-3564], Mr Alan Rayner [REP-3487], have highlighted that in general terms the TAMO would have onshore impacts similar in scale to the Application Project, and that the reduced number of on-shore cables would not result in the 15% reduction in habitat loss predicted by the applicant.

6.4.10 New Forest National Park Authority [REP-3574] considered that the TAMO "*offers benefits in reducing the risks of bird collision for migratory species which contribute to the Forest's our (sic) special qualities*."

PANEL'S REASONING AND CONCLUSIONS

6.4.11 The Panel concludes that the potential impacts of the TAMO have been adequately assessed by the applicant. The mitigation of impacts for the Application Project has been covered sufficiently and is applicable to the TAMO. The measures of mitigation have been incorporated in line with NPS requirements and captured in the DCO and DMLs satisfactorily. There are no significant implications for the DCO or DMLs were the TAMO to be adopted.

6.4.12 The Panel therefore concludes that the TAMO meets the requirements of NPS EN-1 and NPS-EN3 for biodiversity, biological environment and ecology. This is carried forward in our consideration of the case for the Order.

7 SEASCAPE, LANDSCAPE AND VISUAL IMPACT

7.0 THE POLICY CONTEXT

National Policy Statements

7.0.1 NPS EN-1(paragraph 5.9.5) requires the applicant to carry out a landscape and visual assessment[5] and report it in the ES. The assessments are to include effects on landscape components, on landscape character and on views and visual amenity during construction of the project and its operation (paragraph 5.9.6). Factors to be taken into account when judging impact on a landscape include existing character of local landscape, its current quality, how highly it is valued and its capacity to accommodate change (paragraph 5.9.8).

7.0.2 NPS EN-1 accepts that virtually all nationally significant energy infrastructure projects will have effects on the landscape. But that; "[*h*]*aving regard to siting, operational and other relevant constraints the aim should be to minimise harm to the landscape, providing reasonable mitigation where possible and appropriate*." Although the Application Project and Turbine Area Mitigation Option (TAMO) fall outside the nationally designated areas of the New Forest National Park (NFNP) as well as the Dorset, Isle of Wight and Cranborne Chase and West Wiltshire Downs Areas of Outstanding Natural Beauty (AONB), the duty to have regard to the purposes of such areas applies to projects that have impacts within them (paragraph 5.9.12). However, the fact that a proposed project will be visible from within a designated area should not of itself be a reason for refusing consent (paragraph 5.9.13).

7.0.3 EN-1 recognises that outside nationally designated area, there are local landscapes protected by local designation. It acknowledges that such landscapes may be highly valued locally but states that "*local landscape designations should not be used in themselves to refuse consent*" (paragraph 5.9.14). In terms of visual impact, the decision maker is expected to "*judge whether the visual effects on sensitive receptors, such as local residents, and other receptors, such as visitors to the local area, outweigh the benefits of the project.*" Mitigation measures as a means to reducing the effects of a project (for instance, through reduction in its scale, appropriate siting or design) are encouraged, while recognising the potential for such measures to result in significant operational constraint and reduction in function (paragraphs 5.9.21-5.9.23). The extent to which impacts are temporary or reversible should be taken into account.

[5] EN-1 confirms that references to landscape should be taken as covering seascape.

7.0.4 NPS EN-3 refers to the generic and visual impacts covered in EN-1 but recognises that for offshore wind farms seascape is an additional issue for consideration (paragraphs 2.6.198 & 2.6.199). Where such a wind farm would be visible from the shore, a Seascape, Landscape Visual Impact Assessment (SLVIA) is to be undertaken, which is to be proportionate to the scale of the potential impacts.

7.0.5 For the purposes of decision making (paragraphs 2.6.208 & 2.6.210), consent should not be refused solely on the grounds of an adverse effect on seascape or visual amenity, unless:

- an alternative layout can be reasonably proposed (while expecting it to be unlikely that mitigation in the form of reduction in scale will be feasible); or
- the harmful effects are considered to outweigh the benefits of the proposed scheme.

Marine Policy Statement (MPS)

7.0.6 Paragraph 2.6.5.3 of the MPS advises that the existing character and quality of a seascape, how highly it is valued and its capacity to accommodate change should be taken into account when considering the impact of a development on seascape. Any development proposed within or relatively close to nationally designated areas should have regard to the specific statutory purposes of the designated areas.

Countryside and Rights of Way Act 2000 (CROW)

7.0.7 The general duty of public bodies is set out in s85(1) of the CROW, which expects a relevant authority to have regard to the purpose of conserving and enhancing the natural beauty of the area of outstanding natural beauty. Under s89 conservation bodies are tasked with preparing and publishing management plans "*for the management of their area of outstanding natural beauty and for the carrying out of their functions in relation to it.*"

Relevant development plans and other local policies

7.0.8 Policies relevant to climate change and landscape/environmental protection listed below are summarised in the LIRs :

- Poole Core Strategy (2009) Strategic Objective 8 [REP-2675].
- Bournemouth Local Plan Core Strategy Objective 1 and Policy CS3 [REP-2676]
- Christchurch and East Dorset Core Strategy Policy ME5 and Policy HE3 [REP-2677, paragraphs 3.6 & 3.7].
- Island Plan Core Strategy Policy SP5, Policy DM12 and Policy DM16 [REP-2674, paragraph 3.8]
- New Forest District Council Core Strategy Policy CS3 [REP-2681, paragraphs 3.3.4 & 3.3.11]

- Purbeck Local Plan Part 1 Objective 1, Policy LHH and Policy REN [REP-2683, paragraph 4.3]
- New Forest National Park Core Strategy, Objective 1

7.0.9 The Dorset AONB Partnership has an approved and adopted Management Plan for the period 2014-2019 [REP-2989], setting out a framework for the conservation and enhancement of the Dorset AONB. Equally, the Isle of Wight AONB Management Plan 2014-2019 sets out the agreed objectives and policies to ensure conservation and enhancement of the AONB are in line with the purposes of its designation [REP-2959].

7.0.10 The New Forest National Park Management Plan 2010-2015 contains the vision and objectives designed to guide the long-term management of the New Forest National Park [REP-2682].

7.1 INTRODUCTION AND BACKGROUND

7.1.1 ES Volume B Offshore Chapter 13 [APP-079] comprises the applicant's SLVIA. This is intended to be read in conjunction with a suite of Appendices [APP- 135-138] that include a baseline report, explanation of the methodology used to assess the project in SLVI terms and a consultation log. Additional material, also in the form of appendices [APP-139-256], comprising figures and A1 sized visualisations are a core part of the SLVIA.

7.1.2 Through the course of the examination, further visual material was introduced by the applicant, in response to requests for additional viewpoint assessments [REP- 3228] or for clarification. The Panel's questions [PD-006] to the applicant, as well as submissions in Local Impact Reports (LIRs) and Interested Parties' [IPs] representations, elicited further notes to support or explain the SLVIA [REP- 3091, REP-3021-3022, REP-3176]. The TAMO SLVIAs [REP-3309 & 3674] were accompanied by photographs, wireframes and photomontages [REP-3276 to 3287] and further TAMO visualisations were produced by the applicant [REP 3649 to 3673], in response to the Panel's second round of questions [PD-011].

7.1.3 This Chapter is ordered to first deal with the SLVIA methodology, before addressing the effects of the offshore elements of the Application Project on seascape, landscape and visual receptors. The exercise is repeated with the Turbine Area Mitigation Option (TAMO) scheme.

7.2 SLVIA METHODOLOGY

7.2.1 The SLVIA conclusions attracted substantial criticism and debate across a wide range of statutory, non-statutory bodies, local authorities and individuals. Many of the detailed criticisms arise from challenges to the basis of the SLVIA. In other words, the steps and approach used to reach judgements about significance.

7.2.2 This section outlines the applicant's case on methodology, identifies the broad objections levelled at the SLVIA and the Panel's reasoning/conclusions on the matter. The SLVIA for the Application Project and the TAMO share the same assessment approach and are considered together.

APPLICANT'S CASE

Assessment Methodology

7.2.3 The applicant's key points are as follows:

- The SLVIA follows industry guidance and best practice, namely Guidelines for Landscape and Visual Impact Assessment (GLVIA3).
- The Statements of Common Ground (SoCG) with Natural England (NE) and Local Authorities (LAs) largely confirm that an appropriate study area for the consideration of seascape, landscape and visual impacts has been assessed.
- The scope of the assessment is appropriate in terms of the Realistic Worst Case Scenarios (RWCS) assessed, the receptors included and those scoped out.
- Judgements of sensitivity were established on the basis of GLVIA3 method of consideration of both susceptibility and value.
- Definitions of magnitude are consistent with the approach advised in GLVIA3.
- Threshold of significance is a matter of professional judgement rather than methodology. Using different thresholds for significant effects for different ES topics is not unusual, nor a regulatory requirement.

Visualisations

- The suite of visualisations produced is of high quality, robust and sufficient to support decision-making. They are Scottish Natural Heritage 2006 (SNH2006) compliant in terms of their presentation.
- Additional visualisations at Viewpoints A-F were produced in response to requests from IPs.
- Visuals alone cannot give a true representation and the best impression is to be gained by comparison of the visualisations at the viewpoint location.
- The single frame photomontages produced provide a useful comparative tool in the field.
- The viewpoint locations, their geographical spread and categorisation as 'representative' or 'specific' viewpoints are appropriate for the project.
- The photographic techniques used in images presented by others are unknown and many are misrepresentative of the Project.

- The Challenge Navitus visuals are of good technical quality but fall short in terms of presentation.

THE CASES AGAINST THE SLVIA METHODOLOGY

7.2.4 The issues arising from LIRs and from submissions by Interested Parties (IPs) are broadly similar. The key points are summarised below.

Assessment Methodology

- There is disagreement about the Realistic Worst Case Scenario (RWCS) options selected for the Application Project and the TAMO assessments.
- Definition of the different levels of scale of effect has been arbitrarily set to reduce potential significance of impact.
- Sensitivity and magnitude were not properly defined, which has led to underestimates of impacts.
- Extent of effect not properly defined and difficult to understand.
- The additional level of 'permanent' in the rating scale of 'duration of effect' is unexplained.
- Susceptibility of Regional Seascape Units were underplayed. The definition of susceptibility for seascapes is too narrow. The DTI criteria were selectively used. The full list shows a much wider range of issues that increase susceptibility.
- The generic and geographically specific Regional Seascape Units (RSUs) create overlap, leading to confusing sets of results.
- The use of a broadbrush baseline for landscapes and seascapes and impacts across different parts of the area are not captured.
- Walkers and local residents should be classed in the highest category. Recreational sailors should be classed as 'high-medium'.
- Settlements such as Bournemouth should be ascribed high sensitivity.
- Views of those living in cliff top properties have been downplayed.
- The different ratings of significance of impact should include descriptors.
- No account taken of the fact that a series of individual low-level or moderate effects can cumulatively comprise a significant effect.
- The 'major' to 'major-moderate' thresholds used to establish whether the Project would have 'significant' or 'not significant' effect is inconsistent with the methodology used in other ES topics.

Visuals

- SNH 2006 has been superseded by SNH 2014 and should have been used to prepare the photomontages for presentation to the public and for the ES.
- SNH 2014 guidance was produced due to the body of evidence establishing that the methodology and presentation of photomontages under the previous guidance proved to be inaccurate and misleading.
- Images produced under the 2006 guidance under-represent the scale of developments.
- The visual impact will be uncertain unless new photomontage images can demonstrate compliance with SNH 2014.
- The visualisations are not an accurate representation of the true impact, partly because of not using latest guidance but also because of the limitations of static representation of a dynamic facility.
- Turbine height and distance from shore comparison diagrams produced by the applicant are misleading.
- The applicant's visual material is misleading. Photomontages prepared by Challenge Navitus provide a more realistic and truer picture.

THE PANEL'S REASONING AND CONCLUSIONS ON SLVIA METHODOLOGY

Overview

7.2.5 The SLVIA assessed the potential seascape, landscape and visual impacts arising from construction, operational and maintenance (O&M) and decommissioning phases of the Project's offshore components. It was initially undertaken and written using GLVIA2[6], but updated in February 2014 in accordance with the most recent GLVIA3 guidance. The ES confirmed that the assessment process remains essentially the same but that GLVIA3 addressed areas that required clarification. The applicant stated that "*…it allows for a better focused, less rigid and more professionally informed assessment to be undertaken*."

7.2.6 The main features of the SLVIA, as presented in the ES and explained in subsequent documents submitted by the applicant during the examination (see Table 10 of REP-3676), are set out below. They encompass the methods deployed by the applicant to come to conclusions about impact on a variety of different receptors, the basis on which outcomes were reached and the

[6] The Landscape Institute with the Institute of Environmental Management and Assessment (IEMA) Guidelines for Landscape and Visual Impact Assessment (2002), Second Edition (GLVIA2)

reasons for them. This Report focusses only on points of dispute that have a bearing on the final assessments.

Study Area

7.2.7 The study area was broadly defined by the Zones of Theoretical Visibility (ZTV) of the RWCS described below [APP-079, Figure 13.1]. It was based on a 45 km radius around the Application Project turbine area, as agreed with relevant statutory and non-statutory consultees. The TAMO comparison ZTV produced by the applicant [REP-3295 to 3298] indicated that visibility in general would be broadly similar to the Application Project. For assessment of the potential for cumulative SLVIA impacts, the study area extended to a 60 km radius, as shown in Figure 13.20 of the SLVIA.

7.2.8 The Statements of common Ground (SoCGs) with Natural England (NE) [REP-3109] and local authorities (LAs) [REP-3139] confirmed that an appropriate study area for consideration of seascape, landscape, visual impacts had been assessed. The Panel sees no reason to disagree with that assessment, given the level of consensus achieved on this matter and the extent of the coverage. The ZTVs in the ES accord with the methodology and minimum requirements recommended in the 2006 SNH guidance[7] (SNH 2006).

Realistic Worst Case Scenario (RWCS)

7.2.9 The applicant's Report on Identification of Worst Case Scenario [REP-3022] explained the process undertaken and rationale for identification of the RWCS for the purposes of the SLVIA. Through a process of identifying and studying four indicative layouts, the following RWCS options were agreed with the statutory and non-statutory consultees for the reasons given in Table 13.7 of the SLVIA:

Potential Effect	RWCS
Construction & decommissioning	
Effects on seascape character	5 MW turbines comprising 194 turbines with space frame foundations
Effects on landscape character, World Heritage Site, Heritage Coast and designated landscapes.	5 MW turbines comprising 194 turbines with space frame foundations
Effect on visual receptors	5 MW turbines comprising 194 turbines with space frame foundations
Night time effects	5 MW turbines comprising 194 turbines with space frame foundations
Operation and Maintenance	
Effects on seascape character	8 MW turbines comprising 121 turbines

[7] Scottish Natural Heritage, Visual Representation of Wind Farms- Good Practice Guidance.

	with space frame foundations
Effects on landscape character, World Heritage Site, Heritage Coast and designated landscapes.	8 MW turbines comprising 121 turbines with space frame foundations
Effect on visual receptors	8 MW turbines comprising 121 turbines with space frame foundations
Night time effects	5 MW turbines comprising 194 turbines with space frame foundations

7.2.10 The RWCS for the TAMO was disputed by Challenge Navitus [REP-3788] who considered that the 105x6 MW layout should be adopted as the RWCS for both day and night impacts. The applicant explained [REP-3643] that the 8 MW layout was retained for the following reasons:

- consistency of approach with the Application Project;
- the 5m difference in height of the smallest turbines in the Application and the TAMO scenarios would be difficult to perceive at distances of approximately 20 km;
- increased distance from the coastline indicates that turbine height would be more important;
- less variation in the turbine numbers than the Application Project; and
- because the relationship between the receiving environment and the TAMO had not radically altered.

7.2.11 There is some merit in Challenge Navitus' arguments, as the 6 MW layout could appear more dense than the 8 MW option. However, the applicant cannot be criticised for adopting a consistent approach for assessment purposes, particularly as the TAMO impacts were judged on a comparative basis using the study areas and baselines already available. Challenge Navitus accepted that the judgement is subjective and its own benchmark comparison photomontages at Durlston Country Park [REP-3617 to 3620] provide a useful guide for assessing differences. Equally, the additional 5MW layouts for the five viewpoints (VP08, VP09, VP13, VP25 and VP28) included in the ES visualisations provide helpful comparisons.

7.2.12 The applicant's evidence suggested that the nearest turbines (not all turbines) would be visible for no more than approximately two thirds of the days within any one year [SLVIA Tables 13.5 & 13.6 and REP-3226]. This has been disputed by IPs [REP-3978, for instance]. Nevertheless, the SLVIA assumed conditions of good distant visibility. In other words, adopting the RWCS.

Key offshore mitigation measures

7.2.13 The SLVIA identified the measures adopted as part of the Project as mitigation to reduce the potential seascape, landscape and visual effects of the Project. These included reductions in the size of the turbine area between December 2012 and February 2014;

reduction in blade tip height; identification of an offshore substation exclusion zone; minimising use of turbine and substation lighting and maintaining turbines along the northwest leading edge in a straight line. [Also see APP-315, Schedule of Mitigation]. The measures are reflected in the Application Project.

7.2.14 The applicant asserted that the TAMO was introduced to provide the Secretary of State with another viable option with reductions in impacts.

7.2.15 The applicant additionally adopted a set of turbine area design principles which would form part of the list of documents to be certified under Article 39 of the DCOs. The principles, initially introduced by NE [REP-3357], were intended to be incorporated into the development's design, so far as is practicably possible, as indicated by the applicant. NE [REP-4072] confirmed that the design principles to be included in the Orders are aimed at minimising landscape and seascape visual impacts The objectives are to:

- increase distance from the shore;
- reduce the horizontal extent of the turbine area;
- separate the Project from valued views;
- achieve an aesthetically balanced scheme and provide for location of the largest turbines in a hybrid project.

7.2.16 The s106 planning agreement includes 'landscape funds' intended to enhance existing landscape features to enhance the appeal of the area from a visual perspective. The fund is in response to requests in LIRs to compensate for the visual impacts of the Project. Borough of Poole Council for instance suggested a Community Benefit Scheme for the lifetime of the Project [REP-2675] A similar scheme is promoted by Meyrick Estate Management Limited [REP-2954 & 3081].

7.2.17 In its evidence Isle of Wight Council indicated that it would be seeking mitigation in order to increase the experience of landscape/seascape for areas that would be impacted by the development. The measures suggested included footpaths and signage improvements and educational projects [REP-3066]. The NFNPA responded to the Panel's first round of questions in similar terms; it listed improvements to items described in the New Forest Landscape Character Assessments [REP-3080].

Impact Assessment

7.2.18 The SLVIA included assessments for the construction and decommissioning phases, as well as cumulative impacts, but the main focus is on the O&M impacts. The ES stated that these have the potential to generate the most significant long-lasting effects due to the projected 25 year operational lifetime of the wind farm. The definition of 25 years was the subject of some debate

and discussion in the representations [REP-2676, for instance] and was pursued at the hearings.

7.2.19 The key stages included in the SLVIA were based on GLVIA3 and comprise: baseline, design, assessment and cumulative assessment. The main receptors included in the impact assessment were:

- Seascape
  - Regional Seascape Units (RSUs)
  - Seascape Character Types (SCTs)
- Landscape
  - Dorset Landscape Character Types (LCTs)
  - Hampshire Integrated Character Types
  - Isle of Wight AONB Landscape Character Types
- Visual
  - Representative Viewpoints
  - Key Visual Receptors
  - Specific Viewpoints
- Designated and Valued Landscapes and Seascapes
  - Designated Landscapes

7.2.20 The SoCGs with NE and LAs [REP-3109 & 3139] confirmed that the general scope of the assessment was appropriate in terms of receptors assessed. The receptors and areas scoped out were agreed and very few representations challenged the bounds within which the SLVIA operated. The Panel takes no issue with the technical content of the SLVIA and the extent of its coverage.

Assessment Methodology

7.2.21 The applicant asserted that the adoption of GLVIA3 approach to the SLVIA gives a greater level of transparency. The approach was said to provide an understanding of how sensitivity ratings and judgements about magnitude of effect were established. These are explained in Chapter 13 Appendix 3.4 of the ES. Further material was provided in response to the Panel's questions and to points raised by IPs.

Assessing sensitivity of landscape and seascape receptors

7.2.22 The sensitivity of a landscape receptor was rated using a three point 'high-medium-low' scale and established through consideration of both susceptibility and value, as advised in GLVIA3. Susceptibility means the ability to accommodate development without undue consequences for the maintenance of

the baseline situation (GLVIA3 paragraph 5.40) and was rated on the 'high-medium-low' range. Landscape value was described as the relative value attached to different landscapes (GLVIA3 page 157) with 'national, international, local, community, or limited' ascribed to this type of receptor.

7.2.23 IPs expressed disagreement with the descriptions of susceptibility in the SLVIA, but these are matters of professional judgement which the applicant has applied in coming to conclusions about the matter. Differences of opinion are inevitable but do not necessarily amount to flaws in the SLVIA.

7.2.24 The applicant's ES also explained that, in assessing the sensitivity of seascape receptors, the criteria for increasing or decreasing the susceptibility of a seascape to an offshore wind farm development were taken into consideration. The criteria used were said to accord with the list in the DTI (2005) guidance[8]. As there are no seascape designations as such, the SLVIA assessed landscape designations extending up to the coastline and having a bearing on the overall value and sensitivity of a seascape unit. The applicant claimed that does not necessarily infer a high value to the overall seascape unit. Recreational value was rated on a 'high-medium-low' scale.

7.2.25 A number of IPs challenged the applicant's interpretation of the DTI Guidance, suggesting that it was used selectively [REP-2941 and 2959, for instance]. They further objected to the SLVIA focus on intimate seascapes. The applicant claimed the DTI list was produced in the SLVIA in a condensed form and judgements were made about the most appropriate descriptors, based on experience of factors likely to inform assessments. Also that the applicant concurred with the DTI view that large scale, open/expansive views reduce susceptibility, as a simple expansive palette of sea and sky is better able to accommodate an infrastructure development than a small scale intimate stretch of coastline [REP-3227].

7.2.26 The Panel recognises that the difference in approach goes some way to explain differences in conclusions between the applicant and IPs on the findings on RSUs and SCTs. We are inclined to agree that if the DTI definitions had been used in their complete form then seascapes might have been ascribed higher sensitivity. Had openness and exposure been given greater prominence, seascape sensitivity might have been placed in a higher category.

7.2.27 The Panel also questions the extent to which presence of shipping locally reduces sensitivity of the seascape. Major commercial

[8] Guidance on the Assessment of the Impact of Offshore Wind Farms: Seascape and Visual Impact Report

ports at Weymouth and Poole attract marine traffic to the area, but at our site inspections we did not gain an impression of regular and high levels of activity as a defining characteristic of the seascape. This is certainly not apparent in the photomontages produced in the ES or submitted to the examination.

7.2.28 Although SCTs assessments were suggested by NE, we do not consider that they add much to the overall considerations, as there is considerable overlap with the geographic extent of the RSUs. In any event, GLVIA3 advocates a proportionate approach focussing on potentially significant effects, not every conceivable effect.

Assessing sensitivity of visual receptors

7.2.29 Visual receptor groups included in the assessments comprised: residents within settlements; people using key routes; those within accessible recreational landscapes and seascapes, using public rights of way (PRoWs) or visiting key viewpoints. The applicant's assessment was extensive and thorough in its scope and coverage.

7.2.30 Sensitivity was rated in a single step five-scale process combining susceptibility and value. Judgements of susceptibility and value for visual receptors at specific viewpoints were regarded as being closely interlinked, so their sensitivity was rated in a single step process combining the two factors and ranging from: high (visitors to panoramic viewpoints), high-medium (people in locations where they are likely to pause to appreciate the view), medium (travellers on cycle routes or identified scenic routes), medium-low (users of the majority of road routes) to low (people with limited opportunity to enjoy the view).

7.2.31 In responding to IPs' suggestions, the applicant did not consider that receptors experiencing views from key locations in designated landscapes and on National Trails could be accorded 'high' instead of 'high-medium' sensitivity. The applicant asserted that the IPs' approach would undervalue the primacy of panoramic viewpoints and designed views. The sensitivity of a receptor on a National Trail was defined by the experience of the route on which there can be a range of varied views. In other words, level of engagement with views varies with elements dipping in and out of the view and with no particular location being an obvious destination, as explained at the issue-specific hearing (ISH). The applicant considered it inappropriate to equate the sensitivity of a receptor on a National Trail or within designated landscapes with a receptor at a specific destination viewpoint. [REP-3091].

7.2.32 The Panel agrees that receptors at specific viewpoints are visitors to valued viewpoints who might visit purely to experience the view or well-known viewpoints. They are rightly accorded 'high'

sensitivity. However, ascribing a similar level of sensitivity to receptors on National Trails does not undermine the importance of the viewpoint regarded as a destination.

7.2.33 The Panel does not agree that the reasoning justifies reduction in the sensitivity of users of National Trails to 'high-medium'. After all, people visiting and moving through such trails, do so with high expectations of views or experiences. The fact of less than complete visibility of the offshore wind energy development across the length of the trail is no reason for reducing those expectations or value that people would attach to views gained from them. The Panel considers that a blanket approach to ascribing high-medium sensitivity on National Trails is not appropriate in this case.

7.2.34 GLVIA3 (paragraph 6.33) records that visual receptors most susceptible to change include "*people….who are engaged in outdoor recreation, including public rights of way, whose attention or interest is likely to be focussed on the landscape or particular views*." People walking on coastal trials do so specifically to experience seascape views and fall in the category described.

7.2.35 Residents were acknowledged in the SLVIA as having a higher than average sensitivity to the presence of the Project and were recorded as 'high-medium' sensitivity. The applicant noted [REP-3091] that there is no precedent within offshore wind farm studies or need to assess the visual amenity of residents within their homes, for a development located a minimum distance of 14.4 km. That is because, none of the properties within the study area could be deemed to be affected to the extent of resulting in an unattractive place to live[9].

7.2.36 GLVIA3 recognises that visual receptors most susceptible to change are generally likely to include residents at home (paragraph 6.33) but also recognises that effects of development on private property are frequently dealt with mainly through residential amenity assessments (paragraph 6.17). The Panel agrees with the applicant, insofar as residents (even those occupying properties perched on cliff tops) should be accorded no more than 'high-medium' sensitivity; thus recognising there would be some visual intrusion but not to the extent of causing undue harm to living conditions.

7.2.37 A number of IPs [REP 2954 for example] argued that settlements such as Bournemouth, Christchurch/Barton on Sea and Swanage

[9] The applicant referred to the 'Lavender' test, used in the onshore wind sector by planning inspectors [REP-3091]

should be accorded higher than 'high-medium' sensitivity for reasons of their attractions for tourists. The Panel disagrees with that proposition, as the character of these settlements is not limited to connection with the sea; they attract visitors for reasons in addition to the experience of viewing open, uninterrupted sea and skyline. Other seaside and town-based facilities add to the settlements' character and attractions.

Assessing magnitude of effects

7.2.38 In the SLVIA, magnitude was measured on a 'high-medium-low-very low' scale and was assessed by combining the considerations of scale, extent and duration of effects.

7.2.39 Scale of effect identified the degree of change to arise from the development. The rating depended on the scale of alterations to key elements, features, qualities or characteristics of a baseline situation. Thus 'large' amounted to total or major alteration; 'medium' equated to partial alteration; 'small' meant minor alternation and 'negligible' reflected very minor alteration. For seascape, descriptors that acknowledged the characteristics of the marine environment were included.

7.2.40 The Panel is satisfied that the descriptors for each of the rating levels set out in the ES provide adequate understanding of the basis on which scale of effects were judged. Challenge Navitus [REP-2941] pointed to reference in the definitions to both effects on receptor and appearance of the wind farm, whereas GLVIA3 focusses only on the former. That may be so, but referring to both receptor and appearance underlines the thoroughness of the approach in the SLVIA.

7.2.41 Extent of effect indicated the geographic area over which the effects would be experienced. This ranged from 'limited' part of the receptor area (less than 10%); 'localised' (up to approximately 25%);' intermediate' (up to approximately 25 km or half the receptor area);'wide' (beyond 25 km, or more than half receptor area). Extent of effect was assessed for all receptors. The SLVIA further listed factors that tend to increase and reduce apparent scale and effect upon seascape. Challenge Navitus identified the scope for confusion, as linear measurements are mixed with area ratios and site is not defined. However, the narratives for individual receptors are clearer about how extents are judged. The SLVIA therefore provided the necessary information when assessing this aspect.

7.2.42 Duration of effect was assessed for all receptors and identified the time period over which the change to the receptor would arise, as a result of the development. The applicant considered a period of 25 years as long-term on the five-point scale of 'permanent, long-term, medium-term and short-term'. GLVIA3 acknowledges that there are no fixed rules on the definitions and

how the categories are defined must be clarified. The SLVIA indeed defined each of the categories; succinctly but clearly.

7.2.43 For the purposes of the SLVIA (and LVIA), the Panel agrees that the project would be regarded as 'long-term', because of the likely (or anticipated) timescale of 10-25 years and because it is likely to be reversed. The 25 years could be exceeded, as further explored in this Report, but the element of reversibility would be likely to remain. Furthermore, for visual/landscape/seascape purposes, the 'long-term' duration does not imply a lessening in the overall judgement of magnitude, as to all intents and purposes long-term means the development would be experienced or perceived over a period occupying a large proportion of a generation span.

Significance of effects

7.2.44 GLVIA3 advises distinguishing clearly between what are considered to be the significant and non-significant effects. The SLVIA accorded with that advice and stated that; *"[i]mpacts that are moderate or less are considered to be not significant under the EIA Regulations*." A common complaint amongst IPs, however, is the level at which the SLVIA established the trigger of 'significant'.

7.2.45 The SLVIA stated that; *"[t]he overall significance of an impact is determined by combining the sensitivity of the receptor and magnitude of effect to come to a professional judgement of how important this effect is…*" The conclusions were supported by a range of descriptors set out in the SLVIA to enable an understanding of how sensitivity and magnitude were derived.

7.2.46 Furthermore, it was claimed by the applicant that the threshold of significance is a matter of professional definition and judgement rather than methodology, as agreed with NE [REP-3109]. That is correct, as GLVIA3 confirms that; "…*there are no hard and fast rules about what effects should be deemed 'significant'…*" On the other hand, while GLVIA3 may not establish thresholds for significant effects, it advises consistency across different topics areas in the EIA (paragraph 3.33). The EIA Methodology Chapter stated that: *"[p]otential impacts identified as major or moderate are generally considered to have a significant effect in EIA terms*." By contrast, the SLVIA set the threshold for judgements about significant at 'major-moderate' and 'major'.

7.2.47 The Panel was informed that the SLVIA was prepared to a methodology developed by LDA Design and used previously on numerous offshore wind farms. LDA Design has consistently adopted an approach whereby 'major' and 'major-moderate' significance of impacts only are classified as being 'significant'. Consistency across the different EIA topics is not a regulatory requirement. The applicant also confirmed, with examples, that

different design practices work to different labelled thresholds and that using the 'major-moderate' threshold is not uncommon in wind farm projects [REP-3091, Table at paragraph 9.5].

7.2.48 LDA Design clearly brings a body of experience to the process, having carried out assessments for a number of offshore wind farm developments [REP-3091]. However, the Panel considers that the range of environmental designations and high sensitivity accorded to the surroundings in which the development is to be located provides some justification for a departure from the standard approach adopted in previous wind farms. What is more, a consistent approach across the EIA Chapters would have been preferable, in the interest of clarity and understanding of the overall impacts of the development.

7.2.49 At the Issue Specific Hearing (ISH) the Panel posed the question; "*If the threshold of 'significant effect' were triggered by the moderate category would this necessitate changes to the overall assessment?"* The applicant confirmed [REP-3313] that re-calibration of the methodology would result in the same assessment findings. However, at the hearing the applicant agreed that the SLVIA would have recorded more 'significant' outcomes had LDA Design adopted the 'moderate' threshold as the trigger. The applicant further accepted the Panel's proposition that had the SLVIA approach accorded with the thresholds used across other EIA topics, fewer 'moderate' impacts would have been identified.

7.2.50 These responses leave the Panel to conclude that the assessments would have benefitted from a more rigorous, objective approach to judging significance of effects. By establishing the 'major-moderate' and above categories as the trigger for defining 'significant' effects, the SLVIA potentially under-estimated the extent of the impacts on a range of receptors.

Selection and presentation of viewpoints

7.2.51 The SLVIA used 12 specific viewpoints (VPs) to assess scale, extent and magnitude of effects on visual receptors. Representative viewpoints were used as samples on which to base judgements of the scale of effects only on visual receptors. Extent and magnitude of effect were not judged at representative viewpoint locations. Assessments were undertaken to determine scale of effects only across the extent of the study area. Night time views were also considered from five viewpoints (VPs 09, 10, 15, 18 and 29). A total of 35 VPs were assessed in the SLVIA.

7.2.52 The SLVIA noted that representative viewpoints were selected through a consultation process and the majority were in locations where significant effects could be anticipated. The applicant was confident that their number, location and distribution were

appropriate and fit for the purposes of the assessment. Following the original assessment, further viewpoints were selected and visualisations produced for those locations - as identified in VPs A-F [REP-3228]. VP F represented an additional night time view from Hurst Castle.

7.2.53 The Panel is satisfied that the range of viewpoints and the categories selected for assessment are extensive and provide good coverage across the study area. The applicant has been assiduous about responding to stakeholder consultations in this respect.

Visualisations

7.2.54 The SLVIA described the key stages used to prepare the photomontages for daytime and night time visualisation purposes. The applicant confirmed that all visualisations prepared during the consultation stages and those included in the ES were undertaken in accordance with SNH 2006.

7.2.55 The applicant dismissed IPs' allegations with regard to inaccuracies in the photomontages presented at stakeholder events, and introduced a graphic representation to demonstrate otherwise [REP-3346]. The applicant also confirmed that Dorset CC's independent consultants concluded that they did not "*deliberately mislead*" and were "*compliant with relevant standards*."[REP-3018] The single frame images were undertaken as a specific response to a request from NE.

7.2.56 Despite criticisms from a number of quarters, including lack of reference landmarks, the SoCGs with LAs, NE and the Isle of Wight AONB Partnership confirm that all visualisation material (with the exception of the single frame views) accorded with the SNH 2006 guidance [REP-3109, 3129 & 3139].The Panel finds no evidence to suggest that the visual material prepared by the applicant was deliberately misleading or intentionally under-representative. The images conform to industry guidance prevalent at the time. The 'as built' comparison images material produced by the applicant [REP -3230] go some way to allay concerns about the realism or otherwise of the photomontages produced by the applicant for the purposes of the SLVIA. The Panel further accepts that the applicant was justified in proceeding with the TAMO visuals on the basis of SNH 2006, in the interest of consistency.

7.2.57 Challenge Navitus and other IPs argued that the need for changes in the approach to preparing and presenting visual material was recognised since at least 2009, and that SNH 2006 did not apply to offshore wind farms [REP-3088, 2678, 2907]. It was suggested that the applicant having been aware of the SNH 2006 shortcomings should have proceeded on the basis of the updated

version of the SNH's visualisation guidance which was published on 31 July 2014 (SNH 2014).

7.2.58 SNH 2006 was the industry's most authoritative visualisation guidance document available at the time of consultations and during preparation and submission of the ES, some three months before SNH 2014 was published. The Landscape Institute's Advice Note 01/11 [REP-3021] endorsed the 2006 guidance and "*strongly advise[d] members to follow this …in preference to any other guidance or methodology."* Furthermore, the May 2013 consultation draft of SNH 2014 noted that the updated "*guidance should not be used for the production of wind farm visualisations until the consultation has been completed and the revised guidance published."* SNH advice also confirmed that "..*it is not necessary to re-do assessments undertaken using the former guidance."* Given the timing and advice prevalent at the time, the applicant cannot be criticised for proceeding with the SNH 2006 approach. The visualisations were correctly prepared in accordance with advice current at the time.

7.2.59 The applicant was critical of images produced by some organisations and individuals, which were regarded as either "*simply unrealistic with no defensible methodological evidence base*" or "*contrived such that turbines are taken out of context.*" They also described other items as misleading - the image accompanying a flyer alerting people to a survey, for instance [REP- 2758, 2763, 2764 and 4052]. One IP concurred and referred to the "…g*rossly distorted images of a wind turbine juxtaposed to the Isle of Wight and Hengistbury Head."* [REP-2761].

7.2.60 The Panel agrees with these sentiments and finds some of the images submitted unhelpful for objective considerations of the projects. While not suggesting that the IPs' images were intended deliberately to misrepresent offshore views, it is difficult to establish the techniques used to prepare images or their compliance with guidance [REP-3420]. The Panel has therefore not relied on images that cannot be properly validated.

7.2.61 The visualisations prepared by Challenge Navitus [REP-2778 to 2807 & REP-3615 to 3627], on the other hand, were modelled accurately and the photography is to a high standard. The applicant conceded that point but drew attention to some technical shortcomings that could result in the viewer being misled. Their main criticism was the way the material was presented, as the 'letter-box cropping' effect of over-emphasising the presence of the project. [REP-3313]

7.2.62 The video-montages prepared by Challenge Navitus [Rep 2808 to 2830] are useful for imparting a sense of the movement of the turbines that photographic images are unable to capture. However, slow panning across the frames is unrealistic and can

be misleading, as noted by the applicant [REP-3313]. The Panel notes that the quantity and quality of Challenge Navitus' visual representations to the examination are impressive, but is aware that the video montages must be treated with some caution.

7.2.63 The Panel undertook to visit each of the viewpoints featured in the ES[10], including those relating to additional visuals submitted, as well as viewpoints suggested by others. Documents HE-053, 054, 055, 075, 076 confirm the locations visited by the Panel either unaccompanied or in the company of the applicant's representatives and IPs. For completeness, Panel members also viewed (from land) completed offshore windfarm projects at: London Array and Kentish Flats, Thanet .

7.2.64 At the site inspections the Panel compared actual views with photomontages of the Application Project (and the TAMO), produced by the applicant and Challenge Navitus. The latter's images were described by a number of IPs as giving a true approximation of reality. There are indeed marked differences in the amount of detail captured in the images produced under the previous and updated guidance. Nevertheless, even SNH 2104 confirms that images can never be 100% accurate. The Panel duly noted that a photographic image does not fully represent exactly what the eye will observe on site.

7.2.65 At the ISH the applicant and participating IPs agreed that the visual material should be regarded as tools to assist in the decision-making process. The extensive range of photomontages and wireframes prepared at viewpoints over a significant geographic spread, and consistent with professionally endorsed guidance, offer a fair and reasonable basis for aiding judgements on potential visual effects. The conclusions the Panel has reached on impacts are based on our experiences of the area and inspections at identified viewpoint locations assisted by the images on site.

Overall conclusions on SLVIA methodology

7.2.66 NE confirmed in its SoCG and other representations that there was not a fundamental disagreement about the appropriateness of the methodology used in the SLVIA [REP-3109 & 3070]. The Panel similarly acknowledges that the methodology deployed in the SLVIA broadly accorded with industry guidance, in particular GLVIA3. The SLVIA was extensive in its depth and scope; assessments were supported by narrative text with clear conclusions summarising effects. Photomontages and wireframes produced by the applicant were similarly compliant with guidance

[10] Despite several attempts the Panel was unable to access Povington Hill (VP06), due to military manoeuvres restricting access to the viewpoint.

up to date at the time the assessments were undertaken. Alongside the Challenge Navitus photographic images, they provide a fair and reasonable basis for the Panel's considerations.

7.2.67 The differences between the Panel's conclusions and findings in the SLVIA stem largely from judgements relating to differences of opinion on scale, extent and magnitude of effects. In some instances, however, differences can be attributed to the sensitivities ascribed to receptors or where the Panel does not agree that a 'moderate' impact can be disregarded.

7.3 PANEL'S REASONING AND CONCLUSION OF THE APPLICATION PROJECT

INTRODUCTION AND BACKGROUND TO THE PANEL'S APPROACH

7.3.1 The turbine array would be exposed to and visible from the mainland and the Isle of Wight, including a number of nationally designated locations and the Dorset and East Devon Coast World Heritage Site (WHS) international designation.

7.3.2 National designations included in the SLVIA comprise: the New Forest National Park (NFNP), the Isle of Wight Area of Outstanding Natural Beauty (AONB), the Dorset AONB and the Cranborne Chase and West Wiltshire Downs AONB. The Purbeck Heritage Coast and the Tennyson Heritage Coast were also assessed individually in the SLVIA.

7.3.3 The Panel's findings on AONBs will have some bearing on the conclusions relating to the WHS. The topic is considered at length in Chapter 9 of this Report. It forms part of the considerations below only insofar as the WHS contributes to the character of the landscape receptor or to the experiences of visual receptors.

7.3.4 The applicant recorded [REP-3226] that there were no particular contentions or debates in respect of the findings of the assessment of impacts arising during the construction and decommissioning periods or with regard to cumulative assessments. This was apparent during the examination where the evidence (and substantial objections) focussed mainly on the daytime and night time impacts arising from operation of the completed offshore works. Likewise, the Panel's considerations of offshore impacts are based on the completed Application Project, as well as the TAMO.

7.3.5 The SLVIA [APP-135] recognised that the "… *varied, complex and highly designated coastline, with numerous national designations and a World Heritage Site international designation.. [u]nderpin the variation and special character of much of the coast and study area*..." Given the sensitivities of the national and international designations, and because they occupy a large proportion of the study area, the findings in relation to impacts

on them are fundamental to conclusions on the merits of the Project. The ExA regards it appropriate therefore to focus on implications for the AONBs and NFNP.

7.3.6 At the ISH the Panel enquired whether NE's assessment of impacts on AONBs [REP-2900] was a credible approach to adopt. In effect, NE's written representations focussed on components which it considered contribute to the special qualities and natural/scenic beauty on which the AONB designation is founded. The applicant confirmed that the particular receptors are already included separately in the SLVIA and was concerned that factoring the findings on individual receptors into assessments of effects on designated landscapes would lead to considerable double counting and skew the assessment. [REP-3313]

7.3.7 The Panel agrees with NE insofar as the special qualities of a designated landscape derive from the physical and sensory characteristics of elements lying within or adjacent to it. The manner in which a development interacts with the key characteristics of the individual receptors provides the building blocks for coming to conclusions about impacts on the AONB or NFNP as a whole.

7.3.8 Looking at impacts on the AONBs and NFNP by reference to individual components has the additional advantage of covering a range of inter-related receptors at the outset. To avoid the double counting effect, they are not then re-assessed individually. The Panel has focussed its attentions on receptors held to contribute to the qualities on which the AONB or NFNP designations are founded. They broadly accord with those selected for consideration by NE (and others) in its submissions [REP-2900 & 3357].

7.3.9 During the course of the examination, the applicant claimed that anything over 20 km could be classed as 'remote'. The threshold for defining 'remote' was used by the applicant on a number of occasions [REP-3018, 3226,3313, for instance] to expound the proposition that significant impacts on receptors would not result from 'remote' distances of 20 km or more. The 20 km figure was said to have derived from NE's evidence to the recent examination into the Rampion offshore wind farm project, and accepted by the ExA in its report on the Rampion project to the Secretary of State.

7.3.10 Be that as it may, the Panel does not agree that either: 1) the concept of 20 km regarded as 'remote' at another wind farm project would inevitably apply to this case; or 2) that any distance beyond the 20 km threshold would render an offshore project incapable of having significant impacts.

7.3.11 On the first point, we agree with NE when it stated that: "*bespoke judgements have to be made in relation to each*

designated landscape and its particular context, qualities and sensitivities and according to the specific details of the offshore development proposed." [REP-3357] The context and circumstances of the Navitus Bay project are very different to the Rampion wind farm. Applying a blanket approach is inappropriate, and does not allow for local, specific considerations. On the second point, as our examination of the Project below shows, a 20 km limit cannot necessarily be applied to a development of the size and scale of this offshore wind farm.

7.3.12 The sections that follow are structured as follows:

- Description of the AONB, NP or Heritage Coast and identification of the main elements that contribute to it.
- The applicant's findings on the designated landscape and its key components.
- Main issues identified in the LIRs and by IPs.
- The Panel's reasoning and overall conclusions on the AONB or NP
- The Panels consideration of receptors broadly representative of the area not subject to AONB or NP designations.
- Overall conclusions on the visual impact of the Application Project.

CRANBORNE CHASE AND WEST WILTSHIRE DOWNS AONB

7.3.13 The AONB, identified on Figure 13.10 of the SLVIA, extends over an area of 981 km^2. It lies entirely inland and the closest point to the turbine area near Wimborne Minster is at a distance of 34.2 km north-west of it. The southernmost 10 km lies within the study area.

7.3.14 The SLVIA confirmed that theoretically the turbine area would be visible intermittently from within this AONB, although the closest area with visibility is about 38 km. The ES concluded that the distance, extent of visibility and lack of connection to the seascape environment serve to limit the scale and extent of effect on the AONB. The magnitude of effect is considered to be **very low** and it was concluded that no further assessment was required.

7.3.15 These findings were not challenged. For reasons of distance, limited visibility and remoteness from the coast, the Panel agrees that the AONB would remain unaffected by the Application Project. We have not taken the matter further.

DORSET AREA OF OUTSTANDING NATURAL BEAUTY

Background

7.3.16 The AONB was designated in 1959 and occupies an area of 1,129 km^2; in other words some 42% of Dorset. It extends from Lyme Regis in the west, along the coast to Poole Harbour in the east.

Inland, the AONB extends to 22 km inland. Figure 13.10 of the SLVIA identified the extent of the designation. Only the eastern sector of the AONB, about a quarter of the total AONB, extends into the study area.

7.3.17 The receptors included in our deliberations are:

- **Purbeck Heritage Coast**
- **Regional Seascape Units (RSUs):**
  - Purbeck Coast, Bournemouth Bay, Swanage Bay
- **Landscape Character Types (LCTs)**:
  - Limestone Plateau (Purbeck Plateau), Clay Valley (Kimmeridge Coast), Chalk Escarpment/ Ridge (Purbeck Ridge),
- **Specific viewpoints (VP)**:
  - VP06, VP07, VP08, VP09 and VP12
- **Representative viewpoints**:
  - VP04, VP05, VP10, VP11, VP13, VPA, VPB, VPC, VPD
- **Night time impacts:**
  - VP09, VP10
- **Settlement**:
  - Swanage
- **Recreational routes**:
  - South West Coast Path, Purbeck Way and other Public Rights of Way (PRoWs)
- **Accessible and recreational landscapes**:
  - Durlston Country Park, National Trust/Common Land within the AONB

The ES and the Applicant's Findings

AONB in its entirety

7.3.18 The bareground ZTV (Figure 13.2 of the SLVIA) established that the Project would be visible from approximately 37% of the section of coastline within the study area, which includes some elevated coastal fringe areas such as the Purbeck Hills. The sensitivity of the AONB is adjudged to be **high**, given its high

susceptibility to offshore wind energy development and national designation.

7.3.19 The eastern part of the AONB within the study area was sub-divided into six separate sub-areas or land parcels (A-F) (SLVIA paragraph 13.5.809). The SLVIA did not assess land parcel F, due to limited, if any, visibility of the turbines from that area.

7.3.20 Sub-areas A-E comprise:

- A. Coast and coastal fringe from Old Harry Rocks to St Aldhelm's Head
- B. Poole Harbour and Studland
- C. Coast and coastal fringe from St Aldhelm's Head to Worbarrow Tout
- D. Coast and coastal fringe from Worbarrow Tout to White Horse Hill
- E. Inland on the Purbeck Ridgeway

7.3.21 The conclusions in the SLVIA on the individual sub-areas were based on assessments of alterations to the AONB's special qualities and impact on the baseline situation. The findings were as follows:

Sub-Area	Scale of Effect	Extent	Magnitude	Significance of impact	Significant under EIA Regs
A	Medium	Wide	Medium	Major-moderate	Significant
B	Small	Intermediate	Low	Moderate	Not significant
C	Small	Wide	Low	Moderate	Not significant
D	Small-negligible	Wide	Low-very low	Minor	Not significant
E	Small	Localised	Low	Moderate	Not significant

7.3.22 Parcel F occupies a large proportion of the AONB within the study area, and the SLVIA stated had the effect of moderating impact on the designation as a whole. Taking account of variations in visibility from the parcels of land, the SLVIA concluded as follows on the entirety of the Dorset AONB:

	Scale of Effect	Extent	Magnitude	Significance of impact	Significant under EIA Regs
Dorset AONB	Small-negligible	Localised	Low-very low	Minor	Not significant

7.3.23

Heritage Coast

7.3.24 The Purbeck Heritage Coast was accorded **high** sensitivity. This categorisation derived from: its high susceptibility due to its physical attributes and geographic overlap with the Dorset AONB, and because of its definition as Heritage Coast. The SLVIA divided the Heritage Coast into four land parcels which correspond with the AONB sub-areas A-D. Conclusions on the individual areas of Heritage Coast were the same for the corresponding areas of the AONB.

Seascape

7.3.25 The seascape assessment was based on both RSUs and SCTs. Use of the former is the recognised approach but the SLVIA confirmed that additional use of SCTs was agreed in consultation with NE.

7.3.26 The ES concluded that on RSUs the following levels of significance of impact would occur:

- Purbeck Coast - at the coast and coastal sea portion of this RSU the impact would be **major-moderate** east of St Aldhelm's Head and **moderate** to its west; considered to be **significant** and **not significant** respectively under the EIA regulations.
- Swanage Bay - coastal and coastal sea portion was expected to experience **moderate** significance of impact while the offshore portion would be **minor**, in each case considered to be **not significant**.
- Bournemouth Bay - magnitude of effect on this RSU was considered to be high-medium, but due to the medium sensitivity of its coast and coastal sea portion and medium-low sensitivity of the offshore portion, a **moderate** significance of impact was predicted. Overall, **not significant**.

7.3.27 The SLVIA confirmed that the turbine area would not lie within any of the geographical areas the SCTs cover. Therefore only the visual and perceptual elements that make up the characteristics were considered to be affected.

7.3.28 The significance of impacts predicted on SCTs ranged from **minor** to **moderate** which was regarded as **not significant**.

Landscape Character Types (LCTs)

7.3.29 The SLVIA noted that wind turbine developments involve addition of elements rather than alteration or removal of existing features. For that reason, the LCTs would not experience any direct effects on physical defining characteristics and attributes. Effects on character would be limited to effects upon "…*the aesthetic*

attributes that relate to character and any associated perceptual characteristics."

7.3.30 The SLVIA findings on LCTs assessed were recorded as **not significant**, based on significance of impacts ranging from minor to moderate.

Specific viewpoints

7.3.31 As receptors at specific viewpoints were judged to be of high sensitivity[11] to offshore wind energy development. The headline conclusions in the SLVIA are recorded below, and the effects deemed to be **significant** at all but one of the specific viewpoints.

VP	Scale of effect	Extent	Magnitude	Significance of impact	Significant under EIA Regs
06. Povington Hill	Small	Localised	Low	Moderate	Not significant
07 Swyre Head	Medium	Localised	Medium	Major-moderate	Significant
08 St Aldhelm's Head	Medium	Localised	Medium	Major-moderate	Significant
09 Durlston Castle/Head	Large-medium	Localised	High-Medium	Major	Significant
12 Old Harry Rocks	Medium	Localised	Medium	Major-moderate	Significant

Representative viewpoints

7.3.32 These viewpoints were used to represent visual receptors at the distance and direction in which they are located and of the type(s) present at that location. The majority were selected for locations where significant effects could be anticipated.

7.3.33 The scale of effects recorded in the SLVIA (in the case of VPs A-C in REP-3227) are summarised below:

- VP04 - Osmington White Horse - **Negligible**
- VP05 - Hambury Tout - **Small**
- VP10 Swanage Seafront - **Negligible**
- VP11 Ballard Down - Large-**Medium**
- VP13 Knoll Beach, Studland - **Negligible**
- VPA Durlston near Anvil Point - **Large -medium**
- VPB Swanage Beach (north) - **Large-medium**

[11] NBDL accepted that receptors at Durlston Head should be ascribed high sensitivity and not high-medium as recorded in the SLVIA [REP-3018]

- VPC Knoll Beach, Studland (north) - **Medium**
- VPD Brownsea Island - **Small**

Night time impacts

7.3.34 The scale of effect on VP10 (Swanage Seafront) was anticipated to be **negligible**.

7.3.35 On the basis that night time views are representative only of those visiting at night, sensitivity at Durlston Castle was described as high-medium. The scale of effect was considered to be medium-small and extent regarded as localised, leading to medium-low magnitude of impact. This analysis resulted in **moderate** significance of impact which was deemed to be **not significant**.

Recreational routes and Public Rights of Way (PRoW)

7.3.36 Users of long distance routes and PRoWs were described in the SLVIA as having high-medium sensitivity.

7.3.37 The South West Coast Path (SWCP) lies along the Dorset coast. Within the study area it runs along the Purbeck coast and ends at Studland.

7.3.38 Purbeck Way long distance path lies mostly inland along the Purbeck Hills and reaching the coast at Ballard Down. The greatest scale of effect was anticipated to arise from the length of path closest to the coast and inland up to Ailwood Down.

7.3.39 PRoWs on the Purbeck Coastal fringe run in a north south direction along field boundaries to the coast. The SLVIA noted that in general views would be possible within 1.5-2 km from the coast. The network of PRoWs lying along the slopes of Ballard Down and Nine Barrow Down lead up to the Purbeck Way at the top of the ridgeway.

7.3.40 The SLVIA findings are set out below.

Route	Scale of effect	Extent	Magnitude	Significance of impact	Significant under EIA Regs
SW Coast Path to Egmont Point	Medium	Wide	Medium	Major-moderate	Significant
SW Coast Path beyond Egmont Point	Small	Intermediate	Low	Minor	Not significant
Purbeck Way to Ailwood Down	Medium	Wide	Medium	Major-moderate	Significant

Purbeck Way beyond Ailwood Down	Small-negligible	Intermediate	Low-very low	Minor	Not significant
PRoW on Purbeck coastal fringes	Medium-small	Intermediate	Medium-low	Moderate	Not significant
PRoW linking with Purbeck Way (at Ballard Down)	Medium-small	Intermediate	Medium-low	Moderate	Not significant
PRoW linking with Purbeck Way at Nine Barrow Down	Small	Intermediate	Low	Minor	Not significant

Accessible and recreational landscapes

7.3.41 The SLVIA explained that users of these landscapes include people likely to pause to appreciate the view; and visitors to attractions or heritage assets or local landmarks. They were considered to have high-medium sensitivity.

7.3.42 Durlston Country Park is located around Durlston Castle at Durlston Head which, at 14.4 km north west of the turbine area, is the headland closest to it. The park is designated at Grade II on the Register of Parks and Gardens and includes a visitor centre. It extends around the Castle and around to cliffs to the west.

7.3.43 The scale of effect on visual receptors at the park was adjudged to be medium over a wide extent, resulting in a medium magnitude of effect. The significance of impact would be **major-moderate**, which is **significant** under the EIA Regulations.

7.3.44 The National Trust/Common Land located in the AONB include the Purbeck Coast from Winspit to Tilly Whim Caves, Ballard Down, Ailwood Down, Studland, Godlington Heath Nature Reserve and Brownsea Island. The closest point would be Tilly Whim Caves 15 km north-west of the turbines.

7.3.45 A medium scale of effect was anticipated on users of coastal areas and the extent would be wide; resulting in a medium magnitude of effect. The **moderate** significance of impact was considered to be **not significant**.

Settlements

7.3.46 The SLVIA focuses primarily on the effects on Swanage as a whole which was assessed as experiencing an impact of **negligible** significance, based on residents and visitors adjudged to be of high-medium sensitivity to offshore wind energy development.

7.3.47 Nevertheless, from the areas of Swanage anticipated to have visibility of the proposed turbines (recreation areas, seafront north of Victoria Avenue, coastal and open parts of Swanage) scale of effect was considered to be medium and localised in extent. This would result in a medium magnitude and **major-moderate** significance of effect and therefore **significant** under the EIA Regulations.

Issues arising from LIRs and IPs' submissions

7.3.48 Written and oral submissions disputing the applicant's findings and questioning the basis of the conclusions on individual receptors and the AONB itself. They can be summarised as follows:

- Sensitivity, magnitude of effects and significance of effect for the following receptors were disputed:
  - Purbeck Coast, Swanage Bay and Bournemouth Bay RSUs.
  - Coastal and Active Coastal Waters Marine and Sandy Beaches SCT
  - Purbeck Heritage Coast
  - The Limestone Plateau (Purbeck Plateau) and Chalk Ridge / Escarpment (Purbeck Ridge) LCT, Kimmeridge Coast part of the Clay Valley.
  - VPs 05, 08, 09, 10, 11, 12, 13, B, C and D
  - Night time at VP09 and VP10
  - South West Coast Path (SWCP) and other PRoWs
  - National Trust land - northern part of Studland Beach, inconsistency with findings on national trail passing through the land.
  - Settlement of Swanage
- The effects on Studland Beach of Area B of the AONB should be recorded as significant.
- Significant effects would extend in Area C to Worbarrow Tout.
- Significant effects would occur on areas of coastal character in the eastern portion of the Purbeck Ridge (Area E).

PANEL'S REASONING AND CONCLUSIONS

The Dorset AONB

7.3.49 In accordance with S89 of the Countryside and Rights of Way Act (2000) the Dorset AONB Management Plan 2014-2019 has been prepared (co-ordinated by the Dorset AONB Partnership) and became effective in April 2014. The SLVIA referred to the 2009-2014 Plan, as this was the relevant document at the time it was written. However, the applicant had the opportunity to consider the updated policies and set out a written response in REP-3227.

7.3.50 The 2014-2019 Management Plan notes that "*natural beauty does not simply refer to the visual appearance of the countryside, but includes flora, fauna, geological and physiographical features, manmade, historic and cultural associations and our sensory perceptions of it.*" It goes on to list the suite of special qualities that make it "*unique and outstanding, underpinning its designation.*"

7.3.51 The turbine area would not physically alter the fabric of the AONB but it was generally agreed that some of the special qualities would be altered by its presence. Of these, the SLVIA recognised that the following three are vulnerable to alteration:

- tranquillity and remoteness;
- dark night skies;
- the exceptional undeveloped coastline.

7.3.52 In line with NE's submissions [REP-2900], the Panel considers that 'uninterrupted panoramic views' should be added to the list, as this section of the AONB encompasses the Purbeck coast and the higher ground of the Purbeck Hills which allow for such views to be appreciated. The Panel agrees with the applicant that judgements about the AONB should not focus solely on its visual attributes but that special qualities and purpose of designation deserve consideration as well [REP-3313 and 3226].

7.3.53 Having visited the area on a number of occasions, we also concur with NE's observations that the inland portions of the AONB would be affected but only to a limited extent. The special qualities most likely to be tested by this offshore development are best expressed at its coastal edge and this is where the Panel has largely focused its attention.

Land Parcel A: Coast and coastal fringe from Old Harry Rocks to St Aldhelm's Head

7.3.54 The main receptors considered along this stretch of the AONB are:

- The Swanage Bay and Purbeck Coast RSUs

- The Limestone Plateau (Purbeck Plateau) and Chalk Escarpment/ Ridge (Purbeck Ridge) LCTs
- Viewpoints 08, 09, 10, 11, 12, A and B
- The South West Coast Path, PRoWs
- Durlston Country Park, and National Trust properties
- Settlement of Swanage

Seascapes

7.3.55 The Purbeck Coast RSU extends from Redcliff Point along the Purbeck coastline to St Aldhelm's Head and east to Durlston Head (Figure 13.4 of the SLVIA).

7.3.56 The applicant's baseline report [APP-135] stated that the seascape nearest the coast retains a quiet, still character. The character is remote with only occasional sail boats near the coast and isolated ships on the horizon. The report also pointed to a lack of strong focal points towards the offshore portion of the RSU, and that the bays, cliffs and coastal formations form strong focal points within views along the coast.

7.3.57 We agree with the **not significant** conclusions with regard to the offshore portion of the Purbeck RSU, given the scope for accommodating the development within this wide seascape environment and value accorded to it.

7.3.58 In views from the coast, the Project would be seen in combination with landmark coastal features, particularly to the east. The presence of a new focal point on the horizon where presently there is none would detract from the remote quality of this part of the RSU while also detracting from the bays and cliffs as the main attractions at the coastline. The significance of effect is correctly identified as **major-moderate** leading to a **significant** outcome on the eastern coastal portion of the RSU.

7.3.59 The Swanage Bay RSU covers the coastline from Durlston Head, northwards across Durlston Bay, Swanage Bay, Ballard Point and to Old Harry Rocks north-eastwards. The settlement of Swanage spreading out makes it a relatively busy seascape unit but beyond Swanage Bay the coastline is largely undeveloped.

7.3.60 Challenge Navitus' description of the Swanage Bay RSU [REP-2941], gives some measure of the sensitivity of the receiving environment:

"*Approximately two-thirds of this RSU's coastline includes the WHS, the Dorset AONB and the Purbeck Heritage Coast, is undeveloped, and would have unobstructed views of the proposal.*"

7.3.61 The SLVIA recorded that the Project would be visible from most of the seaward portion of the RSU, from the coastal headlands, elevated coastal plain and from cliffs of the landward portion.

From lower parts of the coast, views would be varied but for the most part screened by Peveril Point.

7.3.62 The SLVIA considered that changes would be noticeable from cliffs and headlands, but would result in minor alterations to key elements. We disagree. At Durlston Bay (15 km away at its closest point) the development would form a new dominant focal point which Challenge Navitus estimated would occupy some 47% of the horizon [REP-2941].

7.3.63 From other elevated locations at the southern end of the RSU, the full extent of the turbine area would be visible up to Ballard Down. It is not the fact of visibility alone that causes us to differ from the applicant's findings, but the scale of it in panoramic views from which the AONB derives some of its special qualities. Interference with views of natural focal points such as the headlands is an additional matter of serious concern.

7.3.64 A large proportion of the RSU lies beyond the AONB and comprises settlements located around the bay or popular beaches. Medium sensitivity accorded to the whole of the RSU is understandable. The quieter sections of Studland Beach may be more vulnerable to alterations but that, in our view, does not justify a higher level of sensitivity to the whole of the RSU.

7.3.65 Minor significance predicted for the offshore portion is appropriate. Nevertheless, an overall **moderate** significance of impact in this case should not be disregarded, especially as uninterrupted panoramic views are an important part of the special qualities underpinning the natural beauty of the AONB.

Landscape Character Types

7.3.66 The baseline report [APP-135, paragraph 2.3.1] recorded that the descriptions of relevant LCTs are taken from the Dorset Landscape Character Assessment (LCA). The extent of the LCTs is featured in Figure 13.7A of the SLVIA.

7.3.67 The SLVIA correctly noted that LCTs most affected by the presence of the turbines lie along the coastline within the study area. Views from further inland are likely to be restricted by urban built form, undulating land or intervening vegetation. As the Project would be located offshore, the LCTs' physical attributes would remain unaltered. The SLVIA therefore focused on the visual aspects of character. The Panel's assessments follow a similar approach.

7.3.68 The Purbeck Plateau sector of the Limestone Plateau LCT is the only area of this LCT that is located in Dorset and in the AONB. It lies along the elevated and prominent Isle of Purbeck. The Purbeck Ridge and South Dorset Escarpment sections of the Chalk Escarpment/Ridge LCT include landmarks and prominent

features such as Old Harry Rocks and the chalk ridge at Ballard Down.

7.3.69 The Panel consider that the LCTs should be accorded high sensitivity, given the range of relevant factors recognised in the SLVIA as increasing their susceptibility: "*open views with a focus on …the seascape and uncluttered horizon; inter-visibility between the plateau …and the sea; undeveloped open character, with a bold skyline and panoramic views.*"

7.3.70 By contrast, elements that decrease the LCTs' susceptibility (occasional quarry scars and transport routes and out of character settlements) are limited. They do not interfere with the intrinsic, recognisable attributes described above. Combined with national value, the Panel agrees with the Dorset AONB Partnership's proposition [REP-2989] that the Purbeck Plateau and Purbeck Ridge/escarpment areas of the LCTs deserve to be accorded high level of sensitivity.

7.3.71 Views from within the Purbeck Plateau would be affected along the stretch of coastline between St Aldhelm's Head and Durlston Head, and from the elevated coastal fringes. Visibility from the Chalk Escarpment/ Ridge would be limited to seaward facing slopes of the Ridge and from areas along the coast.

7.3.72 The visual effects on landscape character by the turbine array were described in the SLVIA as:

- noticeable changes of the baseline condition from coastal areas and partial alteration to key visual characteristics (Purbeck Plateau);
- recognisable changes to the bold skyline and panoramic views from Ballard Down to where it reaches the coast at Old Harry Rock. (Purbeck Ridge).

7.3.73 Moderate significance of impact was predicted in the SLVIA, based on high-medium sensitivity of the receptor landscapes and medium magnitude of effect. However, the high sensitivity accorded to the LCTs would, in the Panel's view, lead to higher than moderate and therefore **significant** impacts.

7.3.74 This conclusion is not just based on a matrix exercise. It also stems from our consideration of the proximity of the Project to the coastline, and extent of almost uninterrupted visibility of it from long stretches of the elevated coastal portions of the LCTs. Disruption to key characteristics such as panoramic views and changes to the open seascape against which notable landmarks such as Old Harry Rocks, Durlston Head and St Aldhelm's Head are viewed would result in adverse impacts to the visual aspects of the character of the LCTs.

Viewpoints 08, 09, 10, 11, 12, A and B

7.3.75 These viewpoints are located at St Aldhelm's Head, Durlston Head, Swanage Seafront, Ballard Down and Old Harry Rocks. The applicant's relevant visual material [APP-163-165, 166-175, 176-178, 180-184 and 185-186] includes a range of photomontages, wireframes, and single frame images, with some 5 MW layout options included. Additional images [REP-3228] include VPs A (Durlston near Anvil Point) and B (Swanage Beach north). The Challenge Navitus photographic images include both 5 and 8 MW options across a similar range of viewpoints [REP-2779, 2782-2788, 2789, 2793-2794].

7.3.76 We agree with the SLVIA conclusions of **major** to **major-moderate** significance of effects (and therefore **significant**) on receptors at VPs 08, 09 and 12 (specific VPs at St Aldhelm's Head, Durlston Castle and Old Harry Rocks). Individually, these comprise distinctive, nationally recognised landmarks. Collectively, they contribute to the appeal of this coastal landscape, reflecting its history and natural beauty. The images [see specifically REP- 2779, 2786-2788, 2795-2797] confirm the extent to which the turbine array would form a new focal point in a range of views, potentially at the expense of detracting from the prominence and attraction of prime features in this coastal scenery.

7.3.77 The **large-medium** scale of effects anticipated at VPs A and B (representative) are also appropriate. Similarly, the **large-medium** scale of effect at representative VP11 (Ballard Down) correctly reflects the degree to which the offshore Project would diminish the experience of the *"powerful, wild appearance due to its open and exposed nature with commanding views of most of Purbeck, Poole Harbour and the coast."*[12]

7.3.78 The turbines would intrude on people's perceptions of quiet, remoteness or expansiveness. As indicated earlier (paragraph 7.2.32), the Panel is inclined to concur with NE and others that high sensitivity should be accorded to receptors on the SWCP National Trail, irrespective of the specific or representative categorisation of the viewpoint. The difference between the Panel and the applicant on this point has little bearing on the final outcome at viewpoints discussed earlier, but reiterates the concerns of under-estimation at representative viewpoints along the SWCP.

Night time impacts at Swanage Seafront and Durlston

7.3.79 The lights of Swanage currently illuminate Swanage Bay. At the seafront, the lights from properties on Peveril Point are reflected

[12] Description of Ballard Down in the Dorset AONB Landscape Character Assessment

in the sea. The Panel agrees that aviation lighting of the turbines would not readily affect the night sky, given the distractions of shore-based lights marking the settlement.

7.3.80 The dark skies element of the Dorset AONB's special quality is best expressed and experienced at Durlston. Other remote areas along the coast are unlikely to be visited by members of the public in the numbers expected at Durlston, who were correctly accorded high-medium sensitivity in the SLVIA. The ES provided night time visualisation at Durlston [REP-169 & 176].

7.3.81 Durlston Country Park is a Dark Skies Discovery Site (Milky Way). It hosts the only public access astronomical observatory in Dorset. The Friends of Durlston Executive Committee and other IPs (PCBA for instance) draw attention to the public's ability to appreciate the dark night skies from this location as part of the experience of the remoteness of the AONB [REP-2882,3184]. Similar views were expressed by NE and LAs.

7.3.82 The applicant's evidence indicated that Article 220 of the Air Navigation Order and the Regulations allow for offshore aviation safety lighting to have zero light spillage below the horizontal plane. This is different to the lighting on TV masts emitting peak intensity in the horizontal plane [REP-3643 and 3689]. While no lighting manufacturer is currently supplying zero spillage lights below the horizontal plane, the applicant believes that this should be imminently technically possible.

7.3.83 In the event of low or zero horizontal spillage lights being installed, the Wessex Astronomical Society [REP-3704] confirmed that such lighting would provide sufficient mitigation and enable astronomy events to continue at Durlston. Nevertheless, the sense of darkness would be disrupted, as the turbines would be visible in night time views out to sea. The effect would be localised but Durlston is more than just a locally recognised venue. The SLVIA anticipated a **moderate** significance of impact. But in this instance the Panel believes that the outcome falls into the **significant** category for the likely intrusive effects at night at a location providing opportunities to appreciate the darkness of seaward views.

National Trail and PRoWs

7.3.84 The applicant predicted **major-moderate** significance of effect on receptors at sections of the SWCP National Trail between Studland and Egmont Point (to the west of St Aldhelm's Head), and on the section of the route on Purbeck Way from the coast to Ailwood Down. That is correct, given that the turbines would feature in views across almost the entire stretch of the paths between these points, and because of the scale of alterations to seaward views.

7.3.85 However, we disagree with the findings of **minor** significance west of Egmont Point. As far west as Hambury Tout (VP5) the Project would result in distinct changes to important views, to varying degrees depending on distance and visibility. But on elevated ground they would be seen to compete with the pattern of coves and headlands featured in views along this stretch of the coastline. Similarly, walkers on elevated sections of PRoWs on the Purbeck coastal fringes and at Ballard Down would perceive changes that would discernibly affect the sense of tranquillity and remoteness of the AONB at those points.

Accessible and recreational landscapes

7.3.86 The SLVIA confirmed the importance of views to the experience and setting of Durlston Castle and Durlston Country Park. It also acknowledged that the turbines would noticeably alter seaward views and views from the cliffs. For these reasons, the Panel concurs with the SLVIA findings of **major-moderate** significance of effect resulting from the presence of the turbines for reasons of their proximity (14.4 km) and extent of changes to panoramic views from the Country Park. The importance of the views from Durston Head cannot be under-estimated. Durlston Castle is a key visitors' location housing the visitor centre for the WHS. The turbines would replace the Isle of Wight as the dominant feature in views out from the Castle and intrude upon the open horizon and seascape.

7.3.87 The main receptors at the National Trust (NT) property on the Purbeck Coast are users of the NT Open Access Land and of the SWCP which passes through the land. VPs 11 and 12 (Ballard Down and Old Harry Rocks) represent receptors' experiences at important locations. The Panel concludes that receptors on these viewpoints should be categorised as high sensitivity and the same would apply to visitors and walkers through the Purbeck Coast from Winspit to Tilly Whim Caves and Ballard Down.

7.3.88 Equally, the effects ranging from major, major-moderate to large-medium applying to the relevant viewpoints, the SWCP and Durlston Country Park would extend to receptors visiting the NT Open Access Land and Common Land. They are there primarily for the purposes of walking along well known coastal stretches to appreciate views and experience the area's special qualities. The Panel considers that the **major** or **major-moderate** significance of effects should apply to receptors at this location.

Settlement of Swanage

7.3.89 We accept the SLVIA reasoning behind the finding of **major-moderate** and therefore **significant** effect on receptors at Swanage subject to greater levels of visibility. Recreation areas, seafront north of Victoria Avenue, coastal and open parts of the town, for instance would be adversely affected. The Challenge

Navitus visualisation from De Moulham Road is a good representation of the level of visibility likely [REP-2818]. However, the claim that the character of the town as a Victorian seaside resort would be 'inevitably changed' does not necessarily follow [REP-2941], in the Panel's view. The town's seaside attractions would remain unaffected, as would the sense of it being a pleasant place to live and work.

Conclusions on sub-area A

7.3.90 This section of the AONB is particularly dramatic and distinctive, because of the elevated chalk cliffs. It features known landmarks and prominent headlands. It also lies closest to the turbine area at 14.4 km from Durlston Head.

7.3.91 The turbines would be conspicuous and would appear as prominent features in the open sea. Views and experience of the special qualities characterising this stretch of the coastal edge of the AONB would be markedly altered in the ways described above, including the dark skies element of it.

7.3.92 The Panel agrees that a number of the other special qualities would remain unchanged because of the Project's location beyond the AONB boundaries. Nevertheless, the section of the Dorset AONB comprising land parcel A represents coastal dramatic scenery of the highest quality. It comprises notable and valued features of the highest natural and historic interest. While the Panel agrees with the overall outcome of **significant** implications of harm, this would result from the Application Project causing a **major** significance of impact and not the major-moderate anticipated in the SLVIA.

Land Parcel B: Poole Harbour and Studland

7.3.93 This sector of the AONB includes Studland Heath and the south western portion of Poole Harbour.

7.3.94 The following receptors are considered:

- Bournemouth Bay RSU
- Lowland Heathland LCT
- Viewpoints 13, C and D
- National Trails and PRoWs
- Studland NT property

Seascape

7.3.95 Only very localised areas of the Studland Beach and Poole Harbour sections of the Bournemouth Bay RSU could be regarded as falling within the higher sensitivity category. The RSU in its entirety stretches across a wide area and there is considerable variation in the character of the offshore, coast and coastal sea

portions of the RSU, including recreational value attached to those areas.

7.3.96 Nevertheless, the SLVIA described the close proximity of the Project and its location "..*between two important headlands, … would become a new focal point in an area of open seascape. The entire Project would be visible and would occupy a relatively large proportion of views.*" It further stated that "*baseline condition would be fundamentally changed, with alterations to key visual characteristics of the RSU ranging from major to partial*." In the light of these descriptions, the Panel agrees that a **high-medium** magnitude of effect would result.

7.3.97 Insofar as the AONB is concerned, views from Poole Harbour are largely limited to and focused on the coastline itself. Views towards Old Harry Rocks lie within a similar direction to the wind farm. Views of the turbines juxtaposed with the Rocks would result in more than just a localised effect, due to the value and importance of the feature from key areas of the AONB, such as Studland Beach and Heath. Therefore, while the applicant's matrix results in a moderate effect on the RSU, the consequences for the AONB would be far-reaching and **significant** in the Panel's view.

Landscape

7.3.98 The South Purbeck Heaths area of the Lowland Heathland LCT lies in the AONB. It is judged to have medium sensitivity; scale of effect is considered to be negligible and magnitude **very low**.

7.3.99 Most of the LCT lies inland with only a small portion located at the coast of Studland. Views from that location are assessed separately. But for the purpose of considering the impact on the LCT, the ExA agrees with the findings above.

Viewpoints 13, C and D

7.3.100 The finding of negligible scale of effect at VP 13 (Knoll Beach, Studland) is correct, given limited visibility from that particular viewpoint [APP-187-190]. The location, however, was identified for the Original Turbine Area and does not represent views of the Application Project as one moves northwards along the beach. VP C [REP-3228] and the Challenge Navitus images [REP-2795 to 2797] are more revealing about the extent to which the turbine array would interfere with Old Harry Rocks as the focal point from this important stretch of beach. The beach lies within NT land and the SWCP runs through it.

7.3.101 In VP C, the turbines would appear to the south east of the view and behind the Rocks. They would be seen extending to approximately the same height as the Rocks. Even at 20 km distance, the applicant conceded that the Project would have a strong presence and reduce the sense of remoteness [REP-3227].

The Panel notes that the medium scale of effect under-represents what is likely to be a substantial intrusion affecting a range of visual receptors at a highly sensitive location. The scale of effect at the beach and at VP C would be **large**.

7.3.102 VP D [REP-3228] shows the view from Brownsea Island. The chain ferry, harbour features, navigation buoys and movements of boats, ferry and commercial shipping serve as distractions in views towards the open sea. The turbines would be visible but against the context of a busy environment with existing built form and other features in the fore and middle ground. The turbines would be partially screened by existing vegetation. The Panel agrees that the scale of effect would be **small,** as predicted by the applicant.

National Trails, PRoWs and accessible recreational landscapes.

7.3.103 For reasons of degree of visibility and intrusive effects described in relation to VP C, users of the SWCP and the NT property at Studland would be similarly affected by the turbines occupying the open horizon. They would conflict with the shape and form of Old Harry Rocks. The outcome would be **significant** for those looking to experience the landmark features and other attributes of the AONB from these locations.

Conclusions on sub-area B

7.3.104 Views out from Poole harbour are restricted and in any event dominated by the bustle of activities and harbour-related features. From Studland, views of the turbines would be oblique but they would be seen adjacent to or behind Old Harry Rocks. Tranquillity and remoteness may not apply to Poole Harbour, but the Studland stretch of the coast displays a number of the characteristics that contribute to the AONB's special qualities.

7.3.105 As with sub-area A, the Panel recognises the absence of change to the AONB's physical properties. Nevertheless, alterations to key features and qualities that would be brought about by the presence of the turbines would lead to an overall **medium** magnitude of effect. The effects on the Bournemouth Bay RSU and a wide range of receptors at the Studland coastline, including the SWCP and NT properties would cumulatively result in at least a **major-moderate** significance of effect, and not moderate as anticipated in the SLVIA.

Land Parcel C: Coast and coastal fringe from St Aldhelm's Head to Worbarrow Tout

7.3.106 This section of the coastline is made up of small bays and headlands, consisting of the Kimmeridge Rock Ledges, Kimmeridge Bay and Brandy Bay. The main elements considered are:

- Purbeck Coast RSU
- Clay Valley LCT
- VP 07

Seascape

7.3.107 Coastal views from Worbarrow Tout eastwards would vary from glimpses through gaps across lower sections of the cliffs (views eastwards between the Tout and Gad Cliff) to full scale views for long stretches along the cliff top sections of the coast. Generally, the views are orientated to the south.

7.3.108 The SLVIA anticipated a distinct change to the offshore sector baseline condition in the east and only a noticeable change in the western part of the Purbeck RSU. However, our inspections suggested that the turbines' presence would be perceived further west along the coastline towards Worbarrow Tout. The Project may only appear to occupy a small part of the horizon line at those distances, but would be noticeable and intrusive above and to the south east of notable coastal scenery, including St Aldhelm's Head.

7.3.109 The Panel notes that the SLVIA conclusions did not fully represent the extent to which the characteristic panoramic experience and remoteness of the RSU would be affected. We consider that the **significant** outcome predicted on the eastern end would extend further westwards along the RSU towards Worbarrow Tout.

Landscape Character Type

7.3.110 NE considered that significant effects would occur in relation to the Kimmeridge Coast part of the Clay Valleys LCT [REP-2900]. The SLVIA identified a minor significance of impacts on account of the very localised effect of the Project and therefore minor alterations to the key characteristics of this LCT.

7.3.111 Inland, the Project would be visible from elevated ridges such as Swyre Head. From within the Clay Valley LCT it would be seen from coastal areas and some inland elevated or open portions. While clearly there would be minimal impact on the extensive area covered by this LCT, there would be a perceptible experiential change to the remote and exposed character of the LCT near the coast for the same reasons described in relation to the RSU.

Viewpoint 07 (Swyre Head)

7.3.112 At this viewpoint there are extensive views across the sea from south-east to south-west. The applicant's evidence noted that on a clear day distant views of the Isle of Wight are just possible beyond St Aldhelm's Head to the east [REP-135]. The applicant's images from this viewpoint comprise APP-160-162. The Challenge Navitus simulation of the wind farm from Swyre Head [REP-2808]

is focussed on the seaward view and does not capture the rolling farmland also visible from this inland but wide-reaching viewpoint.

7.3.113 Views across the coastline and coastal fringes would be noticeably changed. The Project would visually enclose the sea between the coast and the Isle of Wight. The eye would be drawn away from the intricate landscape in the foreground. The Project would appear to occupy a wide horizon line directly above the well-defined plateau ending in St Aldhelm's Head.

7.3.114 Receptors at this viewpoint would be highly sensitive to the changes and in the Panel's view the scale of alterations would result in a higher than medium magnitude of effect predicted. We are therefore in agreement with the **significant** conclusion in the SLVIA.

Conclusion on sub-area C

7.3.115 The SLVIA confirmed the turbines would create a new focus in the undeveloped coastline views along this section of the AONB. The Project would alter perceptions and appreciation of tranquillity, remoteness, undeveloped coastline of exceptional quality and dark skies. The applicant stated that the absence of physical change or harm to other qualities of the AONB moderates the overall scale of effect. The Panel disagrees with this quantitative approach to assessments as further explained in our consideration of the AONB as a whole.

7.3.116 In any event, the conclusions we have reached in relation to VP07 (Swyre Head) applies beyond that specific location. The changes to views of the landscape and the coastline against the backcloth of uninterrupted panoramic views of the sea would extend across much of the elevated sections of sub-area C. Based on the evidence and site inspections, the Panel is more inclined to the view that at least a medium scale of effect over a wide extent would occur, resulting in a **major-moderate** significance of effect on sub-area C.

Land Parcel D: Coast and coastal fringe from Worbarrow Tout to White Horse Hill

7.3.117 The Panel's views on the Purbeck Coast RSU and Clay Valley LCT within sub-area C apply to this section of the AONB, although the effect would be tempered as distance from the turbine area increases. The SLVIA noted the coastline in this part of the AONB is relatively straight, with small scale variations in alignment and coastal features, such as Durdle Door and Lulworth Cove.

7.3.118 The finding of **negligible** scale of effect at VP 04 (Osmington White Horse) [APP-154] was not challenged. At an estimated distance of over 40 km the Panel agrees that the Project would be barely discernible.

7.3.119 The visual representation at VP 05 (Hambury Tout) [APP-156-157] shows the extent of the views of the open sea possible from this elevated stretch of coastline. A series of headlands and coves frame the view to the right, with hills seen to the left. This is a typically distant view along the SWCP looking east. The turbines would be discernible but with the benefit of distance would appear less disruptive to the extensive views gained from this point. The **not significant** judgement at this particular viewpoint is appropriate. However, as the Challenge Navitus visualisation above Lulworth illustrates [REP-2808], even from distances over 33 km the turbines would be apparent and in periods of good visibility would be eye-catching. From points eastwards of Hambury Tout, receptors would start to experience the effects of the wind farm in ways that would impinge on their enjoyment of the area's key qualities. NE expressed similar concerns in its submissions [REP-2900 & 3357].

Conclusions on sub-area D

7.3.120 The Project's impact on the area's special qualities would reduce with distance. The turbines' presence would become less apparent and there would be less interference with the character of tranquillity or remoteness. Turbine lighting and its effect on the dark skies would also be little discernible. Minor alterations to these qualities and to people's experience of them would result in **minor** significance of effect.

Land Parcel E: Inland on the Purbeck Ridgeway

7.3.121 This part of the AONB lies along the ridgeway from Ballard Down to Nine Barrow Down, Corfe Castle, Ridgeway Hill and Povington Hill.

7.3.122 The Purbeck Ridge LCT was considered under land parcel A and need not be repeated here. Similarly our observations of views from Ballard Down are noted in paragraph 7.3.77 above.

7.3.123 The SLVIA recorded that the Project would be visible from elevated areas inland within the context of the undeveloped seaward view. VP 06 at Povington Hill illustrates this point [APP-158 & 159]. The finding of moderate magnitude of impact on visual receptors at this viewpoint was deemed to be not significant in this case in the SLVIA. The Panel disagrees.

7.3.124 The Panel was unable to visit the viewpoint, but the photomontages [APP-158 & 159] show that alterations to the seaward views would be seen in the context of a varied and undulating coastal landscape. The Project would appear on the horizon above St Aldhelm's Head detracting from its prominence. The distance of 28.2 km from VP 06 would moderate the scale of effect. Nevertheless, the panorama of hills and headlands

featuring against an uninterrupted open seascape would be visibly altered.

7.3.125 Similarly the outlook from other elevated points on the network of footpaths along this ridge would change. Receptors would be faced with a series of views in which the open seaward setting of the coastal landscape would be disrupted by the presence of the turbines on the horizon. The Purbeck Ridge and vegetation would intervene to limit visibility in some instances, but the level of harm experienced by users of local footpaths would be significant and on more than just localised stretches of the ridge.

Conclusions on sub-area E

7.3.126 Although the SLVIA predicted a moderate significance of effect, the Panel's understanding is that a partial alteration to people's perceptions of the key qualities or characteristics that define the landscape would occur. The wind farm would be conspicuous from a number of locations and would catch the eye. The degree of change accords with the description in the SLVIA of medium category of scale of effect. The Panel's view is that the effect on this stretch of the AONB would be **major-moderate** and therefore **significant**.

Dorset Heritage Coast - Purbeck Coast

7.3.127 Heritage Coasts are defined by NE. The purpose of the definition (relevant to the Panel's considerations) are to *"conserve, protect and enhance the natural beauty of the coasts.*" and "*facilitate and enhance their enjoyment, understanding and appreciation by the public.*" The definition confers no statutory powers or obligations.

7.3.128 The Purbeck Heritage Coast occupies a very similar geographical extent to the Dorset AONB. The Dorset AONB Partnership referred to the Purbeck Heritage Coast as a highly valued component of the Dorset AONB [REP-2989]. The NE describes the relevant section of the Heritage Coast in this way:

> "*Purbeck ranges from the creeks and flats of Poole Harbour to Studland's superb white sands, climbing to a spectacular series of chalk and limestone cliffs, including the beauty spot, Lulworth Cove.*"

7.3.129 In its written representation NE stated that significant effects on the Purbeck Heritage Coast will extend from Studland through to the area west of St. Aldhelm’s Head to at least Worbarrow Tout, with moderate visual effects extending further westwards [REP-2900].

7.3.130 For reasons similar to those applying to the AONB sub-areas A-D, the Panel agrees with NE's conclusions.

Overall conclusions on the Dorset AONB and Purbeck

Heritage Coast

7.3.131 Having revisited the area, reviewed relevant sections of the SLVIA and assessed two additional viewpoints, the applicant saw no reason to alter the overall conclusions reached. In regard to the Dorset AONB, the applicant re-stated its position that the significant effects would not extend beyond the bounds of sub-area A. Even here it was said that the significant impacts on the AONB would be confined to the aesthetic and perceptual attributes that impact on its special qualities and reason for designation [REP-3227].

7.3.132 The applicant's finding of no significant impact on the AONB partly relies on the extent to which the impacts on the AONB would be limited and localised. The following factors were cited in support of the applicant's position[REP-3313]:

- Only a very limited portion of the AONB would be significantly affected.
- The AONB extends for a considerable distance westwards and inland from where the Project would not be visible.
- The Project would not be located within the AONB but a minimum of 14.4 km south-east of its easternmost extent.
- A substantial portion of the Project would fall outside the study area and the ZTV (see Figure 13.10B of the SLVIA).
- Effects would be confined to visual and perceptual effects upon three of a wider range of 12 qualities. The other qualities would remain wholly unaffected.

7.3.133 Furthermore, it was confirmed that only a proportion of the coastal length of the AONB is within the study area. Of that, a smaller proportion was said to be affected by the Project, [REP-3490] as illustrated below:

- The study area occupies 55% of the 135.8 km length of the Dorset AONB that is at the coast.
- The stretch between South Haven Point (Swanage ferry) and Worbarrow Tout occupies 38% (51km) of the coastal length.
- The stretch between St Aldhelm's Head and Old Harry Rocks occupies 19% at 25.6 km

7.3.134 The Panel disagrees with the applicant's approach for these reasons. Firstly, judgements of whether a project would compromise the special qualities of the designation cannot be bound by the sort of quantitative exercise deployed. Second, the Dorset AONB Management Plan confirmed that the AONB is a collection of fine landscapes "*each with its own characteristics and sense of place*."; in other words recognising that individual parts can as much reflect the qualities meriting the designation, as the Dorset AONB as a whole.

7.3.135 Finally, the approach fails to recognise that the special and outstanding landscape qualities of this AONB are particularly well expressed on its coastal edge, and in some instances can only be experienced on the coast. The description in the Management Plan captures it in the following terms:

> "*Nowhere is the contrast and diversity of this rich assemblage of landscapes more graphically illustrated than in the Isle of Purbeck. Here, many of the characteristic landscapes of the Dorset AONB are represented on a miniature scale to create scenery of spectacular beauty and contrasts, which mirrors that of the whole AONB*."

7.3.136 The Panel further notes that the area in closest proximity to the proposed Project contains renowned coastal features: Old Harry Rocks, St Aldhelm's Head, Lulworth Cove, Durlston Castle and Durlston Head. 'Uninterrupted panoramic views' are possible from extensive stretches of this coastline, from cliff tops, beaches, coastal and other paths as well as popular and publicly accessible properties. Views across to the open sea and to the Isle of Wight are an integral part of the experience of the coastal landscape, adding to the sense of remoteness and tranquillity. The landscape provides opportunities for experiencing the dark skies and exceptional undeveloped coastline aspects of the AONB. The WHS adds an extra dimension to the quality of the coastline, for its geological interest. This is discussed in Chapter 9.

7.3.137 The importance of this coastal environment to the AONB cannot be under-estimated. The uninterrupted panoramic views, sense of tranquillity and remoteness, dark skies and exceptional undeveloped coastline feature, either individually or in combination, and are expressed across the study area lying in the AONB. This coastline includes some of the most recognisable coastal geographic features in the British Isles, symbolic of England's marine character and largely uninterrupted by man-made intrusions.

7.3.138 The ExA agrees that no physical changes would result from the Project. Our analysis addresses the extent to which the Application Project would undermine the experience or appreciation of the qualities of the AONB noted earlier. Our conclusions of **major** to **major-moderate** significance of effect on sub-areas A, B, C and E and a **moderate** significance of effect on D, leads the Panel to conclude that, in the round, the Application Project would have **significant** consequences for the 'sensory perceptions' of the natural beauty of the Dorset AONB. The extent of the AONB likely to be affected in this way by the Project may amount to only a proportion of the AONB as whole but the coastal stretch is an exemplary and widely recognised part of it. The scale of visual harm on a core section of the AONB would be damaging to the AONB as a whole.

7.3.139 Objectives and policies in the Management Plan are designed to facilitate local authorities' statutory duties and having regard to the purposes of the AONB. Most are relevant to proposals within the designated area or relate to physical changes to it. However, Policy L1c, Policy CS3a, Policy PH1k and Policy PH2b are relevant insofar as they seek to conserve and enhance special qualities of the AONB. For reasons explained above, the Application Project would not accord with the aims of those policies.

ISLE OF WIGHT AONB

Background

7.3.140 The Isle of Wight AONB was designated in 1963. It covers an area of 191 m^2 or approximately half the land mass of the island and is made up of five distinct land parcels.

7.3.141 The SLVIA identified a number of special qualities that have a relationship to the sea, coast and views of the seascape. These are based on descriptions contained in the Isle of Wight Management Plan 2014-2019 Statement of Significance. The special qualities anticipated to be potentially affected by the proposed wind farm are:

- patchwork of worked fields and the enduring presence of the downs;
- intricate tranquil creeks;
- chines and steps down cliffs to the beach;
- harbour towns, castles and tumuli.
- majestic sea cliffs and sweeping beaches;
- long distance views from coastal heath and downland;
- dark starlit skies;

7.3.142 In its SoCG NE [REP-3109] agreed with the applicant that, of the special qualities identified, the first four bulleted features would not be significantly impacted on. Having considered the evidence and with the benefit of visits to the area, the Panel sees no reason to disagree. Our deliberations therefore focus on the implications of the offshore development on: majestic sea cliffs and sweeping beaches; long distance views from coastal heath and downland and dark starlit skies.

7.3.143 Of the five land parcels A-D identified in the Management Plan, the SLVIA stated that visibility of the turbines would be gained from land parcel A and only that area has been assessed in detail. For the purposes of the assessment, land parcel A was further divided into two sub-areas A1 and A2. The Panel considers it a reasonable approach to adopt.

7.3.144 Receptors included in the Panel's assessment of the AONB are as follows:

- Tennyson Heritage Coast

- Western Solent and West Isle of Wight RSUs
- Chalk Downs, Intensive Agricultural Land, Southern Coastal Farmland, Sandstone Hills and Gravel Ridges and Undercliff LCTs.
- VPs 28, 29, 30, 31, 32, 33 and E
- Isle of Wight coastal path and Tennyson Trail
- Military Road
- NT land

The ES and applicant's findings

The Isle of Wight AoNB

7.3.145 There would be very limited visibility from large areas inland across the AONB, and therefore unlikely that its special qualities would be affected. The ZTV overlay onto the AONB at Figure 13.10b of the SLVIA illustrates this.

7.3.146 The assessment has identified some locally and geographically limited impacts of moderate significance, principally from the cliff tops between the Needles and Freshwater. The effect would be perceptual and the inherent physical properties of the AONB would not be altered.

7.3.147 Sub-area A1 covers the south-west (north) from the Needles to Freshwater. The scale of effect was predicted to be medium-small, the extent would be intermediate, resulting in a magnitude of effect of medium-low. The **moderate** significance of impact was considered to be **not significant**.

7.3.148 Sub-area A2 follows the southern portion of the south-western section of this parcel of AONB land, extending from Freshwater to St Catherine's Point. The small scale of effect predicted over a localised extent is said to result in a low magnitude of effect. The **moderate** significance of impact was deemed to be **not significant**.

7.3.149 Across the AONB as a whole, the overall scale of effect would be small-negligible and the extent localised. The magnitude of effect would be low-very low leading to a **minor** significance of impact.

Tennyson Heritage Coast

7.3.150 The Tennyson Heritage Coast lies within the AONB and follows the western edge of the Island from Totland to the west of Ventnor. At its closest it is approximately 15.9 km from the turbine array at the Needles, and 33.5 km at its furthest point.

7.3.151 Given the descriptions above and the geographic overlap, the SLVIA judged its susceptibility to offshore wind energy development to be high. The landscape value is national resulting in a judgement of high sensitivity for the Heritage Coast overall.

7.3.152 For the purpose of the SLVIA the Heritage Coast has been sub-divided into three land parcels A1, A2 and B. The former two stretch from Needles to Freshwater (A1) and Freshwater to St Catherine's Point (A2), and B covers the south eastern stretch along the coast at the undercliff. The effects for the three lengths of Heritage Coast were recorded as follows:

Land Parcel	Scale of Effect	Extent	Magnitude	Significance of impact	Significant under EIA Regs
A1	Medium-small	Wide	Medium-low	Moderate	Not significant
A2	Small	Wide	Low	Moderate	Not significant
B	Small-negligible	Localised	Low-very low	Minor	Not significant
Overall	Small	Wide	Low	Moderate	Not significant

Regional Seascape Units

7.3.153 The Western Solent RSU follows the Solent strait separating the Island from the mainland. It runs along the north-western edge of the Island where it meets the sea at Totland and beyond the Needles. The closest point of the coastline within the RSU lies 17.5 km north-east of the turbine area, which occupies some 3% of the total RSU. The scale of effect on the character of the RSU was found to be small, extending over an intermediate area and resulting in a low magnitude of effect. Taking account of the RSU's high-medium sensitivity, the overall judgement was a **minor** significance of impact which was considered to be not **significant**.

7.3.154 The West Isle of Wight coast RSU consists of the area from the Needles on the north-west of the island, south-east along the coast across numerous shallow bays to St Catherine's Point. High-medium sensitivity is accorded to the coast and coastal sea portion and medium-low to the offshore portion. The medium and medium-low magnitude of effects predicted would lead to **moderate** significance of impact as far as both portions of the RSU are concerned.

Landscape Character Types

7.3.155 The SLVIA conclusions on LCTs were recorded as **not significant.**

Viewpoints VPs 28, 29, 30, 31, 32, 33 and E

7.3.156 VPs 28 (The Needles), 29 (Tennyson's Monument), 32 (Limerstone Down) and 33 (Blackgang car park) represent specific viewpoints.

7.3.157 The 5 MW turbine layout was considered in relation to VP 28 in addition to the 8 MW RWCS. Sensitivity of visitors to these viewpoints falls in the high category. The scale of effect at VP 28 was judged to be large over an intermediate extent, resulting in a high magnitude of effect. A **major** significance of visual impact was predicted at VP28 and deemed to be **significant**.

7.3.158 At Tennyson's Monument a medium magnitude of effect was anticipated derived from a medium scale of effect over a localised area. The **major-moderate** significance of impact would be regarded as **significant**.

7.3.159 The scale of effect at VP32 was judged to be medium-small and extent of effect would be localised. The medium-low magnitude of effect would lead to **moderate** significance of impacts. At VP 33 low-very low magnitude of effect was predicted with **minor** significance of impact.

7.3.160 The scale of effects at the representative viewpoints VP 30-33 were recorded in the SLVIA. VP E was considered in REP-3227. The findings were:

- VP 30 - Compton Beach - **medium-small**
- VP 31 - Mottistone - **medium-small**
- VP E - St Catherine's Point - **small**

Isle of Wight coastal path

7.3.161 The path traverses the majority of the coast of island but for the purposes of the SLVIA was considered only along the north-west to south-west coast between the Needles and Blackgang. The route coincides with the Tennyson Trail (a long distance path) as it crosses Tennyson Down (SLVIA, Figure 13.11b).

7.3.162 Receptors along the length of the coastal path and Tennyson Trail between the Needles and Freshwater (ascribed high-medium sensitivity) would experience medium scales of effect and extent of effect would be wide. The medium magnitude of effect predicted would lead to **major-moderate** significance of impact.

7.3.163 Between Freshwater and Blackgang it was considered that the scale of effect would be medium-small and extent would be wide. The medium-low magnitude of effect would lead to **moderate** significance of impact.

7.3.164 The SLVIA confirmed that the Project would be clearly seen from elevated and open area on the Tennyson Trail and Freshwater Way on Compton Down. The scale of effect was regarded as small and extent would be intermediate. The resulting low magnitude of effect would lead to **minor** significance of impact.

A3055 (Military Road)

7.3.165 The road lies parallel to and in close proximity to the west Isle of Wight coastline, running between Freshwater and Blackgang. The sensitivity of receptors was considered to be medium-low. The medium scale of effect over a wide extent would lead to medium-low sensitivity and **moderate** significance of impact.

NT land within Isle of Wight AONB

7.3.166 The NT properties considered in the SLVIA included Tennyson down, Compton Down and cliffs, Hulverstone Down, the Needles and West High Down. VPs 28, 29, 30 and 31 were representative of locations in and around these areas.

7.3.167 The overall scale of effect was judged to be medium-small and the extent would be wide, resulting in a medium-low magnitude of effect. The significance of impact predicted would be **moderate**.

Issues arising from LIRs and IPs' submissions

7.3.168 The Isle of Wight Council's LIR questioned a number of findings in the SLVIA. Similarly, submissions made throughout the course of the examination by a number of statutory bodies, including NE and the Isle of Wight AONB Partnership, and those expressed by individual IPs as well as non-statutory bodies, raise a whole range of disagreements with the detail and conclusions of the SLVIA with regard to individual receptors. These can be summarised as :

- Disagreements over the magnitude of effect and significance of effect in relation to :
  - Western Solent and West Isle of Wight RSUs
  - SCTs assessed
  - LCT1, LCT3, LCT4, LCT5 and LCT9
  - Viewpoints 30-33
  - Night time impacts
  - Coastal footpaths and inland trails
  - NT properties
  - Tennyson Heritage Coast, and
  - Isle of Wight AONB.

Panel's reasoning and conclusions on the Isle of Wight AONB

7.3.169 The applicant claimed that objections to the proposal fail to take account of a range of important factors [REP-3226]:

- The Project would be located a minimum of 17.7 km south-west of the westernmost extent of the AONB increasing to approximately 28 km at St Catherine's Point.
- All areas east of Freshwater would be sited over 20 km from the Project and 'remote' from it.

- A large majority of the AONB falls outside the extent of theoretical visibility of the Project (Figure 13.10b of the SLVIA). There is no prospect of any visibility of the distant Project from within approximately 75% of the AONB, when screening features are factored in.
- The Project would be located at some distance out to sea within an active offshore shipping environment.

7.3.170 The Panel agrees that distance from the Project would have a bearing on levels of impact. But, for reasons set out earlier in this Report (paragraphs 7.3.9-7.3.11), defining 'remote' by reference to 20 km is inappropriate. Furthermore, an analysis based on quantifying the proportion of the AONB from which the Project would be visible is misleading and misguided. Finally, as noted earlier (paragraph 7.2.27), the Panel does not accept that marine activity in the area is a defining characteristic of the seascape, particularly when viewed from the south western coast of the island.

7.3.171 The applicant is correct, however, in claiming that the physical attributes of the AONB would be wholly unaffected. Impacts on its special qualities are limited to considering the aesthetic and perceptual attributes. Our assessment therefore focuses on the implications of the offshore wind farm on the visual experience or appreciation of the three special qualities identified earlier (paragraph 7.3.142) in relation to the key components that feature in sub-areas A1 and A2 of the AONB.

7.3.172 The Panel observes that the special qualities of majestic sea cliffs and sweeping beaches, long distance views from coastal heath and downland and dark starlit skies are especially well represented along the south-western coastal edge of the island, referred to as the Tennyson coast.

7.3.173 The south-western coastline faces the open sea, in contrast to the northern coast which looks out to the busy stretch of the Solent and the mainland to the north. The former includes the landmarks of the Needles and elevated chalkland at Tennyson Down. The coast is known for the high chalk cliffs and deep wooded chines. The following text taken from the Isle of Wight Council's LIR [REP-2674] aptly describes the Tennyson coast:

> "*This coastline is breath-taking, with an open aspect; long distance views to the English Channel; a special quality of light; the iconic Needles chalk stacks and other multi-coloured cliffs; a fossil rich coastline including the well-known dinosaur footprints at Brook Bay; miles of undeveloped coastline and unspoilt beaches; important wildlife habitats; memories of past Islanders including smugglers; chines and lighthouses.*"

Sub-Area A1 - south-west (north) from the Needles to

Freshwater

7.3.174 The receptors considered in this stretch of the AONB include: Tennyson Heritage Coast, the two RSUs, Chalk Downs (LCT1) LCT, VPs 28 and 29, night time effects, Isle of Wight Coastal Paths, Tennyson Trail and NT properties.

7.3.175 Many of the characteristics of the Heritage Coast are shared with the coastal sections of the AONB. The following observations apply equally to both.

Seascapes

7.3.176 As with the Dorset AONB, the Panel's considerations of the SLVIA are limited to the RSUs. In its LIR the Isle of Wight Council noted that from the Western Solent, the Project would be seen at a distance against a variety of distractions including the coastline either side of the Solent, a busy shipping channel and areas of development [REP-2674]. The special qualities of the Isle of Wight AONB are not particularly apparent. The magnitude of effect from either within or away from the coastal portion of the Western Solent RSU would be low, leading to **minor** significance of impact.

7.3.177 The coastline at the West Isle of Wight Coast RSU is generally secluded, undeveloped and with little impact from sea traffic around the shoreline. The SLVIA accorded it a high-medium sensitivity which, in the Panel's view, is appropriate for the RSU as a whole but recognises that the coastal portion would be subject to a higher level of sensitivity to the type of Project proposed.

7.3.178 The SLVIA acknowledged that the turbine array would lie centrally and occupy a large proportion of the views with visibility across the entire coastline and elevated coastal fringe. Views would be closest from the Needles at 17.5 km distance The Panel is unable to reconcile the descriptions of changes likely over a wide area with the medium scale of effect and magnitude of effect predicted by the applicant. The Panel's conclusion is a high-medium magnitude of effect and a **major-moderate** significance of impact in this location.

Landscape Character Types

7.3.179 NE disagreed with the SLVIA conclusions on the Chalk Downs (LCT1) and Southern Coastal Farmland (LCT4) landscape receptors [REP-2900]. The former lies some 17.5 km north -east of the turbine area and extends from the Needles along the chalk ridge to Tennyson Down. The Isle of Wight AONB Landscape Character Assessment described it as :

> "..*an open landscape with long vistas, distinct skylines, large fields, sparse hedge or field boundaries, few mature*

hedgerow trees and a sense of space and exposure….It is the landscape type best known by the public because of the dramatic white cliffs at either end of the east–west central ridge, including the Needles Chalk stacks…. Landmarks and seamarks such as St Catherine's Oratory and the Tennyson Memorial occur on high vistas."

7.3.180 The landscape has a strong coastal connection. The baseline report and SLVIA also noted its sensitivity to the type of change proposed, due to the elevated and long views which afford inter-visibility of the sea, downs, and other inland LCTs. The sense of exposure, long distance views and the Needles chalk stacks are also highlighted. By contrast, the factors that detract from the landscape's sensitivity are few and less apparent. In the light of these descriptions, the high-medium sensitivity accorded to the landscape is an underestimation, in the Panel's view, particularly at recognised points such as the Needles, Tennyson Down and Compton Down.

7.3.181 The Project would impact less on the inland sections of the LCT1 due to lesser visibility. But from locations highly valued for views afforded to the open sea, to notable scenery as well as landmarks the changes would be marked and harmful to aesthetic and perceptual aspects of the landscape's character. For the sections of LCT1 that lie to the west of Freshwater the Panel concludes that the significance of impact should be classed as **major-moderate**, given the high sensitivity of the receptor, the medium scale of effect, its wide extent and likely high-medium magnitude of effect.

Viewpoints 28 and 29 and night time effects

7.3.182 The extent of visibility of the turbine array across the Isle of Wight AONB would generally vary even along the elevated coastal edges. However, nowhere on the island would it be more visible or seen more clearly in the context of the inter-visibility between the island's chalk cliffs, its landmark features and the Dorset Jurassic coastline beyond (during days of good visibility) than at VPs 28 (the Needles) and 29 (Tennyson's Monument).

7.3.183 The applicant's photomontage, panoramas and wire frames featuring views from VP 28 [APP-228 to 235] include both 5 MW and 8 MW layout options as well as single frame images. VP29 is featured in APP 236 to 238 and provide views of the two layout scenarios. Challenge Navitus also produced views of the two layout options from Tennyson's Monument [REP-2806, 2807 & 2830].

7.3.184 VP 28 is on the elevated section of a footpath with clear views around the cliff, towards the Needles and beyond looking northwards. The baseline report [APP-135] confirmed the importance of the Needles as geological features. It further

recognised there was an appreciable visible link from this viewpoint between the Needles and the exposed white ridge of Old Harry's Rock on the Purbeck coast.

7.3.185 The SLVIA acknowledged that the Project would become a new focal point and a foremost feature at a viewpoint visited by people specifically to gain views of the Needles. The defining elements of the view would be fundamentally changed. The 8 MW layout was regarded as having the greater visual effect. The SLVIA also noted that offshore substations would be clearly visible and contribute to the overall scale of effect. Unsurprisingly, a **major** significance of visual impact was predicted. The Panel agrees.

7.3.186 VP 29 overlooks the tall cliffs with an almost 360° panoramic view possible from the footpath and Down leading to the base of the Monument. Looking westwards the white chalk cliff is visible to the left. The white cliffs of Old Harry Rocks are discernible on the horizon as the Dorset coastline extends westwards. Sea views are extensive, open and exposed. While the view towards Christchurch Bay and across the Solent would remain undisturbed by the turbine array, it would be seen on its own in seaward views and interrupting the horizon line. A new focal point on the horizon would be created with the offshore substations adding to the complexity of the view. The Panel agrees with the **major-moderate** significance of impact predicted in the SLVIA, given the scope for all-round views gained from this point, as opposed to the seaward focussed views from VP28.

7.3.187 The applicant undertook a night time visualisation at VP 29 [APP-236]. The SLVIA predicted that aviation lighting would be noticeable in the seaward view "*which is currently completely unlit, other than for occasional ships …that move across the view*." The turbines would feature across a relatively wide extent of the unlit view. Although the night time view from Tennyson's Monument would be experienced by a small number of people, the lighting would impact on the AONB's special quality of 'dark starlit skies'. NE aptly captured the context in these terms: "*It is the views out to the channel along the south west coast of the AONB where dark night skies can be especially appreciated, in comparison to the lighted development in views to the north across the Solent*" [REP-2900]. The Panel agrees with the **moderate** significance of impact predicted but it should not be disregarded in the overall lassessment.

Isle of Wight Coastal path and Tennyson Trail (between the Needles and Freshwater)

7.3.188 The coastal path follows the majority of the coast of the island but the assessments only cover the section between the Needles (to the north west) and Blackgang to the south east.

7.3.189 Open views of the sea are gained from the elevated chalk cliffs in the north-west which would be disrupted by the conspicuous nature of the turbines. The applicant's evidence in the SLVIA confirmed that key features such as the open and expansive views of an undeveloped seascape and the chalk cliffs would be affected. The **major-moderate** significance of effect has been appropriately predicted for these reasons, although the Panel considers that visual receptors should be accorded high sensitivity (see paragraph 7.2.33 for reasoning).

A3055 Military Road

7.3.190 The Isle of Wight AONB Partnership disagreed with the medium-low sensitivity given to users of this route [REP-2959]. The route was improved and surfaced in the 1930s and is seen as part of a 'Marine Drive' to allow enjoyment of coastal views. The SLVIA recognised the importance of the road and also the changes that would occur along the lines described earlier.

7.3.191 The Panel agrees that the speed of travel tempers the sensitivity of users and that little more than **moderate** significance of impact would occur.

NT properties

7.3.192 The Panel's findings at VPs 28 and 29 apply as much to the West Wight NT property, insofar as the sensitivity of receptors should be considered to be high and the visual impacts would be to the same extent as experienced by visitors walking the path and trails. In other words, at least a **major-moderate** significance of impacts would occur across wide areas of the property.

Sub-Area A2 - south-west (south)from Freshwater to St Catherine's Point

7.3.193 The Panel's views on the impact of the Project on the RSU are recorded in paragraphs 7.3.177 and 7.3.178 above.

7.3.194 Turning to LCTs, the Southern Coastal Farmland LCT4 is 21.5 km at its closest point to the turbine array. The landscape character is described as having an "*open and exposed feel, with a gently undulating landform…. The existence of chines along the coastline adds drama to an otherwise largely gentle landscape*." Open views to an undeveloped offshore horizon is recognised as a factor increasing its sensitivity. [APP-135]

7.3.195 The Panel does not consider that either the strategic road transport routes (namely the A3055) or occasional large ships out at sea detract from the key characterisations identified. The former is recognised as a key tourist route affording expansive views to sea across the coastal landscape. This landscape character type coincides with almost all of the AONB, lies largely

within the Heritage Coast and should be accorded high-medium sensitivity.

7.3.196 The Project would be visible from almost all of the western area of LCT4. The chalk cliffs to the north feature in the same view. The openness against which they are seen would be reduced by the presence of the turbines. Even at distances of more than 21.5 km the Project would be visible and catching to the eye, leading to a medium scale of effect across a wide extent. The significance of effect would be edging towards the **major-moderate**, in the Panel's opinion.

7.3.197 In its LIR the Isle of Wight Council confirmed that the proposal would not result in significant effects on LCT2, LCT3 or LCT9 [REP-2674]. The AONB Partnership agreed that a large part of LCT3 (Intensive Agricultural Lands) would not be affected by views of the turbine array [REP-2959 & 3072]. LCT5 lies entirely inland with little visual connection with the sea. St Catherine's Point is the closest point in LCT9 (the Undercliff) at 27 km from which the Project would be seen, and visibility would be restricted due to pockets of vegetation.

7.3.198 Overall, the Panel concludes that factors such as distance and screening would limit the extent to which the Project would compromise visual perception of the defining characteristics of LCT 2, 3, 5 or 9. The **minor** significance of impact predicted is appropriate.

Isle of Wight coastal path and Tennyson Trail

7.3.199 For reasons explained earlier, sensitivity of receptors on these national trails or long distance paths would vary depending on the importance of the visibility of the open sea to the views and the context of those views.

7.3.200 Thus, walkers on the coastal path and on sections of the Tennyson Trail that coincides with the coast would be more sensitive to the Project for the closeness of the elevated clifftop path to the sea, the context of a dramatic chalk cliff coastline and few distractions or features in the foreground to obstruct the views. Moving away from Freshwater, the scenery alters and the capacity to accommodate the turbine array increases. The Panel therefore considers that a **moderate** significance of impact on the coastal path is not unreasonable but that the effect should not be disregarded, given that the continuous presence of the Project could diminish people's enjoyment of long distance views. The inland location of Tennyson Trail would moderate the impact of the turbines on seaward views but views of the landscape around the trail would remain unaffected. So, the **minor** significance of impact anticipated is appropriate.

Viewpoints 30, 31, 32, 33 and E

7.3.201 VP 30 at Compton Beach [APP-239 & 240] is located at the bottom of cliffs where the footpath meets the sandy beach. The beach is secluded and enclosed by tall cliffs; distant views are restricted. The turbines would appear on the horizon but the low level from which they would be viewed would moderate their impact. The **medium-small** scale of effect predicted is not unreasonable.

7.3.202 VP 31 (Mottistone) [APP-241 & 242] is representative of the highest point along the Worsley Trail footpath from which far-reaching views out to sea are possible. To the north and the middle distance the chalk cliffs towards the Needles are clearly visible. VP 32 is sited on the highest point of Limerstone Down but lying further inland [APP-243 to 249]. Again, the chalk cliffs occupy middle distance views to the north. Extensive seaward views across the length of the coast characterises this viewpoint alongside large stretches of arable farmland extending towards the coast. The grass downland landscape in the close and middle ground features extensively in VP 32.

7.3.203 In both instances, the Project would lie to the west and slightly south at distances of about 24-26 km. The **moderate** significance of impact predicted for the Limerstone Down viewpoint is reasonable, given that the turbine array would lie in its own portion of a wide expanse of seaward views, and would not disrupt the scenery of cliffs and coastline. The extent to which the Project would be seen from Tennyson Down would not apply at Limerstone Down which is less exposed to the coastline and further from it.

7.3.204 Viewers on the Worsley Trail would also see the turbines within a less sensitive portion of views. The **medium-small** scale of effect anticipated in the SLVIA is appropriate.

7.3.205 VP 33 [APP-249 & 250] at Blackgang car park is a specific viewpoint but for the purposes of assessment is poorly located [REP-2900, 2959], due to overgrown trees obscuring views out towards the Project. VP E [REP-3228] represents an appropriate replacement, being located on the path to the north of Blackgang car park and above the car park. The turbines would be visible but across a relatively large expanse of sea and at a distance of nearly 28 km. The **small** scale of effect predicted is not unreasonable, as the Project would be a distant feature and not seen against views of the island's cliffs.

Overall conclusions on the Isle of Wight AONB

7.3.206 Policies in the AONB Management Plan are designed to facilitate objectives such as conserving the Isle of Wight AONB according to its statutory purpose. In other words conservation and enhancement of its natural beauty.

7.3.207 The applicant claimed [REP-3227] that the Project would "…*create some potentially minor alterations*" to the three special qualities identified but "*only within the views to and from the majestic sea cliffs and sweeping beaches*" and "*only create minimal effects on the dark skies."*

7.3.208 The Panel's findings are less favourable. While visual changes resulting from the Project would be less apparent from inland portions of the AONB, it would have significant implications on the experience and appreciation of coastal views extending from the Needles to Freshwater, and continuing along the coast southwards. The turbine array would impact in ways that would interfere with views of the chalk cliffs, the long distance views and dark lit skies.

7.3.209 The fact that the level of significant harm perceived would be largely confined to the areas A1 and A2 assessed in the AONB, and therefore also the Tennyson Heritage Coast, is immaterial as we do not support the applicant's quantitative approach to assessments of impact on AONBs. The sectors affected display core qualities of the AONB and contain iconic features such as the Needles and Tennyson's Monument. The Panel concludes that the implications for the Isle of Wight AONB would be **significant**.

THE NEW FOREST NATIONAL PARK (NFNP)

7.3.210 The SLVIA confirmed that only a small proportion of the NFNP would have views of the Project. These would be principally located on the coastal and slightly elevated areas within about 25 km of the turbine area. Figure 3.10b illustrates the areas within the NP from which visibility of the Project would be possible. These would be limited to the coastal section at Hurst Spit and along the northern coast of the Solent.

7.3.211 The special qualities of the NFNP singled out for consideration are 'tranquillity' and the NFNP's 'outstanding natural beauty'. The qualities are expressed at the following receptors

- Western Solent RSU
- Open Coastal Shore LCT
- Viewpoints 26, 27 and F
- Solent Way long distance path

The ES and applicant's findings

7.3.212 Due to the popularity of the NFNP as a tourism resource and because of views from the coastal sections, susceptibility to offshore wind energy development is regarded to be high. Combined with the Park's national value, its overall sensitivity was considered to be high.

7.3.213 The SLVIA indicated that there would potentially be very minor and localised alterations to the special qualities of tranquillity and

outstanding natural beauty in the part of the of Park that lies along Hurst Spit and the southernmost part of the Solent coast. The scale of effect would be small and extent of effect limited. The low magnitude of effect would result in a negligible significance of impact on the NFNP.

Western Solent RSU

7.3.214 The baseline report confirmed that to the north the Solent strait is bordered by low lying land with salt marshes and relatively flat undeveloped farmland leading inland to Lymington and Keyhaven. Views out to the sea are restricted to a narrow gap on the horizon between the prominent landmarks of Hurst Castle and the Needles. Marine activity is regarded as a factor reducing susceptibility. Sensitivity is recorded as high-medium. Low magnitude of effect is predicted in the SLVIA (derived from small scale of effect and intermediate extent), resulting in **minor** significance of impact.

Open Coastal Shore LCT

7.3.215 The closest point to the turbine array is 23.2 km at Hurst Castle. The active dynamic character of the beaches and the scale of the beaches are said to reduce the LCT's susceptibility to the type of change proposed, which is cast as low. Medium sensitivity is accorded to it. The scale of effect predicted in the SLVIA is small over a wide extent. The low magnitude of effect is considered to result in a **minor** significance of impact.

Viewpoints 26, 27 and F

7.3.216 VP 26 is representative of views along the sea wall section of the inland coastal walk on the Solent Way [APP-220 to 225]. The baseline report confirmed that the open sea is not visible from this viewpoint, as the raised Hurst Spit and Hurst Castle occupy the gap out to sea. Nevertheless, the sea's presence is perceptible due to views of the Needles in the background of south facing views. Walkers are considered to have high-medium sensitivity. The scale of effect was considered to be **medium-small**.

7.3.217 The location for the specific viewpoint at VP 27 lies outside Hurst Castle on Hurst Spit [APP-226 & 227] . From the viewpoint the Needles are 5.3 km away and provide the main focal point in the view. Beyond that lies the large open views of the sea extending westwards.

7.3.218 Visitors to Hurst Castle are accorded high-medium sensitivity. The scale of effect was considered to be large over an intermediate extent of effect. The high magnitude of effect and high-medium sensitivity was predicted to result in a **major** significance of impact.

7.3.219 VP F is located at the same position as VP27 and shows the night time panorama [REP-3228]. The baseline assessment indicated that the main source of lights at present is the Isle of Wight coastline (towards Yarmouth and Totland), boats, ferries and buoys across the middle distance [REP-3227]. Beyond the Isle of Wight there are limited visible light sources. The small scale of localised effect was judged to lead to a low magnitude of night time visual effect, overall resulting in a **minor** significance of impact.

Solent Way

7.3.220 The path runs from Hurst Spit along the Solent toward Lymington. It is closest to the turbine area at Hurst Spit. At Hurst Spit a **major-moderate** significance of impact is anticipated in the SLVIA. Beyond the spit, towards Lymington, the scale of effect is predicted to reduce to small over an intermediate extent. The low magnitude of effect and high-medium sensitivity would result in **minor** significance of impact.

Issues arising from LIRs and IP's submissions

7.3.221 The assessments and findings in the SLVIA in relation to the following are disputed by IPs and in some LIRs due to:

- Impact on the NFNP
- The effect on receptors at VP 27 and on Solent Way

Panels reasoning and conclusions on the NFNP

7.3.222 As noted in the applicant's findings the Project's visibility on the NFNP would be limited and its impact on special qualities would be confined to the coastal section at Hurst Spit and along the northern coast of the Solent. Visual impacts on receptors at VPs 26, 27 and F best represent the effects that would be perceived for the wider range of receptors assessed individually. The Panel's conclusions on those receptors therefore flow from its findings at the aforementioned viewpoints.

VPs 26, 27 and F

7.3.223 Photographic images of the Application Project from Hurst Spit (VP27) were presented by the applicant [APP-226 & 227]and by Challenge Navitus [REP-2804 & 2805]. As noted earlier, the main focal point from this view is the Needles silhouetted against the seaward horizon.

7.3.224 The SLVIA estimated that, with screening from the island and the Needles, only 17° of the 23.1°of the horizon occupied by the turbines would be visible. Nevertheless, they would appear behind and extend beyond the Needles. The turbines would become the focal point in seaward views undermining the presence of the Needles in the seascape.

7.3.225 For those reasons the Panel agrees with the **major** significance of impact cited in the SLVIA, but the importance of this location should not be under-estimated. Hurst Castle marks the entrance to the Solent. It is a Grade I designated heritage asset attracting visitors to the Spit, which in turn provides opportunities for visitors to enjoy views across to the Isle of Wight.

7.3.226 The view at VP26 represents just one point of a sequence of views along Solent Way towards Hurst Spit and Castle with the Needles behind. The long distance footpath is a popular destination with the sea wall following the irregular shape of the coastline. Views from the path vary as it twists through coastal marshes. Although there is much else in the view to catch the eye - masts and flags from moored boats in Keyhaven Harbour for instance - the Needles continue to hold the focus on the horizon.

7.3.227 The SLVIA recorded that the Project would be seen above the Spit and appear to sit behind the Needles, adding another layer to the already busy view. In the summer months the boat masts might add to the clutter in the views out to sea but out of the boating season the turbines would become the dominant vertical element and movement of the blades would be eye-catching.

7.3.228 The Panel considers that the sensitivity of receptors along the Solent Way from Keyhaven to VP 26 was underestimated, given the popularity of the path and its contribution to the experience of views out of the NFNP. Equally, the medium-small scale of effect at VP 26 and minor significance of impact on receptors using Solent Way underrepresents the extent to which the turbines would intrude on people's enjoyment of this iconic coastal scenery.

7.3.229 It follows that the adverse impact on the special quality of *'stunning views across the coastal marshes to the Isle of Wight from Keyhaven and Hurst Point*' (see paragraph 7.3.232 below) as experienced from VPs 26 and 27 and Solent Way would similarly affect views out from stretches of the RSU and LCT discussed above.

7.3.230 The implications on dark lit skies, however, would be less concerning. The distance of the turbine lights from the Keyhaven end of the coast would moderate their reach on a night time environment already illuminated by a range of other sources.

7.3.231 The NPNPA's LIR [REP- 2682] confirmed that the natural beauty of the New Forest's coastline and opportunities for the public to enjoy the area's special qualities were a key factor in designation of the National Park (NP) in 2005. The LIR states that the Designation Order cites "*the stunning views across the coastal marshes to the Isle of Wight from Keyhaven and Hurst Point, as*

*contributing to the inclusion of this area within the N*ational *P*ark *boundary*."

7.3.232 In its SoCG NE [REP-3109] agreed that the NFNP as a whole would not be subject to a significant effect. But it also noted that one of the special qualities of the New Forest, identified in the National Park Management Plan, is its outstanding natural beauty and that this quality makes specific reference to the unspoilt coastline, with views of the Solent and Isle of Wight.

7.3.233 The Panel agrees that the visual impact of the turbines would be significant at the southern edge of the NFNP, harmfully impinging on the key coastal views element of its outstanding natural beauty. However, given the limited geographic extent of these implications, the consequences for the NFNP designation as a whole would be **not significant**.

IMPACTS OF THE APPLICATION PROJECT ON RECEPTORS BEYOND DESIGNATED LANDSCAPES

7.3.234 This section records the Panel considerations of impacts of the Project outside of the Dorset AONB and the NFNP, by reference to visual receptors. The receptors were selected by the Panel as broadly representative of the area around the coast, and beyond the designated landscapes. These are:

- VP 15 - Sand Banks Beach
- VP 18 - West Cliff, Bournemouth
- VP 20 - Hengistbury Head
- VP 21 - Mudeford Quay
- VP25 - Milford Promenade
- Bournemouth
- Ferry passengers (cross channel and local)
- Recreational offshore activities

VP 15 - Sandbanks Beach (representative)

7.3.235 The baseline report [APP- 135] confirmed that Sandbanks Beach in Poole is a popular tourist destination. The busy sandy beach and open view across the broad sweep of Bournemouth Bay are characteristic of seaward views, which is framed by the headlands at Hengistbury Head, Hurst Castle and Old Harry Rocks. The photographic images show that the turbines would sit adjacent to but with a small gap between Old Harry Rocks to the south [REP-194-195]. Although not recorded in the list of site visits [HE-053],the Panel visited this viewpoint location on 23 July 2014.

7.3.236 In their LIRs Borough of Poole Council and Dorset County Council disagreed with the medium scale of effect predicted in the SLVIA. The Panel, however, accepts that the gap between the Project and Old Harry Rocks would ensure that the primacy of the latter is not disrupted in views southwards from the beach. Furthermore, while the Panel agrees that the baseline view would

be noticeably changed, the urban setting of the location, combined with beach related distractions, would moderate the Project's impact to a **medium** scale of effect.

VP18 - West Cliff Bournemouth (representative)

7.3.237 This viewpoint is located on a public green space at the top of West Cliff in Bournemouth. The viewer would be positioned at a point higher than the beach with clear views across the bay. It is representative of the view gained from the cliff tops and cliff top parks in Bournemouth. The applicant's images [APP-201 & 202] show the extent of uninterrupted seascape and wide horizon visible from elevated points of the town. At VP 18, the bay curves round with the pier clearly in view to the east. The white cliffs at the Needles are visible in the image but the Panel noted that visibility of the island from this distance is variable and dependent on weather conditions.

7.3.238 The turbines would be located some 22 km south east, occupying a large proportion of the sea view. The open sea is an important feature of the view out from elevated sections of the town. In our opinion, the Project would create a new focal point drawing the eye out to the horizon.

7.3.239 However, in common with other urban and seaside locations, viewers' expectations of panoramic uninterrupted views of the sea are moderated by other distractions, mostly urban related. The Challenge Navitus images taken from West Cliff for instance [REP-2800 & 2801] show the turbines on the horizon but with the pier dominating the foreground. Taken overall, we conclude that from within the urban setting of Bournemouth, such as at VP18, receptors would experience some change to their outlook to sea but not resulting in anything more than a **medium** scale of effect.

VP 20 Hengistbury Head (specific)

7.3.240 VP20 is located at an information point on the footpath at the top of Hengistbury Head with 360° panoramic views across Bournemouth Bay and Christchurch Bay to the south, west and east, and the entirety of Christchurch Harbour to the north. The applicant's images comprise APP-205 & 206. Challenge Navitus visualisations of the Project from Hengistbury Head can be found in REP-2826.

7.3.241 The Project would lie at a distance of some 20.4 km to the south of Bournemouth Bay and away from the surrounding headlands and coastal points of interest. It would occupy part of the seaward views but not to the point of unacceptably reducing the perception of openness of the expanse of sea visible from this elevated viewpoint.

7.3.242 The Panel also noted on site that views to the open horizon are not the only attraction for viewers that have climbed to the top of Hengistbury Head. Relatively close-up views over Christchurch Harbour and the more middle and distant views towards Bournemouth Beaches and the Purbeck Hills beyond add to the attraction of this popular viewpoint. The turbines would occupy only a small part of people's enjoyment of a busy panoramic outlook. The Panel concludes that the SLVIA's prediction of **moderate** significance of impact on visual receptors is appropriate.

VP 21 Mudeford Quay (representative)

7.3.243 The applicant's images [APP-207 & 208] illustrate the busy nature of the promenade along the sea edge of Mudeford Quay. Seaward views are over Christchurch Bay and across the sand dunes at Hengistbury Head. The Isle of Wight is visible to the south east. To the southwest, sand dunes and rocks of Hengistbury Head spit occupy the view. Development and boats in and around the harbour at Christchurch also occupy the view westwards. We noted that the movement of boats and people, the fast flowing tide as well as distractions onshore comprise the main focus of attraction along the westward stretch of the coast.

7.3.244 The images confirm that the turbines would extend across part of the horizon from Hengistbury Head but, as reported in the SLVIA, would appear smaller than the headland. The array would not extend across the horizon to alter views towards the Isle of Wight. The Panel believes that viewers' perceptions overall would remain undisturbed, even with the turbines altering part of the seaward views. We agree with the resulting **medium** scale of effect predicted by the applicant.

VP 25 Milford Promenade (representative)

7.3.245 The Panel noted that much of the view from the coast represented by VP 25 is focussed on the Needles and the Isle of Wight with the large expanse of the coastline to the west. Views of the open sea are to the south.

7.3.246 For VP 25 the applicant undertook assessments of the 5 MW and 8 MW layout options. The SLVIA confirmed that the Project would occupy a large proportion of the sea view. It would be seen adjacent to the Needles. The 8 MW turbines would appear as a similar height [APP-216 & 217], but the 5 MW ones would appear more densely on the horizon [APP-218 & 219]. Either way the SLVIA concluded that the Project would detract from distinctive view of the Needles.

7.3.247 The Panel agrees, but also accepts that views of the turbine arrays would be shared across the bay and headlands. The **medium** scale of effect predicted in the SLVIA is what we would

anticipate, given also our impression from the site visit that a large proportion of the views across Bournemouth and Christchurch Bays would not be impeded.

7.3.248 The Panel agrees with the NFDC LIR [REP-2681] that the impacts described in relation to VP 25 would apply equally to many parts of the district's coastline, including Milford. Residents and visitors would be exposed to views of the turbines that would be conspicuous, would occupy a large proportion of the horizon and detract from views of the Needles.

Bournemouth

7.3.249 The Bournemouth BC LIR [REP-2676] stated that the strong sense of a green and natural seafront is part of the town's unique offer. Unlike other coastal areas, the view of the sea is framed and consequently more sensitive to visual impact from development. Other IPs point to Bournemouth's importance as a tourist destination; its beautiful coastline; numerous hotels and residential properties with far-reaching sea views and the popularity of its beaches [REP-2954, for instance].

7.3.250 The Panel's visits to Bournemouth confirmed that visibility of the Project would be limited to views from publicly accessible cliff top locations and cliff top parks, the beaches and chines opening on to the beaches. VPs 18, 19 and 20 broadly represent the views expected from such areas of the town [APP-200 to 204].

7.3.251 Residents occupying properties on coastal locations especially those with an elevated outlook, would be exposed to views of the turbines. However, as noted earlier (paragraph 7.2.36), despite the visual intrusion, residents' living conditions would not be unduly harmed in planning terms.

7.3.252 Residents and visitors in many inland areas of the town would not perceive the Project's presence out to sea. Nevertheless, the Panel accepts that the coastal stretches of Bournemouth feature prominently in its attractions as a tourist destination, for its scenic qualities but also for the many facilities on offer. Bournemouth BC's LIR [REP-2676] states that *"[t]here is a strong sense of a green and natural seafront, a place where the town meets its coast in many dramatic ways*"; *[t]he golden sands that stretch the length of Poole Bay offer the ultimate recreational destination. The combination of these, and many other natural elements, allied with a wealth of heritage, history and visitor footfall during warmer months, combine to create a unique coastal experience*." PCBA's Written Representation confirmed that Bournemouth welcomed 4.5 million visitors annually, of which 53% went there mainly to admire the coastal scenery; "*however, other attractions included extensive conference facilities and the unique atmosphere engendered by open air*

spectacles such as the International Air Show and the various art festivals." [REP-2906].

7.3.253 The medium scale of effect over a wide extent predicted in the SLVIA is not unreasonable, in the Panel's view, as the wind farm although conspicuous would result in partial alterations to key characteristics. The **moderate** significance of impact resulting from the matrix assessment is in line with the Panel's conclusions of effect on receptors in Bournemouth.

Ferry passengers

7.3.254 The SLVIA confirmed that ferries from Poole and Weymouth journeying to and from France/Jersey/Guernsey would pass immediately adjacent to the turbine area. Passengers' views would be fundamentally altered. Their sensitivity to the development was classed as medium-low, on the basis that ferry passengers are likely to be *"..intermittently occupied by views across the seascape*."

7.3.255 The Panel agrees that close to the turbine area the scale of effect would be large over a wide extent; the array would dominate the seascape as ferries pass close by. The **major-moderate** significance of impact is not surprising, particularly as the Panel noted that ferry passengers approaching mainland UK would be faced with the turbine array interfering and detracting from views of the distinctive chalk- faced cliffs at Purbeck and the Needles. On the other hand, passenger's experience would be transitory and the impact would lessen as distance from the development site increases.

Recreational sailors and those engaged in water sports

7.3.256 The Application Project would be clearly visible to sailors and other water sport participants across the Bournemouth and Christchurch bays, the western side of the Isle of Wight, west Solent area and the Purbeck coast. The SLVIA accorded them high-medium sensitivity. A number of IPs drew attention to the popularity of the Dorset, Hampshire and Isle of Wight coasts. The area is heavily navigated not just around the coastline but also with sailors venturing across the Channel [APP - 079, Figure 13.8 and APP-082, Figure 16.10].

7.3.257 The significance of impacts predicted in the SLVIA vary from **major-moderate** (Bournemouth and Christchurch bays), **moderate** (west Isle of Wight area and Purbeck coast) to **low-very low** (west Solent). The Panel agrees with these findings, on the basis that people's visual perceptions vary with proximity to the turbine array. The impact of the array's visual presence, however, cannot be under-stated, even the 'moderate' category would have implications for those engaged in offshore

recreational activities looking to experience the sense of an undeveloped coastline and the open sea.

Conclusion on visual impacts on receptors outside designated landscapes

7.3.258 The effects of the Project on the broad range of receptors considered above would vary depending on distance, extent of visibility and sensitivity of the receiver to offshore wind farms. Our conclusions illustrate that in some instances significant impacts are inevitable. However, in itself that should not preclude serious consideration of the Project, as virtually all nationally significant energy infrastructure projects will have effects on the landscape or seascape and is likely to have visual effects for many receptors around proposed sites (EN-1 and EN-3).

OVERALL CONLCUSIONS ON THE VISUAL IMPACT OF THE OFFSHORE APPLICATION PROJECT (O&M)

7.3.259 EN-1 encourages the provision of reasonable mitigation wherever possible and appropriate.

7.3.260 The Panel recognises that the applicant has limited measures available to mitigate the visual effects of the proposed Project on the AONBs, National Park and Heritage Coasts. The pre-application reductions in the turbine area in December 2012 and February 2014 may be of some interest in terms of the Project's evolution. However, the materiality of those changes to the Panel's consideration of the Application Project's visual consequences is minimal.

7.3.261 Measures to reduce the offshore visual impacts were included as part of the design of the Project. These comprise:

- Maximum number of turbine foundations limited to 194.
- Turbines likely to be coloured grey, with the lower portion coloured yellow to meet Trinity House safety requirements.
- Turbines along the north western leading edge of the site to be maintained in a straight line.
- Demarcation of a substation exclusion zone.
- Implementation of a lighting scheme to minimise lighting impacts where feasible.

7.3.262 The TAMO amounts to a form of mitigation introduced by the applicant as a potentially viable option for the Secretary of State's consideration. Its impacts are examined alongside those of the Application Project and discussed below.

7.3.263 The set of design principles[13] agreed between the applicant and NE [REP-4038] was intended as a measure to minimise the offshore impacts of the Application Project on the AONBs, NFNP and Heritage Coasts. Challenge Navitus claimed that the principles should be expressed as a binding condition of the DML [REP-4020]. The Panel is not satisfied that the wording proposed would accord with the level of precision and enforceability expected of a condition (NPS and NPPF references). For instance, there is considerable room for latitude in the words 'as far as possible' which appear in 3 of the 5 listed design parameters. In addition to which, design principle (e) introduces a caveat recognising that constraints could militate against achieving "*an aesthetically balanced scheme*."

7.3.264 The Panel also questions whether the agreed principles are prescriptive enough to achieve the "..*coherent, harmonious, balanced appearance in relation to sensitive visual receptors*" sought [REP-4038], given also that other project constraints necessitate a flexible approach to the future layout and distribution of the turbines. Therefore, the absence of certainty about what is or is not deliverable in terms of layout, distribution or distance of turbine from the coast, limits the extent to which the intended mitigation of the design principles can be factored into our considerations.

7.3.265 The Dorset, Isle of Wight and New Forest Landscape Funds in the development consent obligation [REP-4083], introduced late into the examination, are intended to enhance the visual appearance of the area in the vicinity of the development. From the evidence, the Panel is unable to verify the specific items the funds would be directed to or to what extent the quantum proposed is related in scale or kind to the proposal. We cannot therefore conclude on its acceptability in terms of the EN-1 (paragraph 4.1.8) tests. That element of the obligation has therefore been accorded limited weight in coming to our conclusions.

7.3.266 So, the scope for reducing the potential visual impacts of the Application Project is limited to the bullet point items listed above and the design principles agreed with NE, the effectiveness of which is uncertain. In any event, the Panel is not convinced that the care and attention that might be accorded to turbine layouts or colours would overcome fundamental concerns about the scale of the Project and its proximity to nationally designated highly sensitive areas.

7.3.267 EN-1 also advises applicants to draw attention to any examples of permitted infrastructure with a similar magnitude of impact on

[13] 'turbine area design principles' (certified document to be secured as part of Article 39(1)(s))

sensitive receptors. In its Deadline IV (Part 2) response [REP-3313] the applicant referred to the Galloper and Rampion offshore wind farms and the Felixstowe South port reconfiguration. The materiality of the latter is questionable, but we note that it was found not to have a significant impact on the AONB. The Galloper wind farm was located 27 km from the coast and the offshore element of the scheme was not deemed an issue in terms of effect on the closest AONB.

7.3.268 In its Deadline VIA response [REP-3768] NE drew attention to the final design of the Rampion project which located the "…*nearest turbine to the key landscape receptors of the South Downs NP and Sussex Heritage Coast at approximately 27 km (from the beach at Cuckmere Haven) and approximately 30 km from elevated coastal viewpoints, at Birling Gap, with Beachy Head a further 5 km away at approximately 3 km*." While noting that the consented Rampion wind farm sets the nearest turbines some 3 km closer to the locations mentioned, we also note that the consented Rampion project is further away from the relevant Heritage Coast and National Park (at Beachy Head and Cuckmere Haven) and also of a smaller span (14.6° and 19° respectively) than the span of 44° at the closet point of 14.4 km at Durlston [REP-3356]. The Panel does not consider that parallels can be drawn for these reasons and also because of the very different characteristics of the two stretches of coastline.

7.3.269 The ExA draws the Secretary of State's attention to the unique physical characteristics of the Navitus Bay location. These comprise the curved bays to the north framed by the Isle of Wight to the east and Purbeck to the west. The area is characterised by exceptional scenic, dramatic qualities of the coastline and the presence of notable geological and historic features and headlands at various points along the coastline. A combination of these factors renders the area unique in terms of its landscape/seascape environment, and particularly sensitive to offshore energy developments in its vicinity.

7.3.270 Our conclusions earlier confirm that presence of the Application Project in this environment would lead to significant impacts. It is not just the fact of visibility that is of concern, but the effect of such visibility on the defining characteristics of extensive stretches of renowned landscapes and seascapes of the Dorset and Isle of Wight AONBs. The same concerns apply to the coastal portion of the NFNP. The scale and location of the Project would affect important special qualities of the AONBs over a widespread coastal area of exceptional quality and sensitivity. Similarly, the defining qualities of the Heritage Coasts would be significantly harmed.

7.3.271 In considering the impacts of the Project the ExA has had regard to the purposes of the AONBs and NFNP, as required by NPS EN-1 and s85(1) of the CROW Act 2000. The primary purpose of the

AONB and National Park is to conserve and enhance natural beauty. Even with the measures to reduce or compensate for impacts, we find that the Application Project would cause significant harm to a number of special qualities underpinning the designations, and contrary to the purpose for which the landscapes are designated. This conclusion carries significant weight against the Project and is considered in the context of the overall planning balance in Chapter 21 of this Report.

7.4 TURBINE AREA MITIGATION OPTION (TAMO)

OVERVIEW AND THE PANEL'S APPROACH TO EXAMINING THE TAMO

7.4.1 Following introduction of the TAMO (Appendix 43 in the applicant's Deadline III submissions [REP-3248]), a further document was submitted [REP-3429] in response to a Rule 17 letter issued by the ExA on 21 November 2014 [PD-007]. The response confirmed that the document was intended to update and replace Appendix 43 in its entirety. It includes a SLVIA for the TAMO, as well as (at Appendix 1 of the document) a comparison exercise to identify the order of change occasioned by the TAMO.

7.4.2 Additional key information and details in relation to the TAMO's seascape/landscape/visual impacts were provided by the applicant as follows:

- Appendices 3-8, Deadline IV (Part 1) [REP-3276 to 3309]
- Appendix 11, Deadline V [REP-3501]
- Appendices 6 and 7, Deadline VI [REP-3649 to 3674]

7.4.3 The additional documentation was produced by the applicant in response to questioning by the Panel at the ISHs and when responding to our second round of questions. They include a TAMO SLVIA [REP-3309], an additional TAMO SLVIA [REP-3674] and viewpoint visualisations relating to the TAMO scenario. The Panel's judgements on the TAMO impacts are based on the material provided by the applicant (in addition to oral submissions at the ISHs), the IPs' written and oral responses to the TAMO from Deadline IV onwards. These include additional TAMO-based viewpoint visualisations produced by Challenge Navitus [REP-3615 to 3627]. The Panel also re-visited a number of viewpoints with the relevant TAMO material to hand [HE-076].

7.4.4 We have also arrived at conclusions based on the NPSs, the MPS and other Government policies relevant to our considerations. Of particular note of relevance to the TAMO is the EN-1 advice: "*Having regard to siting, operational and other relevant constraints the aim should be to minimise harm to the landscape, providing reasonable mitigation where possible and appropriate*."

7.4.5 The TAMO is a scaled down version of the Application Project. These are the relevant facts:

- Maximum installed capacity - 630 MW (340 MW less than the Application Project)
- Maximum tip height - 200m (no change)
- Maximum rotor diameter - 176m (no change)
- Maximum hub height - 112m (no change)
- Maximum number of turbines - 105 (-89)
- Number of offshore sub-stations - 2 (3)

7.4.6 The development boundary is to remain unchanged. Figure 1 of REP-3429 and no additional development would take place within that red line boundary. The change to the DCO would involve adoption of a 'structures exclusion zone', hatched blue in Figure 1. Illustrative layout of the 6 MW and 8 MW options feature in Figures 2 and 3.

7.4.7 It is clear from our conclusions in relation to the Application Project that the findings on impacts on the nationally designated landscapes of the Dorset and Isle of Wight AONBs and the NFNP, as well as the Heritage Coasts, are fundamental to the balance of judgements. Accordingly, the Panel has focussed its attentions on the two AONBs and the NFNP.

7.4.8 Notwithstanding the smaller turbine array, a substantial majority of the objections directed at the Application Project applied with similar force to the reduced option. For that reason the IPs' submissions have not been summarised in this section but referred to where relevant to a particular point. Equally, the applicant's findings are not recorded in any detail, except where necessary to explain the Panel's reasoning.

SEASCAPE LANDSCAPE AND VISUAL EFFECTS OF THE TAMO

Panel's reasoning and conclusions on the Dorset AONB and Purbeck Heritage Coast

Land Parcel A: coast and coastal fringe from Old Harry's Rocks to St Aldhelm's Head

7.4.9 The viewpoints selected for assessments in the TAMO SLVIA provide a good representation of the likely visual effects on the qualities of the AONB expressed over the wider receiving environment as well as on receptors on local trails and visitors to specific locations. Our considerations therefore start with the following key viewpoints:

- VP 08 St Aldhelm's Head (**moderate**)
- VP 09 Durlston Castle (**major-moderate**)
- VP 11 Ballard Down (**medium**)
- VP 12 Old Harry Rocks (**major-moderate**)
- VP A Anvil Point (**medium**)

- VP B Swanage Beach North (**medium**)

7.4.10 Text in bold indicates the applicant's conclusions in respect of scale or magnitude of effect. In each case, the TAMO SLVIA predicts a reduction of one point on the scale from that experienced with the Application Project. The relevant RSUs and LCTs are considered after the viewpoints.

VP 08 St Aldhelm's Head (specific)

7.4.11 The applicant's visualisations are based on the 8 MW layout (76 no turbines) [REP-3280 & 3281]. The Challenge Navitus image from a similar viewpoint is based on the 6 MW (105 turbines) option [REP-3616][14].

7.4.12 The images confirmed our own perceptions that even at distances of about 23.5 km, the turbines would be clearly visible albeit with less depth and spread across the horizon. There would be sufficient distance and separation from the Isle of Wight to prevent interference with views across to the island. The turbines would however interfere with the uninterrupted panoramic views of the open sea. The 6MW option would clearly add to the spread across the horizon. We consider that in the open sea environment the turbines would be conspicuous and eye catching to an observer. The scale of effect is more likely to fall in the **medium** category.

7.4.13 As stated earlier (paragraphs 7.2.33 and 7.2.34), the Panel does not agree with the high-medium sensitivity accorded to walkers on the National Trail. For that reason, the high sensitivity of visual receptors at St Aldhelm's Head to the sort of change proposed would result in **major-moderate** significance of impact.

VP 09 (specific) and VP A (representative) Durlston Castle and Durlston Country Park at Anvil Point

7.4.14 In both viewpoints, the reduced angle of view at 30-33°(compared to the Application Project at 42.5-44°) and separation of the turbines from the Isle of Wight is an improvement in the TAMO scheme.

7.4.15 At VP 09, the Panel agrees with the applicant that at some 19 km the turbines would be "*conspicuous and well defined but not to the extent that it would be the foremost predominant feature*." [REP-3674]. The applicant's visualisations [REP-3653 & 3654] as

[14] The Challenge Navitus visual representations of the TAMO scheme are all based on the 6 MW layout (105 turbines), except for two additional images based on the 8 MW options (76 turbines). Caution needs to be exercised in comparing the applicant's RWCS 8 MW layout with the Challenge Navitus images.

well as those submitted by Challenge Navitus [REP-3621 & 3622] reveal the extent of alterations to open sea views. As the principal receptors are regarded to be highly sensitive to the offshore wind farm development, the Panel agrees with the applicant that a **major-moderate** significance of impact is likely.

7.4.16 At VP A [REP-3276 & 3277 and REP-3617 to 3620] our observations are similar to those expressed in relation to the St Aldhelm's viewpoint, in that the turbines would appear conspicuous and eye catching, although the lighthouse is an additional point of interest drawing the eye away from the sea. The applicant's finding of **medium** scale of effect is appropriate. However, it is one of a sequence of medium effects experienced along this stretch of the SWCP which we agree with NE would be significant in overall terms for the loss of tranquillity, remoteness or uninterrupted panoramic views.

VP 11 Ballard Down (representative)

7.4.17 Although located some 4 km further away than the Application Project, at 22 km the turbines would maintain a noticeable presence out to sea off Swanage Bay. The images [REP-3301 & 3302, and REP-3623 & 3624] confirmed the Panel's observations that the baseline situation would be noticeably altered and the TAMO scheme would draw the eye. Even at a distance of 22 km to the nearest turbines we believe that the TAMO would occupy enough of the horizon and outlook as to detract from the scenic qualities enjoyed by walkers on Ballard Down. We agree that the reduced scheme would result in a reduced scale of effect but it would remain at **large-medium**.

VP 12 Old Harry Rocks (specific)

7.4.18 The TAMO SLVIA [REP-3674] referred to a 30% reduction in horizontal spread and just over 5 km reduction in distance compared to the Application Project. In the light of this factual information, the Panel agrees that the TAMO would represent a comparatively reduced presence across the horizon, and result in increased separation from the Isle of Wight.

7.4.19 Nevertheless, because of the extent of coverage of a development of the size of the TAMO turbine array, it would represent a new focal point in seaward views, competing with the prominence of the rocks and chalk cliffs that symbolise long and close up views. [REP-3655 & 3656]. The applicant's wireframe comparison [REP-3656] does not adequately capture those concerns but, with the benefit of site inspections, the Panel concludes that the finding of **major-moderate** significance by the applicant is appropriate.

VP B Swanage Beach North

7.4.20 This viewpoint is a good representation of the views available to those visiting the beach [REP-3278 & 3279]. Peveril Point is the principal feature in southwest facing views. During the summer season boats in the bay and beach related activities are as much a part of the view as the open sea beyond. The TAMO turbines would extend beyond the headland at Peveril Point and occupy part of the long distance view (about 24°). In the context of other features in the foreground drawing the eye away from the horizon, the Panel agrees that the scale of effect is likely to be no more than **medium**.

Conclusions on Land Parcel A

7.4.21 The TAMO SLVIA [REP-3309] confirmed that at its closest point the turbine array would be located at 19 km from the coast. It further recognised that alterations would result from the project, affecting perception of three of the Dorset AONB's special qualities. As demonstrated in our findings and observations on the viewpoints considered above, distance from the coast and level of horizontal spread of the TAMO render its impacts no higher than major-moderate or large-medium, with others at moderate or medium.

7.4.22 These visual impacts would be similarly perceived in the ways described above by people using or visiting the SWCP, long distance routes or public accessible spaces (such as NT land). The scale of visual damage would be equally reflected in the visual aspects of the landscape and seascape character types reviewed in the Application Project section of this Chapter.

7.4.23 Thus, the remote quality of the eastern coastal portion of the Purbeck Coast RSU would be affected by the introduction of a new focal point on an otherwise largely uninterrupted horizon. The Panel also considers that at Durslton Bay the TAMO would be visible as a new dominant focal point, and the extent of visibility across the southern sections of the Swanage Bay RSU would impose on uninterrupted panoramic views. The TAMO would represent an incursion into panoramic views across the Purbeck Plateau and Purbeck Ridge parts of the LCTs that contain notable landmarks (Old Harry Rocks, Durlston Head and St Aldhelm's Head). The Panel considers that moderate significance of impacts would result. But spread over a wide area, in our view, that would be deemed to be significant. The night time effects would be noticeable but not to the point of detracting substantially from the dark skies experienced at remote points of the coastline.

7.4.24 The level of intrusion by the TAMO affecting qualities, such as remoteness and tranquillity over long stretches of the coastline, would be reduced in comparison to the Application Project. It would, nevertheless, cause noticeable and significant alterations to people's experience and enjoyment of qualities characterising the AONB.

7.4.25 For the reasons explained, the Panel accepts the **major-moderate** overall significance of impact predicted for this section of the Dorset AONB, implying that the harm would be **significant**.

Land Parcel B : Poole Harbour and Studland[15]

7.4.26 In line with our conclusions on the Application Project, the Panel is satisfied that the characteristics of Poole Harbour would remain largely unaffected by the presence of the turbines.

7.4.27 As for Studland, the TAMO SLVIA [REP-3674] noted that from more than half the length of the beach the TAMO would be obscured by the Purbeck coast. From the north of the beach the SLVIA predicts minor alterations to views and to some special qualities of the Dorset AONB.

7.4.28 The Panel disagrees. The turbines would feature behind and extend beyond Old Harry Rocks. The array would extend from behind Old Harry and would be visible between the chalk stacks. Our inspections at and around the points of the beach from which the TAMO would be visible confirmed the extent of harm even at distances of between 24 km and 25 km, as illustrated in the Challenge Navitus visualisation [REP-3625]. With the 8 MW layout the turbines would not extend as far along the horizon, but they would appear taller.

7.4.29 Either way, they would interfere with important views of Old Harry Rocks. The Panel's observations in relation to the Application Project apply equally here - that the TAMO would amount to a substantial intrusion affecting a range of visual receptors. The harm caused to the Studland sections of the Bournemouth Bay RSU and the AONB would be **significant**.

Land Parcel C: Coast and coastal fringe from St Aldhelm's Head to Worbarrow Tout

7.4.30 The applicant's viewpoint at Swyre Head (VP 07) [REP-3651 & 3652] showed that the turbines would extend across part of the wide panoramic view (about 22°) and appear along the horizontal line above the plateau terminating in St Aldhelm's Head. The applicant accepted that the TAMO would tend to draw attention away from other focal points of the view, albeit that it would sit more comfortably with the scale of the viewed landscape than previous schemes. Furthermore, that the development would sit within a different seascape than the landscape and coastline

[15] None of the Application Project viewpoints featuring in this section of the AONB was assessed for theTAMO scheme

occupying the foreground and middle distance of the viewed landscape.

7.4.31 The SLVIA predicted a **major-moderate** significance of impact due to the high sensitivity of receptors at this valued viewpoint. We see no reason to disagree with this outcome but consider that the scale of effect would be higher as one proceeds eastwards than the medium-low anticipated at VP 07. The baseline view would be noticeably altered and the turbines' influence on receptor's perceptions of the landscape and marine environment would become more apparent.

7.4.32 The Panel is inclined to agree with the Dorset AONB Partnership [REP-3988] that the position of the TAMO behind and adjacent to iconic scenery within views from the coastline in this area of the AONB would continue to raise cause for concern. The effects would be perceived as far west as Worbarrow Tout. Our conclusions are that, even with reductions in the TAMO's geographic extent, the significance of impact is likely to be **major-moderate**.

Land Parcel D: Coast and coastal fringe from Worbarrow Tout to White Horse Hill

7.4.33 The Panel concluded that a small scale of effect and minor significance of impact would be caused by the Application Project to sub-area C of the Dorset AONB. It follows that with the reduced option the significance of impact would be no more than minor and therefore **not significant**.

Land Parcel E: Inland on the Purbeck Ridgeway

7.4.34 The Panel was unable to access VP 06 at Povington Hill and therefore relies on evidence provided by the applicant in the TAMO additional SLVIA [REP-3674] and the viewpoint visualisations [REP-3650 & 3651]. We also note that NE agreed with the applicant's finding of **moderate** significance of impact. At a distance of 32.7 km the SLVIA alleged that the TAMO would lack definition and not be immediately identifiable, which may well be right. Dorset AONB Partnership confirmed that there would be relatively distant adverse effects on views between Povington Hill and Flowers Barrow [REP-3988].

7.4.35 On the other hand, the Dorset AONB Partnership pointed to the potential for significant effects between Ballard Down and Brenscombe Hill. The SLVIA did confirm that the greatest scale of effect would arise from the length of path closest to the coast and inland up to Ailwood Down (approximately 25 km from the TAMO). From these elevated locations the turbines would represent an alteration to seaward views but the Panel notes that impacts would diminish with distance from the coast.

7.4.36 Nevertheless, the ExA believes that the visual intrusion at important and elevated points on this section of the AONB (such as Ballard Down and Nine Barrow Down) would be detrimental to the valued panoramic outlook. Even at distances of 22 km the turbines would impinge on the area's remoteness and tranquillity when viewed from these locations.

7.4.37 The **moderate** significance of impact described in the SLVIA is in our view appropriate for areas extending away from the coast. For the portions of land parcel E extending from Ballard Down to Nine Barrow Down, however, the TAMO turbines would represent a harmful incursion into the remoteness and tranquillity enjoyed from these locations. The Panel anticipates a medium scale of effect leading to **major-moderate** significance of impact on localised areas of land parcel E.

Overall conclusions on the Dorset AONB and the Purbeck Heritage Coast

7.4.38 Our conclusions in terms of the individual sub-areas of the Dorset AONB considered by the Panel reveal a lessening of impacts when compared to the Application Project. The scale of effects would vary within the sub-areas as reflected in our findings. However, a number of key features of the AONB would continue to be harmfully affected. We have predicted levels of impact that would be significant across important sections of the AONB, marked by well-known and notable features. The TAMO would be an imposing feature affecting key qualities of tranquillity, remoteness, uninterrupted panoramic views. It would maintain a continuous presence in views along the exceptional undeveloped coastline and cause significant harm to the core qualities of the AONB, the NFNP and the way they are experienced.

Panel's reasoning and conclusions on the Isle of Wight AONB and Tennyson Heritage Coast

7.4.39 As with the Dorset AONB the Panel believes that consideration the visual impacts of the TAMO on the AONB's core qualities and on the defining characteristics of the Heritage coast are well represented by the range of viewpoints assessed in the TAMO SLVIA. That is where we focus our attentions.

Sub-Area A1 - south west (north) from the Needles to Freshwater

7.4.40 The closest receptors on land would be around the Needles (at VP 28). Although with a greater degree of separation of about 10°, the turbines would be seen with the Purbeck coast in the background. The spread of the array at 19.3° and at a distance of 22.3 km the project would be noticeable but as a distant feature in the views [REP-3665 & 3666].

7.4.41 Nevertheless, it would form a new focal point in an otherwise undeveloped seascape with loss of the experience expected by observers at this particular viewpoint. The **major-moderate** significance of impact described in the SLVIA is appropriate, in the Panel's opinion.

7.4.42 Similarly the TAMO scheme would interfere with the qualities expressed at the south western coastline closest to the array and viewed from points along the Isle of Wight coastal path. Having identified walkers on National Trails as having high sensitivity to offshore developments, the medium scale of effect that the Panel considers would be likely would lead to a **major-moderate** significance of impact, which would diminish with distance as the Trail extends southwards.

7.4.43 At VP 29 (Tennyson's Monument) neither the applicant's viewpoint visualisations [REP-3286 & 3287] nor the one prepared by Challenge Navitus [REP-3627] reveal the extent of the 360° view possible from this elevated viewpoint. As with the Application Project, the TAMO turbines would occupy only a proportion of the full extent of long range views.

7.4.44 At a distance of some 23.9 km, the turbines would be a distant feature, accommodated within the wide marine expanse in which they would be seen. The photographic images however illustrate the development would create a new focal point within the seaward portion of the view.

7.4.45 The Panel accepts that a medium-low magnitude of effect is appropriate leading to a **moderate** significance of impact on receptors at this viewpoint. For the same reasons we would anticipate that walkers on Tennyson Trail in this location would be subject to similar experiences and moderate impacts. The dark skies element of the AONB would be affected but is less concerning with the reduced number of turbines proposed and its distance from the island's south-west facing coastline.

7.4.46 The sequence of moderate impacts cannot however be disregarded, given the sensitivity of receptors on these trails. Viewers' perceptions stretching over a wider area along a marked trail route would be as much diminished as it is recognised to be reduced at a specific viewpoint.

7.4.47 Despite the increased separation and reduced depth of the turbine array, the TAMO would have discernible and harmful effects on sensitive receptors closest to it. In effect, that means the south west promontory and areas of the coast displaying core qualities for which the Isle of Wight AONB was designated.

Sub-Area A2 - South-west (south) from Freshwater to St Catherine's Point

7.4.48 NE accepted the applicant's findings [REP-4072] of the array being perceived as "*a distant and remote feature within a wide expansive seascape view*" [REP-3700] at viewpoints at Mottistone (VP31), Limerstone Down (VP32) and Blackgang car park (VP33). At distances of 28 km or over, the TAMO scheme would be discernible but no more than that and would cause only minor alterations to baseline views. The qualities of the portion of the Isle of Wight AONB between Freshwater and St Catherine's Point would remain largely unaffected.

Overall conclusions on the Isle of Wight AONB and Tennyson Heritage Coast

7.4.49 The Panel's conclusions are that significant harm would arise from the TAMO's presence but it would be largely confined to sub-area A1 of the Isle of Wight AONB. Because of the relative proximity to distinctive features such as the Needles and Tennyson Monument and Down and the role they play in the wider visual experience of the AONB, the qualities of the Isle of Wight AONB and Tennyson Heritage Coast would be unacceptably and significantly harmed.

Panel's reasoning and conclusions on the New Forest National Park (NFNP)

7.4.50 The TAMO turbine area would be at a distance of 27.5 km south west of Hurst Castle. The SLVIA [REP-3309] describes the project as lying to the south west of the view (VP 27) and adjacent to the Needles. The descriptions also emphasise the extent of reductions in visibility and reduction in apparent height due to increased distance and reduction in comparison to the Application Scheme (38% and 15m respectively).

7.4.51 Nevertheless, viewpoint visualisations prepared and submitted by the applicant and Challenge Navitus [REP-3284 & 3285, REP-3626 respectively] confirmed the Panel's observations on site that the TAMO turbines would be visible through the gaps between the stacks at the Needles as well as extend beyond the lighthouse. With the 8 MW turbines they would extend by 4° and further with the 6 MW option represented in the Challenge Navitus image.

7.4.52 The Needles is the key focal point of interest in this view. The NFNPA described the view from the National Park coast (in particular from Hurst Castle) as being of the highest quality. Having visited the area, the Panel is inclined to agree. At a distance of just over 27 km to the nearest turbine from the viewpoint, the TAMO would be apparent and evident. The SLVIA does not consider that it would be conspicuous, visible or eye catching. That may well be, but the intrusive effects of the turbines silhouetted between and beyond the stacks would be sufficient to cast the significance of effect into the **major-moderate** category.

7.4.53 With the benefit of distance from VP 26 along Solent Way, the turbines would be discernible but less intrusive due to lack of clarity. On the other hand, from closer viewpoints along the Solent Way clarity would improve and so would the way that the TAMO would be perceived in relation to views looking out towards the Needles. A SLVIA assessment of **moderate** significance of impact along this footpath in locations close to Keyhaven is not unreasonable.

7.4.54 Overall, however, and in spite of the impact that the TAMO would have on views from the National Park to the Needles, we agree with NE's point that the qualities of the NFNP as whole would not be significantly affected.

7.5 PANEL'S REASONING AND CONCLUSIONS ON THE TAMO

7.5.1 NE confirmed that the TAMO offered a reduction in the visual and landscape impacts, further explaining that "….*when viewed from nationally designated landscapes the horizontal spread of the development is reduced by the Mitigation Option and the distance offshore from the designated site boundaries are increased*." It went on to describe the TAMO as a "*beneficial and meaningful reduction in the scale of the visual and landscape impact*."

7.5.2 The Panel agrees with these sentiments. The series of spatial comparison plans submitted by the applicant [REP-3303 to 3307] illustrates the marked scale of reduction intended by introduction of the TAMO. The applicant quantified the reductions as benefits in the following terms [REP-3700]:

- 48% reduction in the turbine area.
- Reductions in horizontal spread of between 20% (as at Durlston Head) and 30% as at the Needles.
- Increased distance from the nearest coastline of approximately 24% at the Needles and 31% at Durlston Head.

7.5.3 NE however also noted that comparison with the Application Project should not mask the fact that the TAMO would represent a substantial development with landscape and visual effects considered significant in their own right [REP-3768].

7.5.4 In terms of views westwards of Worbarrow Tout, the TAMO would be visible but as a distant feature occupying its own marine environment and with little intrusion on key landscape features. Similar conclusions apply to the sections of the Isle of Wight AONB moving southwards from Freshwater. Equally, as NE confirmed, the NFNP as a whole would not be significantly harmed.

7.5.5 The turbines would nevertheless maintain a continuous and intrusive presence over wide stretches of locations sensitive to the type and scale of project proposed. The TAMO would amount

to an incursion in views alongside features symbolic of the Dorset and Isle of AONBs, the Heritage Coasts and the NFNP; the Needles, Old Harry Rocks, Durlston Head, St Aldhelm's Head, Hurst Point and Tennyson Down, for instance. The Panel is inclined to agree with NE's conclusions that the TAMO would amount to a major development which would lead to significant impacts on nationally designated landscapes and would be contrary to their purpose.

7.5.6 The matter carries significant weight in the case against the TAMO and is carried forward into the balance of considerations in Chapter 21.

8 LANDSCAPE AND VISUAL IMPACT ONSHORE

8.0 THE POLICY CONTEXT

NATIONAL POLICY STATEMENTS

8.0.1 NPS EN-1 advises applicants to undertake a landscape and visual assessment which is to include "*the effects during construction of the project, effects of the completed development and its operation on landscape components and landscape character*." (Paragraph 5.9.6)

8.0.2 While accepting that all nationally significant energy infrastructure projects will have effect on the landscape, EN-1 paragraph 5.9.8 goes on to state that "[*h*]*aving regard to siting, operational and other relevant constraints the aim should be to minimise harm to the landscape, providing reasonable mitigation where possible and appropriate*."

8.0.3 With regard to developments in nationally designated areas, EN-1 requires conservation of the natural beauty of the landscape and countryside to be given substantial weight. In exceptional circumstances development consent in these areas may be granted subject to assessments of need for the development, cost of and scope for developing outside the designated area and any detrimental effect on the environment, landscape and recreational opportunities.

8.0.4 With regard to Green Belt, EN-1 reflects the NPPF wording in that general policies controlling development in the countryside apply with equal force in Green Belts. In addition to which, there is a general presumption against inappropriate developments in the Green Belt and such development is not to be approved except in very special circumstances.

RELEVANT DEVELOPMENT PLANS AND OTHER LOCAL POLICIES

8.0.5 Paragraph 7.0.8 of Chapter 7 of this Report lists the policies relevant to landscape/environmental protection. As the onshore elements of the Application Project and the Turbine Area Mitigation Option (TAMO) would be sited in the administrative boundaries of New Forest National Park Authority, New Forest District Council, East Dorset District Council and Christchurch Borough Council, the relevant development plan policies apply.

8.1 APPLICATION PROJECT

BACKGROUND

8.1.1 The Offshore Export Cable, making Landfall at Taddiford Gap, Barton on Sea, would head to the Onshore Substation site lying within an enclosed pasture in Three Legged Cross, East Dorset.

The route is described in some detail in ES Volume C, Chapter 2 - Onshore Project Description [APP-088 paragraphs 2.3.4 to 2.3.14]. Six cable circuits are proposed to be buried in trenches for much of the 35 km route but trenchless installations would be deployed in certain crossing locations [REP-3051, Trenchless Crossing Plans]. A 40m Cable Corridor working width is proposed [APP-088, Figure 2.22]. A total of seven temporary construction compounds are proposed for the onshore construction works (two to be located at the Landfall, one at the Onshore Substation and four along the cable corridor)[16]. The onshore construction programme is intended to take place in three broad stages: pre-construction activities starting in Year 1 and primary construction activities in Years 2 and 3. The substation and parts of the Cable Corridor would lie within the South East Dorset Green Belt and some 6 km of the cable route passes through the NFNP.

8.1.2 The applicant's Landscape and Visual Impact Assessment (LVIA) is contained in ES Volume C Onshore Chapter 12- Landscape and Visual [APP-098]. The LVIA explained that the assessment process (started in August 2012) was substantially completed when GLVIA3[17] was published in April 2013. In accordance with the Landscape Institute advice, the assessment continued to completion on the basis of GLVIA2 [APP-295]. A comparison study was undertaken by the applicant to identify the key differences in approach between GLVIA2 and GLVIA3 and to present the findings of a desk-based LVIA using a GLVIA3 compliant methodology. The findings are presented in ES Volume C, Appendix 12.5 [APP-297].

8.1.3 For LVIA purposes, the study area was agreed through consultation with local authorities (LAs) and Natural England (NE). For the Onshore Substation the study area is based on analysis of the Zone of Theoretical Visibility (ZTV) and agreed as a 3 km radius from the substation site boundary [LVIA, Figure 12.1]. For the onshore Cable Corridor and Landfall site, a 1 km radius study area was agreed as appropriate for the purpose of the LVIA [LVIA, Figure 12.2].

8.1.4 The applicant's assessment identified a baseline environment and, for the Landfall and cable elements of the onshore works, analysed impacts on landscape and visual receptors at the construction and operation and maintenance (O&M) stages. Similarly, the LVIA included assessments of the new Onshore Substation during the construction and O&M phases. Impacts of removing below ground infrastructure as part of a decommissioning phase were scoped out of the assessments,

[16] See ES Volume C Chapter 2 Onshore Project Description [APP-088] Figures 2.16 to 2.21 for location of the construction compounds
[17] Guidelines for Landscape and Visual Impact Assessment published by Landscape Institute and IEMA

because of the short-term, temporary and reversible nature of such interventions. The Panel sees no reason to disagree with that approach.

8.1.5 In relation to methodology, the applicant confirmed that there was a typographical error in the LVIA, which indicated that moderate effects and above were judged to be significant. This is not what the applicant intended. An errata issued on 16 October 2014 [REP-2687], confirmed that only major and major-moderate are considered to be significant; thus bringing the LVIA into line with the SLVIA, and different from the threshold of 'significance' applied in other ES topics.

MAIN ISSUES ARISING FROM THE OFFSHORE ELEMENTS OF THE APPLICATION PROJECT

8.1.6 The Panel has identified the following key issues arising from consideration of the material submitted:

- The landscape and visual impacts at the landfall site
- The landscape and visual impacts of the Cable Corridor, including effect on the NFNP.
- The effect of the Onshore Substation development on the Green Belt, its openness, character and appearance.
- Whether the harm by the inappropriateness of development in the Green Belt or any other harm is clearly outweighed by other considerations, so as to amount to the very special circumstances necessary to justify the development.

8.2 LANDSCAPE AND VISUAL IMPACTS AT THE LANDFALL SITE

The applicant's case

8.2.1 The LVIA identified a noticeable change to the landscape arising for the duration of the construction phase of the Landfall works, resulting in a **moderate** impact which is regarded as **not significant**. For users of the PRoW near to the car park and construction compound a **major/moderate** impact is predicted, which is considered **significant**. Similarly, significant effects are anticipated at the coastal path and the local path connecting to it.

8.2.2 A very low magnitude of impact was predicted within one growing season for areas of ground cover and between five and 10 years for areas of hedgerow planting. The LVIA expected the adverse effects during operation to reduce to **negligible**, which was considered to be **not significant**.

Panel's reasoning and conclusions on visual impacts at the landfall site

8.2.3 Construction of the Landfall elements would be undertaken using High Directional Drilling (HDD) techniques, as described in ES Volume C, Chapter 2 Onshore Project Description [APP-088]. The

cable would remain underground until the HDD set up area, approximately 200m from the foreshore near to the Taddiford Gap car park. Beyond the immediate foreshore, the HDD set up area would require a land take of approximately 10,000 m^2 which would accommodate heavy plant and materials. The indicative Landfall arrangement is illustrated in Figure 2.12 of APP-088. The site compound would be temporary and the compound area restored on completion of the construction phase. The Taddiford Gap car park would be used as a temporary laydown area for construction of the Landfall site and during this time would remain inaccessible to the public.

8.2.4 The Cable Corridor and Landfall sites would pass through open farmland. Field boundaries would need to be removed over the whole working width of 40m during the construction phase, which include hedgerows and narrow tree belts. Hedgerow restoration would be carried out in accordance with the principles set out in the draft Landscape and Ecological Management Plan (LEMP) [Appendix 1 of REP-3692]. The LEMP is appended to the Code of Construction Practice (CoCP) and would be secured via Requirement 15 of the DCO.

8.2.5 The site currently comprises gently rolling landscape set on top of the elevated and eroded coastal fringe. There are panoramic views of Christchurch Bay and the mouth of the Solent. The LVIA noted that the construction compound would be a notable feature in the landscape. The Panel similarly notes that construction activities and traffic would detract from the quiet rural nature of the area. There is little doubt that, given the scale of the construction works intended, the character of the area would alter for the duration of the construction period. Users of local footpaths would be subject to **significant** effects for a period of about 2 years, although the Panel is satisfied that measures secured through the Construction Environmental Management Plan (CEMP) (Requirement 15 of the DCO) would seek to minimise the environmental harm.

8.2.6 During the O&M phase there would be an incremental blending in of disturbed land as landscape features such as hedgerows and trees are reinstated, in accordance with the LEMP, and the land restored to its previous uses.

8.2.7 **Significant** impacts on landscape and visual receptors are inevitable, during the construction phase and early years of the operational period. The temporary and reversible nature of the works at and around Taddiford Gap, however, combined with the restoration measures intended, assures the Panel that in time the area would broadly revert to the conditions presently seen. The overall effects in the long term would be **not significant**, on the basis that the restoration and replanting would take place as intended in the LEMP.

8.3 LANDSCAPE AND VISUAL IMPACTS OF THE CABLE CORRIDOR

The applicant's case

8.3.1 The Onshore Cable Corridor route, shown in Figure 12.2 of the LVIA, would pass through a predominantly rural and frequently rolling landscape comprising mostly agricultural land and plantation forestry.

Impacts of construction and operation and maintenance (O&M) phases on the New Forest National Park (NFNP)

8.3.2 The applicant explained that the attributes contributing to natural beauty and tranquillity are not as strongly expressed within parts of the NFNP southern fringe (through which the cable corridor is intended to pass) as elsewhere within its 'core' [REP-3313 & 3329]. The factors purportedly reducing the perception of natural beauty and tranquillity include busy roads, proximity to settlements, railway line, overhead electricity lines and a holiday park [REP-3313 & 3329].

8.3.3 The short-term, temporary and largely reversible nature of the construction works were considered to lead to negligible and therefore **not significant** impacts on the NFNP. Very low magnitude of effect was expected for the period within incremental assimilation of the reinstated land (one growing season for areas under natural regeneration and between five and 10 years for trees and hedgerow planting). The impacts during operation were deemed to be **negligible** and overall likely adverse effects on the NFNP were considered to be **not significant**.

Impacts of cable route on landscape and visual receptors - construction and O&M

8.3.4 The Cable Corridor would traverse through a range of landscape character areas including the Dorset Heath and New Forest National Character Areas (NCA) (Figures 12.6 and 12.8 of the LVIA). The assessment concluded that impacts on landscape character would be within the range of **negligible to moderate** significance for all stages of the Project, and that such effects were considered to be **not significant**.

8.3.5 The LVIA assessments also considered 11 representative viewpoints (Figure 12.10 of the LVIA). The assessment findings were that impacts on representative viewpoints for the Onshore Cable Corridor would be within the range of **major/moderate to negligible**. Of these, residents and users of a PRoW at Hordle (VP 14) and visitors/walkers at Taddiford Gap (VP 16) and the coastal footpath (VP 17) would be subjected to temporary and reversible **significant** effects during the construction period. It

was stated that **no significant** impacts would remain at these viewpoints following reinstatement in accordance with the LEMP.

8.3.6 The applicant also discounted potential for harm to the openness, permanence or visual attributes of the Green Belt from the completed onshore Cable Corridor or from its construction.

Statements of Common Ground (SoCG)

8.3.7 This section records the broad areas of agreement reached in the SoCG with relevant bodies.

8.3.8 With regard to onshore landscape and visual impact, in its SoCG Natural England (NE) agreed the following [REP3109]:

- GLVIA 2 is acceptable to assess onshore impacts.
- Impacts on the NFNP and its special qualities were properly assessed in the LVIA.
- Permanent loss of broadleaved woodland directly above the cables along some sections of the cable route within the NFNP would be likely to change local landscape character of the locations affected.
- Subject to restoration measures, other sections of the cable route within the NFNP would be unlikely to undergo a significant change of landscape character.

8.3.9 The Forestry Commission agreed in its SoCG [REP-3122] that the chosen route minimises impacts on the Public Forest Estate as far as possible by following existing tracks or infrastructure and is likely to lead to an overall biodiversity gain in the medium to long term. This would be achieved through the creation of new heathland rides and enhancement of woodland edge transition habitats, as described in the LEMP.

8.3.10 The LVIA methodology and scope were broadly agreed in the joint SoCG with Hampshire and Dorset CCs, the New Forest National Park Authority (NFNPA) and New Forest DC [REP-3140]. Initially, the local authorities were not in agreement with the LVIA's findings on impacts on landscape and visual receptors. However, it was agreed that matters relevant to mitigation and reinstatement (the Visual Tree Appraisal, hedgerow, broadleaved woodland reinstatement and root protection measures) are adequately covered in the LEMP and would reduce some of the effects of losses of features.

Issues raised in the Local Impact Reports (LIRs) and in IPs' submissions

New Forest National Park (NFNP)

8.3.11 In its Deadline II Written Representation NE accepted that the onshore cable corridor passage through two relatively small sections of the NFNP would incur a moderate visual impact during

the construction phase. This would arise as a result of loss of small areas of woodland (ES VPs 11 and 13). Subject to restoration measures being fully implemented and successful, NE went on to conclude that there would not be a change in either the character or quality of the NP.

8.3.12 The NFNPA LIR [REP-2682] stated that construction of a 6km long, cable corridor with a 40m working width across parts of the NP would inevitably impact on trees and wider landscape character due to gaps in woodland and tree belts. Mature trees are impossible to replace instantly or even in the medium term. An amendment to Requirement 18(4) was requested, as replacement of protected mature trees with small nursery trees would not be appropriate compensation.

8.3.13 At the issue-specific hearing (ISH), and in subsequent submissions, NFNPA noted that a comprehensive assessment of land within the NFNP was undertaken only a decade ago. All areas within the NFNP boundary are afforded the highest level of protection in relation to landscape and scenic beauty. It was claimed that the applicant underplayed the impact on the NP's landscape and that justification had not been provided for major development to be supported in this location. [REP-3348]. The NFNPA and Meyrick Estate Management Ltd [REP- 2953] further called for the trenchless technique to be deployed for the Allensworth Wood and Neacroft Bog sections of the Cable Corridor. At the ISH the NFNPA informed the Panel that the sites were included in the NP for strong landscape reasons

8.3.14 NFNPA accepted that the current draft LEMP would adequately address the design and management of the scheme to achieve the mitigation and compensation measures and address biodiversity issues. However, the size of replacement trees remained an issue [REP-3630]. Similar views with regard to replacement trees were expressed by other local authorities.

8.3.15 The NFNPA also confirmed that the Hampshire Biodiversity Fund and the New Forest Landscape Fund offered in the s106 are the minimum necessary to mitigate the impacts of the development [REP-4071].

Non-designated landscapes

8.3.16 NFDC's LIR accepted that the measures intended could reduce the inevitable major disturbance by construction works, as well as the long-term and permanent impacts to acceptable levels [REP-2681].

8.3.17 Christchurch BC (LIR) and Hurn Parish Council (PC) [REP-2854 & 2853] objected to the substantial number of trees that would need to be removed due to the trenched length of the cable corridor passing through Hurn Forest. Within Hurn Forest the

character of the landscape would be significantly altered with the 40m working width resulting in loss of a substantial number of trees.

8.3.18 Hurn PC estimated that a total of around 8.3 Ha and 2.1 Ha of conifer woodland in Hurn Forest and Avon Common Plantation would be lost, and was seeking compensatory funding for woodland creation within the parish to offset the losses [REP-3635]. At the ISH the PC referred to biggest changes likely to occur on land to the west and east of Matchams Lane, due to the loss of trees opening up the forest to the A338 carriageways. Hurn PC further claimed that the creation of heathland would not compensate for loss of woodland.

8.3.19 A substantial number of IPs referred to the permanent loss of trees and hedgerows causing unacceptable changes to landscape character along the cable route [REP-2845, 2887 & 2994 for instance], referring to the aftermath of the cable corridor as a 'permanent scar'. One IP suggested the use of overhead lines to avoid significant loss of trees in forests [REP-3065].

PANEL'S REASONING AND CONCLUSIONS ON THE LANDSCAPE AND VISUAL IMPACT OF THE CABLE INSTALLATION

8.3.20 The Panel undertook unaccompanied site inspections over a period of two days following the cable route. Along that route we inspected the areas adjacent to the construction compound locations, visited the viewpoints assessed in the LVIA and, at the request of Meyrick Estate Management Ltd., visited the grounds of the Hinton Admiral House. Hordle Lakes and Gundry's Farm were visited in the company of representatives of the applicant and a number of IPs [HE-076].

NFNP

8.3.21 EN-1 accepts that development consent in National Parks may be consented in exceptional circumstances.

8.3.22 Figure 12.5 of the LVIA identifies the cable route through the New Forest National Park (NFNP). The applicant described the landscape of the southern outer edge of the NP around the cable route as "*relatively flat agricultural fields bounded by mature hedgerows and tree belts*." It was further described in the LVIA as "*not deemed to provide a significant contribution to the special qualities of the New Forest National Park.*"

8.3.23 Policy in relation to National Parks (NP) affords the highest protection to all parts of the designated area. The Panel therefore agrees with the NFNPA that no one area is more important than another. The applicant's findings on the landscape qualities of the southern outer edges of the NP are therefore of little relevance to the Panel's consideration of the following tests invoked in EN-1:

- whether the Project is in the public interest and there is a clear national need for elements of it to be located within the National Park;
- that the national need for renewable energy cannot be met outside the New Forest National Park; and
- that the impacts on the environment, landscape and recreational opportunities within the New Forest National Park can be mitigated.

8.3.24 On the first point, the Application Project falls within the category of infrastructure covered by NPSs, to be assessed on the basis that the Government has demonstrated that there is an urgent need for new renewable electricity generation projects. The public interest element of the above considerations is therefore met.

8.3.25 As for locating parts of the Onshore Cable Corridor in the NFNP, the Panel's conclusions in Chapter 4 confirm that there was limited scope to develop outside the designated area and we were satisfied that the applicant had adequately explored the possibility of locating the Cable Corridor outside the NP.

8.3.26 The LVIA identified that construction of those sections of the Onshore Cable Corridor that would be located within the NP would lead to limited and localised disruption to the landscape of the NFNP. The works would include some 10% loss of woodland at New Close Wood, 7.1% loss at Allensworth Wood and 2.6% loss of woodland at Stanley's Copse.

8.3.27 The Panel notes that undergrounding the cables is a substantial part of reducing impacts. Specific measures in the LEMP are also proposed to ensure that impacts on the NP were temporary and result in no long term landscape harm [REP-3313]. The measures include:

- Reinstatement of hedgerows
- Restoration of open cut woodland
- A Visual Tree Appraisal (VTA) to avoid impacts on trees that contribute to landscape and amenity
- Replacement of trees removed within the onshore development area, outside of the permanent cable easement.

8.3.28 The Biodiversity Funds, to be secured through the s106 planning agreement [REP-4083], would fund the planting and management of at least 100% of the trees initially lost through construction.

8.3.29 It is clear that loss of trees and parts of woodland, loss of hedgerows and the construction activities would disrupt pockets of the NP's landscape character, its natural beauty and tranquillity. The movement of machinery, removal of trees and hedgerows and other construction-related works would be

apparent from a number of publicly accessible locations. Furthermore, the permanent loss of trees along the cable route would bring about marked changes to the woodlands affected.

8.3.30 The Panel accepts, however, that the construction impacts would be short to medium term and much of it would be reversible. We are also satisfied that the applicant has sought to mitigate or offset the longer term effects of tree and hedgerow losses. Restoration and protection measures provided for in the LEMP, as well as the funds offered in the development consent agreement, would effectively limit the long term impacts, subject to addressing two matters raised in the evidence. One concerns replacement of protected trees and the second is related to long term management of woodlands. They are considered in paragraphs 8.3.53 8.3.57 of this Chapter.

8.3.31 Subject to longer term tree and hedgerow management obligations in the LEMP and the Panel's suggested wording for Requirement 20(4) the localised landscape impacts inevitably incurred by a project of this size and in the NP, although not completely addressed, would be reduced.

8.3.32 The Panel broadly agrees with NE's conclusion that the character and quality of the NP would be largely unharmed. However, if the overall balance does not fall in favour of the Application Project, then the exceptional circumstances for consenting development in the NFNP would not arise.

Green Belt and other landscapes.

8.3.33 The greatest changes to landscape character and visual amenity would most likely occur during the construction phase of the Cable Corridor. The construction impacts were also expected to extend into the early period of the O&M phase, where landscape reinstatement works would lead to areas of disturbed and/or despoiled land.

8.3.34 Table 12.8 of the LVIA sets out the potential impact on woodlands by identifying the percentage of the individual woodland directly impacted. The applicant could not comply with the Hurn Forest PC and other IPs' request for quantifying the number of trees to be felled. In the absence of a detailed design for the cable route the numbers are difficult to establish. However, there can be no doubt in anyone's mind that the scale of trees to be felled to accommodate the Cable Corridor would be considerable and would have the potential to result in localised changes to landscape character.

8.3.35 The LVIA also anticipated that approximately 2.3 km of hedgerow would require temporary removal along the cable route. In addition to which, unwelcome visual incursions into areas of countryside and woodlands would occur from the presence of

construction compounds and the general disturbance arising from the placement and movement of heavy machinery.

8.3.36 In response to the Panel's questioning at the ISH, the applicant produced a detailed note [REP-3313] explaining the reasons for the 40m working width, which reflected the development boundary along the entire length of the cable route. The note also confirmed that there would be some opportunities (albeit limited) for narrowing working width to reduce impacts on particular features or receptors which would be captured through the LEMP.

8.3.37 In addition to the trench with thermal separation between circuits, the Cable Corridor would need to accommodate a haul road (minimum width of 5m), temporary soil storage areas, additional working area, and comply with the necessary health and safety standards. The applicant further explained that a 40m working width would allow for flexiblity to avoid features such as high value trees, unknown or abandoned utilities and as yet unknown obstructions. Future cable technology could result in a narrower working width and the design principle process in the LEMP would allow for this to be achieved.

8.3.38 The applicant claimed, and the Panel broadly agrees, that the construction stage impacts would typically be intermittent, of a short to medium-term duration[18] and largely reversible. That is not to underestimate the scale of disturbance (and significant effects) that the construction works would cause in visual terms or the changes occasioned to landscape character, but to accept that adverse impacts are inevitable for a project involving undergrounding export cables over a distance of 35km. The LEMP and CEMP [Appendix 1 of REP-3692] offer scope for mitigating against impacts during construction, such as micro-siting to minimise vegetation removal.

8.3.39 The LVIA expected the construction impacts to extend into the early part of the post-construction phases. From then on, as a result of replacement planting and ground cover regeneration, there would be an incremental assimilation of disturbed land into the immediate and wider landscape affected by the Cable Corridor construction works. The restoration measures would include replacement tree and hedgerow planting plus seeding/natural regeneration measures. These and other measures are considered below.

8.3.40 The Dorset and Hampshire Biodiversity Funds would be delivered through the development consent obligation [REP-4083] and would enable local authorities or local environmental partnerships

[18] The LVIA defines duration of effect as: long term (in excess of 10 years), medium term (within two to 10 years and short term (less than two years)

to conserve or enhance habitats which relate directly to those potentially impacted upon by the Project. The applicant confirmed that the quantum of the funds was agreed with NE, Wildlife Trusts and the local authorities that wished to be part of the discussions. It is based on enabling authorities to plant at least 100% of the total affected habitat.[REP-3018].

8.3.41 The applicant claimed that the funds are not necessary to make the development acceptable in planning terms [REP-4051]. However, the Panel regards it as an important biodiversity gain to offset the Project's impacts. From the evidence given by the applicant it also appears to be fairly and reasonably related in kind and scale to the development and reasonable in all other respects. The Panel's view is that the funds are necessary and meet the tests of acceptability.

8.3.42 The Dorset, Isle of Wight and New Forest Landscape Funds in the development consent obligation [REP-4083], introduced late into the examination, are intended to enhance the visual appearance of the area in the vicinity of the development. From the evidence, the Panel is unable to verify the specific items the funds would be directed to or whether the quantum proposed is related in scale or kind to the proposal. We cannot therefore conclude on its acceptability in terms of the EN-1 (paragraph 4.1.8) tests. In line with our conclusions in the previous Chapter, we have not taken that element of the development consent agreement into account in our conclusions.

8.3.43 By way of additional mitigation, a Visual Tree Appraisal (VTA) would be undertaken within the 40m width Cable Corridor to identify individual trees and tree groups that have significant value based on visual characteristics, ecological and biodiversity value, or contribution to the defining special characteristics of the local landscape [REP-3018]. The appraisal would be carried out in advance of construction works and used to inform the horizontal alignment of the cable trench.

8.3.44 The VTA was introduced in response to concerns expressed by a number of local authorities that only protected trees would be replaced or protected. The VTA included in the LEMP commits the developer to consider and give weight to individual trees and tree groups during the detailed design process beyond those statutorily protected. The measure would allow for identifying those of high value to the landscape; where loss could not be avoided, provision would be made to plant replacement trees in suitable locations.

8.3.45 Furthermore, contractors would be required to avoid loss of trees considered to be of the highest value. This would be achieved through diverting cable trenches or implementing protection measures. Where neither is practical or feasible, provision would be made to plant replacement trees in suitable locations.

8.3.46 The Panel acknowledges the commitment to trenchless crossings across approximately 15% of the onshore cable route. The sites were said to have been selected having identified the most sensitive nationally and internationally designated habitats as well as targeting traffic sensitive roads, the railway and other engineering obstacles. In this regard the Panel notes the intended use of trenchless techniques to avoid impacts on ancient woodlands at Dane Stream Coppice, Great Woar Copse and Beckley Moor Copse. Inclusion of trenchless installations at a number of locations to avoid harming ecological sensitive protected habitats is a further measure incorporated into the Project as part of the design process to minimise potential impacts.

8.3.47 In response to requests for trenchless installations at Allensworth Wood and New Close Wood (Neacroft Bog) [REP-2953], the applicant explained that these are broadleaved or mixed woodlands and neither was designated for ecological interest [REP-3490]. The NFNPA said that a wide wayleave running through the woodland would impact negatively on the special qualities of the NFNP [REP-3348]. There was an additional concern that open trenching would be impractical at Neacroft Bog and detrimental to it.

8.3.48 The LEMP woodland restoration plan would allow for mix of woodland ride, scrub edge and diverse deciduous woodland planting. While in the short term there would be a loss of semi-mature and mature trees in the locations referred to above, the Panel is satisfied that the long term benefit to wildlife and level of restoration intended would offset the losses incurred. In addition to which, the design principles in the LEMP indicated that during the detailed design process there would be potential for narrowing the Cable Corridor through specific areas, and the results being discussed with the relevant planning authority. The undertaker would therefore have the flexibility to align the cable route to avoid potentially sensitive areas, such as Neacroft Bog.

8.3.49 The route through parts of the Hinton Admiral House grounds is considered in detail in the Onshore Heritage Chapter. At this stage the Panel confirms that it is satisfied that offsetting measures combined with the range of protective options offered in the LEMP would limit the losses and visual disruptions anticipated at construction stage and in its aftermath during restoration.

8.3.50 The applicant also rejected the call for additional trenchless crossings through Hurn Forest [REP-3358]; they were not said to justify the additional costs, given that the ES did not identify long term significant impacts. However, the scale of tree loss identified by Hurn PC indicates to the Panel that the visual impacts are likely to have been understated. The PC referred to some 3900m of "*wholesale disturbance through open trenching techniques*"

through the parish. In Hurn Forest the cable route would extend by some margin beyond the gravel track laid through the forest. Loss of a broad swathe of trees to allow the cable installation to take place and the 20m wide replacement ride in which only shallow rooted plants could be reinstated would significantly alter the enclosed character of the forest, including the areas around Matchams Lane referred to by the PC.

8.3.51 Design principles in the LEMP provide opportunities to reduce cable spacing to avoid specific obstacles or narrow the corridor width. The measure is limited to 30m working widths for lengths up to 200m and 25m for up to 100m [REP-3313], due to health and safety and costs constraints. While the measure could alleviate some of the concerns raised in connection with Hurn Forest and other plantations, in the absence of a detailed design, it provides no certainty of meaningful mitigation.

8.3.52 On the other hand, the s106 agreement provides for heathland habitat enhancement and additional heathland creation to offset losses in Hurn Forest, West Moors Plantation and Ringwood Forest North. This has been accepted by NE and the Forestry Commission as a suitable compensatory measure and regarded as a biodiversity gain. The replacement planting along rides would not replicate the trees lost. But this is an unavoidable consequence of an underground cable installation (in itself a form of mitigation) and in our view acceptable in the circumstances of the biodiversity gains indicated. The Panel notes that other IPs disagree that gains would be made, but is satisfied that the applicant's offer would go some way to mitigate the visual impacts of the Cable Corridor and accords with advice provided by statutory bodies.

8.3.53 The Project would affect two groups of protected trees (Schedule 11 of the DCO), leading to losses of up to 8.5% of the group TPO in one case and 33% of the group TPO in the other [REP-3018]. Requirement 20(4) of the applicant's DCO version 6 [REP-4031] refers to the size of replacement trees for protected trees felled as *"….a minimum, a standard tree (tree girth size 8-10cm)."* NFNPA noted in its Deadline VI response to the Panel's DCO that *"[t]he replacement of protected trees - which could be hundreds of years old - with small nursery trees is not appropriate compensation and reaffirms the Authority's concerns over the potential landscape impacts of the onshore cable works."*

8.3.54 The Panel recognises that loss of a protected tree could have significant implications in ecological, visual or amenity terms. Its replacement would have to be of a size appropriate to the importance of the tree felled. The Panel suggested replacement wording along the lines of "*a tree of size and species to be approved in writing by the LPA*." The applicant did not agree on the basis first, that details of restoration can be agreed as part of the LEMP and is not specifically restricted to a standard tree.

Second, while replacement with larger trees may be appropriate depending on amenity and landscape value of the tree felled, more mature trees have a reduced survival rate when replanted [REP-4033].

8.3.55 We do not disagree with the second point but consider that the LPA is best placed to make decisions about the appropriate size of tree, given their local knowledge. The Panel's suggested wording would give the developer sufficient flexibility to then decide on an appropriate and survivable size of tree to compensate for loss of valuable features. Securing these requirements in the DCO, as suggested by the Panel's wording, is necessary to limit the harm caused by loss of protected trees and to be assured of an effective outcome.

8.3.56 The Panel agrees that the LEMP offers a good basis for delivering sound and effective reinstatement plans which would help reduce the long term impacts of the Cable Corridor post-construction. However, we questioned the long term effectiveness of a management obligation limited to 5 years. New Forest DC similarly called for longer term management of no less than 10 years.

8.3.57 The applicant's response to NFDC [REP-3490] suggests to the Panel that 5 years may be long enough for hedgerows to establish before handing back to the landowner. For woodlands, the description in the LEMP of the management operations in the first 5 years is reasonable. However, it omits to mention that thinning would be required (depending on the density at which the trees are planted), probably on more than one occasion after the first 5 years. If landowners are not prepared to do this work themselves, then a satisfactory mature woodland structure may not result. To be assured of a successful replanting programme, given the temporary loss of about 12 ha of woodland as a result of open cut trenching, the Panel considers that the LEMP (currently in draft form) should be updated to provide for a 10 year management programme for woodland replanting.

8.3.58 The Panel concludes that there would be effects on the landscape character and visual receptors as a consequence of onshore cable laying. The effects of the cable laying at construction stage would be temporary, and reduced through suitable working practices. The long term effects of the Cable Corridor would be reduced by the proposals to lay underground cables; the provision in the recommended DCO of a number of plans to be approved through the relevant planning authority, including the CEMP, CoCP and the LEMP, and the compensatory measures set out in the development consent agreement, subject to modifications to the LEMP and Requirement 20(4) in the form set out in the DCO (Appendix A).

8.4 LANDSCAPE AND VISUAL IMPACT OF THE ONSHORE SUBSTATION

8.4.1 The Onshore Substation would comprise a compound of approximately 3 Ha in area. The building, housing gas insulated switchgear (GIS), is expected to extend to a height of up to 14m. Other electrical equipment and infrastructure would extend to up to 11m high. If required, lightning masts would be up to 19m. The ground level could be raised by up to 1000mm to provide suitable foundations and facilitate drainage. The compound would also accommodate car parking, access roads and security fencing. Figure 2.23 of APP-088 shows the Onshore Substation location.

The applicant's case

8.4.2 The applicant's case in the LVIA and subsequent submissions notes that construction of the Onshore Substation would result in localised alteration to the local landscape fabric (LCA21: Horton Common-Three Legged Cross). Impacts on the landscape's defining characteristics were expected to be **minor** during construction and **negligible** during operation and maintenance. At Gundry's Farm changes to the immediate landscape were expected to result in **moderate** levels of impact, regarded as **not significant**.

8.4.3 The LVIA anticipated that construction of the substation would result in a **major** impact on receptors living and working at Gundry's Farm (Onshore VP 01 wireframe and photomontages). The completed substation would also lead to a major impact initially, but reduce to **major-moderate** within about 15 years, once the planting is established. In both instances the LVIA predicted **significant** effects.

8.4.4 The remaining viewpoints (Onshore VP 02 to VP 06) were positioned on PRoWs or bridleways at distances ranging from 0.5 km to 2.3 km from the substation site. The impacts predicted were **negligible** during both construction and operational phases, resulting in **no significant** effects on visual receptors.

8.4.5 The applicant further indicated that measures built into the design and landscaping of the Onshore Substation site would reduce impact on the Green Belt; the purposes, openness and visual attributes of which would remain largely unharmed.

Responses from Local Authorities

8.4.6 Submissions by Christchurch and East Dorset District Councils at Deadline VI and Deadline VII stages [REP-3640 & 4078] criticised the absence of structural planting on the northern portion of the substation site. They called for planting to be extended into the area to screen the compound, instead of relying on existing planting outside the site for that purpose. Furthermore, the local authorities felt that greater control was needed over the

landscaping and design, given the Green Belt location and absence of specific design principle in the DAS. Suggested modifications to the wording of Requirement 12 of the DCO flow from these concerns.

Panel's reasoning and conclusions on the visual impacts of the Onshore Substation

8.4.7 The area surrounding the Onshore Substation site has scattered housing and isolated farmsteads. Development in Three Legged Cross, extends in a broadly linear pattern along the B3072 and Ringwood Road, and includes industrial estates and a large MOD petrol depot. The latter shares a boundary with the Onshore Substation site; it is sited within an area of tree planting and separated from the substation site by secure fencing [APP-088, Figure 2.23].

8.4.8 The site itself forms part of the western portion of the curtilage of Gundry's Farm estate. The land comprises open fields used as grazing pasture and a camping caravan site. There is no other public access to the site.

8.4.9 The Design and Access Statement (DAS) (version 2) [REP-4047] explained that the Onshore Substation site was selected partially for its high level of screening and that the design seeks to utilise this screening. The landscaped screening would be enhanced as shown in Figure 5.6 of the DAS, to reduce visibility of the site as far as is practicable. New planting around the Onshore Substation is to be provided as part of the scheme design.

8.4.10 A preliminary phase of planting is proposed to be undertaken on the eastern edge of the substation in advance of construction, for the purposes of anchoring the development into its surroundings and establishing effective low-level screening from an early stage. The indicative layout plan also shows an area on the northern end of the development site which is proposed to 'remain largely open'.

8.4.11 During construction and the early stages of the operational phase of the substation, the changes to local views and landscape would be notable and apparent, as confirmed in the applicant's evidence and the LVIA. However, the effects would be temporary and localised.

8.4.12 The Panel notes that the perimeter landscape planting would help screen the substation building and compound, in particular shielding it in views from Gundry's Farm, the MOD site and nearby properties. Our visits to long distant viewpoints (VP 02 to VP 06) confirmed the extent to which views of the substation and associated fixtures would be restricted by local terrain and existing woodland belts. The lightning towers and electrical infrastructure would be visible in some views, but in the context

of pylons and overhead cables already forming part of the wider landscape. Night time effects would be limited and transient, as lighting at the substation would only be required during the occasional visit by engineers.

8.4.13 At the ISH the Panel explored the question of reducing the height of the GIS building, noting that the Rampion equivalent would be built to a lower overall height of 6m. The response from the applicant at the ISH and in writing [REP-3313] reassures us that, although the GIS technology to be deployed at Application Project's substation site would necessitate a two storey building, it would also occupy a much smaller area than intended at the Rampion project (2.5 Ha as compared to 23 Ha). Subject to Requirement 12(4) restricting the height of the building and infrastructure, the Panel accepts that the applicant's commitment to a more compact design would be an acceptable compromise.

8.4.14 The land on which the building and compound are to be sited is contained by mature coniferous plantation woodland along the western boundary and mature broadleaf tree belts along the northern boundary. Otherwise the land is open in the sense of its aspect, and because it is largely free of built development. The building, electrical infrastructure, fencing and the access road through the plantation introduced into this open area of land would individually and in combination markedly alter its appearance, while severely compromising the open (i.e. undeveloped) attribute of the Green Belt.

8.4.15 We agree that the landscaping to be secured by Requirement 23 - Landscape Design and Management Plan is necessary to soften the appearance of the substation site. But observe that the structure landscaping intended to screen the building and compound would also serve to reinforce incursion by the substation-related development into an undeveloped area of Green Belt land. The additional landscaping in the northern section of the site, as requested by East Dorset DC, would do little, in our view, to lessen the impact on openness occasioned by the scale and nature of development intended for this site.

8.4.16 The Panel concludes that the Onshore Substation would reduce openness of the Green Belt and amount to an intrusion into undeveloped land. Against that, we accept that the applicant has demonstrated commitment to a landscaping scheme to minimise its impact on the surrounding area, and opted for a form of technology that would limit the amount of site coverage by the works.

8.4.17 The design principles[19] listed in the DAS is a further indication of the applicant's commitment to addressing the Project's impact. However, reference to the DAS in Requirement 12(2) would not by itself secure the intended objectives, as the DAS accompanies the Application Project to explain and justify the proposals in the Application but is not part of it. The Panel considers that the design principles are particularly important for limiting the wider effects of the Onshore Substation and should be spelled out in the DCO. The wording promoted by East Dorset DC is not precise enough for the purpose and the Panel's recommended wording for Requirement 12(2) should be adopted.

8.4.18 As far as the purposes of the Green Belt are concerned, the applicant has, in our view, correctly predicted that the Onshore Substation would not impact on the Green Belt purposes of: checking unrestricted sprawl of built up areas; preventing neighbouring towns from merging; preserving the setting and special character of historic towns or assisting with urban regeneration. However, The Panel believes that a substantial new building, alongside associated infrastructure, within a rural area would be harmful to the Green Belt purpose of preventing encroachment into the countryside.

THE GREEN BELT ISSUE

The applicant's case

8.4.19 In its Deadline IV (Part 2) submissions [REP-3313] the applicant set out its position with regard to the Green Belt, confirming that the Onshore Substation would amount to inappropriate development in the Green Belt. The evidence went on to describe how harm to the Green Belt would be minimised through design measures such as the use of GIS switch gear, undergrounding the cables, discounting sites for the substation that may lead to urban sprawl and locating the substation next to existing industrial developments. Siting the substation in areas where there is already mature screening, alongside new landscaping to supplement the screening, was identified as an additional factor to be weighed into the very special circumstances exercise.

Panel's reasoning and conclusions on the South East Dorset Green Belt

8.4.20 Following completion of the cable installation, the land would be reinstated. Impact on openness during the construction period, caused by the engineering operations or the temporary construction compounds, would be short-lived and would not

[19] Introduced by the applicant in the second version of the DAS, following the Panel's questioning at the ISH

undermine the permanence, openness or purposes of the Green Belt. The operations associated with cable-laying therefore do not amount to inappropriate development in the Green Belt, in the Panel's view.

8.4.21 There is no argument that the Onshore Substation works is inappropriate development. Furthermore, the Panel has found it to be harmful to openness, and identified adverse visual consequences. The very special circumstances necessary to justify the development in the face of such harm depend on the degree to which other material considerations weigh in favour of the Application Project.

8.4.22 The measures proposed by the applicant are necessary to limit the harm that would arise from the development's inappropriateness and its impact on openness; they are not positive factors that can be accorded any weight. Absence of harm in relation to other environmental topics is also a neutral factor in the overall Green Belt balance.

8.4.23 On the positive side, the Project would contribute towards the Government's energy targets from renewable sources. That the Onshore Substation would be necessary to facilitate the electrical output gained by the offshore wind farm is a weighty consideration in its favour. The applicant demonstrated to the Panel's satisfaction (see Chapter 4) that locations outside the Green Belt are neither feasible nor available for siting the substation, given the extent of land in Christchurch Borough subject to Green Belt status. Additional employment opportunities and new jobs created would add to the factors in favour of the Project.

8.4.24 The benefits described, and absence of alternative non-Green Belt locations for the Onshore Substation, could be sufficient to clearly outweigh the harm caused by the inappropriateness of the Onshore Substation and any other harm arising from it. If the Project as a whole was found to be acceptable, then the Panel would be in a position to conclude that very special circumstances exist to justify the Onshore Substation element of the proposal. On the other hand, in the absence of a favourable outcome for other reasons, the Green Belt argument would also fall.

8.5 OVERALL CONCLUSIONS ON LANDSCAPE AND VISUAL IMAPCT OF THE ONSHORE APPLICATION PROJECT

8.5.1 The Panel has had regard to the visual impacts that would occur during the construction phases of the Landfall, cable laying and Onshore Substation works. Short and medium term impacts are inevitable and in some instances the effects would be significant. The Panel is however satisfied that the temporary and often reversible nature of the construction works, aligned with good practices secured through the CoCP and CEMP to limit the

impacts, would not have long term implications due to the construction works alone.

8.5.2 The ES and later documents such as the LEMP provide assurances of the scale of restoration, regeneration and replanting intended to mitigate or compensate for loss of trees and hedgerows. The Panel agrees that the non-replacement of trees in woodlands such as Hurn Forest through which the Cable Corridor would pass would lead to marked changes in the area's landscape character. However, both NE and the Forestry Commission accept that creation of new and additional habitats to compensate for those losses would be an acceptable solution. The Panel is satisfied that the applicant has sought to minimise the harm and provided reasonable mitigation where possible and appropriate, in accordance with EN-1.

8.5.3 The Panel has had regard to the highest level of protection accorded to the NFNP and assessed the Application Project against the considerations listed in EN-1. The onshore elements of the Project have additionally been tested against Green Belt policy. In both instances, the Panel concludes that exceptional circumstances would exist if the renewable energy benefits of the scheme, plus the benefit of jobs, were to outweigh its adverse impacts. The matter is considered in full in Chapter 21.

8.6 TURBINE AREA MITIGATION OPTION (TAMO)

The applicant's case

8.6.1 Implications of the TAMO on onshore infrastructure are described in the applicant's response to the Panel's Rule 17 for additional information [REP-3490].

8.6.2 The applicant proposed to maintain the extent of the onshore Order limits to the 40 m working width. But it was also confirmed that the number of cable circuits would be reduced to a maximum of four circuits. The reduced number of cable circuits was expected to lead to an associated reduction in the amount of spoil, ducting and ancillary equipment required for the construction period. Taking these factors into account, it was expected that the total working width could be reduced to 34m except for locations such as trenchless crossing installations, highways crossings and where obstructions or sensitive receptors were to be avoided. The permanent cable easement width would commensurately reduce to 17m.

8.6.3 The applicant explained that the land requirement for the Onshore Substation would remain the same, as the reduction in capacity would not affect the size of the substation. The provisions of the development consent agreement accompanying the Application Project would apply equally to the TAMO scheme.

Responses from relevant local authorities and IPs

8.6.4 Christchurch and East Dorset Councils, Hurn Parish Council and other IPs claimed that the onshore impacts would be substantially the same as the Application Project.

8.7 PANEL'S REASONING AND CONCLUSIONS OF THE TAMO

8.7.1 From the applicant's evidence it is apparent that the visual and Green Belt implications of the Landfall and Onshore Substation elements of the onshore works would remain unchanged by the TAMO. The considerations and conclusions that apply in relation to those elements of the Application Project would therefore apply as much to the TAMO.

8.7.2 The potential for reducing the Cable Corridor working width and, as a consequence, for introducing a narrower cable easement width would lessen the visual impacts along the cable route when compared to the Application Project. The prospect of felling fewer trees and possibly reducing the length of hedgerow removal would have beneficial implications for the NFNP and landscape character overall.

8.7.3 The Panel agrees that the reduction in adverse impacts in relation to the Cable Corridor is an advantage of the TAMO scheme over the Application Project. Nevertheless, its acceptability as an exception in the National Park is equally dependent on the conclusions reached on the Project overall. The matter is considered in Chapter 21.

9 WORLD HERITAGE SITE (WHS)

9.0 THE POLICY CONTEXT

INTERNATIONAL AND NATIONAL POLICY FRAMEWORK

9.0.1 The United Nations Scientific and Cultural Organisation Convention (the Convention) concerning the protection of World Cultural and Natural Heritage 1972 was ratified by the UK in 1984. Article 4 of the Convention places a duty on each State Party to ensure the identification, protection, conservation, presentation and transmission to future generations of the cultural and natural heritage on its territory.

9.0.2 There is no separate legislative system in England for protecting WHSs, but the obligations under the treaty are incorporated into the planning system by the Planning Act 2008 (PA2008), National Policy Statements (NPSs), the National planning Policy Framework (NPPF) and the National Planning Policy Guidance (NPPG). Decisions on NSIPs with a designated NPS must be taken under s104 of PA2008 and be decided in accordance with the NPS(s104(3)). But s104(3) also lays out a number of reasons why the decision taker may decide otherwise than the NPS including, in s104(3)(a), where it might render the UK in breach of international treaty obligations.

9.0.3 The WHS in this case falls within a number of other designations, including Dorset Area of Outstanding Natural Beauty (AONB), Site of Special Scientific Interest (SSSI) and Purbeck Heritage Coast, and is protected by legislation, guidance or policy relating to these areas.

9.0.4 NPS EN-1 (paragraph 5.8.1) recognises that the construction, operation and decommissioning of energy infrastructure has the potential to result in adverse impacts on the historic environment. It goes on to advise that an understanding of the particular nature of the significance of heritage assets and the value they hold for this and future generations should be used to *"…avoid or minimise conflict between conservation of that significance and proposals for development.*" (paragraph 5.8.12)

9.0.5 EN-1 (paragraph 5.8.13) expects account to be taken of the desirability of sustaining and, where appropriate, enhancing the significance of heritage assets, the contribution of their settings and the positive contribution they can make to sustainable communities and economic vitality. It also recognises that significance of a designated heritage asset can be harmed or lost through development in its setting (paragraph 5.8.14). EN-1 further advises that substantial harm to a designated asset of the highest significance (such as a World Heritage Site) should be wholly exceptional. Consent should be refused where an application leads to substantial harm or loss of significance unless

demonstrated to be necessary "*in order to deliver substantial public benefits that outweigh that loss or harm."(*paragraph 5.8.15)

9.0.6 Applications affecting the setting of a designated heritage asset should be treated favourably if they preserve those elements of the setting that make a positive contribution to or better reveal the significance of the asset. In respect of WHSs, EN-1 advises that account should be taken of the relative significance of the element of the WHS affected and its contribution to its significance as a whole. Any negative effects are expected to be weighed against the wider benefits of the application. (paragraph 5.8.18)

9.0.7 EN-3 also deals with the historic environment but adds nothing more for the purposes of the Panel's considerations.

9.0.8 The NPPF broadly reflects the EN-1 policies for conserving and enhancing the historic environment. Paragraphs 133 and 134 of the NPPF outline the approach to weighing public benefits against harm, relative to the degree of harm or loss of significance; in other words whether the harm is 'substantial' or 'less than substantial'.

9.0.9 In describing how the setting of a WHS is protected, the NPPG states that the UNESCO[20] *Operational Guidelines* seek protection of "*the immediate setting*" of each World Heritage Site, of "*important views and other areas or attributes that are functionally important as a support to the Property*", and suggest designation of a buffer zone wherever this may be necessary. It goes on to explain that other landscape designations may also prove effective in protecting the setting of a World Heritage Site.

9.0.10 The Guidelines additionally recognise the boundaries of a nominated property may coincide with one or more existing or proposed protected sites.

DEVELOPMENT PLAN AND LOCAL POLICIES

9.0.11 Dorset CC's local impact report (LIR) indicated that local interpretation of national policy is given by the Dorset and East Devon World Heritage Site Management Plan 2014-2019 (the Management Plan). In it, policies provide for the protection of the landscape, natural beauty, cultural heritage and setting of the Site from inappropriate development. Policy 1.8 specifically looks to protect the Outstanding Universal Value (OUV) and seaward setting of the Site from adverse impacts of offshore oil or gas exploration and exploitation, or renewable energy developments,

[20] United Nations Educational, Scientific and Cultural Organisation

particularly regarding the infrastructure needed to bring oil, gas or power onshore.

9.0.12 Policy LHH of the Purbeck District Local Plan expects development proposals to conserve the appearance, setting, character, interest, integrity, health and vitality of landscape and heritage assets, including locally, nationally or internationally designated sites.

9.1 INTRODUCTION

9.1.1 The Dorset and East Devon Coast World Heritage Site (also known as the Jurassic Coast WHS) was granted World Heritage status in 2001. For the purposes of this Report the key facts are:

- The Site was designated under UNESCO's criteria viii) - Earth's history and geological features - which indicated that its geology and geomorphology were of Outstanding Universal Value (OUV).
- The Site includes a near-continuous sequence of Triassic, Jurassic and Cretaceous rock exposures, representing almost the entire Mesozoic Era, approximately 185 million years of Earth history.
- It includes a range of internationally important fossil localities, including at Kimmeridge Bay and Purbeck and Durlston Bays.
- It contains a great variety of 'textbook' geomorphological features including rock arches such as at Durdle Door.
- The site comprises the only natural WHS on mainland Britain.

9.1.2 The WHS comprises eight sections in a near-continuous 155 km of coastline with its boundaries defined by natural phenomena. On the seaward side the property extends to the mean low water mark and on the landward side to the cliff top or back of the beach.

9.1.3 The Statement of Outstanding Universal Value (SOUV) detailed in the Management Plan sets out statements for each of the three recognised pillars or components of OUV: criteria or value; integrity and protection and management requirements. A set of five Attributes have been defined for the Site which are described as aspects of the property associated with or expressing the OUV.

9.1.4 The Management Plan confirms that there is no defined buffer zone as the wider setting of the property is well protected through the existing designations and national and local planning policies. The Plan emphasises that there is a need to protect "*an area around the World Heritage Site that includes the 'immediate setting' and the 'important views and other areas or attributes' that help make the Site what it is, and emphasise its importance. Outstanding Universal Value as a cultural phenomenon means*

that our experience of the Site and its setting is part of this equation, and it is not just protection for the intrinsic, evidential and educational value of the geology."

9.2 THE APPLICATION PROJECT

THE APPLICANT'S CASE

9.2.1 ES Volume D, Project Wide Assessment, Chapter 5 World Heritage Site [APP-105] comprises the applicant's assessment of the impact of the Project on the Site's Outstanding Universal Value (OUV). Impacts were assessed as 'significant' or 'not significant'. For the purposes of the assessment carried out 'significant impact' was described in the ES as "*one which causes harm to the attributes; integrity; or protection and management of the OUV, potentially also resulting in the Site being deleted from the World Heritage List*." The assessment considered the potential effects of the Turbine Area only; the ES confirmed that is "*the only element visible and therefore with the potential to alter the OUV (fabric and setting) of the WHS*."

9.2.2 The ES stated (paragraph 5.3.19) that impacts relevant to the WHS fall into two main categories: changes to the existing natural coastal erosion processes, and changes to the immediate setting and important views that contribute to OUV. It went on to describe the baseline physical attributes and the setting of the WHS.

9.2.3 The assessment tested the Project's impacts against the five attributes of the Site's OUV as defined in the Management Plan. The ES concluded that impact on the Site's attributes would be **not significant,** based on the following main findings:

- The Project is not considered to physically impact on the elements of the Jurassic Coast WHS that contribute to its OUV.
- The surrounding environment of the coastline would not be affected.
- The relationship with the sea would not be affected.
- Views along the coast would change but appreciation of the geological progression would not be obscured or interrupted.
- Access to the Site would remain unchanged.

9.2.4 The Project was not expected to impact on management issues contained within the Management Plan and therefore not considered to impact on the management of the Jurassic Coast WHS and its OUV. The ES concluded that the existing framework of protection and management of the WHS would not be threatened or weakened, and presentation and transmission of the WHS would not be altered.

9.2.5 Appendix 5.1 to the ES Chapter 5 [APP-311] comprises the applicant's alternative approach to assessing the setting of the

Jurassic Coast WHS. The assessment follows a five-step approach reflecting the methodology advised in English Heritage Guidance 'The Setting of Heritage Assets', published in 2011[21]. The key conclusions arrived at in the document are:

- The OUV of the Jurassic Coast WHS is wholly derived from its geological and geomorphological values.
- The geological landscape to the north, exposed coasts and beaches, surrounding seascape, views along the coast. accessibility of the coast and amenity of the surrounding area form part of the setting and allow for its OUV to be conveyed.
- The Project is not considered to alter any of the elements of the Jurassic Coast WHS setting that contribute to its OUV.
- Although the seascape would change, the specific experience of geological formations would not be harmed.
- The physical surroundings of the WHS would not change.
- Attributes such as fossil collection and the WHS as a teaching aid would not be harmed by the development.

9.2.6 The applicant expanded on its case during the course of the examination, in response to submissions made by bodies and individuals and to questions raised by the Panel. They are not recorded here but are drawn upon where necessary to our reasoning and conclusions.

STATEMENT OF COMMON GROUND (SOCG) WITH THE DORSET AND EAST DEVON (JURASSIC COAST) STEERING GROUP

9.2.7 The Steering Group is a non-executive body established to ensure that the Management Plan is implemented, achieved, reported against and regularly reviewed. In the SoCG with the applicant the following substantive matters were agreed :

- The Project would not result in a significant adverse impact on the 'physical fabric' of the WHS (the stratigraphy, the fossils and the geomorphological features of the OUV) or any of the underlying geomorphological processes in the setting of the Site.
- It would lead to no significant impact on the 'educational or scientific experience / value' of any attributes of the OUV as a teaching resource and for ongoing scientific investigation.
- It would be visible in certain views from and to the WHS.
- Introduction of man-made structures in the seascape may be perceived by some visitors to the WHS as a detrimental change.

[21] The Setting of Heritage Assets was withdrawn and replaced by Historic England's Historic Environment Good Practice Advice in Planning Note 3: The Setting of Heritage Assets, published in March 2017

9.2.8 Having initially agreed there would be no direct impact on OUV, at Deadline IV stage the Steering Group claimed to have altered its position [REP-3409]. In the light of the advice of the International Union for Conservation of Nature (IUCN) and subsequent discussions, the Steering Group stated that an impact on any one of the three components of OUV is an equal impact on OUV, because they are all necessary tests to be passed if a Site is to be inscribed on the World Heritage List.

ISSUES ARISING FROM LOCAL IMPACT REPORTS (LIR) AND OTHER SUBMISSIONS

LIRs

9.2.9 In their LIRs Dorset CC and Purbeck DC [REP-2678 & 2683] align themselves with the views expressed by the Steering Group, which are recorded below.

Steering Group

9.2.10 The following main points arise from the Steering Group's objections to the Application Project:

- There would be a significant adverse impact in the way in which the WHS would be presented.
- The Project would result in the property being presented and transmitted to future generations in a form that would be significantly different from what was there at the time of inscription and until today, but only when presentation and transmission are taken together.
- The Project would substantially modify views along and from the WHS through the introduction of man-made structures. Some people may find the change detrimental and therefore unacceptable.
- Agree with IUCN that potential impacts from the Project would be in contradiction to the over-arching principle of Article 4 of the World Heritage Convention. Protection of setting is specified in the SOUV and impact on the setting would have a bearing on the whole OUV.

DCMS and UNESCO

9.2.11 A Relevant Representation (RR) from the Department of Media Culture and Sport (DCMS) was received by the Planning Inspectorate on 29 May 2014 [REP-0635]. The RR included a letter, dated 2 May 2014, from the Director of the World Heritage Centre at UNESCO to Head of Heritage Policy at DCMS. The RR clarified that the views expressed in the letter were not those of DCMS but of UNESCO in relation to the WHS.

9.2.12 Annex 1 of the 2 May letter comprised a review by UNESCO's Advisory Body (IUCN[22]) of the Navitus Bay Wind Park project. The DCMS representation further noted that the "*issue has not been examined by the World Heritage Committee, there is no official view by the World Heritage Committee nor UNESCO as an organisation*." In a further letter, dated 9 February 2015, from the former Secretary of State of DCMS, the Rt Hon Sajid Javid MP, to the Planning Inspectorate confirmed that DCMS had registered as an IP[23] to ensure that IUCN's representations were "*received in the correct manner to allow for their consideration*."

9.2.13 IUCN's assessment of impacts from the Project on the WHS was based on documents submitted by the 'State Party' and a report by a 'third party'. The former included a letter from DCMS to the Director dated 17 February 2014 [REP-3024], the ES Chapters, the Steering Group's position paper of 23 December 2013 [REP-3023] and the SOUV agreed by the Steering Group meeting of 26 September 2012. Despite a request from the applicant, copies of the report by a 'third party' were not forthcoming; IUCN stated it must "*respect the confidentiality of the individual who had provided the information*" [REP-3202].

9.2.14 In its review IUCN concluded that the Project is likely to have some adverse impacts on the underlying geomorphological processes in the setting of the Site that are essential for the long-term maintenance of its OUV. On this point, however, it was said further data, information and analysis were required.

9.2.15 Other key issues raised were as follows:

- The assessment had not adhered to all eight World Heritage Impact Assessment Principles outlined in IUCN's Advice Note.
- The Project would have a significant impact on the natural setting of the property.
- It would adversely impact on important views from the property, including views from the main visitor centre at Durlston Castle towards the Isle of Wight.
- The Project would replace the Isle of Wight as the dominant feature on the horizon.
- It would result in the property being presented and transmitted to future generations in a form that is significantly different from what was there at the time of inscription and until today.
- If built, the development would put the UK in breach of Article 4 of the Convention

[22] International Union for Conservation of Nature
[23] IP No 10027353

9.2.16 The 9 February 2015 letter from the Rt Hon Sajid Javid MP referred to IUCN's conclusions and in particular the last bullet point above. The Secretary of State additionally referred to the potential of the Project to put the WHS status at risk as a "*highly undesirable outcome*" and requesting that the concerns raised be given full consideration.

Other submissions

9.2.17 Natural England (NE) advised that the adverse effects on the perception, enjoyment and presentation of the Jurassic Coast World Heritage Coast, which relies on the statutory designation of the Dorset AONB for protection of its setting, should be weighed in the decision.

9.2.18 A number of non-statutory bodies (including the National Trust, Friends of Durlston Executive Committee, Challenge Navitus and Poole and Christchurch Bays Association) and individuals expressed strong views against the Project, for the impact on the presentation and setting of the WHS.

9.2.19 The following from an IP is worth recording for its measured understanding and reflection of the arguments representative of those supporting the Project [REP-2837]:

"*presence of the wind park within the setting of the World Heritage Site could be used to positively further the Site's educational objectives, by making the link between the climate changes that punctuated the Mesozoic era and those which will occur in the near future if we fail to develop alternatives to fossil fuels.*"

9.3 PANEL'S REASONING AND CONCLUSIONS

Preliminary matters

9.3.1 The applicant claimed that policy in the NPS is confined to the historic environment, and therefore strictly speaking section 5.8 of EN-1 does not provide direct guidance on WHS, which was designated as a natural property for its geology [REP-3313]. However, the applicant then went on to note that there is not considered to be any basis for applying different tests of acceptability to those identified in section 5.8, which as a matter of principle would apply equally to this WHS. The Panel agrees and has considered the implications for the WHS in accordance with the NPSs.

9.3.2 At the issue-specific hearing (ISH) the Panel explored whether the applicant's approach to the assessment accords with IUCN's Advice Note advice. The applicant correctly identified the IUCN note as a "*guidance on integrating natural World Heritage sites within Environmental Assessments*" [REP-3177] and not an assessment methodology note. In any event, the ES material

submitted by the applicant comprises a comprehensive assessment of impacts on a range of topics; it includes a standalone WHS Chapter and a separate settings assessment based on the English Heritage guidance on settings, as well as consideration of alternatives (ES Volume B Chapter 4). The Panel is satisfied that the ES was based on a rigorous evaluation of the Project in relation to the WHS, and broadly covers the eight Assessment Principles, albeit not strictly in the form recommended in the IUCN Advice Note

9.3.3 From all that we have read and heard the Panel has identified the following main issues:

- The extent to which the Application Project would affect the three components of OUV: values, integrity and protection and management and therefore its OUV as a whole.
- Impact on the setting of the WHS and the extent to which that impact would affect the property's significance.
- Whether allowing the Project would be in breach of the State's duty under the Convention.

9.3.4 In line with the assessment undertaken by the applicant, our considerations focus on the impact of the turbines only at the operational phase of the Project.

Main issues

Three components or pillars of OUV

9.3.5 The applicant's position throughout the examination was that the physical attributes of the WHS are the sole basis of the OUV. The IUCN Advice Note, however, explains that OUV is the basis for a site's inscription on the World Heritage List and that its three components comprise: value, integrity and protection and management.

9.3.6 The applicant confirmed that its assessments had always focussed on the impacts of the Project on the OUV (and its three pillars or components) [REP-3313 and APP-105 paragraph 5.3.7]. The Panel discussed the three components at the ISH and our deliberations below follow the same approach.

9.3.7 Value of the Jurassic Coast WHS lies in the criterion for which it was inscribed on the World Heritage List, as an outstanding example representing "….*major stages of Earth's history, including the record of life, significant on-going geological*

processes in the development of landforms, or significant geomorphic or physiographic features[24]."

9.3.8 The ES concluded, and the Steering Group agreed, that the Project may result in adverse impacts on the physical fabric of the WHS and on its integrity but that the magnitude and extent of impacts are likely to be so low as to be insignificant. The ES findings of no significant impacts on the attributes are based on conclusions about changes to wave and tidal regime (ES Volume B, Chapter 5, Physical Processes [APP-071]) and ability to experience and view physical forms without interruption.

9.3.9 A report appended to the SoCG with the Steering Group [REP-3110] addressed concerns raised in earlier representations. The concerns related to reductions in wave height at the coast which could make cliff sections less active thereby promoting vegetation growth and causing geological exposures to become covered. The report reflected the ES findings that the Project would not impact significantly on the 'physical fabric' (the stratigraphy, the fossils and the geomorphological features) of the WHS or any of the natural processes along the WHS coast.

9.3.10 The Panel has no evidence to the contrary and accepts that impacts on the Site's geology and geomorphology would be insignificant, subject to measures in the DCO/DMLs to reduce the potential for impacts on physical processes. For the same reasons, the Site's value as a high quality teaching, training and research resource would remain unharmed.

9.3.11 The measures for limiting impact on physical processes would be secured through provision of a monopile exclusion zone for the Application Project[25] (Schedule 13 Condition 4(2)); by limiting the maximum number of turbines to 194 (description of Work No 1, Part 1, Schedule 1), identifying grid co-ordinates to comply with buffers agreed with the aggregate industry (Section 2, Part 1 of Schedule 1) plus a construction method statement and cable specification and installation plan to be submitted and approved by the MMO (Schedules 13 and 14 Conditions 11 (c) and 11(g)).

9.3.12 The IUCN Advice Note confirmed that integrity is a measure of 'wholeness'. The Panel is satisfied that the physical elements of wholeness, expressed in the geological succession exposed on the coastline and the dynamic coastline, would not be compromised should the Project be developed. The statement of integrity, however, also refers to the boundaries of the WHS coinciding with nationally and internationally designated areas that protect the

[24] Criterion viii of the four natural World Heritage Criteria
[25] There are to be no monopile foundations for the TAMO project

property and much of its setting. This aspect of integrity is considered in the second main issue, as it relates to setting.

9.3.13 As for protection and management, the statement in the SOUV confirmed that "*there is no defined buffer zone as the wider setting of the property is well protected through the existing designations and national and local planning policies*." Prof Brunsden, the proposer and original leader of the bid for the Dorset and East Devon Coast to become a WHS, addressed the Panel at the Open Floor Hearing. He explained that, when the application was presented to the UNESCO committee, it was necessary to show that the Site was protected by a buffer zone, land and sea "*so that the Site's integrity, presentation and setting are protected for all time and for all the people on the planet.*"[REP-2849]. The Panel was informed by Prof Brunsden that evidence was provided to show that the Site was one of the most highly protected in the world.

9.3.14 We note that the WHS was not inscribed for its natural beauty and aesthetic importance [REP-3409]. Nevertheless, the Management Plan states that the nomination document for the WHS made it very clear that the existing conservation protection and planning policies were sufficiently robust to obviate the need to add another layer of planning control in the form of a buffer zone. It is clear from the evidence and from the narrative in the SOUV, that the protective functions of the AONB and Heritage Coast designations (amongst others) are vital to the Site's OUV, and to the basis for its inscription.

9.3.15 Chapter 7 of this Report includes a detailed consideration of the Project's impacts on the Dorset AONB and Purbeck Heritage Coast. Our findings report that significant harm would be caused to both as a result of the Project's presence in a number of key views and in the way it would affect the core qualities of the AONB and Heritage Coast. For reasons explained below, the harm would compromise the setting of the Site. However, the case in relation to the protection/management component of OUV is less clear cut. The Panel considers that the status of the AONB or Heritage Coast designations is unlikely to be threatened by the Project. So, the relevant planning and legislative protections would remain in place and continue to support the current protection/management regime.

9.3.16 To conclude on this issue, the Panel is satisfied that the Application Project would not result in changes to physical processes to the extent of harming the Site's value nor the criterion meriting its designation. The ability to protect and manage the Site to the standards expected would not be undermined. However, implications for the Site's setting and significance in NPS (or NPPF) terms would have a bearing on its integrity. The matter is considered below.

Setting of the WHS

9.3.17 The setting of an historic feature is defined in the Good Practice Advice Note 3 as "*the surroundings in which a place is experienced, its local context, embracing present and past relationships to the adjacent landscape*."

9.3.18 The Management Plan identifies a need to protect an area around the WHS that includes 'immediate setting' and 'important views and other areas or attributes'. The Management Plan explains that the setting should be regarded as the surrounding landscape and seascape, and "*concerns the quality of the cultural and sensory experience surrounding the exposed coasts and beaches*" (experiential definition). A functional definition is also explained in the Plan but, as it concerns physical processes, the matter is not pursued further in our deliberations.

9.3.19 The immediate setting of the WHS comprises the undeveloped coastline of the Dorset AONB and its marine environment. The applicant claimed that the special qualities of the AONB cannot be applied as a proxy to understand how the OUV is experienced [REP-3313]. And that the exposed geological formations are best appreciated looking inland towards the geological exposures or occasionally within longer range views along the coastal foreshore [REP-3313].

9.3.20 The Panel, however, fails to understand how the special qualities marking the coastal stretches of the AONB can be disassociated from the experiential aspects of the WHS. The overlapping of boundaries, for one, binds the AONB/Heritage Coast with the Site. The Dorset AONB has approximately 75km of coastline, of which about 66km (88%) is within the WHS [REP-2900]. But, more crucially, the high expectations of a tranquil setting comprising an exceptional undeveloped coastline and an open seascape is as much part of enjoying the WHS as it is a perceptual experience of the AONB or Heritage Coast. Similarly, appreciating the natural beauty of the AONB cannot be separated from appreciating it as part of the WHS, especially for visitors wishing to experience the Site without detailed knowledge of its physical attributes. The same applies in reverse. As noted in Chapter 7 of this Report, the WHS adds an extra dimension to the quality of the coastline.

9.3.21 Importance of the seascape to the WHS is aptly captured in the following description from Appendix 5.1 of the ES :

"*Most of the surrounds of the asset are dominated by the seascape to the south and this plays an important role in the experience of the asset. This relationship is responsible for the on-going formation of the geological profiles visible within the cliff faces and the appreciation of the Jurassic Coast WHS relationship with the sea is an important part of its setting. The dynamic*

nature of this relationship is central to the OUV of the Jurassic Coast WHS."

9.3.22 Therefore, in the language of the English Heritage Guidance, the surroundings in which the Jurassic Coast WHS is experienced extends beyond its immediate vicinity, and includes the natural setting of the coastal edges of the AONB, the Heritage Coast and the seascape. The setting therefore makes a positive contribution to the WHS and the Panel considers contributes to its significance as whole.

9.3.23 The Application Project would be conspicuous in a number of views from the boundaries of the WHS looking out to sea. The natural setting would change the horizon from one largely devoid of structures or features to one dominated by turbines. The harm caused by the wind farm in views along the coastal stretches of the AONB (described in the SLVIA Chapter) would similarly affect the WHS, particularly at key locations. For instance, the turbines would intervene in views of the Site's emblematic features, such as Old Harry Rocks. It would replace the Isle of Wight as the most dominant feature on the horizon and detract from views of the island, which is confirmed in the IUCN review to be a direct continuation of the cretaceous chalk at the eastern end of the WHS [REP-0635]. The turbines would appear prominently in views from Durlston Castle (the closest point to the turbine array at 14.3 km), which is the main visitor centre gateway to the Jurassic Coast.

9.3.24 While the Panel agrees with IUCN that the Project is likely to impact on visitors' experience and appreciation of the WHS in its wider natural setting, there is no cogent evidence to suggest it would lead to the visitor centre losing revenue or that stewardship of the WHS would be compromised in the long-term. Nevertheless, it would result in marked changes to the surroundings of the WHS and the way it would be experienced in those surroundings to the point of harming the Site's significance. The impact would not be such that "*very much, if not all, of the significance was drained away.*[26]"; in other words it would be 'less than substantial'. The finding of 'less than substantial' harm to a WHS is still an objection of some magnitude and requires the negative impact to be weighed against the public benefit of the development.

Overall conclusions

9.3.25 The potential for changes to the way that the Site would be experienced or enjoyed in its surroundings would have adverse

[26] Bedford BC v SSCLG and Nuon UK Ltd

implications for the Site's significance and therefore its OUV. There may be a risk, and we put it no higher than that, that the property would be "*presented and transmitted to future generations in a form that is significantly different from what was there at the time of inscription until today,"* as indicated in IUCN's conclusions [REP-0635].

9.3.26 The measures to limit the Project's impacts are described in Chapter 7 (paragraphs 7.3.259-7.3.266) and not repeated here, but have been considered by the Panel as a way of minimising conflict between conservation of the site's significance and the proposal for development, as advised in EN-1 paragraph 5.8.12. Even with the measures in place, the Panel concludes that the harm that would be caused to the setting of the Jurassic Coast WHS, and the harm to its OUV, carries significant weight against the decision to make the Order. This conclusion is carried forward to the overall consideration in Chapter 21.

The State's duty under Article 4 of the 1972 Convention

9.3.27 The Article 4 duty in full states:

> "*Each State Party to this Convention recognizes that the duty of ensuring the identification, protection, conservation, presentation and transmission to future generations of the cultural and natural heritage referred to in Articles 1 and 2 and situated on its territory, belongs primarily to that State. It will do all it can to this end, to the utmost of its own resources and, where appropriate, with any international assistance and co-operation, in particular, financial, artistic, scientific and technical, which it may be able to obtain."*

9.3.28 The Convention is not directly implemented into UK law; nevertheless the PA2008 requires that an application to be decided in accordance with any relevant national policy statement except to the extent that to do so would lead to the UK being in breach of its international obligations.

9.3.29 The applicant stated that the duty of ensuring the identification, protection, conservation, presentation and transmission to future generations applies only to the OUV of the natural heritage. That may well be right, given that outstanding universal value is referred to in Articles 1 and 2. However, as noted above, OUV is not the narrow definition adopted by the applicant.

9.3.30 That said, the Panel has taken account of the nature of the significance of the WHS and the value it holds for this and future generations [EN-1, paragraph 5.8.12]. We have found against the proposal for the damage that would be caused to the Site's significance.

9.3.31 The Secretary of State is under no obligation to accept these findings. However, she would have had the opportunity to come

to her own conclusions based on the full facts of the case, having regard to the weight to be accorded to the WHS and weighed up the evidence before making a decision. Even in the face of a conclusion different to that recommended by the ExA, the duty of the State Party to "*do all it can to this end, to the utmost of its own resources and, where appropriate*" would be met. The Panel is satisfied that making a decision in accordance with the national policy statements would not place the UK in a position of breaching its international obligations.

OTHER MATTERS

9.3.32 A number of IPs objected on the basis that the Project poses a risk to the Site's World Heritage status [REP-2906, for instance]. We note the cases referred to in this regard by the Steering Group. However, the Panel has not addressed this matter as it falls outside The Panel's remit. The decision is for the World Heritage Committee to make.

9.4 TURBINE AREA MITIGATION OPTION (TAMO)

THE APPLICANT'S CASE

9.4.1 In responding to the Panel's Rule 17 letter the applicant explained that reduction in the extent and increased distance from the coast would reduce visibility of the TAMO [REP-3429]. Similarly the reduced number of turbine foundations would reduce the potential for impacts on wave heights and lessen impacts on the Site's fabric.

9.4.2 In view of the assessment in the ES of no significant impact on the OUV of the WHS, the applicant indicated that a scheme of a reduced scale would have a consequential impact of no harm.

IPS' SUBMISSIONS

9.4.3 The Steering Group agreed that the visual impact would be reduced but that the TAMO would still be a dominant feature in the seascape, and clearly visible to visitors to the WHS, particularly in the area between Studland and St Aldhelm's Head [REP-3470].

9.4.4 The case submitted by the Steering Group broadly covered the views articulated by other IPS.

9.5 PANEL'S REASONING AND CONCLUSIONS

9.5.1 The Panel acknowledges that the TAMO would bring about reduced impacts. The conclusions on the TAMO's effect on the Dorset AONB and the Heritage Coast have a direct bearing on consideration of impacts on the Site's OUV and on its setting. The TAMO would similarly intrude on important views from the coastal edges of the AONB towards the open sea, in particular from

Durlston Castle (at its closet point at 18.8km), St Aldhelm's Head and Old Harry Rocks. The experiential aspect of the setting would be harmed to the point of resulting in 'less than substantial harm' to the significance of the WHS. The harm identified is accorded significant weight against recommending the TAMO Order and is carried forward into the planning balance in Chapter 21.

10 OFFSHORE AND ONSHORE ARCHAEOLOGY AND HERITAGE ENVIRONMENT

10.0 THE POLICY CONTEXT

NATIONAL POLICY FRAMEWORK

10.0.1 NPS EN-1 (paragraph 5.8.1) recognises that the construction, operation and decommissioning of energy infrastructure has the potential to result in adverse impacts on the historic environment. It goes on to advise that an understanding of the particular nature of the significance of heritage assets and the value they hold for this and future generations should be used to "…*avoid or minimise conflict between conservation of that significance and proposals for development.*" (paragraph 5.8.12)

10.0.2 EN-1 recognises that significance of a designated heritage asset can be harmed or lost through development in its setting (paragraph 5.8.14). EN-1 further advises that substantial harm to a designated asset of the highest significance (Grade I or II* listed buildings, Scheduled Monuments) should be wholly exceptional. Substantial harm to or loss of a Grade II listed building, park or garden requires clear and convincing justification. Consent should be refused where an application leads to substantial harm or loss of significance unless demonstrated to be necessary "*in order to deliver substantial public benefits that outweigh that loss or harm*."(paragraph 5.8.15)

10.0.3 Applications affecting the setting of a designated heritage asset should be treated favourably if they preserve those elements of the setting that make a positive contribution to or better reveal the significance of the asset. On the other hand, EN-1 also advocates the weighing of any negative effects against the wider benefits of the application. (paragraph 5.8.18).

10.0.4 EN-1 further advises on the recording arrangements to be followed and how that could be secured in the consent. Furthermore, where there is a "*high probability that a development site may include as yet undiscovered heritage assets with archaeological interest*", appropriate procedures should be in place "*for the identification and treatment of such assets discovered during construction*."

10.0.5 EN-3 also deals with the historic environment but adds nothing more for the purposes of the Panel's considerations of onshore assets. However, EN-3 states in paragraph 2.6.144 that the decision maker "*should be satisfied that offshore wind farms and associated infrastructure have been designed sensitively taking into account known heritage assets and their status, for example features designated as Protected Wrecks*." The following two

paragraphs of EN-3 refer to the potential need for exclusion zones and for micrositing in respect of heritage assets such as wrecks.

10.0.6 Section 2.6.6 of the UK Marine Policy Statement (MPS) covers the historic environment. It recognises that "*many heritage assets with archaeological interest in these areas are not currently designated as scheduled monuments or protected wreck sites but are demonstrably of equivalent significance. The absence of designation for such assets does not necessarily indicate lower significance*." Furthermore, it requires suitable mitigating actions to record and advance understanding of the significance of a heritage asset before it is lost.

10.0.7 Policies in the NPPF largely follow the EN-1 approach to conserving and enhancing the historic environment. The NPPF however makes a distinction in the level of justification required for negative impacts depending on whether the harm caused to the significance of a designated heritage asset would be 'substantial' or 'less than substantial'.

10.0.8 The Panel notes that the Guidance on the contents of a Written Scheme of Investigation for assets of archaeological interest set out in the Practice Guide to PPS5 (footnote 123 in EN-1) was cancelled on 27 March 2015. The Historic Environment Good Practice Advice in Planning Note 2, however, published by Historic Buildings and Monuments Commission for England (HBMCE) provides guidance on Written Schemes of Investigation (WSI), and the Panel has had due regard to the advice in the Note.

DEVELOPMENT PLAN POLICIES

10.0.9 The development plan policies relevant to onshore heritage assets are

- Christchurch and East Dorset Core Strategy, Policy HE.
- The saved policies of The Borough of Christchurch Local Plan (2001), Policy BE15.
- The Bournemouth Local Plan: Core Strategy, 2012, Policy CS39.
- New Forest District Local Plan Part1: Core Strategy (adopted 2009), Policy CS3.
- New Forest District Local Plan Part 2: Sites and Development Management (adopted 2014) ,Policy DM1.
- Purbeck Local Plan Part 1 (adopted 2012), Policy LHH.
- The Island Plan Core Strategy (adopted 2012), Policy SP5 and Policy DM11.

10.1 INTRODUCTION

10.1.1 ES Volume C Chapter 13 Onshore Cultural Heritage and Archaeology [APP-099] assessed the potential impacts of the Application Project on cultural heritage and archaeological receptors arising from the construction, operation and

maintenance (O&M) and decommissioning of the onshore elements of the Application Project. In addition to which, the applicant produced a Heritage Desk-based Assessment (Volume C, Appendix 13.1 APP-298]. ES Volume B Chapter 14 Offshore Archaeology [APP-080] assessed the potential impacts on the marine historic environment arising from each stage of the Project.

10.1.2 The effects of the offshore elements of the Application Project on cultural heritage assets on land are covered in ES Volume B Chapter 15, Setting of Heritage Assets [APP-081] and ES Volume B, Technical Appendix 15.1 [APP-259].

10.1.3 Introduction of the TAMO did not result in the submission of new assessments, other than a schedule setting out a statement of impact which covered the full range of ES topics [REP-3429].

10.1.4 This Chapter considers the impacts on cultural heritage assets and archaeology of the Application Project and the TAMO. They are considered together, to avoid repetition and in the interest of readability.

10.2 OFFSHORE ARCHAEOLOGY

THE APPLICANT'S CASE

10.2.1 The ES study area (Figure 14.1 of APP-080) included a 1 km buffer around the Offshore Development Area (the Turbine Area and Export Cable Corridor). The buffering of the Offshore Development Area was to allow the identification and inclusion of archaeological sites outside but near the Turbine Area and Offshore Export Cable Corridor.

10.2.2 All potential archaeological receptors (prehistoric, maritime and aviation) were considered in the baseline review. However, shipwreck sites were scoped out because design mitigation made provision for exclusion of the site from Project activities, as reflected in the Written Scheme of Investigation (WSI). In response to the Panel's second round of questions, the applicant confirmed [REP-3643] that the offshore WSI (ES Volume B Appendix 14.1 APP-258) is a 'live' document. The final WSI would be approved by the MMO in consultation with the Historic Buildings and Monuments Commission of England (HBMCE) prior to commencement of construction, in accordance with Condition 11(h) of the DMLs.

10.2.3 The draft WSI included the proposed extent of the archaeological exclusion zones referred to above and a plan for managing the exclusion zones during the life of the Project. It also included a reporting protocol for the reporting of unexpected anthropogenic discoveries during Project activities and throughout the Projects' lifetime. It was developed in consultation with HBMCE.

10.2.4 The ES described the baseline environment, including a detailed explanation of the data gathering methodology, and concluded that prehistoric archaeological material could be expected in the Turbine Area and the Export Cable Route Corridor, with potential presence of historic undiscovered maritime remains and shipwrecks. The potential for aircraft casualties were also considered.

10.2.5 The ES concluded that the major adverse impacts on pre-historic remains would occur as a result of the Application Project but with the compensatory measures the residual significance would reduce to minor adverse and thus not significant. Impacts on modern seabed sediments were deemed to be localised and the effects would be minor adverse. For all other features of archaeological interest, the ES predicted that measures in the WSI would reduce the magnitude of impacts generally to minor adverse and therefore not significant.

10.2.6 With regard to the TAMO, the applicant claimed that potential disturbance impacts to the seabed would be reduced thus reducing the potential for impacts on archaeology.

STATEMENT OF COMMON GROUND (SOCG) WITH HBMCE

10.2.7 The SoCG confirmed that all matters associated with the approach and assessments of the impacts of the Application Project on offshore archaeology were agreed, including the conclusions of minor adverse and not significant effects.

10.2.8 It was further agreed that the mitigation measures as set out within the draft WSI were appropriate and suitable to ensure no significant adverse effect on known marine archaeological receptors.

10.3 PANEL'S REASONING AND CONLCUSIONS ON OFFSHORE ARCHAEOLOGY

10.3.1 The Panel recognises the richness of undiscovered and known remains on the seabed and the potential for harm to or destruction of features of archaeological interest as a result of the projects. Provision is made in the generation and transmission assets DMLs (Schedules 13 and 14 Conditions 11(h)) for submission, and approval by the MMO, of a WSI, which we agree is essential in safeguarding the heritage significance of remains. The WSI would be the subject of consultation with HBMCE.

10.3.2 In addition to the archaeological exclusion zones, the WSI includes a reporting protocol for the reporting of unexpected discoveries throughout the Projects' lifetime. The WSI broadly comprises:

- an outline of the known and potential receptors that may be impacted by the Project;

- an account of activities that are to take place during the construction and operational and maintenance (O&M) phases which have the potential to affect the archaeological record or inform baseline archaeological knowledge of the Offshore Development Area;
- detailed methodologies for archaeological actions and involvement in Project activities;
- roles and responsibilities in respect of offshore archaeology during Project activities.

10.3.3 The document would be updated as information came to light that may call for increased or decreased archaeological activity. It provides details of the archaeological actions required by consent, avoiding the need for detailed conditions to be included.

10.3.4 In response to the Panel's first round of questions, HBMCE supported the identification of WSI and regarded it as an essential and viable mitigation strategy to be secured through the DMLs. The conditions allow for a timetable to be agreed with the MMO and Conditions 12(i) expect archaeological reports to be agreed with HBMCE. The Panel agrees that the wording provides the necessary safeguards.

10.3.5 The Panel recognises that a site-specific WSI must ensure that sufficient attention is given in the event that an archaeological exclusion zone cannot be implemented, as requested by HBMCE [REP-3205 & 3392]. The applicant confirmed [REP-3176] that the WSI would be finalised following confirmation of final Project parameters and would take account of comments from HBMCE. Condition 11(h) provides for that consultation to take place. The applicant would be in a position to put measures in places where anomalies cannot be avoided during construction or operations.

10.3.6 HBMCE also referred [REP-4074] to the potential for inconsistencies between the wording of Condition 11(h)(v) and the draft In-Principle Monitoring Plan (IPMP) [REP-4039]. The latter refers to a high resolution survey conducted at pre-construction and post-construction phases. The Panel agrees that in the interest of consistency the word 'pre-construction' should be added to Conditions 11(h)(v) of the DMLs, and recommend accordingly.

10.3.7 Subject to the change suggested above, the Panel is satisfied that Conditions 11(h), alongside the IPMP, would provide the necessary protection or mitigation to adequately safeguard or compensate for loss of offshore assets, as required by the NPS and MPS. This conclusion applies to the Application Project and with additional force to the TAMO, given the potential for reduction of impacts.

10.4 ONSHORE ARCHAEOLOGY

THE APPLICANT'S CASE

10.4.1 The study area for the purpose of assessment comprised an area of at least 500m from the boundary of the Onshore Development Area. The ES recorded that the baseline survey identified a total of 358 non-designated assets (Figures 13.3-13.13 of the ES). A further 154 possible assets were also identified on historic mapping, aerial photography and LiDAR (Figures 13.14 and 13.15 of the ES). Sites of all periods are represented.

10.4.2 The ES confirmed that a total of 51 non-designated sites (out of the 358 identified) are considered to have the potential to be impacted by the Project (Table 13.9 of the ES). Of these, 26 are deemed to be subject to a high impact magnitude, six to a medium impact magnitude, six to a low impact magnitude and 12 to very low impact magnitude. For sites where the value of assets cannot be determined, the ES indicated that it would be appropriate to investigate the sites by means of a programme of geophysical survey and evaluation, as detailed in the WSI appended to the Code of Construction Practice (CoCP) [REP-3692].

10.4.3 The ES concluded that implementation of the measure proposed as part of the Application Project would resolve the instances where impact significance would be uncertain.

10.4.4 Very low significance of impacts is anticipated in the ES from the O&M and decommissioning phases, as archaeological deposits would have been resolved at the construction stage.

10.4.5 Similar conclusions applied in respect of the TAMO, where the potential for encountering archaeological remains would be similar. However, greater potential for avoidance was anticipated through detailed design of the cable route.

10.5 PANEL'S REASONING AND CONCLUSION ON ONSHORE ARCHAEOLOGY

10.5.1 The Panel notes that the intrusive construction techniques used to install the cables underground have the greatest potential to impact on below ground archaeological assets, more than any of the other works associated with the onshore elements of the Application project and the TAMO.

10.5.2 The ES confirmed that measures adopted as part of the Application Project included the design of the Onshore Cable Corridor to avoid known archaeological sites and the use of HDD techniques at Landfall, Golden Hill and sites within the Avon River Valley. Furthermore the WSI, to be delivered through the CoCP (Requirements 15(3)(i) and 25), would be prepared in consultation with HBMCE and submitted to the relevant planning

authority for approval. The WSI would contain measures aimed at mitigating the effects of the development during construction. The strategies, comprising preservation in situ, watching brief and preservation by record, would be undertaken in accordance with the WSI.

10.5.3 In response to the Panel's first round of questions, HBMCE agreed that in principle the WSI would provide an adequate means of addressing the uncertain impact significance on assets as well as known effects. The SoCG with HBMCE identified a disagreement with regard to the requirement for a geoarchaeological deposit model to be produced and geophysical survey conducted within the route corridor. This was considered necessary to assess deeply buried sequences and near-surface archaeological stratigraphy.

10.5.4 The commitment to undertake a geophysical survey is included in the WSI, which confirms that such a survey "*would seek to investigate areas of archaeological potential, the sites of unknown sensitivity (i.e. areas where there is uncertainty) and to further establish the extent of sites of known value; and if required, a programme of trial trenching would be designed following consultation on the results of the geophysical survey*."

10.5.5 In its Local Impact Report (LIR) Hampshire County Council [REP-2680] confirmed that the mitigation measures proposed would meet the requirement of the County's Archaeological Officer. The New Forest National Park Authority [REP-2682] also agreed that the overarching WSI would provide an appropriate basis to develop mitigation measures and individual site-specific WSIs.

10.5.6 With clarification provided in the WSI, and discharge of Condition 25 requiring consultation with HMBCE, the Panel is satisfied that the measures proposed would minimise the impacts of the Application Project to the point of achieving no significant effects on onshore archaeological remains during construction. It follows that no significant impacts would occur during the O&M or decommissioning phases.

10.5.7 With regard to the TAMO the applicant stated that the potential for encountering archaeological remains would be similar but with greater opportunities for avoidance through detailed design of the cable route. The Panel agrees and our conclusions in relation to the Application Project apply to the TAMO.

10.6 ONSHORE HERITAGE ASSETS

INTRODUCTION

10.6.1 The ES and Technical Appendix [APP-081 & 259] assessing impacts on setting of heritage assets followed the five step approach recommended in the then extant English Heritage document 'The Setting of Heritage Assets'.

10.6.2 Of the heritage assets included for assessment in the ES, the Panel has considered in detail those most sensitive to impacts from the offshore elements of the projects and subject to greatest levels of disagreement. These are:

- Lower Needles Point Battery Scheduled Monument;
- Grade II Listed Tennyson's Beacon;
- Hurst Castle Scheduled Monument
- Grade I Listed St Aldhelm's Chapel;
- Grade II listed Durlston Castle and Grade II Registered Durlston Historic Landscape.
- Keyhaven Conservation Area

10.6.3 In relation to the onshore works, the Panel visited the grounds of the Grade II Hinton Admiral House at the request of Meyrick Estates Management Ltd. The property is included in our deliberations, as the Cable Corridor would be routed through its grounds.

10.6.4 The Panel has focussed its attentions on the O&M phase of the turbine area, as that is where the potential for greatest magnitude of effect would occur.

10.7 PANEL'S REASONING AND CONCLUSIONS ON ONSHORE HERITAGE ASSETS

LOWER NEEDLES POINT BATTERY

10.7.1 Lower Needles Point Battery Scheduled Monument (which incorporates the Grade II Listed Old Needles Battery) is located near the western end of the Isle of Wight. It is one of a group of fortifications built in the 1860s to combat the perceived threat of French invasion. The main task of the battery would have been to prevent enemy shipping from running past the fort up the western Solent [Photos 27, 28 & 29 APP-259]. HMBCE's response to the Panel's first set of questions also elicited the information that vigilance in this respect required a view over the open sea to west and south of the mouth of the Solent [REP-3089]. The original Battery was closed in the 1890s but the structure and surroundings were used for defence up to and during World War II.

10.7.2 The ES recognised that the position of the Battery "*at the western end of Lower Needles Point, with chalk cliffs to the north and south, surrounded by the sea on three sides, provides a striking setting for the asset, and contributes to its aesthetic value*." And that "*impressive views of the surrounding seascape make a large contribution to the asset's importance, because they enable the asset's original function as a coastal defence Battery to be understood.*"

10.7.3 In countering HBMCE's arguments the applicant confirmed that the range of the Battery's ordnance would have fallen well short of the 17.6 km or so distance between it and the Project [REP-3176]. However, the Panel agrees with HBMCE that its position to scan is part of its historical illustrative value and that its setting with wide views of open sea to west and south contributes to the ability to appreciate the Battery's significance [REP-3089].

10.7.4 The proposed turbines would be located 17.6 km to the south west of the asset and would feature close to the horizon (Viewpoint (VP) 28, APP-228 to 235]. The Application Project would not change the northern aspect of the Battery nor affect its relationship with Hurst Castle which lies to its north east. However, in occupying 19% of the seaward view and "*fundamentally changing the defining elements of this view*" [APP-079], the Application Project would also significantly alter the setting of the asset as well as the ability to fully comprehend its significance. The turbines would be a fixture in the seascape and extensive in their spread; they would impinge on the ability to appreciate the extent of sea available to an invader in a way that the transient presence of ships does not. The seaward setting of the Battery would be affected, but we agree with HBMCE that the harm would be 'less than substantial'.

10.7.5 The TAMO would be located at a distance of 22.3 km but also noticeable as a new focal point in an otherwise undeveloped seascape [REP-3665 & 3666]. The extent of sea that would be affected would be less with the reduced spread of the turbines. Nevertheless, the open character of the sea would be changed with a consequential impact on appreciating the Battery's historic value. The level of harm would be reduced but would remain at 'less than substantial'.

HURST CASTLE SCHEDULED MONUMENT

10.7.6 This asset is located on Hurst Spit and lies at sea level. The shingle spit defines the northern side of the Solent's western entrance. It comprises the remains of a C16 artillery castle, C19 casemented defences, three lighthouses and the remains of C20 defences. The castle forms part of a network of seven forts designed by Henry VII for defence against the French [Photo 5, APP-259].

10.7.7 The exposed setting of the monument affords it a view consisting of the sweep of Christchurch and Bournemouth Bays, and a sector of open sea closed on the south by the coastline of the Isle of Wight. The view towards the Isle of Wight terminates at the Lower Point Needles Battery, the distinctive chalk stacks of the Needles and the lighthouse. The detailed setting assessment in the ES [APP-259] noted that "*the views across the Solent towards the Needles and beyond are fundamental to the setting of the asset, and positively contribute to its significance*." Further, the

Castle's location at the end of a long, narrow spit was crucial to its defensive role, and "*this landscape context contributes to the overall significance of the asset*." Having visited Hurst Spit and the Castle, the Panel agrees with these descriptions and we do not concur with the applicant's position expressed at the hearing that an "*open (uninterrupted) sea view does not contribute to the significance of the asset*."

10.7.8 The Application Project would be located 22.8 km to the south west of Hurst Castle, introducing a new built form into the seascape setting with the turbines appearing on the horizon beyond the Needles [Applicant's images VP 27, APP-226 & 227 and Challenge Navitus images REP-2804 & 2805]. The applicant stated that Hurst Castle's defensive functions were focussed on the narrow choke point across the western Solent, and it was never intended to have commanding views of extensive seascapes, in the manner of the Needles Battery [REP-3176]. However, the likelihood is that the ability to see for considerable distances across open sea to the west and south west would also have been important to the functioning of the castle and is therefore of historical value.

10.7.9 Setting aside the visual implications of the "*unmistakeable and commanding*"[APP-079] presence of the Application Project in the context of the south west facing view, alterations to the view would also affect the asset's setting and the ability to appreciate the full sense of the direction of attack. As HBMCE put it; "*a fleet appearing from the Channel would be first seen behind the Needles*." The change in the character of the wider view would impact on the monument's significance and in the Panel's view result in harm, albeit it 'less than substantial'.

10.7.10 With regard to the TAMO, the increased distance and reduced spread would render the turbine array less intrusive in the context of the wide sweeping open sea views [REP-3284 & 3285 AND REP-3626]. The juxtaposition with the Needles would still occur and we are inclined to agree with HBMCE that the harm would be 'less than substantial'.

TENNYSON'S MONUMENT (GRADE II LISTED)

10.7.11 Tennyson's Monument or Beacon comprises a large granite Celtic cross standing on a moulded plinth. It is situated on Tennyson Down and was erected as a shipping beacon in memory of Lord Alfred Tennyson, following his death in 1892.

10.7.12 The setting is formed by the grassy common extending to the north east and south west, the cliff top to the south and by the English Channel to the south and east [Photo 31, APP-259]. The applicant's assessment of setting and contribution to significance noted: *"[t]he isolated cliff top location enhances the experience of the monument, and clearly exhibits the monuments strong*

association with the sea. The surrounding Tennyson Down (named after the poet) also provides views of the asset which enhance its aesthetic value and contribute positively to its significance." The Panel agrees that the cultural association with Lord Tennyson greatly adds to the asset's value and serves to draw visitors to the area. In its LIR, the Isle of Wight Council claimed that absence of man-made features in views out to sea and a sense of isolation makes use of person's imagination to understand the magnitude of the asset [REP-2674].

10.7.13 In Chapter 7 of this Report the Panel note that a new focal point would be created on the seaward horizon as result of the Application Project. In seascape/landscape terms we identified an adverse impact, but in heritage terms the effect is less clear-cut, given that experience of the beacon means more than just views out to the open sea. Its sense of isolation would not be unduly affected; the busy stretch of the Solent to the north also forming part of the experience would remain unaffected and the sense of an association with the poet would be maintained. On balance, therefore, while the turbines at a distance of 19.5 km would alter views out to sea, we consider that in itself is not sufficient to conclude that the setting would be harmed.

10.7.14 It follows from the conclusion above that the TAMO, at a distance of nearly 24 km, would be even less intrusive to the setting of the asset.

ST ALDHELM'S CHAPEL (GRADE I)

10.7.15 The square plan single storey chapel dates to the C12. It is located within an early medieval enclosure on St Aldhelms Head and appears alongside panoramic views across the English Channel [Photo 1, APP-259]. In addition to the sea and earthwork surrounding the chapel, its setting comprises surrounding agricultural land, and includes a coastguard lookout to the south and coastguard cottages to the north west. From within the chapel the view is restricted to a slit window on the eastern wall.

10.7.16 The ES noted that: *"[t]he panoramic views from the crest of St Aldhelm's are also likely to have been a significant factor in the original setting of the Chapel. Furthermore, the extensive sea views to the south led to the asset's use as a sea marker and the aesthetic value of these views contributes to its significance.*" The narrative also recognised that the coastguard look out does not "*appreciably detract from these panoramic views that contribute to the value of the asset through their aesthetic value.*" [APP-259]

10.7.17 At the site inspections the Panel observed the prominence of the chapel and visibility of it from the coastal footpath approaches to the east and west. In distant viewpoints, the nearby coastguard lookout and cottages detract from the isolation of the chapel but

in closer views along the footpath it is seen against a backdrop of the sea to the east and west. There is a distinct sense of spiritual value derived from the chapel's remoteness from local settlements, which is heightened, in our view, by its exposure to the open seascape. The seaward setting in that respect is an important contributor to the building's significance.

10.7.18 The Application Project turbine array would be situated 19 km to the south east of the St Aldhelm's headland and the entire array would be visible from this elevated location [VP 08, REP-2779]. Views to the east and south east would be unmistakeably altered by the stacking of turbines on the horizon and the movement of blades. The Project would appear as a backdrop to the building, challenging the chapel's primacy in this exposed location and compromising its isolation. The relationship with the surrounding medieval enclosure would not be changed, but the Panel finds that the Project would be harmful to the experience of seeing and sensing the listed building against a backcloth of the open sea. The harm would be categorised as 'less than substantial'.

10.7.19 The TAMO layout would occupy a reduced portion of horizon [REP-3616]. It would still however feature in the backdrop to the asset, albeit to a lesser extent. Nevertheless, the TAMO would also intrude on the chapel's setting and result in 'less than substantial' harm to its significance.

DURLSTON

10.7.20 Durlston Castle was built in 1887 and is listed as Grade II [APP-081, Figures 15.11 and 15.12]. It forms the focal point to the designed landscape setting which is designated at Grade II on the Register of Parks and Gardens. The Park includes the Grade II listed Globe; erected in 1891 [APP-081, Figure 15.13] , and depicting the world as seen by the Victorians, as well as the Grade II listed Chart (built C1890) comprising a stone relief map.

10.7.21 The Castle and its surrounding environs are more than a collection of historic features in a landscaped setting. The inspiration behind the concepts and the reasons for the presence of the Castle on this cliff-top location on the Isle of Purbeck are recorded in some detail in the evidence from the applicant, HBMCE [REP-3392], local authorities [REP-2678 & 2683], Friends of Durlston Executive [REP-2882] and a number of IPs [REP-2941, for example].

10.7.22 George Burt, a local Swanage resident and businessman, planned to develop the strip of land he bought overlooking Durlston Bay as "*part of an ideal but unrealised commercial Arcadia on the outskirts of Swanage*" [HBMCE, REP-3392]. The complex was to comprise a residential development and a resort. The venture was largely unsuccessful, but in an effort to revive interest in the development he created new attractions such as the Globe and

Durlston Castle. The belvedere on the top of the Castle was built as an observatory and Durlston Park was designed as a visitor attraction in the 1880s and early 1890s.

10.7.23 George Burt wished to create "*an area which had an educational and cultural infrastructure, to inspire and teach people about the natural wonders of the coastline, the sea and the heavens, but to also inspire feelings of awe in response to nature*." [APP-081]. A large block of quarried stone on the former visitor circuit is inscribed "*Look around and read great nature's open book"*. The Dorset County Council LIR [REP-2678] described how George Burt's educational vision to inspire people about the natural wonders of the coastline, the sea and the heavens (in particular the curving waters of the English Channel) has been incorporated into the restored and extended Castle buildings and the refurbished Park. The building now forms the main visitor centre to the Jurassic Coast World Heritage Site and Durlston is accorded official recognition as a Dark Sky Area.

10.7.24 The open seascape is not visible when viewing the Castle from the west, but walking past it on the path immediately to the south opens up views of the sea. The ES confirmed that extensive sea views are possible from the footpaths within the Park (Figure 15.14), and especially from the Globe and Castle in the south-east and that such views contribute strongly to the aesthetic value of the asset. It went on to note that *"[t] he panoramic views created by George Burt at Durlston Castle have been supplemented in the new sections of the renovated building by architectural handling that enhances the revealed horizon effect*" and that "*it has a strong visual link to the sea.*"

10.7.25 The ES explained that at a distance of 14.4 km from Durlston Head, the turbine array would be visible from a number of points from within the Castle as well as from the terrace to its south east, in views south eastwards from the Globe and from carefully controlled 'reveal' points in the Park.While confirming that views of the sea contributed to the significance of the assets the applicant went on to claim that: 1) an open, interrupted sea does not contribute to significance and 2) there are no documented views designed to take in an element of the horizon in the direction of the Project. Visibility of the Project was also considered to be inconsequential when considered against the modern additions to the Castle and the Park [REP-3313].

10.7.26 The Panel disagrees for these reasons. The significance of Durlston lies as much in the relationship of the property to its natural setting, in particular the sea, as in its aesthetic value. Views were deliberately designed to take advantage of the wide uninterrupted seascape and to promote the educational value of nature. In the SoCG with the local authorities [REP-3139] the applicant agreed that views from Durlston that allow the curvature of the earth to be recognised contribute in part to the

importance of the asset. Whatever else has been undertaken at Durlston in the interest of enhancing educational and visitor experience, appreciation of the vastness of the sea and the uncluttered horizon have remained largely intact to the benefit of the assets' cultural, social and historic significance

10.7.27 The Project would alter the essential experience of viewing an uninterrupted open sea from key points within and around the building and the Park [APP-167, 168, 170-175 and REP-2782 to 2788]. It would lead to an extensive man-made feature spreading across the horizon, conflicting with the concept of reading "*great nature's open book*" and masking the curvature of the horizon. Recent changes to the Castle and the Park have clearly added to the success of the property as a popular visitor facility. The same could not be said for the turbine array which would impinge on a core aspect of the setting of the building and its Park. Although the harm to the assets would be 'less than substantial' there would nevertheless be harm to their significance.

10.7.28 Increased distance of the turbines from Durlston by another 3 km or so would clearly reduce the harm likely to arise from the TAMO. The horizon would however still be interrupted and the expectation of an unspoilt seascape would be impaired. While less so than the Application Project, the TAMO would also result in 'less than substantial' harm to the assets' setting.

HINTON ADMIRAL HOUSE (GRADE I LISTED) AND HINTON PARK

10.7.29 Hinton Admiral House was built in 1720, remodelled in 1777 and enlarged in 1905 by H E Peto FRIBA for Sir George Meyrick. Although submissions on behalf of Meyrick Estate Management Ltd (MEM) indicated that part of its gardens is listed at Grade II [REP-3415], the applicant's Deadline III and V responses suggest that the gardens are not listed in the Register of Parks and Gardens of Special Historic Interest [REP-3176 & 3490]. Nevertheless, the grounds form part of the setting of the listed building and the wall to terrace in the garden façade is listed as Grade II in its own right.

10.7.30 The grounds include a large rock garden set around a stream and a terrace laid out be H E Peto. Meyrick Estates Management (MEM) referred to Peto's work at Hinton Admiral as particularly significant as he has a well-regarded reputation for his work around the turn of the last century on water gardens [REP-3415]. The submissions also referred to the evolving landscaped grounds specifically in the form of the Chilean arboretum which is on the route of the cable run [REP-3415, Appendix B, route of cable run].

10.7.31 At the site inspection the Panel noted the arboretum is a recent venture and the trees planted have not had time to mature. Their

loss would be regrettable but in their present immature state, and because of their distance from the main house, they do not contribute to its historic setting.

10.7.32 The cable route would pass through an area of mature deciduous woodland some distance to the south of the house and to the west of the drive leading to the water features described earlier. In the short to medium term the character of the woodland area affected would alter significantly as the trenching works and cable laying takes place. However, subject to implementation of the Visual Tree Appraisal, restoration and enhancements schemes in accordance with the Landscape and Ecology Management Plan (Requirement 20), the Panel is satisfied that the long term visual or ecological impacts on the woodland would not be so harmful as to insist on trenchless installation through the grounds of the listed building.

10.7.33 The listed house and its more managed formal grounds, are located far enough away from the area of woodland lost to the Cable Corridor as to be unaffected by the works. The Panel considers that the harm to the setting of the listed building is likely to be negligible.

KEYHAVEN CONSERVATION AREA

10.7.34 The Buckland, Keyhaven and Ashlett Creek Conservation Area Character Appraisals [REP-3349] described Keyhaven as a small linear settlement bounded by the Solent to the south, farm land to the north, marshes to the east and Hurst Spit and Milford on Sea to the west. Views through the conservation area were described as playing a significant part in the underlying character of the conservation area.

10.7.35 The applicant's evidence confirmed what the Panel observed on site, that views to the south-west from the majority of the conservation area are largely screened by built form and vegetation [REP-3203]. However, views towards Hurst Spit are possible from the footpath at the southern boundary of the conservation area. While the elevated section of the Isle of Wight and the Needles headland are visible, the shingle and sand bank of the Spit screen out wider sea views towards the bays and the English Channel.

10.7.36 The applicant's evidence noted that the turbine hubs and blades would be visible above the Hurst Spit. However, from the majority of the conservation area the Application Project would neither impinge on the views gained from much of the conservation area nor challenge the dominance of the Spit, which is a major feature of south west facing views out of the area. In terms of character and setting of the conservation area, the Panel is satisfied that the turbine arrays (Application Project and the TAMO) would not be so intrusive as to cause harm.

10.8 PANEL'S OVERALL CONCLUSIONS

10.8.1 With regard to onshore and offshore features of archaeological interest, known and undiscovered, the Panel is satisfied that the WSIs proffered through the DCO and DMLs sufficiently eliminate concerns about their harm or loss. The proposals would accord with the EN-1 requirement to avoid or minimise conflict between conservation of significance and proposals for development and EN-3 considerations with regard to known heritage assets and their status.

10.8.2 The ES assessed in detail the impacts on the settings of 54 designated heritage assets. Of these, the Panel concluded that 'less than substantial' harm would result from the Application Project and the TAMO on the significance of the Lower Needles Point Battery Scheduled Monument and the Grade II listed Battery, Hurst Castle Scheduled Monument, St Aldhelm's Chapel, Durslton Castle and the Park at Durlston. In other words, the impact would not be such that "*very much, if not all, of the significance was drained away*"[27]. The Panel notes that less than substantial harm does not equate to a less than substantial objection, and the harm found needs to be weighed against the public benefits of the Projects. These findings are carried forward into the planning balance in Chapter 21 of this Report.

10.8.3 The Panel takes no issue with the remaining heritage assets with the potential for sensitivity to the Projects, and notes that the applicant has sought to include measures to reduce or mitigate adverse impacts on the significance of those assets, as required by EN-1.

[27] Bedford Borough Council v SSCLG & Nuon UK Ltd.

11 RECREATION

11.0 THE POLICY CONTEXT

NATIONAL POLICY STATEMENTS

11.0.1 EN-1 paragraph 5.10.24 states that "*rights of way, National Trails and other rights of access to land are important recreational facilities for example for walkers, cyclists and horse riders*" and further requires " *applicants to take appropriate mitigation measures to address adverse effects on coastal access, National Trails and other rights of way*."

11.0.2 EN-3 paragraph 2.6.166 requires the Panel "*to be satisfied that the scheme has been designed to minimise the effects on recreational craft and that appropriate mitigation measures, such as buffer areas, are built into applications.*" It further notes that "*in view of the level of need for energy infrastructure, where an adverse effect on the users of recreational craft has been identified, and where no reasonable mitigation is feasible*" the Panel should "*weigh the harm caused with the benefits of the scheme.*"

UK MARINE POLICY STATEMENT

11.0.3 The UK Marine Policy Statement (MPS) paragraphs 2.5.5 and 2.5.6 and section 3.11 refer to the need to consider recreational uses.

THE DEVELOPMENT PLANS AND CORE STRATEGIES

11.0.4 Relevant local policies have been summarised in the LIR and ES, including:

- The Bournemouth Local Plan: Core Strategy (2012) Policy CS30 (green infrastructure), [REP-2676]; Policies CS6 (sustainable communities), CS18 (walking and cycling) and CS31 (recreation) [APP-104];
- Christchurch and East Dorset Local Plan Part 1 - Core Strategy (2014) Draft Policy HE4 (protection of open space) [APP-104];
- New Forest District Local Plan Part 1: Core Strategy (2009) Policy CP3 (green infrastructure), DP3 (protecting open space), DP21 (recreational horse keeping), DP23 (maneges) and CS7 (open spaces) [APP-104];
- New Forest National Park Core Strategy and Development Management Policies DPD (2010) Policy CP3 (conservation sites) [APP-104];
- Poole Core Strategy (2009) Policy PCS26 (distinctive places) [REP-2675];
- Purbeck Local Plan Part 1 (2012) Policy GI (green infrastructure) [APP-104,]; and

- The Island Plan Core Strategy (2012) Policies DM7 (open spaces); DM13 (green infrastructure); DM15 (coastal management) and DM17 (sustainable travel) [APP-104].

11.1 INTRODUCTION AND BACKGROUND

11.1.1 The applicant's assessment for recreation was set out in ES Volume D Chapter 4 [APP-104] and was supported by appendices that contained a report on interviews with recreational users [APP-310] and a local strategy and policy review [APP-306].

11.1.2 Through the course of the examination issues were identified and addressed in a number of representations, SoCGs, the Panel's written questions and ISH [REP-3676, table 29 and table 30]. The main issues included:

- disruption to recreational walking, cycling and horse riding during construction and to astronomy due to lighting;
- noise and EMF impacts on diving;
- disruption to offshore recreational sailing, motor boating, fishing and angling; and
- secondary and multiplier effects on other businesses.

11.1.3 This section of the report deals with both recreational users and recreational businesses, and considers commercial diving alongside recreational diving. Other sections of the report relevant to this include:

- Chapter 7 and 8 for visual impacts on recreational users;
- Chapter 10 for the preservation of ship wrecks;
- Chapter 12 for impacts on tourism causing impacts on recreation;
- Chapter 13 for commercial fisheries and fishing;
- Chapter 14 for recreational sailing and motor boating navigational safety; and
- Chapter 16 for water quality impacts on bathing.

11.2 THE ENVIRONMENTAL ASSESSMENT

11.2.1 Volume D Chapter 4 of the ES [APP-104] described the baseline environment for onshore and offshore recreational activities by type and location. This was based on a combination of desk based research of various studies, Local Plans and other documents [APP-306] and interviews [APP-310].

11.2.2 The applicant identified specific mitigation measures for walking, cycling, horse riding, diving and boat based angling and provided a public rights of way strategy [APP-320] and outline diver management plan [APP-324]. With this mitigation in place, the applicant [APP-104, table 4.12] concluded that residual impacts on each type of recreation were negligible or minor and not significant.

11.2.3 With regard to other mitigation, during the examination the applicant [REP-3313] stated that part of the Tourism Fund (to be secured through the Unilateral Undertaking) could be allocated to alleviating any adverse effect of the Project on businesses as a result of reductions in private recreation.

11.2.4 In a Statement of Common Ground (SoCG) between the applicant, Bournemouth BC and Isle of Wight Council [REP-3148], it was agreed that the applicant's methodology, extent and scope of baseline data, and scope of conclusions of the cumulative impact assessment and agreed to defer comments on impacts to other organisations or other SoCGs.

11.3 WALKING, CYCLING, HORSE RIDING AND ASTRONOMY

11.3.1 Temporary public rights of way closures required for the construction of the onshore cable works are covered in DCO Article 15, Requirement 14 and Schedule 4.

11.3.2 The applicant noted [REP-3219] that the public rights of way diversion and closure scheme would be prepared in accordance with the public rights of way strategy, which was agreed with the relevant local authorities (LAs) before submission of the application.

11.3.3 In the ES [APP-104] the applicant stated that walking, cycling and horse riding routes in Hurn Forest would be obstructed for periods up to 5 months during the construction of the onshore cable works, but that in each case the impact was moderate and significant. Mitigation measures proposed by the applicant in the ES and a clarification note [REP-3033] included the provision of a full time warden, signage, provision of information, diversion routes, a trenchless crossing and the maintenance of certain key routes.

11.3.4 In the ES [APP-104] the applicant assessed the impact on Astronomy due to the offshore construction and operational and maintenance lighting was not significant and no mitigation was proposed. The applicant [REP-3643 and REP-4030] undertook to work with lighting manufacturers at the detailed design stage to reduce light spill below the horizontal plane and therefore to minimise the potential visibility of aviation safety lights, but considered that it was impractical to make this a firm requirement until the technological advances in LED technology could be understood in more detail.

11.3.5 The SoCGs between the applicant, Hampshire CC and Dorset CC [REP-3154] and the Ramblers Association [REP-3120] showed that matters in relation to public rights of way were agreed.

11.3.6 In the SocG between the applicant and British Horse Society [REP-3121] a number of measures including speed limits on the bridleway, construction worker behaviour protocol,

communications of closures and a grievance procedure were agreed. These are secured in the public rights of way strategy and code of construction practice, which are both certified documents as part of the DCO.

11.3.7 During the examination, Wessex Astronomical Society [REP-2774 and REP-3193] raised concerns regarding the lighting levels and flashing lights and stated that if a technical specification to achieve zero illumination below the horizontal plane was made a firm requirement of the design then it should provide adequate mitigation of the adverse effects at Durlston and enable the astronomy events there to continue unimpeded.

11.4 DIVING

11.4.1 In the ES [APP-104] the applicant stated that during construction:

- impacts had been identified on diving due to the levels of subsea noise and a 2km avoidance zone that was required on safety grounds;
- there was a larger potential area where divers may choose not to go during piling due to underwater noise;
- divers would also be concerned with visibility due to suspended sediments from construction that would disperse within days;
- further mitigation was proposed with a communications protocol that would provide information on construction activities and on alternative dive sites; and that
- following mitigation the residual impact was assessed as significant.

11.4.2 During operations and maintenance the applicant [APP-104 paragraphs 4.5.131-134] identified a risk of collisions with turbines due to drifting, but considered that some diving in the turbine areas would not continue as it would be less attractive and the impact was therefore considered to be not significant.

11.4.3 The applicant [REP 3490 and REP-3643] did not provide detailed noise calculations. Instead, a coordinated narrative response in a diver clarification note [REP-3699] noted that the Control of Noise at Work Regulations was used in the underwater noise assessment, as it offered the best assessment tool for calculation of noise exposure for humans. This would overestimate risk to an individual with a single exposure event such as a dive.

11.4.4 With regards to mitigation, the applicant [REP-3490, REP-4030] stated that the key principles by which it proposed to manage and minimise the risks posed by offshore activities to the diving communities were contained in the outline diver plan [REP-4044], which was aimed at ensuring diver safety and demonstrating that diving would still be possible during the construction phase

and that there would still be ample opportunities to dive when there would be no piling noise. The plan formed the basis of the detailed diver mitigation plan that is secured under DML condition 11(j) and is to be approved by the MMO. DML Condition 16 further requires monitoring of noise levels during the installation of the first four driven or part-driven pile foundations.

11.4.5 Following discussion and a request at an ISH the applicant produced underwater noise contour maps [REP-3327] and stated that:

- the maps demonstrated that any noise level that was considered to present a direct risk to a diver was well within the proposed 2 km patrolled exclusion zone; and that
- in order to avoid a startle reaction, an avoidance area during piling up to 5.7 km, continuous with a noise level of 100 dB(UW), was recommended from any pile position.

11.4.6 Responding to comments regarding the lack of any proposals for noise mitigation, the applicant stated [REP-3490] that current available technologies such as bubble curtains were not proven and had received some criticism.

11.4.7 With respect to the impacts of increases of turbidity on diving, the applicant [REP-3327] stated that:

- any increases in turbidity would be localised and short term;
- increases in turbidity would only be apparent up to approximately 1 km from the installation site, which was well within the proposed 2 km diver exclusion zone that would be in place during the installation of each foundation.

11.4.8 With regards to EMF impacts on divers, the applicant [REP-4030] considered that:

- the ES confirmed that on a worst case basis assuming 100% loading of the cables the EMF levels would be considerably below the 100 microtesla limit set out by ICNIRP 1998 guidelines; and that
- as there was existing industry guidance to be followed, and the Project has been demonstrated to easily comply with the recommendations, no further controls were necessary.

11.4.9 On the topic of diving wrecks the applicant [REP-3327, REP-3643 and REP-3699] stated that:

- the avoidance of identified and known wrecks would be secured through the application of archaeological exclusion zones, as detailed in the offshore written scheme of investigation (WSI), to approved in consultation with English Heritage. The WSI is secured in DML Condition 11(h);
- damage to a wreck from vibration was unlikely;

- the commitment to work with diving safety officers at BSAC was secured in the outline diver management plan, and that
- the SoCG between the applicant and the Professional Association of Diving Instructors (PADI) [REP-3116] confirmed that all matters in relation to recreational diving were agreed.

11.4.10 In their Local Impact Reports (LIRs) both Dorset CC [REP-2678] Purbeck DC [REP-2683] raised concerns that:

- noise during the construction phase was likely to have a significant impact and would deter divers from visiting the area, and that
- there was a real potential for significant and long lasting adverse effects on recreational diving and the reputation of Dorset as being an excellent place to dive.

11.4.11 Swanage Boat Charters [REP-3407 and REP-3586] stated that:

- the noise contours showed that piling noise would be audible many miles from the site of the actual piling operation;
- just outside the avoidance zone the sound levels were predicted to be equivalent to "*standing on the hard shoulder of a major motorway"*;
- diving organisations and businesses must be involved in the Diver Management Plan to ensure that it was workable before approval by the MMO;
- the applicant had failed to consider that for noise levels well below the safety limit the loss of a calm, quiet environment would result in divers choosing to dive elsewhere; and that
- after completion of the wind park it would be hard to entice customers to return as they would have found alternative diving locations.

11.4.12 Challenge Navitus [REP-3375, REP-3600 and REP-3614] and Swanage Boat Charters [REP-3407 and REP-3586] stated that:

- there were technical concerns and detailed noise calculations were requested;
- unexpected changes in visibility caused by turbidity from the offshore works could cause difficulties for divers, particularly inexperienced ones.;
- there was no assessment of EMF impacts on divers, no specification of acceptable levels, no clear undertaking that ICNIRP guidance would be complied with and no commitment to bury cables the minimum of 1.5m suggested by EN-3 for effects to be unlikely to have adverse impacts;
- there were concerns about the potential for wrecks being damaged by the offshore works and particularly piling; and that
- during decompression ascents, divers or their lines could collide with or become entangled with the Project's

underwater structures, which caused safety concerns and could result in diving to some wrecks no longer being possible.

11.4.13 Close to the end of the examination Challenge Navitus stated [REP-4020] that insufficient information was provided to "*help an independent expert to check the calculations*" and that "*this lack of transparency and rigour is unacceptable when human safety is at stake.*" The applicant did not have an opportunity to respond.

11.5 SAILING, MOTOR BOATING AND BOAT BASED ANGLING

11.5.1 In the ES [APP-104] the applicant considered that:

- impacts on recreational sailing and motor boating due to obstruction for the rolling 500m safety zone and the completed turbines were minor and not significant and no specific mitigation was proposed; and that
- with mitigation secured through the development and implementation of a communications protocol, the provision of a fisheries liaison officer and phased closing of angling marks within the safety zone, the impact on boat based angling would be reduced to minor and not significant.

11.5.2 The mitigation for boat based angling is secured through the project environmental management plan, DML condition 11(d).

11.5.3 During the examination the applicant [REP-3176, REP-3214 and REP-3317] stated that:

- no robust empirical evidence that met the standard of EN-1 had been identified to demonstrate that there was an impact on recreational sailing;
- the assessment of cross channel routes concluded that that sailing times did not significantly increase for the majority of crossings when deviating around site unless a vessel was navigating into a strong tide for a large proportion of the journey; and that
- the impacts on sea bass were noted and it was in discussions with individual charter vessel owners regarding the potential for a disruption agreement.

11.5.4 In a SoCG with the applicant, the Royal Yachting Association (RYA) [REP-3125] considered that the assessments were based on assertion rather than empirical evidence and that there would be a loss of amenity to leisure boaters and the local Small Medium Enterprises dependent on them that was disproportionate to the Project's generating capacity benefits. The RYA further suggested that the potential effects on cross channel recreational vessel routes required further consideration.

11.5.5 In its LIR [REP-2678] Dorset CC stated that while in general the applicant had identified the main receptors in terms of

recreational activities likely to be impacted by the development, boat angling was an exception and there was little mention of the impacts of fish avoidance of the area and the potential impact on angling experience.

11.6 DISRUPTION AGREEMENTS AND KNOCK-ON EFFECTS

11.6.1 An example of 'knock-on' effect of impacts on recreation is the likelihood that any change in the number of people taking part in recreation activity could affect the economic operation of other businesses locally. The applicant [REP-3313] stated that:

- these effects had been assessed as part of the socio-economic and tourism impact assessment through the business survey and through literature review and case studies into the economic effects of wind farms in other locations.
- the business survey included recreation-related businesses as well as indirect businesses that recreation participants may use; and that
- local businesses including hotels, bars and restaurants would not be affected and therefore knock-on/multiplier effects would be negligible.

11.6.2 The applicant noted [REP-3327 and REP-3643] that:

- it had offered commercial disruption agreements to local dive businesses to ensure protection of diving amenity;
- the purpose of the disruption payments were to ensure the businesses are no worse off because of the construction of the wind farm;
- it had been progressing agreements with commercial fishing operators, charter boat owners and dive businesses;
- of a total of 47 agreements in discussion, commercial terms had been agreed in principle for 23 operators and final contracts were under discussion;
- terms were agreed in principle with businesses from each sector;
- the other 24 agreements are still under discussion and it was proposed that these would be agreed by the close of the examination;
- the agreements were intended to compensate businesses for their higher operating costs; and that
- businesses would therefore continue to operate and there would be no associated secondary impacts on other businesses.

11.6.3 In its LIR [REP-2683], Purbeck DC stated that Swanage in particular would be adversely affected due to the large number of dives starting out from Swanage and there would be wider ramifications to the local economy beyond the dive businesses, such as bed and breakfast and café businesses.

11.6.4 Bournemouth BC [REP-3584] commented that the most recent Solent Study (2009) estimated the value of visiting cruising yachtsmen staying overnight in South Hampshire and the Isle of Wight to be worth approximately £20.4 million and that around £8.2 million of the total crew expenditure directly benefitted businesses operating in the visitor economy on shore including shops/supermarkets, restaurants, cafes, pubs, and taxi services.

11.6.5 Challenge Navitus [REP-2944, REP-3268, REP-3378 and REP-4020] questioned the data and methodology used by the applicant to assess socio-economic impacts and disagreed that commercial agreements would fully mitigate the associated impacts.

11.7 PANEL'S REASONING AND CONCLUSIONS

11.7.1 The Panel considers that the applicant has addressed the main areas of disagreement between the parties sufficiently for the purposes of EN-1, EN-3 and the MPS.

11.7.2 The Panel concludes that the mitigation of impacts on walking, cycling and horse riding have been, or will be, agreed with relevant stakeholders and are acceptable.

11.7.3 The applicant's undertaking to work to reduce lighting impacts on astronomy but not have a requirement secured in the DCO is considered appropriate by the Panel, given the limited evidence of any impact and the uncertainty of future technological advances required to address them.

11.7.4 The MMO's and Swanage Boat Charter's concerns to ensure that businesses to be involved in the development of Diver Mitigation Plan are considered by the Panel to be satisfied by the inclusion of a list of organisations to be consulted in the development of the Diver Mitigation Plan and by the requirement for it to be approved by the MMO.

11.7.5 The Panel is satisfied that the communication protocol, other measures in the Diver Mitigation Plan and the disruption agreements would sufficiently address impacts on diving businesses caused by the restrictions on diving times and locations required due to increases in noise levels during offshore piling.

11.7.6 Challenge Navitus' concerns regarding the availability of calculations of underwater noise levels and that some of their technical concerns remained unresolved are acknowledged. However, the Panel is satisfied that uncertainties would be sufficiently addressed by the requirements to monitor noise levels during the installation of the first piles and for the Diver Mitigation Plan to specifically address noise impacts on diving to be approved by the MMO. The Panel accepts that the applicant should not be required to adopt noise reduction techniques that

are not proven, but recognises their commitment to employ any should they become suitable.

11.7.7 The Panel is satisfied that the MMO can be relied upon to ensure that the measures required to establish a 5.7 km avoidance area to avoid a startle reaction for divers would be secured in the detailed diver mitigation plan.

11.7.8 The Panel concludes that reasonable steps have been taken to reduce the safety risks associated with noise levels and with reductions in visibility for divers through the diver exclusion zone. The Panel finds that risks of EMF exposure are adequately addressed by the applicant's commitment to comply with industry guidelines.

11.7.9 The Panel considers that potential damage to wrecks during construction would be minimised through the offshore WSI. With regards to the safety concerns when diving in wrecks close to the Project structures, the Panel is satisfied that this would be sufficiently mitigated by divers avoiding certain wrecks in certain conditions and diving other wrecks instead.

11.7.10 The Panel however concludes that the Project would cause disruption to recreational diving due to subsea noise and turbidity. This would require the temporary phased closure of dive sites within a 2 km exclusion zone for safety reasons and would harm amenity over a wider area, evidenced by an avoidance area of 5.7 km being required to avoid divers having a startle reaction to noise. Although diver mitigation plans would make information available on alternative diving locations and times to allow effects to be avoided, the temporary loss of diving sites over a wide area and the disturbances due to underwater noise over a still wider area during offshore piling leads the Panel to agree with the applicant's assessment in the ES that there would be significant residual adverse impacts to recreational divers during construction.

11.7.11 On the matter of loss of amenity to leisure boaters, the Panel is mindful of the concerns expressed by IPs but considers that sufficient evidence has not been provided to cause the Panel to disagree with the applicant's overall assessment. The Panel is satisfied that the impacts on cross channel sailing and motor boating routes have been considered sufficiently during the examination and, based on the information provided, the Panel concludes that little harm would be caused.

11.7.12 Dorset CC did not comment on the applicant's response to concerns regarding impacts on boat angling. The Panel has no reason to conclude other than that they were addressed adequately.

11.7.13 In considering the assertions made by IPs that adverse impact on recreation would cause adverse knock-on effects on other businesses, the Panel finds that sufficient evidence has not been provided to cause the Panel to disagree with the applicant's overall assessment.

11.7.14 The Panel accepts the necessity for disruption agreements to be commercially confidential and considers that sufficient evidence has not been provided to convince us that this significantly distorts the assessment or the mitigation. Regarding suggestions from other IPs that disruption agreements would not mitigate impacts on the businesses that are party to those agreements, the Panel considers that the businesses themselves are best positioned to make that judgement.

11.7.15 The DCO and DMLs includes modifications made by the applicant in response to the representations made by interested parties and as agreed in the SoCGs and raised by the Panel during the examination. The Panel is satisfied that the DCO and DMLs sufficiently mitigate the impacts on recreation.

11.7.16 Some detailed issues, design matters and approvals remain to be resolved. The Panel is satisfied that these would be adequately addressed through the application of the recommended DCO and DMLs and through the proper enforcement of other regulatory regimes.

11.7.17 The Panel therefore concludes that the application meets the requirements of EN-1, EN-3 and the MPS for recreation, save for the issue of loss of diving sites. The matter of impact on recreation, including the impacts on recreational diving, has been taken forward into the consideration of the planning balance in Chapter 21.

11.8 TURBINE AREA MITIGATION OPTION

THE APPLICANT'S CASE

11.8.1 The applicant stated [REP-3643] that:

- as the TAMO reduced the number of turbines and the area of seabed take, the effect on recreational diving would be reduced in spatial scale but not magnitude or sensitivity, and would be expected to remain as previously assessed; and that
- for other forms of recreation the change from the Application Project to the TAMO would have no consequential bearing on the conclusions of the assessment.

11.8.2 With respect to the significant issues addressed in this section the applicant stated [REP-3701] that the changes from the Application Project to the TAMO included:

- walking, horse riding, cycling and astronomy – a reduction in extent and an increase in distance from the coast would change the potential appearance of the Project;
- diving – reduced number of impacted dive sites and reduced impacts on subsea noise;
- recreational sailing – creation of more sea room and increased separation from the Hurst Point leading light; and
- boat based angling – reduced disturbance due to reduced number of turbines.

OTHER REPRESENTATION

11.8.3 Swanage Boat Charters [REP-3781] noted that as the TAMO was a smaller development it would have less impact on its business. However, the fact still remained that piling anywhere within the mitigation option area would inevitably cause considerable disruption to its business.

PANEL'S REASONING AND CONCLUSIONS

11.8.4 The Panel concludes that the impacts of the TAMO have already been addressed by the applicant. The mitigation of impacts have already been covered sufficiently for the Application Project and the measures of mitigation have been incorporated in line with NPS requirements and captured in the DCO and DMLs satisfactorily. There are no significant implications for the DCO or DMLs were the TAMO to be adopted.

11.8.5 Although the TAMO would occupy a smaller area than the Application Project and would involve the installation of a smaller number of piles, the applicant has not provided sufficient evidence for it to quantify a reduction in impact on diving and has not suggested that there would be a significant reduction. On this basis, the Panel concludes that, for the same reasons as noted for the Application Project, the TAMO would cause significant residual adverse impacts to recreational divers during construction.

11.8.6 The Panel therefore concludes that TAMO meets the requirements of EN-1, EN-3 and the MPS for recreation, except for concerns regarding diving sites. This conclusion is taken forward to Chapter 21.

12 TOURISM AND OTHER SOCIO-ECONOMICS

12.0 THE POLICY CONTEXT

NATIONAL POLICY STATEMENTS

12.0.1 EN-1 paragraphs 4.1.2 to 4.1.4 emphasise that there is an urgent need for infrastructure development and that the decision maker should take into account the environmental, social and economic benefits as well as adverse impacts at national, regional and local levels and "*any measures to avoid, reduce or compensate for any adverse impacts.*"

12.0.2 Regional and local socio-economic impacts are specifically dealt with in section 5.12 of EN-1. Paragraph 5.12.3 identifies a number of considerations as relevant socio-economic impacts, including:

- the creation of jobs and training opportunities;
- the provision of additional local services and improvements to local infrastructure, including the provision of educational and visitor facilities, and
- the effects on tourism.

12.0.3 EN-1 paragraph 5.12.4 then requires the applicant to "*refer to how the development's socio-economic impacts correlate with local planning policies.*"

12.0.4 The linkage between socio-economic and other impacts is mentioned in EN-1 paragraph 5.12.5, noting that "*the visual impact of a development … may also have an impact on tourism and local businesses.*"

12.0.5 EN-1 paragraph 5.12.7 notes that "*limited weight is to be given to assertions of socio-economic impacts that are not supported by evidence (particularly in view of the need for energy infrastructure as set out in this NPS).*"

12.0.6 EN-1 paragraph 5.12.8 emphasises that the Panel should take into account "*any relevant positive provisions the developer has made or is proposing to make to mitigate impacts (for example through planning obligations) and any legacy benefits that may arise*."

12.0.7 EN-1 paragraph 4.1.8 states that the Panel "*may take into account any development consent obligations that an applicant agrees with local authorities. These must be relevant to planning, necessary to make the proposed development acceptable in planning terms, directly related to the proposed development, fairly and reasonably related in scale and kind to the proposed development, and reasonable in all other respects*". This wording is similar to that used in Regulation 122 of the Community

Infrastructure Levy Regulations and Paragraph 204 of the National Planning Policy Framework.

12.0.8 In terms of mitigation, EN-1 paragraph 5.12.9 states that the Panel "*should consider whether mitigation measures are necessary to mitigate any adverse socio-economic impacts of the development*."

UK MARINE POLICY STATEMENT

12.0.9 The UK Marine Policy Statement (MPS) paragraphs 2.5.5 and 2.5.6 and section 3.11 refer to the need to consider economic benefits and local jobs.

12.0.10 MPS paragraph 3.11.1 notes that:

- "*tourism is one of the top 3 growth sectors of the economy*";
- "*seaside tourism makes an important contribution*" and that
- "*economic, social and environmental factors relating to tourism therefore need to be carefully considered."*

12.0.11 In terms of issues for consideration, MPS paragraphs 3.11.5 and 3.11.6 state that:

- *"decision makers should consider the potential for tourism … in the marine environment and the benefits that this will bring to the economy and local communities*";
- "*the provision of slipways, coastal footpaths and ensuring coastal access for example could encourage economic growth and highlights the importance of considering the links between marine and terrestrial plans*" and that
- "*in weighing up these considerations it will be important to ensure that local authorities, local tourism stakeholders, tourism destination management organisations … are engaged and consulted before decisions are taken.*"

THE DEVELOPMENT PLANS AND CORE STRATEGIES

12.0.12 Relevant local policies have been summarised in the LIR and ES, including:

- The Bournemouth Local Plan: Core Strategy (2012) Policies CS3 (sustainable energy), CS28 (tourist accommodation), CS29 (protecting tourism and cultural facilities) and CS30 (green infrastructure), [REP-2676]; Policy CS8 (Lansdown employment area) [APP-306];
- Christchurch and East Dorset Local Plan Part 1 - Core Strategy (2014) Draft Policies ME5 (renewable energy) and HE3 (landscape quality) [REP-2677 and REP-2679]; Draft Policies HE3 (landscape character) and PC3 (the rural economy) [APP-306];
- New Forest District Local Plan Part 1: Core Strategy (2009) Policies CS17 (employment and economic development) and

CS19 (tourism) [REP-2681]; Policy CS4 (energy and resource use) [APP-306];
- New Forest National Park Core Strategy and Development Management Policies DPD (2010) Policies DP1 (general development principles), CP3 (green infrastructure) and CP5 (renewable energy) [APP-306];
- Poole Core Strategy (2009) Policies PCS1(iv) (principal locations for economic investment) and PCS3 (Poole Port) [REP-2675]; Policies PCS28 (Dorset Heath's international designations), PCS29 (Poole harbour SPA and RAMSAR site) and PCS31 (sustainable energy sources) [APP-306];
- Purbeck Local Plan Part 1 (2012) Policies SE (South East Purbeck), REN (renewable energy), E (Employment) and TA (tourist accommodation and attractions) [REP-2683];
- The Island Plan Core Strategy (2012) Policy DM16 (renewables) [REP-2674, paragraph 3.8]; Policies SP3 (economy); DM13 (green infrastructure) and DM16 (renewables) [APP-306].

12.1 INTRODUCTION AND BACKGROUND

12.1.1 The applicant's assessment for socio-economics and tourism was set out in ES Volume D Chapter 3 [APP-103], supported by appendices containing:

- a technical report on the 2012 visitor survey [APP-302];
- a supply chain analysis [APP-303];
- a socio-economic and tourism baseline [APP-304];
- a technical report on the 2013 visitor survey [APP-305];
- a local strategy and policy review [APP-306];
- a tourism business survey [APP-307];
- a design visual calibration study 2013 [APP-308]; and
- a design visual calibration study Feb 2014 [APP-309].

12.1.2 Through the course of the examination issues were identified and addressed in a number of representations, Statements of Common Ground (SoCGs), the Panel's written questions and issue-specific hearings (ISH) [REP-3676].

The main tourism issues for the Application Project and the TAMO included:

- the robustness of the environmental assessment;
- the perception surveys, their limitations and the extent to which they should be used to identify impacts;
- the case studies of other wind farms, their applicability to the Project and the extent to which they should be used to identify impacts;
- other evidence of impacts provided by IPs;
- the robustness of tourism businesses and their sensitivity to effects caused by the Project;
- the significance of impacts;

- the ability and need to quantify impacts on employment and GVA;
- the definition of "*local"* and the ability and need to identify impacts at local authority area and micro scales;
- secondary and multiplier effects on others, including retail and other businesses;
- impacts on language schools;
- the need to prove that impact will not occur;
- the need for mitigation;
- the extent to which Project employment and supply chain benefits could mitigate possible adverse tourism impacts;
- the Unilateral Undertaking for a tourism fund, the extent to which this would mitigate impacts and the planning obligation tests;
- whether the impacts and the effectiveness of any mitigation could be monitored; and
- requirements for a communication protocol and complaints procedure.

The other main socio-economics issues included:

- opportunities for local employment and resource supply to the Project;
- uncertainties arising from the growth scenarios and possible port locations;
- the s106 agreement for a skills and supply chain funds and the planning obligation tests;
- whether targets should be set for employment and supply chain benefits;
- impacts on attracting inward investment and the grey pound; and
- whether economic losses due to road closures, amenity losses and national impacts have been adequately assessed.

12.1.3 Impacts on tourism and other socio-economics receptors link to impacts addressed elsewhere in this report, particularly:

- visual impacts [chapters 7 and 8];
- heritage sites [chapters 9 and 10];
- noise and air quality impacts [chapters 17 and 18];
- commercial fisheries, fishing, recreation and operational and navigational safety [chapters 11 to 14]; and
- highways, traffic and transportation [chapter 15].

12.2 TOURISM

THE ENVIRONMENTAL STATEMENT

12.2.1 This section provides an overview of the ES and the degree to which it was accepted in the Statement of Common Ground (SoCG). Further issues relating to the baseline environment are considered below under receptor sensitivity, perception surveys

and case studies. Detailed issues relating to impact assessment and mitigation are considered under those respective headings below.

12.2.2 Volume D Chapter 3 of the ES [APP-103] described the baseline environment for tourism in terms of visitor numbers and reasons for visiting the area, tourism businesses and case studies of tourism impacts at operational offshore wind farms elsewhere in the UK. This was based on a combination of desk based research of existing regional and district/county sources and Local Plans [APP-306], together with surveys commissioned by the applicant [APP-302, APP-305 and APP-307].

12.2.3 The ES [APP-103] defined a tourism study area of Dorset and Hampshire, of which a 10km wide strip along the coast was considered a coastal area that "*accounts for a higher proportion of businesses and employment*". An onshore area was defined as a 2km buffer either side of the cable corridor and a 3km buffer surrounding the onshore substation. During construction, impacts on the coastal and inland tourism economies were considered to be minor adverse and not significant. Operational and maintenance impacts were considered to be minor adverse and not significant for the coastal tourism area, and negligible and not significant for the inland coastal area.

12.2.4 With regard to mitigation, the applicant [APP-103] noted the limited local experience of the type of infrastructure and that although impacts were considered not significant it would respond to the concerns of local stakeholders and any potential impacts by providing resources to enhance the tourism sector during the construction phase. Options under discussion with LAs were quoted as the provision of a visitor centre, a fund to promote local tourism and a communications protocol to disseminate information to stakeholders.

12.2.5 In a SoCG between the applicant, Hampshire CC, Dorset CC, New Forest DC, Christchurch BC, East Dorset DC, Bournemouth BC, Purbeck DC, Borough of Poole and Isle of Wight Council [REP-3147] the LAs responded to the relevant sections of the ES:

- the legislation, policy and guidance documents identified were agreed to be accurate and comprehensive;
- the extent of the study area was agreed, with the exception of Bournemouth BC who considered that the assessment was at a regional scale and that a local assessment should have been undertaken for each LA area;
- the scope of the study was agreed, with the exception of Bournemouth BC who did not agree as they had not been able to shape the research undertaken;
- the tourism definitions were agreed, with the exception of Bournemouth BC and Borough of Poole who considered that the definitions of tourism business were too narrow;

- the impact assessment definitions were agreed to be appropriate;
- the methodology assumptions and limitations were agreed to be accurate and comprehensive, with the exception of Bournemouth BC who raised concerns over the duration of impacts;
- the baseline environment was agreed to be accurate and comprehensive, with the exception of Dorset CC who did not respond, Borough of Poole who considered that the assessment should have considered off peak times and Bournemouth BC; and
- the conclusions of the impact assessment were not agreed by Dorset CC, Bournemouth BC or the Borough of Poole, but were agreed by the other LAs.

12.2.6 A number of comments regarding impacts were made by the LAs in their LIRs:

- Dorset CC [REP-2678] and Purbeck BC [REP-2683] were concerned about the potential adverse impact of the proposed wind park upon the tourism sector;
- Hampshire CC [REP-2680] suggested that the impact on the visitor and tourism economy would be negative;
- based on the applicant's perception surveys, the Borough of Poole [REP-2675] considered that there would be a significant negative impact and Bournemouth BC [REP-2676] considered that there would be a significant negative impact on the likely income to tourism businesses which also had the potential to adversely affect a number of businesses supplying services to them; and
- Isle of Wight Council [REP-2674] were of the view that there could be beneficial tourism impacts for the island.

12.2.7 In an SoCG [REP-3115] with the applicant, Bournemouth Tourism Management Board stated that it did not agree with the methodology, impact assessment or mitigation. Poole Tourism Management Board [REP-3159] stated that its SoCG comments were deferred to the Borough of Poole's submission.

Size of the tourism industry

12.2.8 The ES [APP-103] stated that the annual spend of domestic visitors in Purbeck, Poole, Bournemouth, Christchurch and Isle of Wight was £637m and that employment in Purbeck, Poole, Bournemouth, Christchurch, New Forest and Isle of Wight was 26,700 jobs. The applicant's socio-economic and tourism baseline [APP-304] suggested a figure of 8,600 for New Forest and a total of 35,300 employed if this was included. In an ISH the applicant suggested that differences between its data and that quoted by others during the examination were due to the use of different data sources, years and definitions. The applicant was

happy with a figure of just over £1billion for the value of tourism to the area that was used in the baseline.

12.2.9 In the ES [APP-304] tourism-related employment as a proportional share of overall jobs in 2008 was quoted as 15.0% for Isle of Wight, 14.8% for Purbeck, 12.8% for New Forest, 12.0% for Bournemouth, 10.4% for Christchurch and 7.7% for Poole.

12.2.10 New Forest DC [REP-2681 and REP-3395] noted that the applicant's employment figures appeared to exclude the New Forest and advised their latest figure was that 10,635 were employed in the sector there. Other LAs also provided recent sector employment and visitor spend figures in their LIR and other representations [REP-2675, REP-2676, REP-2678, REP-2680, REP-2683 and REP-3484]. Bournemouth BC [REP-3484] quoted 2014 research that indicated just over £1 billion per annum and over 24,000 jobs in the areas around Poole Bay most affected by the development.

PERCEPTION SURVEYS

Visitor and business surveys

12.2.11 The results of the applicant's visitor surveys were summarised in the ES [APP-103, APP-302 and APP-305]:

- seaside, beaches and coast were the main motivation for visiting the area for over half of all visitors and a secondary reason for a quarter;
- summer visitors rated views out to sea and along the coast as the most important of a list of seaside related factors;
- sea views were the main motivation for visiting the area for 8% of summer visitors and a secondary reason for 48%;
- sea views were the main motivation for visiting the area for 48% of spring visitors;
- 20% of summer and 10% of spring visitors stated that they were likely or very likely to visit somewhere else during the construction phase [APP-103];
- 10% of summer visitors strongly agreed and 4% agreed that "*the wind farm is likely to put me off visiting the area, I'm likely to visit elsewhere*" [APP-302], and
- 5% of peak period spring visitors strongly agreed and 14% agreed that "*the wind farm is likely to put me off visiting the area, I'm likely to visit elsewhere*" [APP-305].

12.2.12 The results of the applicant's business surveys were also summarised in the ES [APP-103 and APP-307]:

- businesses reported that going to the seaside was the most popular activity for their visitors;

- 54% of businesses considered that there would be no impact on their business, 40% that there would be adverse impact and 6% that there would be beneficial impact;
- 78% of businesses considered that the duration of impacts would be long term for the life of the wind farm, 13% short term during the construction phase and 9% immediate, from the announcement of the project; and
- 59% of businesses in the coastal area on Purbeck considered that there would be either medium or high adverse impact on their business due to impacts on the visual quality of the area and on the Jurassic coast.

12.2.13 The applicant [APP-103, REP-3055 and REP-3643] commented on the perception survey results:

- 3% of summer visitors and 9% of spring visitors considered that the Project would enhance the area;
- the number of people likely to be put off visiting were well within the normal annual fluctuations in visitor numbers presented in Bournemouth BC's LIR;
- there was poor correlation between the visitor surveys and locations of significant visual impact; and
- the surveys suggested that there could be a very small impact on a few visitors to the area.

12.2.14 Comments received from Bournemouth BC [REP-2676, REP-3185, REP-3391, REP-3484, REP-3584; REP-3629 and REP-4068] and Challenge Navitus [REP-3369, REP-3599 and REP-4020] included that:

- both surveys revealed that a significant number of visitors would stay away during the construction of the wind farm;
- the EIA process did not disclose any difficulty with the robustness of the surveys, which it was required to do;
- the reality of what the applicant asserted in terms of bias did not apply with any particular force to the visitors being interviewed and the surveys were more robust than the applicant suggested, albeit some allowance might be needed for uncertainty;
- previous relevant studies showed that perception surveys could have validity for forecasting behaviour changes;
- over 60% of visitors specifically referenced sea and coastal features as the main reason for their visit, implying that the data gathered at the six coastal locations was relevant for a substantial part of the tourist economy; and that
- the perception surveys should carry weight as they were Project specific.

12.2.15 Alan Neale [REP-2837 and REP-4001] considered that:

- intention surveys where respondents may perceive that their answers could influence the outcome were notoriously

unreliable, because there was an incentive to give strategic rather than truthful answers;
- the sample was not a random sample of visitors, poor questionnaire design skewed the results and the research surveyed perceptions not behaviour; and that
- therefore as a predictor of behaviour, the research was far from robust.

Visualisation material

12.2.16 Details of how images of the scheme were to be used in the surveys were set out in the ES [APP-302, APP-305 and APP-307] and were summarised by the applicant [REP-3313]. For the two visitor surveys respondents were able to use the images [REP-3331 to REP-3341] in situ. For the business survey, respondents were asked to view the same images on the Navitus Bay Project website and in some instances those who wanted to participate in the survey requested hard copies, which were posted to respondents in advance of the survey taking place.

12.2.17 Hampshire CC [REP-2680] stated that the way the visitor surveys were carried out underestimated the true likely impact on visitors. Similar concerns were expressed by Dorset CC [REP-2678], Bournemouth BC [REP-2676], Borough of Poole [REP-2675] and Purbeck DC [REP-2683].

12.2.18 Bournemouth BC [REP-3584] further considered that there was no certainty that those being interviewed were looking at the wind farm at the right size of image and in the right way in line with the Scottish Natural Heritage (SNH) 2006 guidelines; there was no way of being certain that those businesses responding had ever looked at the images of the proposed wind farm; and that there was therefore a strong likelihood that the results of the business survey understated the likely economic impact of the development.

12.2.19 Challenge Navitus [REP-3599] suggested that the visualisations used in the surveys under-represented the perceived scale of the wind farm, that SNH2006 panoramas could not be displayed in a valid way on standard computer monitors (as relied upon for the business survey) and hard copies were necessary. PCBA [REP-3708] and Bournemouth Tourism Management Board [REP-4010] raised similar concerns.

CASE STUDIES

Other wind farms

12.2.20 Case studies of other offshore wind farms in the UK that were used by the applicant for the assessment were summarised in the ES [APP- 103 and APP-304] and a note [REP-3238] provided during the examination:

- 11 wind farms were considered, ranging from 60 to 300 MW installed capacity and from 2.3 to 19.4 km offshore;
- the analysis did not show a consistent pattern of adverse impacts on tourism trips;
- the analysis showed that most areas had experienced an increase in number of trips;
- where trips had fallen post construction it was often attributable to the health of the wider economy or the weather;
- external factors were likely to be the greatest influence on changes in trip volumes; and
- in all cases it did not seem likely that the wind farms had an adverse impact on the local or wider onshore areas.

12.2.21 Responding to suggestions from IPs that the analysis was flawed and the case studies were not comparable with the project the applicant [REP-3019, REP-3055, REP-3238 and REP-3643] stated that:

- in no case did the construction or operation of a wind farm significantly affect the total number of jobs in the tourist sector and changes in employment were usually part of a pattern of year on year volatility;
- as the case studies considered what had actually happened they were inherently more reliable as evidence of what impacts were likely in practice and therefore carried more weight than predictions arising from the perception surveys;
- although tourism was important to the local economy, it was fairly average in UK terms and there were many places, some of which had wind farms, where tourism was a bigger share of the economy;
- Bournemouth and surrounding areas were therefore not more sensitive in terms of the tourist economy; and that
- in respect of the comparability of some differences with other wind farms were acknowledged, however the scale and proximity to local communities of some of the examples were comparable and therefore weight could be placed on their being no evidence of any impact.

12.2.22 Dorset CC [REP-2678] and Bournemouth Tourism Management Board [REP-4010] raised concerns about the comparability of the case studies, noting the significance of beach and coastal activities, the World Heritage Site and the Area of Outstanding Natural Beauty (AONB).

12.2.23 Purbeck DC [REP-2683] suggested that it did not necessarily follow that an economic downturn resulted in reductions in visitors, as it had experienced visitor increases during the downturn due to 'staycationers'.

12.2.24 Comments received from Bournemouth BC [REP-2676, REP-3185, REP-3391, REP-3584, REP-4014 and REP-4068], Challenge

Navitus [REP-3196, REP-3373, REP-3378, REP-3369, REP-3614 and REP-4020] and the PCBA [REP-3472] included that:

- the conclusion that there were no adverse impacts at other wind farms was not proven by the available evidence;
- in only two locations had tourism returned to pre wind farm levels and in the case of Rhyl Flats it took 4 years - many business would fail in that time;
- the figures provided for Barrow indicated a general decline in tourism from 2004 and were significant evidence that wind farms could negatively impact tourism;
- a comparison of pre and post construction was always subject to uncertainty as there were many factors that could influence the outcome and comparisons with different sites were even more susceptible to drawing the wrong conclusions;
- the case studies were not comparable as they were not in areas that attracted visitors primarily for their outstanding seascape and avoided AONB areas and tourism centres;
- the scale of projects, location, population and major tourism activity in each case study were entirely different;
- the Project area combines wild and unspoilt coastlines, such as those of Purbeck to Weymouth and the west coast of the Isle of Wight, with the developed areas of Poole and Bournemouth - the context for the proposal was unique and had to be judged on its own merits;
- the strong adverse reaction of Bournemouth residents, visitors and the Council to the Project, something that had not happened at any other wind farm elsewhere, was evidence of the area's uniqueness;
- a Sheffield Hallam 2014 report placed Bournemouth in third position in the study of 121 UK resorts analysed for the size and importance of its visitor economy and second only to Blackpool in the UK coastal league table;
- a 2013 VisitEngland visitor survey indicated that the importance of coastal assets in Bournemouth were almost double the national average for seaside resorts;
- the indications were that the primary reason for the absence of harm was that the siting of wind farms had been carefully planned to avoid sensitive areas of high scenic and tourism value; and
- there was insufficient case study evidence to overturn the stronger survey evidence which showed harmful impact on local tourism as a result of the proposed wind farm.

12.2.25 Alan Neale [REP-3417] considered that in almost all cases any wind-farm related impacts were dwarfed by changes in the state of the national economy; experience in areas where such a change had already occurred was likely to be a more reliable guide to actual behaviour than a poorly-designed perception survey; and this suggested that there would be little, if any,

impact on visitor numbers, particularly once the construction phase was over.

Bournemouth University report

12.2.26 During the examination the applicant submitted a report [REP-3311] on research on the economic impact of wind farms on tourism in the UK that it commissioned from Bournemouth University and responded [REP-3490, REP-3643] to comments from IPs on this report. Drawing on examples from the UK and USA the study was unable to conclude with any confidence on the extent to which the construction of wind farms had any significant impact on tourism.

12.2.27 These findings were challenged by Bournemouth BC [REP-3391, REP-3484 and REP-4015] and other IPs [REP-3373, REP-3427, REP-3472 and REP-4010] in terms of the relevance of the examples chosen and interpretation of the data.

OTHER EVIDENCE

12.2.28 The applicant [REP-3055 and REP-3643] suggested that evidence from a report from the Scottish Government Economy, Energy and Tourism Committee 2012 and from the Kentish Flats, Burbo Bank, Rampion and Scroby Sands offshore wind farms suggested that there were unlikely to be significant adverse impacts on tourism.

12.2.29 Bournemouth BC [REP-3391, REP-3484, REP-3629 and REP-4014] considered that:

- Rampion and Scroby Sands were not comparable with the Project;
- in a 2013 seafront visitor research commissioned by Bournemouth BC between 21% and 33% of 584 people interviewed on the seafront in Bournemouth said they would not return during the construction phase;
- a Sheffield Hallam 2014 report showed that coastal locations with offshore wind farms were amongst the worst performing destinations in the UK;
- a 2013 review of tourism in Denmark indicated declines in tourism near several large offshore wind farms contrary to growth in tourism nationally;
- the 2012 Scottish Government report noted that while it was clear that there was an impact, that the impact was very small; and that
- a 2008 report for the Scottish Government concluded that overall there was no evidence to suggest a serious negative economic impact of wind farms on tourists but that developments in the most sensitive locations did not appear to have been given approval on the grounds of the scenic impact and perceived knock-on effects on tourism.

12.2.30 Challenge Navitus [REP-3373 and REP-3599] referred to a series of further studies that provided evidence of adverse impacts on tourism due to offshore wind farms.

12.2.31 Poole Agenda 21 [REP-2765 and REP-3387] provided a detailed critique on visitor surveys prepared for Bournemouth BC and suggested that they were not independent.

12.2.32 East Dorset Friends of the Earth [REP-3799] suggested that no attempt had been made to assess the loss of tourism income that would be caused by climate change, while Alan Rayner [REP-4066] considered that loss of tourism due to climate change would either occur or not occur in accord with wider global trends and that the Project would have no significant impact upon them

ROBUSTNESS OF TOURISM BUSINESSES

12.2.33 The business survey of perceived levels of impact summarised in section 3.5 of the ES [APP-103] used a system of categorising impacts whereby a perceived level of impact of 10% was considered to indicate a low magnitude of effect on the basis that turnover fluctuations of 10% could generally be absorbed within the flexibility that businesses allowed to respond to changes in trading conditions. A 10-15% level was considered to indicate a moderate impact capable of being recouped through marketing, cost saving and similar market responses. It was stated that business sustainability could start to become critical after turnover was reduced by 15% or more and such impacts were considered high.

12.2.34 During the examination [REP-3018, REP-3176, REP-3490 and REP-3643] and in an ISH the applicant stated that:

- current business performance was overwhelmingly strong and could reasonably be taken into account as a factor that would reduce sensitivity to change;
- tourism businesses operated on narrow margins;
- tourism businesses must be robust as they had to survive in a cyclical and volatile sector with significant annual fluctuations visitor numbers and spending, which were hugely influenced by the weather, especially around key holiday periods; and that
- it was considered that no evidence had been presented by any party which demonstrated that the tourism sector, or specific sub-sets of the sector, were vulnerable.

12.2.35 Comments received from Hampshire CC [REP-3071 and REP-3385], Bournemouth BC [REP-2676, REP-3077, REP-3390 and REP-4068], Bournemouth Tourism Management Board [REP-2949, REP-3404 and REP-3405], Swanage and Purbeck Hospitality Association [REP-3769] and Challenge Navitus [REP-3378 and REP-4020] included that:

- the applicant's argument that tourism businesses could not be vulnerable because there were general fluctuations in tourism demand was not a logical one;
- business in the hospitality and catering sector were around three times more likely to fail (15.5% per annum) than businesses as a whole (5.25% per annum), according to a study by chartered accountancy group UHY Hacker Young;
- an estimated 80% of tourism businesses were small and medium sized enterprises (SMEs);
- a 2013 University of Exeter report highlighted that Dorset was more dependent on smaller firms than the national average, that there was a high proportion of firms in accommodation and food services and that small firms were more vulnerable to cash flow crises;
- tourism businesses were particularly fragile as a result of their size, small margins and low financial reserves;
- accommodation and retail businesses had high fixed and capital costs that made them vulnerable to small reductions in capacity and turnover;
- a significant loss of income would adversely affect a business in less than five years especially since the recession had resulted in very slim margins of profitability; and that
- the applicant appeared to require a business to fail before it becomes relevant to the measurement of significance of impact, which was a completely inappropriate way to measure the effect of change in business prospects as a result of the Project.

IMPACT ASSESSMENT

12.2.36 The assessment methodology described in section 3.3 of the ES [APP-103] considered that tourism receptors were more sensitive if a higher proportion of the customer base was drawn from outside the regional area and a higher proportion of tourism related employment was at the relevant local authority level compared with the GB average. Similarly the magnitude of effect was considered to be greater with a longer duration of effect and a higher proportion of business survey respondents who perceived the level of impact on turnover or customer base to be high or medium. No justification was provided for the threshold levels used.

12.2.37 However, a number of adjustments to the methodology described in section 3.3 of the ES [APP-103] were made and other criteria were introduced when it came to the impact assessments in section 3.5.

For receptor sensitivity these included considerations of:

- tolerance to potential adverse impacts indicated by levels of current performance; and

- the dependence on the coast at a local level.

For the magnitude of effect these include considerations of:

- the visual, noise, pollution and other related disturbances and impacts identified elsewhere in the ES;
- the findings of the visitor surveys and of focus groups;
- the extent to which specific concerns had been raised; and
- low scales of impact at other wind farms.

12.2.38 The ES [APP-103] assessed the impacts:

- in the inland / onshore area during construction to be minor adverse and not significant, once sensitivity was adjusted as current business performance levels were considered to indicate tolerance to potential adverse impacts;
- in the inland / onshore area during operation and maintenance to be negligible and not significant.
- in the coastal / offshore area during construction to be minor adverse and not significant; and
- in the coastal / offshore area during operation and maintenance to be minor adverse and not significant, once the magnitude of effect was reduced to low based on the low scale of impact at other wind farms. The applicant noted that a medium adverse impact would have followed from the business survey, which the Panel notes would have been considered significant.

12.2.39 During the examination the applicant [REP-3055, REP-3490 and REP-3643] further stated that:

- data on the effect of wind farms on tourism was hard to define and defining causality was hampered by the quality of data, the myriad variables and lack of significant quantitative research;
- the applicant had sought, through agreed methodology and in line with the approach originally outlined in the scoping report, to undertake a transparent and thorough investigation into the propensity for the Project to cause adverse effects on tourism;
- there was no robust, empirical evidence of the sort clearly envisaged by the Government in EN-1 that demonstrated a significant adverse effect on tourism;
- whilst the Project may have had adverse effects on factors which could affect tourism (e.g. views or noise), there was no evidence to support the claim that adverse effects on these factors were then likely to result in significant adverse effects on tourism;
- a sea view may be important to a tourist and it may be affected by the Project, however, it will continue to exist, albeit changed, and there was no evidence to demonstrate

that in practice this was likely to have an impact on a tourist's actual willingness to visit;
- Bournemouth BC's position was that the effect on tourism from the Project was entirely as a result of the perceived effect on visual quality of the landscape and seascape, for which it was critical to take into account that change did not necessitate harm; and that
- no quantifiable significant impacts were identified in terms of obstruction of access to tourism related businesses, disturbance to the tourism related customer base, or lower activity in the tourism economy from reduced use of tourism-related businesses or tourist attractions in the onshore or offshore tourism study areas.

12.2.40 Hampshire CC [REP-3385] considered that direct impacts on tourism in the coastal areas of New Forest were unlikely to be as significant as any in tourism destinations closer to the development, such as Bournemouth and Poole.

12.2.41 Dorset CC [REP-3084] suggested that there were hundreds of SMEs along the coast and within the hinterland that valued the proximity of and, in many cases, association with the World Heritage Site as could be seen from their marketing and promotional material and they clearly valued the designation in respect of attracting visitors. Impacts on the World Heritage Site are considered in Chapter 9.

12.2.42 Isle of Wight Council's view [REP-2674 and REP-3066] was that the development would have a low level impact on the tourism economy for the island.

12.2.43 New Forest DC [REP-2681 and REP-3079] noted the comments from Parish and Town Councils about visitor impact on the area but considered that such was the distance from the shoreline that the overall impact in those areas was deemed to be negligible. Whilst the Council believed that the overall impacts upon the visitor economy would be small, they did feel that overall an impact would be felt, particularly in terms of the onshore developments causing a loss of business owing to both perception and disruption .

12.2.44 Bournemouth BC [REP-2676, REP-3484, REP-3584; REP-3629 and REP-3995] considered that:

- the assessment used in the ES for the magnitude of tourism impact became a descriptor based process made solely on the percentage of business respondents who believed that they would suffer serious loss of business;
- the pseudo-scientific approach was not only confusing but also placed a high dependency on the accuracy of the original data and on the fairness of the threshold levels;

- by concentrating on perceived impact, real impact was significantly understated because the scale of turnover adversely affected was not factored into the assessment;
- consideration of 25% of businesses expecting high or medium impact on business together with 15% employed in tourism compared to a 8% average should have led to the impact being assessed as moderate and significant;
- the perception surveys were the only new evidence or primary research that had been commissioned by the applicant specifically for this application and related to the application and to the particular contextual setting of the site in relation the resorts around Poole Bay;
- all other research was secondary, not specific to the context of this site and must be accorded lower weight;
- the primary research from the surveys indicated that 32% for peak and 20% for off-peak would not visit during the construction phase and that there would be a continuing 14% reduction in visits post construction; and that
- there would be a significant negative impact on the likely income from tourism, which had the potential to adversely affect a number of businesses supplying services to them.

12.2.45 Swanage and Purbeck Hospitality Association [REP-3769] considered that although the applicant's visitor surveys were not broken down by area, the indication suggested that a reduction in visitor numbers was likely and that, as the dominant reasons for these visitors was seaside, beaches, coast and the sea views, it was reasonable to suppose the impacts would be even greater in Purbeck.

12.2.46 Challenge Navitus [REP-2944 and REP-3614] considered that it would take only a small fraction of those visitors expressing doubts actually to stay away to have a significant impact on near-term revenues from tourism, and so, given the narrow margins on which tourist businesses typically operate, on their survival prospects; and that there was sufficient evidence to conclude a high risk of negative impact on the region's economy and because of the size of that economy and the economic value of the natural asset it benefits from that negative impact would far outweigh the economic benefits of the proposal.

12.2.47 PCBA [REP-3708 and REP-3995] noted that the applicant claimed that its own visitor survey should be disregarded as unreliable and instead recommended that reports on other resorts which were not remotely comparable with this location and its "*life blood of tourism*"; and that the applicant's claim that there was no evidence of any impact on tourism was incorrect in view of the evidence in the visitor and business surveys.

12.2.48 Alan Neale [REP-2837] suggested that local worries about effects on tourism had been greatly exaggerated and that the responses of the focus groups and evidence from other offshore sites in the

ES were more reliable guides to behaviour and suggested that tourism would not be significantly affected, especially post construction.

Local and micro scale impacts

12.2.49 Following a question from the Panel, the applicant [REP-3018] replied that:

- the assessment had been taken on a local and regional scale as required by EN-1;
- it was relevant to assess the socio-economic impacts on the local and regional economy and labour market as receptors of a nationally-significant infrastructure project, rather than individual businesses and locations;
- the approach taken is in line with the scope outlined in the scoping report and the scoping opinion, neither of which prescribed any requirements for the spatial study of socio-economic impacts; and that
- it had not been considered viable, appropriate or reliable to present evidence of micro-level effects.

12.2.50 The applicant [REP-3176, REP-3313 and REP-3490] further stated that:

- the assessment of impacts was proportionate and reasonable in its consideration of the scale of effects;
- the ability to collect accurate baseline data at very small spatial scales was very limited;
- the visitor surveys were carried out at 6 locations and it would therefore be inappropriate to quantify impact at a local authority scale; and that
- some statistically valid partial disaggregation of the business survey was possible at local authority level, which indicated high adverse perceived impacts of 44% for Purbeck, 19% for Bournemouth, 17% for Poole, 11% for New Forest, 9% for Christchurch and 8% for Isle of Wight.

12.2.51 Dorset County Council [REP-3084] considered that the applicant had considered a far larger area than would usually be considered as 'local' and it was essential to have a better understanding of potential impact for Dorset alone.

12.2.52 Dorset CC [REP-2678] and Purbeck DC [REP-2683] suggested that Purbeck businesses' expectation of an adverse impact of 77% of should not be disregarded lightly as businesses best knew their clients and their likely reaction and in Purbeck the internationally significant coast and landscapes were hugely significant factors to the tourist industry.

12.2.53 Purbeck DC [REP-2683 and REP-3379] further suggested that the analysis of impact and benefit should have drilled down to truly local levels in order to demonstrate a better understanding of the

interrelationships of this area and that for Swanage the broad approach to assessment of impacts masked that the magnitude of impact there would be particularly high given the high visibility of the wind farm and the large concentration of Purbeck's tourism businesses in that location.

12.2.54 Bournemouth BC [REP-2676, REP-3390 and REP-3584] stated that:

- a definition of local was suggested in EN-1 paragraph 5.12.4, whereby "*applicants should describe the existing socio-economic conditions in the areas surrounding the proposed development and should also refer to how the development's socioeconomic impacts correlate with local planning policies*";
- the use of such a wide area of definition had the potential to mask potentially significant issues at the district or conurbation level;
- to be in line with the provisions of EN-1 the ES should have looked in more detail at the potential for impact on local employment levels than they had done; and that
- the applicant had failed to supply the information necessary to enable the Panel to assess the potential impact of the proposal at the 'local level' required by EN-1.

12.2.55 Challenge Navitus [REP-3378] considered that in the case of an offshore project set in a bay poorly connected on its landward side, one affected area may not be local to another and thus a separate analysis was required for each local economy. For example, Purbeck was 40 minutes average drive time from Poole and substantially longer in the tourist season, and was poorly placed to gain but stood to lose considerably. However Poole could gain a fair amount and lose less. Therefore, the two areas, both local to the wind farm, should not have been considered as a single entity.

Quantifying employment and GVA impacts

12.2.56 The ES [APP-103] paragraph 3.3.27 stated that "*tourism behaviour would be impacted if the Project results in a change to the pattern of visitors/users in terms of numbers and/or expenditure … in considering such factors, opportunities for related expenditure, any potential for variation and its consequent effect on turnover or employment would be of importance*". Paragraph 3.5.4 continued that the assessment focussed on "*effects on tourism business; business turnover change; and related employment effects caused by changes in the number or profile of visitors due to the Project*."

12.2.57 During the examination the applicant [REP-3019; REP-3055, REP-3313, REP-3490 and REP-3643] stated that:

- the ES had approached the collecting of evidence on tourism in line with EN-1, drawing on a review of literature on this matter, a review of experiences elsewhere and a perceptions survey conducted around the site of the Project;
- no request regarding the use of a survey to quantify impacts was made in response to the scoping report;
- perception surveys were subject to a number of biases such as overclaim, loss aversion and issue prominence and were therefore a less robust source of evidence;
- the visitor surveys could not be used to quantify impacts as the surveys were identified only as one part of a suite of wider assessment methodologies and it was not appropriate or possible to use this kind of survey, at six locations in a large tourist market, to quantify impacts in a mechanistic way;
- the key barrier to using the surveys to quantify impacts on tourism was that they were only undertaken at six points that were skewed to those locations with the greatest visual impact and were not representative of the general tourist experience and the impact on that;
- it was unlikely to be true that the coast was the main reason that tourists visited the area; and that
- although the Ipsos MORI research identified factors that could be applied to discount the magnitude of the effect in reality, it was not possible to apply that approach for the Project given the form of the interviews.

12.2.58 Hampshire CC [REP-3385] considered that the level of impact was difficult to measure, but suggested that a 1% decline in tourism to the New Forest would equate to a loss of £4.6m spend per annum in the New Forest economy and that this could equate to £23m over a 5 year construction period.

12.2.59 Bournemouth BC [REP-3185, REP-3391 and REP-3584] considered that the business and visitor surveys had robust predictive validity and should have been used to identify the resulting tourism employment and value impacts, as was normal for a tourism development project and for which there were many examples.

12.2.60 In a paper setting out tourism mitigation proposals [REP-3484] Bournemouth BC considered that based on the lowest figure of 20% loss in tourist numbers from the 2013 off-peak visitor survey and tourism value figures from SWRC 2014, the tourism loss in Christchurch, Bournemouth, Poole and Purbeck would be £211m per annum, £6.3 billion loss to the visitor economy over the life of the project and 4,924 jobs lost. Purbeck DC [REP-3636], Borough of Poole [REP-4073], Christchurch BC and East Dorset DC [REP-3641] confirmed that they were party to the paper.

12.2.61 Borough of Poole [REP-2675] noted that impacts on visitor numbers, the related issue of leisure spending, employment and indirect job losses through the supply chain were missing.

12.2.62 Challenge Navitus [REP-3196 and REP-3378] considered that based on figures of £1,773 million and 35,300 employment derived from the applicant's baseline assessment; a marginal expenditure per job of £54,000 and an elasticity of spending to employment of 0.89 from the Deloitte / Oxford Analytics report for VisitEngland; and assuming that a "*small fraction*" described by the developer was 10%; would together imply a reduction in annual spending of £177 million and a loss of approximately 3,200 to 3,300 jobs within the sector.

12.2.63 Regarding knock-on or multiplier effects:

- New Forest DC [REP-3395] noted that a large proportion of the New Forest economy was inextricably linked with the tourism industry and included £160m a year spent food and drink plus £85m on the retail sector. It suggested that even a small impact upon "*directly associated"* tourism businesses could have a significant impact on the wider economy and that this multiplier effect would need to be considered when equating tourism impacts with the potential impact of supply chains and distribution;
- Bournemouth BC [REP-3404] provided details of a 2013 retail study which stated that 20% of total non-grocery retail spend in the town centre was derived from tourist visits; and
- Challenge Navitus [REP-3378] referred to Deloitte and Oxford Analytics data that calculated multiplier effects for tourism in the UK outside London of 2.2 to 2.7 for GVA.

Alan Neale [REP-3417 and REP-4001] suggested that those who had used the surveys as evidence of serious tourism impacts had ignored their methodological limitations and provided a detailed critique of the figures produced by Bournemouth BC in their LIR.

Language schools

12.2.64 The applicant [APP-307, REP-3019, REP-3313, REP-3490 and REP-3643] stated that no evidence had been identified which demonstrated that visual environment was a key factor in students choosing to attend language schools or that the Project would have an impact on language schools, and the approach suggested by Bournemouth Tourism Management Board extrapolated the visitor survey incorrectly.

12.2.65 Bournemouth Tourism Management Board [REP-3405] stated using results from the visitor survey a 20% fall in Language School revenue of £42,632,432 which using the Cambridge Economic Impact Model would equate to just over 1000 fte jobs lost in that sector alone.

12.2.66 Guido Schillig of Anglo Continental Language School [REP-3467] stated that the seaside location and the beach were cited by students as reasons for choosing to study in Bournemouth, while Bournemouth BC [REP-3185 and REP-3629] and Challenge Navitus [REP-3196 and REP-3598] suggested that more detailed research should have been carried out by the applicant.

MITIGATION

The need for mitigation

12.2.67 During the examination [REP-3055 and REP-3490] the applicant repeated the position in the ES [APP-103] that there was no robust empirical evidence of significant socio-economic impacts at local or regional levels. During the examination the applicant extended the enhancement measures that aimed to avoid adverse impacts beyond the construction stage, which were later included in a Unilateral Undertaking to provide a Tourism Fund.

12.2.68 Hampshire CC [REP-2680, REP-3385] and New Forest DC [REP-2681] referred to impacts of "*inevitable adverse publicity*" arising from the onshore works and considered that the developer should provide a reasonable sum to affected authorities for a marketing and promotional campaign to counter this.

12.2.69 Borough of Poole [REP-2675] noted that no mitigation was initially proposed during operation and maintenance or decommissioning, but considered that this was required to offset a likely loss of visitors indicated by the business and visitor surveys.

12.2.70 Bournemouth BC [REP-3077, REP-3185 and REP-4013] and Bournemouth Tourism Management Board [REP-4010] considered that it would not be reasonable to consider approval of the Project without mitigation of the £6.3 billion losses arising from the surveys.

Project employment and supply chain

12.2.71 The beneficial employment and supply chain benefits of the Project are considered below. This section considers the extent to which those benefits can be considered to mitigate any adverse impacts on tourism.

12.2.72 The applicant [REP-3055] considered that there was strong evidence to support the extent of the local economic benefits and that there would be a package of measure to enhance the local benefits and help address any potential adverse perceptions of tourism in the local area.

12.2.73 Bournemouth BC [REP-3077, REP-3185 and REP-4013] stated that new jobs created by the Project were likely to be mainly in specialised fields of design, construction and marine activity.

Furthermore, due to skills and timing issues, it was difficult to envisage situations in which those potentially losing their jobs in tourism would be able to take up the new opportunities.

12.2.74 A number of comments were received from the other LAs:

- Dorset CC [REP-2678] noted the potential for job creation and economic growth from the Project but considered that from the evidence presented it was impossible to say with any certainty that these would outweigh the potential negative impacts on the tourism sector;
- Hampshire CC [REP-3638] considered that it was unacceptable for one sector of the economy to be harmed at the expense of another and that it was not a straightforward argument to claim that the loss of tourism jobs could be easily replaced at the same time and in the same location in another industry;
- Purbeck DC [REP-2683 and REP-3636] considered that given the peripheral location of Purbeck District and the significant uncertainty that remained, the supply chain and skills fund could have limited benefit to the Council's economy and there was no assurance that the Project would result in jobs for the District;
- New Forest DC [REP-3711] was of the view that whilst any socio economic benefits could mitigate against the impacts on tourism that the tourism impacts were specific and need to be addressed as such; and
- Isle of Wight Council [REP-3066] suggested that the benefits can be targeted to mitigate adverse impacts if a sufficient amount of the economic activity was generated within the local area, noting that operation and maintenance activities would be local as would, most likely, the construction benefits.

12.2.75 At an ISH it was suggested that each of the 3 possible port locations mentioned for the Project either had a very limited view or no view of the wind farm and therefore did not mitigate tourism impacts.

Visitor centre

12.2.76 The provision of a visitor or interpretation centre was mentioned in the ES [APP-103] and was mentioned during the examination by the applicant [REP-3019], in LIRs [REP-2674 and REP-2680] and other IPs [REP-3197]. However, at an ISH it was stated that, following discussions between the applicant and the Councils, it had been agreed that a visitor centre was not the best way forward.

Unilateral Undertaking

12.2.77 Following a number of discussions with LAs during the examination, initially on a s106 agreement, the applicant [REP-4084] provided a signed copy of a Unilateral Undertaking to the LAs that provided for:

- a Tourism Fund of £15m and a tourism administration fund of £121,967, to be paid to Dorset CC in 10 equal annual instalments, only for the purposes of enhancing the tourism draw to the area, delivering a marketing campaign or other measures to support tourism in accordance with the tourism strategy and for the tenth a final instalment to supplement the tourism administration fund if reasonably required;
- a tourism strategy to include proposals for activities to support local tourism and apportionment of the Tourism Fund by LA area, to be prepared by an independent consultant and approved by the LAs; and
- a tourism liaison group chaired by Dorset CC and comprising one representative of the developer, one representative of each of the LAs and one representative from the Jurassic Coast Steering Group, to recommend to Dorset CC how it should allocate the Tourism Fund for the purposes of the tourism strategy.

12.2.78 The applicant [REP-3038 and REP-3643] stated that:

- it had undertaken extensive investigation through the EIA process and during the examination in order to identify any quantifiable effects of the Project on tourism and that whilst no direct, quantifiable or discernible evidence of significant impacts has been identified, the applicant acknowledged that there was some uncertainty and that there may be non-significant, localised effects and there may be effects on tourism as a direct result of the negative perceptions of the Project in the media and through assertions made by IPs;
- there was also an opportunity to enhance local tourism through interest in the scheme itself, and the wider interest in renewable energy and climate change and its effect on the local environment;
- the development would be acceptable in planning terms if the fund was not provided;
- the LAs had stated that they would prefer a single fund against which bids would be made and fund would be allocated to specific measures/initiatives;
- whilst the criteria were still to be agreed through a tourism liaison group and related strategy, these were likely to include value for money, the number of tourists attracted, relationship with the Project and the sensitivity of location;
- the aim of the fund had been to take a precautionary approach and to provide an opportunity for local stakeholders to plan positively for the Project and the

tourism economy and by nature it was inherently flexible and could therefore be used to meet priorities identified and agreed by the LAs; and that
- in evidence to a House of Commons Select Committee, VisitBritain declared a return on investment of 30:1, on which basis the £15m fund could therefore support up to £450m of spending by tourists.

12.2.79 Dorset CC identified example tourism enhancement projects across the LA areas that included marketing and business support programmes and a number of capital projects.

12.2.80 The LAs [REP-3385, REP-3389, REP-3393, REP-3396, REP-3484, REP-3629, REP-3636, REP-3637, REP-3638, REP-3641; REP-3711, REP-3713, REP-3717, REP-4013, REP-4073, REP-4078 and REP-4080] provided examples of projects and measures that could be supported by the fund and stated that:

- given that the applicant and the LAs all accepted that there would be an impact on tourism, though differed over whether the impact would be significant, it was appropriate to include a fund to mitigate the impacts on tourism;
- no evidence had been provided by the applicant to explain how the sum had been calculated;
- it was not possible to provide any more detailed comment or breakdown on precisely how the Tourism Fund might be spent, or on the extent to which individual items of expenditure directly mitigated the impacts on tourism; and that
- the Unilateral Undertaking set out that the apportionment needed only be greater than zero, which did not provide comfort that a LA would receive the necessary funds relative to the impact.

12.2.81 Comments from Challenge Navitus [REP-3614], the PCBA [REP-3995] and Jonathan Fryett [REP-3770] included that:

- the damage to the local economy was far in excess of the £15 million "*enhancement*" fund;
- the fund, when spread over a 30 year period, would be roughly equivalent to 0.001% of the reported spending of £637 million per year by just UK tourists in the area; and that
- there was no guarantee that the money would actually go to those who were worst affected.

Planning obligation tests

12.2.82 Dorset CC [REP-3389] considered that the obligation would satisfy the EN-1 paragraph 4.1.8 tests.

Monitoring

12.2.83 The Panel asked whether monitoring could help to address uncertainties about the type, scale and location of impacts and the need and effectiveness of any mitigation.

12.2.84 The applicant [REP-3019 and REP-3643] stated that it was not possible for monitoring to determine the effect of the Project on tourism in isolation from other background effects which cause the number of visitors and therefore economic activity of businesses to fluctuate. What is more, there was simply too much annual variation in visitor numbers and spending to provide a steady-state baseline.

12.2.85 The LAs [REP-3629, REP-3636, REP-3638, REP-3641, REP-3711 and REP-3713] generally agreed that it was not possible to calculate visitor impact with any degree of accuracy once work has commenced due to the number of external variables involved.

Complaints procedure

12.2.86 Replying to a query from New Forest DC [REP-2681] about the communication protocol mitigation mentioned in paragraph 3.6.8 of the ES [APP-103], the applicant [REP-3218] stated that the DCO made provision for the development and implementation of a communications protocol for the construction phase.

PANEL'S REASONING AND CONCLUSIONS

The environmental statement

12.2.87 The Panel has considered the applicant's tourism assessments and, particularly given the comments made by the LAs, sees no reason to doubt that much of the legislative and policy background, extent of study area, scope of study, tourism definitions, methodology assumptions and limitations and baseline environment set out in the ES are robust. However, there are a number of areas of concern, particularly regarding the impact assessment and mitigation that are addressed below.

12.2.88 Regarding the differences between figures for the size of the tourism industry in local authority areas, the Panel notes that some of the figures provided by LAs are post-assessment. The Panel is satisfied with the applicant's explanation that the variations are due to differences in the definitions and the years used and that the applicant's figures are adequate for the purposes of the assessment.

Perception surveys

12.2.89 The Panel notes that the applicant and other IPs did not provide specific examples to substantiate their suggestions of poor

questionnaire design or biases to the surveys due to such issues as loss aversion, overclaim and issue prominence. The Panel also has no reason to doubt that the visitor surveys were carried out by professional organisations competent in this type of work, who could therefore be reasonably expected to be aware of these issues, but did not refer to any such limitations in their reports when addressing reliability. On this basis the Panel considers that the suggestion of poor questionnaire design and the claimed extent of bias are not substantiated for the visitor surveys.

12.2.90 The ES clearly stated that seaside beaches and coast are the main motivation for visiting the area, that summer visitors considered views out to sea and along the coast as the most important seaside related factor, that sea views were the main or secondary motivation for visiting the area for 56% of summer visitors and were the main motivation for 48% of spring visitors. This was supported by further evidence provided by Swanage and Purbeck Hospitality Association. On this basis the Panel considers it likely that the coast is the main reason that tourists visit the area and that sea views are a key component of that.

12.2.91 The Panel notes the poor correlation between the results of the visual survey and the locations where the impacts on specific viewpoints were given major significance and also that there is poor correlation between the results of visitor surveys and the distance of the survey points from the wind farm. However, as the applicant has suggested that the lower number of results at individual points makes them less reliable and the visual impact assessment was not just based on tourist receptors, the Panel therefore finds that the poor correlation is not strong evidence that the overall survey results are not robust.

12.2.92 The applicant contends that the six survey points used for the visitor surveys are not representative of the tourist experience and that the surveys cannot therefore be used to quantify a general effect on tourism. However, with the importance of the coastal areas and sea views to visitors noted above and the spread of the survey points around the coast, the Panel considers that the survey point locations are, in all probability, representative in terms of the most important factors to visitors when deciding to come to the area and that the six survey points are therefore relevant to the considerations of impacts on tourism.

12.2.93 Based on the evidence provided, the Panel considers that the balance of probability is that a proportion of survey respondents that state an intention not to visit would translate this into action. While there was insufficient evidence to quantify this, the Panel's view of the robustness of the surveys and the evidence relating to the results of other perception surveys to actual changes in behaviour leads it to conclude that the proportion is likely to be significant. The Panel considers that insufficient evidence has

been provided to establish whether a significant number of additional visitors would be attracted by the Project.

12.2.94 The Panel suggests that it is likely that the applicant's statement that the percentages of visitors likely to visit elsewhere during the construction period was within annual fluctuations in visitor numbers was directed more at the issue of the fragility of businesses and their ability to accommodate changes. This has no significant relevance to the robustness of the surveys for identifying effects on tourism in the manner suggested by Bournemouth BC.

12.2.95 Consistent with its findings for the visual impact assessment; the Panel concludes that there is insufficient evidence to suggest that the hard copies of visual material prepared by the applicant and used for the perception surveys is misleading or intentionally under-representative. However, the Panel is concerned that the uses of the material for the business surveys on a computer screen were not in accordance with guidance and therefore are not considered representative. The losses of field of view, inability to compare with the 'real life' view suggest that the impact could be under-represented. The Panel therefore considers that the results of the business surveys may not be entirely reliable.

12.2.96 The Panel considers that insufficient evidence was provided to justify a weighting for different businesses or to justify that the business survey sample size was too small for it not to be considered robust.

12.2.97 On balance, however, the Panel concludes that the perception surveys together constitute evidence for the assessment of tourism impact that can be given some weight.

Case studies

12.2.98 The evidence provided leads the Panel to conclude that there are significant differences in the size and number of turbines, distances offshore, relationship to the coastline, types of tourism attractors and number of visitors between the Project and the case studies of other UK offshore wind farms provided by the applicant. The combination of large scale of wind farm, proximity to a long stretch of coastline, high number of tourists and reliance on coastal attractors and sea views renders the Application Project different from the other individual case studies; parallels cannot easily be drawn with the studies undertaken elsewhere. The Project is therefore likely to have a different impact on visitor numbers and employment than for the majority, if not all, of the case studies.

12.2.99 The Panel is mindful of comments made by a number of parties on the difficulty of linking cause and effect for tourism in

circumstances such as this where a large number of different factors can affect the outcome, where the factors and the inter-relationships between them are not well understood and where there is no steady state or repetition. This leads the Panel to question whether the case studies are inherently reliable evidence to the degree suggested by the applicant.

12.2.100 The Panel considers that any conclusions drawn on the results of an individual case study are unlikely to be representative due to local factors and has therefore not relied on them. However, the figures provided by the applicant for the case studies as a whole do not indicate a consistent pattern in changes to tourism employment related to the construction and operation phases of the wind farms and, although it has concerns about the small sample size, the Panel considers this to be evidence that any impacts of the wind farms on tourism in the case study areas were unlikely to be major.

12.2.101 The Panel has similar concerns regarding the case studies included in the Bournemouth University report as it does for those referred to in the ES that are addressed above, particularly given that the majority are onshore and far smaller than the Project and that the report recognised the sample size and cause and effect issues.

12.2.102 The references to information on other studies in the Bournemouth University report leads to Panel to conclude it likely that there is a relationship between tourism impact and the distance between the wind farm and receptors, but that it did not provide sufficient evidence to conclude what separation distance is required for the impact to be not significant.

12.2.103 Based on the evidence provided, the Panel agrees with the applicant that the case studies do not suffer from the same shortcomings as the perception studies, however it does consider that they have other shortcomings that are equally significant. On balance, the Panel concludes that the case studies should not be given greater weight than the perception surveys in the manner suggested by the applicant

Other evidence

12.2.104 The Panel addresses the other evidence of impacts provided by various parties alongside the case studies and perception surveys considered above. Having considered this evidence carefully the Panel finds that it either reinforces its earlier conclusions or do not provide sufficient evidence for it to change its view.

Robustness of tourism businesses

12.2.105 The robustness of tourism businesses, a key aspect of which is their ability to remain operational following reductions in

turnover, is an important aspect of the applicant's assessment and the Panel considers this to be appropriate.

12.2.106 The applicant's assertion that business performance is strong is supported by evidence of improvement in recent years and the Panel has no reason to disagree that this reduces sensitivity to change in terms of the businesses survival. However, the Panel also notes that as turnover had only recently returned to 2008 pre-economic downturn levels, the buffer that current performance provides can reasonably be considered to be insufficient if turnover was to fall for a sustained period.

12.2.107 The Panel finds that the applicant has not sufficiently substantiated the view that tourism businesses in a cyclical and volatile sector must be robust. The Panel considers that whilst this can reasonably be considered to be more likely for more mature and larger businesses, that it is less likely to be true for the sector as a whole given the evidence of a large proportion of SMEs in the sector, tight margins and levels of businesses failure.

12.2.108 The Panel is also concerned about whether fragility should be considered in terms of business failure, as the applicant contends, or in terms of loss of jobs, as some IPs contend. On this matter the Panel concludes that as the key measure is the impact on tourism, both factors are relevant and neither should be used in isolation. On this basis, and given that the applicant accepts that tourism businesses operate on small margins, it is clear to the Panel that jobs in tourism business are sensitive to reductions in turnover.

12.2.109 The Panel therefore concludes that the applicant has underestimated the likelihood of business failure and has not sufficiently considered loss of jobs that would be caused by a reduction in turnover. On this basis, the Panel therefore considers that the applicant is likely to have understated business fragility and overstated the effects of business robustness in the impact assessment.

Impact assessment

12.2.110 The combination of threshold levels of sensitivity and magnitude of effect criteria that are largely unsubstantiated and the somewhat flexible approach in applying these in the impact assessment give the Panel cause for concern about the robustness of the applicant's methodology. However, the Panel does recognise the difficulty of assessing the large range of relevant factors, accepts that any single approach has its limitations and therefore welcomes the applicant's multi-faceted approach and application of professional judgement.

12.2.111 In considering the applicant's impact assessments the Panel considers that the perception surveys constitute robust evidence.

Based on its consideration of the perception surveys addressed above, and considering these together with the case studies, the Panel disagrees with the applicant's statement that there is no evidence of the sort envisaged by EN-1 that demonstrates a significant effect on tourism.

12.2.112 For the inland/onshore area during construction, based on the evidence provided in the ES the Panel considers it reasonable to conclude that the main effects would be disturbances due to temporary closures to highways and rights of way, visual impact and construction noise and dust. The Panel considers that these effects have been addressed adequately by the applicant for the purposes of the tourism impact assessment. Based on the evidence addressed above, the Panel's view is that an adjustment for business performance is not justified, that it appears reasonable to consider that the criteria established in the methodology suggest a high or medium sensitivity and that based on this the impact remains as minor adverse.

12.2.113 For the inland/onshore area during operation, based on the evidence provided in the ES the Panel considers it reasonable to conclude that the main effect is visual impact, which the Panel considers has been addressed adequately by the applicant for the purposes of the tourism impact assessment. The Panel has no reason to differ with the applicant's assessment that the impact will be negligible.

12.2.114 For the coastal / offshore area during construction, based on the evidence provided in the ES, the Panel considers it reasonable to conclude that the main effects are likely to be visual impact and noise. As indicated elsewhere in the report, the Panel anticipates that these effects are generally likely to be more adverse than assessed by the applicant at some locations and in certain climactic conditions. However, the Panel also notes that the visual impact would initially be negligible and would only reach the levels assessed during operation when the majority of turbines have been constructed and that the duration of this impact during construction is therefore limited. Furthermore, the Panel is not able to reconcile the applicant's assertion that businesses anticipated little or no impact during construction with the findings of the business survey that 22% of businesses considered that the duration of the impacts would be immediate or short term during the construction phase. However, on this basis and considering all factors, although the Panel considers that the impact would be greater than assessed by the applicant it agrees that the impact is still likely to be minor adverse and not significant.

12.2.115 For the coastal / offshore area during operation, based on the evidence provided in the ES the Panel considers it reasonable to conclude that the main effect is visual impact. As indicated elsewhere in the report, the Panel anticipates that this effect is

likely to be more adverse than assessed by the applicant at some locations. Furthermore, based on the evidence addressed above, the Panel considers that applicant's adjustment to the magnitude of effect should also consider the evidence of the perception surveys as well as the scale of impact at other wind farms. On this basis the Panel generally agrees with the applicant's assessment that the impact would be minor adverse for the coastal / offshore area as a whole, but considers that this may not be the case for all locations, as below.

12.2.116 The Panel finds that the applicant has correctly interpreted the requirement of EN-1 in terms of the geographical scale considered for the impact assessment. It also recognises that this is an unusual case given the length of coastline potentially affected as a result of the relationship of the bay and the Isle of Wight to the Project. Therefore the Panel considers that it is regrettable and unhelpful to the LAs that a more spatially specific assessment has not been undertaken to date, and feels that the applicant should be encouraged to assist further with this in the future.

12.2.117 Although the Panel accepts the difficulty in interpreting the visitor surveys at a smaller geographical scale, it does note that this is possible to an extent with the business surveys. Of particular note with the business surveys are the results for Purbeck, where 59% of businesses considered that there would be either medium or high levels of impact on their business and where the 44% level of high adverse impacts was more than twice that identified at any other location. Although no further detail was provided on the breakdown of these high figures, the Panel notes that they were not disputed and has no reason to disagree with the applicant's view that the figures are statistically significant. The Panel also considers that a higher figure for Purbeck is consistent with its proximity to the Project, the visual impact assessment and of the nature of the tourism attractors and local tourism businesses. In the case of Purbeck the magnitude of the responses and their spatial specificity leads the Panel to conclude that in this case greater weight should be given to the business survey results than to the case studies.

12.2.118 Taking the Purbeck example, the Panel has carefully considered the coastal/offshore area during operation, including the evidence of the business survey results, and the other factors noted above. On this basis, the Panel considers that the sensitivity is high, that the magnitude of effect is likely to be medium and the impact is therefore moderate adverse and significant.

12.2.119 Given the averaging effects for larger areas the Panel therefore finds that whilst it agrees that the tourism impact for the inland/onshore and coastal/offshore study areas when considered as a whole are not significant, that this is not inconsistent with impact in some smaller scale areas being significant. Given the

evidence that Purbeck is likely to have a combination of factors that is unique for the study area, the Panel considers that these factors are unlikely to prevail elsewhere and that therefore a significant effect is unlikely to occur elsewhere.

12.2.120 The Panel agrees with a number of IPs that the quantification of employment and GVA impacts on tourism due to the Project would be beneficial in allowing a better understanding of effects and combination with the beneficial impacts of Project employment and supply chain spend. However, as neither the NPS nor the EIA scoping identifies such a requirement the Panel concludes that the applicant is not required to provide this information and that the qualitative assessment that has been undertaken is adequate for NPS purposes.

12.2.121 Whilst the Panel is convinced by the evidence that surveys can be designed to provide a meaningful quantification of employment and GVA impacts, it also considers that it is clear that the applicant's perception surveys were not designed to do this. Furthermore, given the limitations of the perception surveys accepted by the Panel, and the lack of sufficient evidence to the contrary, the Panel accepts the applicant's claim that the results cannot be used to quantify employment and GVA impacts with sufficient confidence on reliability.

12.2.122 The Panel considers that there is sufficient evidence for it to determine whether the impacts would be significant, but that there is insufficient evidence for meaningful figures to be identified for actual changes in visitor numbers and, therefore, employment and GVA impacts. Following from the above, and considering the balance of evidence provided, the Panel finds that the quantification of impacts suggested by IPs is unlikely to be robust and has therefore not relied on it.

12.2.123 Following examination of the evidence on multiplier effects and reflecting on the lack of any evidence to the contrary, the Panel accepts that any impact on directly associated tourism businesses would result in an additional impact on other sectors, such as retail.

12.2.124 With regards to potential impacts on language schools, the Panel considers that, for the reasons noted above, the extrapolation from the perception survey is inappropriate and also that insufficient evidence has been provided to justify that the impacts for language schools are any greater than for the area as whole. On this basis the Panel agrees with the applicant's assessment that the impacts on language schools are not significant.

12.2.125 With regards to the suggestions [REP-3378 and REP-3614] that the applicant should be required to prove that impacts would not occur, the Panel considers that such a test is not required by the NPS and agrees with the applicant that the EN-1 requirement that

"*limited weight is to be given to assertions of socio-economic impacts that are not supported by evidence*" is a relevant test.

Mitigation

12.2.126 This section of the Report considers the requirement for additional mitigation for tourism over and above those identified in other sections of the report for visual impact, noise, highways and rights of way, etc.

12.2.127 On the basis that it considers that there would be significant impact in the coastal areas of Purbeck during operation; the Panel disagrees with the applicant's view that mitigation is not required. Although the Panel acknowledges the comments from Hampshire CC and New Forest CC about the need for adverse publicity to be mitigated due to disturbance along the onshore cable route during construction, it finds that insufficient evidence of impacts at the local scale is currently available for it to require such mitigation.

12.2.128 The Panel does not accept the requirement for the level of mitigation suggested by Bournemouth BC, as this is based on levels of impact that the Panel does not consider justified.

12.2.129 The Panel accepts that the Project would provide significant beneficial impacts in terms of supply chain spend and that when taken across the area as a whole that it appears that these will mitigate tourism impact. However, the evidence that the locations, skills and timing of any benefits from the Project mean that it is highly unlikely that tourism businesses or people lost from those businesses due to adverse impacts would benefit.

12.2.130 Given the uncertainties about port location and the other evidence, the Panel considers that it is unlikely that the employment and supply chain spend beneficial impacts from the Project would mitigate specific adverse impacts on tourism and that therefore these impacts should be considered separately.

12.2.131 The completed Unilateral Undertaking would deliver the Tourism Fund and related obligations contained within it. The Panel's findings in terms of the tests required by EN-1 paragraph 4.1.8 are;

- for the 'relevance' test that Panel notes that the funds are to be used only for the purposes of enhancing the tourism draw of the area or for the reasonable costs of administering the funds and therefore concludes that the test is satisfied;
- for the 'necessary' test the Panel considers that there would be adverse tourism impact that would not be mitigated by other measures and therefore concludes that the test is satisfied;.
- for the 'directly related' test the Panel notes that as there is no requirement to allocate funds to any specific LA area it

cannot be confident that the funds would be used to mitigate the impacts identified in Purbeck and therefore finds that the relevance test is not met;

- for the 'fairly and reasonably in scale' test the Panel finds that as the scale of impact has not been established it is unable to relate the scale of the fund to the scale of impact and therefore finds that the test is not met; and
- the Panel has no reason to conclude that the obligations are not reasonable in other respects.

12.2.132 The Panel therefore concludes that the Unilateral Undertaking cannot be taken into account in coming to conclusions about the impact of the Project on tourism.

12.2.133 With respect to monitoring, the Panel has considered the evidence provided and on this basis concludes that it is not practical to use monitoring to identify adverse impacts and therefore identify any mitigation required to address them.

12.2.134 The Panel finds that suitable complaints and communications processes are in place for construction, operation and maintenance and that these are addressed elsewhere in this report with respect to noise, access, dust and other disturbances relevant to impact on tourism where the LAs or the MMO are able to apply controls.

Overall conclusions

12.2.135 The Panel concludes that the tourism assessment requirements of EN-1 have been satisfied and accepts the applicant's assessment that adverse impacts are unlikely to be significant when considered for the local area as a whole.

12.2.136 The Panel finds that adverse impacts on tourism are significant in the coastal area of Purbeck, that those impacts have not been mitigated and that there would therefore be significant residual harm to tourism in that area.

12.2.137 Given the methodology adopted by the applicant, the Panel is unable to quantify the magnitude of the adverse impact in terms of jobs and GVA and is therefore unable to quantify the mitigation required in terms of the size of a tourism fund or other similar provision.

12.2.138 Although the evidence from other wind farms strongly suggests that the impact would not be a large percentage of tourism employment or turnover, the Panel concludes that even a small percentage change in part of a single local authority area is unlikely to be mitigated by the employment and supply chain benefits to the area. This matter is carried forward to the planning balance in Chapter 21, noting however that the scale of the adverse impact is difficult to predict.

12.3 OTHER SOCIO-ECONOMICS

THE ENVIRONMENTAL STATEMENT

12.3.1 Volume D Chapter 3 of the ES [APP-103 and APP-304] described the baseline environment for tourism in terms of population and skills, economic profile, supply chain and commercial shipping and fisheries. This was based on a combination of desk based research of existing regional and district/county sources and Local Plans [APP-306], together with the applicant's supply chain analysis [APP-303].

12.3.2 The ES [APP-103] defined three local impact scenarios for the supply chain:

- low local impact – some onshore cable and substation construction content and major offshore component replacement using local ports;
- medium local impact – low impact scenario with local pre-assembly, installation, operation and maintenance from new local port facilities, more local management and support for installation; and
- high local impact – medium impact scenario with locally made gravity base structures moved using local tugs.

12.3.3 During the construction of the offshore elements, peak employment under the low and medium impact scenarios were considered to be 55 full time equivalents (fte) and 200 fte respectively and supply chain impacts were minor beneficial and not significant. Under the high impact scenario peak employment was 1,700 fte and supply chain impacts were moderate and significant. During operational and maintenance of the offshore elements:

- low impact scenario employment was 435 local fte years, local GVA was £91 million and impact was negligible and not significant;
- medium impact scenario employment was 4,628 local fte years, local GVA was £748 million and impact was minor beneficial and not significant; and
- high impact scenario employment was 5,928 local fte years, local GVA was £972 million and impact was moderate beneficial and significant.

12.3.4 For the onshore elements, peak construction employment was considered to be 244 fte and supply chain impacts were minor beneficial and not significant. Operation and maintenance employment was minimal and the supply chain impacts were minor beneficial and not significant.

12.3.5 With regard to mitigation the applicant [APP-103] considered that under the high impact scenario the labour market capacity during construction might be strained without mitigation through

training and other initiatives. The applicant proposed to work with local stakeholders to develop a strategy to maximise opportunities for the local supply chain at each stage of the Project.

12.3.6 In a SoCG between the applicant, Hampshire CC, Dorset CC, New Forest DC, Christchurch BC, East Dorset DC, Bournemouth BC, Purbeck DC, Borough of Poole and Isle of Wight Council [REP-3147] the Councils' responses to the relevant sections of the ES were as noted above for tourism, except that:

- supply chain definitions were agreed;
- the baseline environment was agreed to be accurate and comprehensive, with the exception of Dorset CC and Bournemouth BC;
- the conclusions of the supply chain impact assessment were agreed, with the exception of Bournemouth BC who did not agree with the definition of 'local'; and that
- comments on commercial fisheries and shipping were deferred to others.

12.3.7 A number of comments were made by the LAs in their LIRs [REP-2674 to REP-2683]:

- there was potential for job creation and economic growth;
- effects were temporary during construction, after which job creation impacts decreased significantly;
- Bournemouth BC considered that the low impact scenario was the more likely one due to the low specialist skill base in the area;
- objective assessment was not assisted by the lack of clarity on design, construction and operational details;
- there was uncertainty regarding the overall economic benefits when the port location was not decided;
- there were benefits of contractors using visitor accommodation;
- the potential supply chain benefits may have been underplayed; and
- there was little guidance on which of the three supply chain impact scenarios would occur.

IMPACT ASSESSMENT

12.3.8 The applicant [REP-3055] responded to queries from Bournemouth BC [REP-2676] and Challenge Navitus [REP-2944] by providing combined figures for the local impact scenarios for construction, operation and maintenance:

- low - £130 million GVA supporting 70 jobs, including 20 long term operational;
- medium - £850 million GVA supporting 520 jobs, including 180 long term operational; and

- high - £1.6 billion GVA supporting 1,140 jobs, including 250 long term operational.

12.3.9 Challenge Navitus [REP-3614] noted that the applicant stated a wide range of potential economic benefits of the wind farm and presumed that the worst-case benefits had to be assumed.

Port locations

12.3.10 With regard to the decision on the port(s) to be used for the Project, the applicant [APP-103, REP-3018, REP-3055, REP-3490 and REP-3643] stated that:

- one of three local ports of Poole, Yarmouth and Portland was likely to be used to support the construction, operation and maintenance phases of the Project, but no final decision had yet been made;
- in addition to the local ports, Southampton and Portsmouth were being considered for the construction phase; and that
- although there was no precedent for it, the applicant had considered whether it would be appropriate to secure the location through a legal agreement.

The Panel notes that the port location(s) were not secured in a legal agreement that was brought before the examination.

12.3.11 The LAs [REP-2674, REP-2678, REP-2681, REP-2683, REP-3077 and REP-3083], Yarmouth Harbour Commissioners [REP-3399], Seacat Services [REP-3403], Alan Neale [REP-3417] and Clive Mullins [REP-3594] provided evidence of the capabilities of local ports and businesses to support the Project.

Growth scenarios

12.3.12 A number of LAs [REP-3066, REP-3084 and REP-4068] expressed concerns about uncertainties arising from the applicant's three growth scenarios:

- a better understanding of the likely impact required a firming up of whichever growth scenario was most valid, as the three varied significantly;
- without greater certainty regarding the use of local suppliers over the lifetime of the project and the expected impact of this, decision makers in local firms would be reluctant to invest time and money in up-skilling their existing workforce, apprenticeships, and capital investment in premises, equipment and machinery to meet expected demand;
- without the time to adequately prepare, local suppliers may not be in a position to take on new contracts which would then be taken up outside the immediate area and the economic benefit would therefore not be secured locally;

- it was difficult to assess how provision of jobs associated with the development could be delivered through the DCO; and
- the applicant had provided no evidence to support the claimed positive jobs that would be generated as no details of the awarded contracts had been supplied.

12.3.13 Challenge Navitus [REP-3378, REP-3788 and REP-4020] provided detailed comments on the applicant's local impact scenarios and stated that:

- there was no difference between the 'medium' and 'high' scenarios during long-term operations, and yet the applicant was claiming 70 additional jobs in the local area in the 'high' scenario;
- the high scenario assumed the exclusive use of gravity base structures (GBS) produced locally; and
- the applicant's statement [REP-3643] that "*drive/drilling is required for all areas of the project site*" implied that gravity base structures would not be used and that therefore the 'high' impact scenario would not apply.

MITIGATION

Skills and Supply Chain Engagement Funds

12.3.14 Following discussions with LAs during the examination, the applicant [REP-4083] provided a signed copy of a development consent agreement with Hampshire County Council; Dorset County Council; New Forest National Park Authority; Christchurch Borough Council; East Dorset District Council; New Forest District Council; Bournemouth Borough Council; the Borough of Poole and the Isle of Wight Council that provided for:

- a skills fund of £4.3m to be paid to Dorset CC in instalments, only to be used for the purposes of promoting the skills of the local labour force in Hampshire, Dorset and the Isle of Wight, to promote opportunities for the local labour force and to provide skills and labour for the Project;
- a skills administration fund of £69,870.40, to be paid to Dorset CC in instalments, for the reasonable costs in administering the management of and payments from the skills fund;
- a skills strategy to include proposals for activities to enhance workforce skills for the construction, operation and maintenance of the Project and to facilitate the take up of apprenticeships, re-skilling and engagement with schools, colleges and universities;
- a skills liaison group chaired by Dorset CC and comprising one representative of the developer and one representative of each of the LAs, to recommend to Dorset CC how it

should allocate the skills fund for the purposes of the skills strategy;
- a supply chain engagement fund of £4.3m to be paid to Hampshire CC in instalments, only to be used for the purposes of engaging with the local supply chain, promoting opportunities for local businesses and for the local labour force in Hampshire, Dorset and the Isle of Wight;
- a supply chain engagement administration fund of £39,870.40 to be paid to Hampshire CC in instalments, for the reasonable costs in administering the management of and payments from the supply chain engagement fund;
- a supply chain engagement strategy to include proposals for activities to enhance supply chain engagement, to promote supply chain opportunities, to engage with the Project and to develop the local supply chain offering for the construction, operation and maintenance of the Project; and
- a supply chain engagement group chaired by Hampshire CC and comprising one representative of the developer and one representative of each of the LAs, to recommend to Hampshire CC how it should allocate the supply chain engagement fund for the purposes of the supply chain engagement strategy.

12.3.15 The applicant [REP-3018, REP-3038, REP-3313, REP-3643, REP-4030] further stated that:

- the funds were not proposed to be secured by the DCO as a development consent agreement was considered to be sufficiently enforceable;
- the funds would seek to support the development of skills and supply chain capacity locally to give local residents and businesses the best possible opportunity;
- the specific measures/initiatives had not yet been identified and the LAs were free to draw on them for relevant activities as they saw fit;
- it was anticipated that the LAs would engage with other organisations and build on existing programmes that sought to boost local employment and businesses;
- the funds could be used to expand or extend existing programmes and if these were publicly funded they would have established monitoring systems that would measure their effectiveness and outputs;
- the funds would help secure the local benefits set out in the ES and so could be considered as part of the planning balance; and
- some of the LA suggestions were not included as they did not meet the planning obligation tests.

12.3.16 Representations received from the LAs [REP-2678, REP-3066, REP-3084, REP-3389, REP-3396, REP-3638, REP-3640, REP-3713, REP-4071 and REP-4080] included that:

- the agreement was considered to be the minimum necessary to mitigate the impacts of the development;
- consent for the scheme should not be granted without the supply chain and skills funds;
- the supply chain and skills funds would result in benefits to the local supply chain and employment markets;
- the wider supply benefits would be down to the local economy rising to the challenge coupled with the appropriate use of procurement tools to expose the maximum amount of the opportunities to the local market;
- there was concern that the ES only referred to training providers around Bournemouth and Southampton, which suggested a lack of appreciation and/or a lack of commitment to utilise the full range of training facilities and providers in and around Dorset;
- early funding of the skills fund was necessary and the delay in funding until the applicant had obtained a contract for difference may reduce the effectiveness of the contributions;
- impacts should be monitored and measured against key indicators; and that
- there needed to be long term commitment to the contracting and employment opportunities for the lifetime of the project rather than just during the construction period.

12.3.17 Purbeck DC [REP-3636 and REP-3992] stated that given the peripheral location of Purbeck, the supply chain and skills funds may have limited benefit to the Council's economy but there was no assurance that they would result in jobs for the District; and that it had decided not to sign the development consent agreement, as councillors did not wish to be seen to accept that the development was acceptable in planning terms.

Planning obligation tests

12.3.18 The applicant [REP-3500] considered that the funds were intended as enhancement from the proposed development; they were directly related to the activities proposed to be authorised by the Order, namely the harnessing of the positive impact of the development on the local economy; and that the extent of the commitment was considered to be both fairly and reasonably related to the development and would be related in kind to it.

12.3.19 Dorset CC [REP-3389 and REP-4080] considered that the obligation would satisfy the EN-1 paragraph 4.1.8 tests.

Setting targets

12.3.20 A number of responses were received to a question from the Panel as to whether targets should be set for the outputs or outcomes of the activities supported by the funds:

- the applicant [REP-3018] did not consider it appropriate to prescribe actual numbers in terms of jobs or GVA within a DCO or related legal agreements as this approach had not been taken on other projects and would not allow sufficient flexibility to developers;
- Dorset CC [REP-3084] suggested that the applicant should have been required to give a quantified commitment engage local suppliers and ensure that a minimum, significant and reasonable proportion of value of contracts was awarded to local businesses; and
- Alan Neale [REP-3417] stated that greater transparency was needed, that further movement beyond vague statements of intent was essential, and that therefore the applicant should be required to set local content targets that were at least consistent with its high local impact scenario, and that it should monitor its achievement of those targets and publish the results.

OTHER EFFECTS

Amenity losses

12.3.21 The applicant [REP-3176 and REP-3313] stated that wider social and environmental costs were assessed fully in the ES, but there was insufficient evidence for these to be costed and that Challenge Navitus provided no evidence that there were amenity losses and its use of the visitor surveys was flawed.

12.3.22 Challenge Navitus [REP-2945, REP-3369 and REP-3599] considered that the applicant's socio-economic assessment had entirely overlooked environmental amenity losses to actual and potential users and provided calculations to suggest that losses resulting from the diminished sea view, light pollution, loss of free navigation and amenity were valued at £82 million per annum for visitors and £74 million per annum for residents.

Other investment and the 'grey pound'

12.3.23 Bournemouth BC [REP-2676] suggested that the Project would result in damage to the unique and distinctive qualities of the area, which would result in adverse impacts on businesses, while the PCBA [REP-3351] considered that spend by older people would be lost in some measure due to impacts on sea views, which attracted elderly people to the area.

National impacts

12.3.24 The applicant [REP-3313] and Alan Neale [REP-3188] referred to the NPSs and government requirements before awarding a contract for difference in their responses to suggestions from Dr Philip Bratby [REP-2850] and PCBA [REP-3351] that the Project did not meet the expectations of national policy and would result in additional costs that had not been assessed.

PANEL'S REASONING AND CONCLUSIONS

The environmental statement

12.3.25 The Panel has considered the applicant's socio-economic assessments and, particularly given the comments made by the LAs, considers that the methodology, baseline environment, impact assessment and mitigation set out in the ES are robust.

12.3.26 As noted for tourism, the Panel is of the view that the applicant has correctly interpreted the requirement of EN-1 for the geographical scale considered for the impact assessment.

Impact assessment

12.3.27 For the Application Project the local benefits under each scenario assessed by the applicant would be:

- low – £130 million GVA supporting 70 jobs, including 20 long term operational;
- medium – £850 million GVA supporting 520 jobs, including 180 long term operational; and
- high – £1.6 billion GVA supporting 1,140 jobs, including 250 long term operational.

12.3.28 Given the status of the Project, although mindful of the uncertainty that it creates for LAs and for local businesses, the Panel considers it reasonable that the applicant has not yet committed to the use of a specific port. The Panel notes that the earliest resolution of this decision would enable investments to be made that would be likely to increase the chances for local businesses to benefit from supply chain opportunities arising from the Project. However, it appears likely to the Panel that the applicant took this timing into account when undertaking the impact assessment.

12.3.29 The Panel finds that, even though the use of local ports is not secured in the DCO or the s106 Agreement, the commitment that the applicant made towards the end of the examination to use local ports for the TAMO, together with earlier statements that it was likely to use local ports for the Application Project and the evidence provided on the suitability of local ports, means that it is reasonable for the 'medium impact' scenario to be considered as the realistic worst case scenario for socio-economic impact. The Panel therefore disagrees with suggestions from Bournemouth BC and Challenge Navitus that the low impact scenario should be assumed.

12.3.30 The Panel's view is that applicant's statement regarding drill-driving should more likely be interpreted as all piled foundations require drill-driving rather than only drill-driving will be used for foundations. On this basis, the Panel considers that Challenge Navitus have wrongly suggested that concrete gravity base

foundations will not be used and that they have incorrectly inferred that the high impact scenario would not apply.

Mitigation

12.3.31 The Panel considers that the fact that Purbeck DC has not signed the development consent agreement is not material as it is still able to benefit from the funds by virtue of being within the identified area and by its first tier LA (Dorset CC), who clearly demonstrated their support for impacts on Purbeck, being party to the Agreement.

12.3.32 Although the s106 Agreement is not secured in the DCO, the Panel has received a signed copy and considers that it would deliver the skills and supply chain funds and related obligations contained within it. The Panel's findings in terms of the tests required by EN-1 paragraph 4.1.8 are;

- for the 'relevance' test that Panel notes that that the funds are to be used only for the purposes of providing skills and promoting opportunities for local workforce and businesses or for the reasonable costs of administering the funds and therefore concludes that the test is satisfied;
- for the 'necessary' test the Panel considers that the need to secure the benefits is supported by EN-1, that no alternative means of securing these has been identified and therefore concludes that the test is satisfied;.
- for the 'directly related' test the Panel notes that the measures are specifically related to the Project activities authorised by the DCO, are constrained to the local affected area and therefore finds that the test is satisfied;
- for the 'fairly and reasonably in scale' test the Panel considers it likely that that the level of funding is appropriate for the scale of employment and supply opportunities arising from the 'medium impact' scenarios that it considers to be the realistic worst case scenario and therefore finds that the test is satisfied; and
- the Panel has no reason to conclude that the obligations are not reasonable in other respects.

12.3.33 With respect to LA concerns regarding references to training in certain areas and the need to set targets, the Panel considers that they would have sufficient opportunity to resolve these issues through the mechanisms established in the Agreement.

12.3.34 The Panel therefore concludes that the parts of the s106 Agreement relevant to the skills and supply chain funds satisfy the EN-1 tests and can be taken into account.

Other effects

12.3.35 The case for amenity losses presented by Challenge Navitus has been carefully considered by the Panel and, while it is of the view

that there are likely to be some losses, it finds that the relevance of the Danish study to the Project has not been sufficiently established, accepts that the perception surveys were not designed to be used for these purposes and considers that the magnitude of amenity losses suggested were not sufficiently justified. The Panel has therefore not relied on the amenity loss figures provided by Challenge Navitus and concludes that the applicant has satisfied the requirements of EN-1 for the assessment of wider social and environmental impacts.

12.3.36 The Panel finds that insufficient evidence has been provided for to conclude that there would be any additional significant adverse impacts on local businesses and the 'grey pound' of the type suggested by Bournemouth BC and the PCBA over and above those considered elsewhere in this Report.

12.3.37 With respect to the concerns expressed on national impacts, the Panel is mindful of the different views expressed, but concludes that these are policy matters that are addressed by the NPS and are therefore not material to the examination.

Overall conclusions

12.3.38 The Panel therefore concludes that the application meets the requirements of EN-1 for other socio-economic impacts, notes that the Application Project would bring employment and other supply chain benefits to the local area and that in the case of the 'high impact' scenario these benefits would be significant. The matter weighs in favour of the Application Project and is carried forward into the planning balance in Chapter 21.

12.4 TURBINE AREA MITIGATION OPTION

TOURISM

The applicant's case

12.4.1 The applicant [REP-3429 and REP-3643] stated that:

- a reduction in extent and an increase in distance from the coast would mean that TAMO would be less visible than the Application Project and that perceived visual impact and therefore perceived impacts on tourism would be reduced;
- the assessment of the Application Project was that the impact on tourism would be not significant and this would still be the case for TAMO;
- the LA's case was based on the adverse effect of the visual impacts of the Project on tourism, however the visual effects of TAMO would be less from at least some of the viewpoints assessed for the Application Project, implying that the impact would be lower;
- Bournemouth University identified distance from the coast as a key factor in the effects of wind farms on tourism;

- on the basis that the turbines would be further from the coastline, and less visible, it was considered that any concerns related to perception would reduce; however
- as these impacts could not be quantified, the applicant had identified a ring-fenced tourism fund of £15m.

Other representations

12.4.2 Bournemouth BC [REP-3774 and REP-4013] concurred with the applicant that the £15m fund would still apply but, on the basis that the applicant had undertaken no research nor provided any evidence to the contrary, it believed the adverse tourism impact of TAMO would be the same as the Application Project.

12.4.3 Comments were received from other LAs [REP-3637, REP-3986, REP-4073, REP-3741 and REP-3777]:

- it was accepted that TAMO would reduce the visual impact of the development but it would not reduce it sufficiently to overcome the objections to the Application Project;
- the degree of change in terms of the distance of the TAMO from the coastline was insufficient to remove significant impacts previously identified;
- no new perception surveys had been produced for TAMO to reassess the impact and that therefore the objections were the same for TAMO as for the Application Project;
- the figures for losses of turnover and jobs suggested in Bournemouth BC's assessment still applied; and
- there was great uncertainty whether any reduction in impacts could be achieved by TAMO.

12.4.4 Swanage Town Council [REP-3777] remained highly concerned that, as the town in closest proximity to the windfarm, Swanage would continue to be the community that suffered the greatest detrimental impact from its construction.

12.4.5 A number of other IPs including Swanage and Purbeck Hospitality Association [REP-3769], Crispin Read Wilson [REP-3737], Mike Cemm [REP-3731] and Judith Crain [REP-3772] raised similar concerns regarding tourism impacts for TAMO as had been raised for the Application Project.

12.4.6 Alan Neale [REP-3804 and REP-4001] stated that the negative impacts of the wind park on tourism had been greatly exaggerated by many IPs; and that the extent that there may be negative impacts connected to altered sea views would be even lower with TAMO than with the Application Project.

OTHER SOCIO-ECONOMICS

The applicant's case

12.4.7 The applicant [REP-3643] advised that the total figures for the local impact scenario for the TAMO (and the Application Project in brackets) for construction, operation and maintenance were:

- low – £85 million (£130 million) GVA supporting 45 (70) jobs, including 10 (20) long term operational;
- medium – £560 million (£850 million) GVA supporting 340 (520) jobs, including 120 (180) long term operational; and
- high – £1.1 billion (£1.6 billion) GVA supporting 750 (1,140) jobs, including 150 (250) long term operational.

The applicant [REP-3677 and REP-3678] also provided detail on the breakdown of the figures for the TAMO.

12.4.8 The applicant [REP-3643] assessed impacts for the TAMO (Application Project in brackets) as:

- under the low local impact scenario, the magnitude would be low (low) and not significant (not significant);
- under the medium impact scenario the impact would be minor beneficial (minor beneficial) and not significant (not significant); and
- under high impact scenario, the magnitude would be minor beneficial (moderate beneficial) and the impact would be not significant (significant).

12.4.9 The applicant [REP-3653, REP-3678 and REP-4030] further stated that:

- the probable manufacture and installation UK content of the TAMO would be 35%, compared with 40% for the Application Project;
- operations employment for the TAMO was greater under the 'high' scenario than the 'medium' scenario due to the greater overall local content;
- the applicant had committed to the use of one of the three local ports as an installation base, implying that the 'low' scenario was unlikely to be implemented and the 'medium' scenario was effectively therefore the lowest realistic worst case scenario; and that
- Bournemouth BC's view that the reduction in size would result in difficulties for 'start-up' businesses to pick up work and for factories to be built to do the work did not appear to be supported by evidence and was contrary to the applicant's supply chain strategy and fund commitments.

Other representations

12.4.10 Bournemouth BC [REP-3774] suggested that the proportion of 'local' jobs would be more likely to be proportionally less under the TAMO; with the reduction in the number of turbines and other elements of the construction phase it was difficult to envisage any new 'start-up' businesses picking up any of the work; and that with fewer pieces of equipment to be manufactured it seemed unlikely that there would be the work available to justify the set up costs of the factories that would be needed to be built to do the work.

12.4.11 The Borough of Poole [REP-4073] considered that the TAMO represented a significant loss in jobs created at the construction and operational stages and that the Agreement did not differentiate between the Application Project and the TAMO and could be interchangeable.

12.4.12 Challenge Navitus [REP-3788] were of the view that:

- the additional, local, direct employment generated by the project would be unlikely to exceed 100 jobs and that the information provided by the applicant suggested that it was not actively considering the use of gravity base structures for the TAMO, which would eliminate the "*high scenario*" completely from consideration; and that
- there was no difference between the 'medium' and 'high' scenarios during long-term operations, and yet the applicant was claiming additional jobs in the local area in the 'high' scenario.

12.4.13 Alan Neale [REP-3631, REP-3804 and REP-4001] stated that the comparison omitted any consideration of the risk that the reduced scale of the TAMO could discourage local businesses; and that it was not clear whether the high impact scenario was more or less likely with the TAMO.

PANEL'S REASONING AND CONCLUSIONS

12.4.14 The Panel concludes that the impacts of the TAMO have been sufficiently addressed by the applicant for the purposes of EN-1.

12.4.15 For the TAMO the local benefits under each scenario assessed by the applicant would be:

- low – £85 million GVA supporting 45 jobs, including 10 long term operational;
- medium – £560 million GVA supporting 340 jobs, including 120 long term operational; and
- high – £1.1 billion GVA supporting 750 jobs, including 150 long term operational.

12.4.16 Although the Panel accepts that the visual impact of the TAMO is likely to be lower than for the Application Project and that therefore the adverse impacts on tourism are also likely to be lower, it considers that insufficient evidence has been provided to allow the differences to be quantified. It also notes that the onshore elements of the TAMO and the Application Project are essentially similar. The Panel therefore concludes that the significance of impacts, and particularly the unmitigated significant impacts on Purbeck, remains as identified above for the Application Project.

12.4.17 The Panel finds that insufficient evidence has been provided for it to disagree with the GVA and employment figures assessed by the applicant for the TAMO. The Panel considers that the TAMO would bring employment and other supply chain benefits to the local area, which have been assessed as minor beneficial and not significant. The significance for the high impact scenario is lower for the TAMO than for the Application Project due to the magnitude of effect of the lower GVA and number of jobs for the Application Project being above a threshold defined in the assessment, while the TAMO is below the threshold. The matters weigh in favour of making the DCO.

13 COMMERCIAL FISHERIES AND FISHING

13.0 THE POLICY CONTEXT

13.0.1 In assessing the impact of a proposed wind farm on commercial fisheries and fishing, the major consideration identified in National Policy Statement EN-3 is the impact in terms of disruption to established economic activity. Relevant policy in relation to fishing is set out in EN-3 paragraphs 2.6.121 to 2.6.136.

13.0.2 Paragraph 2.6.133 states that the decision-maker "*should be satisfied that the applicant has sought to design the proposal having consulted representatives of the fishing industry with the intention of minimising the loss of fishing opportunity taking into account effects on the other marine interests.*"

13.0.3 In relation to mitigation, paragraph 2.6.134 says that "*any proposals should result from the applicant having detailed consultation with relevant representatives of the fishing industry*." Paragraph 2.6.135 goes on to suggest that "*mitigation should be designed to enhance where reasonably possible medium and long-term positive benefits to the fishing industry and commercial fish stocks*," while paragraph 2.6.136 advises that the decision-maker will need to consider "*the extent to which disruption to the fishing industry, whether short-term due to construction or long-term over the operational period, including that caused by the future implementation of any safety zones, has been mitigated where reasonably possible."*

13.0.4 The Marine Policy Statement (MPS) points out that "*marine developments have the potential to prevent, displace or encourage fishing activities. There are potential social, economic and environmental impacts of the displacement of fishing activity caused by other sea uses particularly if from well established fishing grounds.*" (para 3.8.7) and goes on to observe that as well as commercial sea fishing stocks "*the coastal environment is important as a corridor for migrating Atlantic salmon and European eel…..These important species that support coastal and inland commercial fishing and recreational angling could be vulnerable to a wide range of coastal activities*."

13.0.5 The Panel examined the issues relating to the displacement of commercial fishing in the light of NPS and MPS policies through the issue-specific hearing (ISH) and written questions.

13.1 COMMERCIAL FISHING

13.1.1 The applicant's case was set out in the ES Volume B Chapter 17 [APP- 83] and described the assessment methodology for both the turbine area and the cable route. It described the determination of the baseline environment as well as impact

assessment and mitigation measures. It also assessed cumulative impacts. The assessments cover construction, operation and decommissioning stages of the project.

13.1.2 While most of the assessments were considered not significant certain receptors were identified as suffering significant impact, notably individual fishing vessels would be adversely affected by construction activity and noise. The decommissioning phase was assessed as having significant impact on individual vessels. The use of vessels by the wind farm operators during construction and the operation phases was also assessed as having a significant effect on individual vessels.

13.1.3 The turbine area is relatively lightly fished, and some vessels would be displaced to nearby fishing areas, potentially already being fished at capacity. However the impact on all receptors during the operation of the wind farm was considered not significant, and for those using static gear, notably whelk potting, fishing within the constructed turbine area was considered feasible.

13.1.4 Cumulative impacts in relation to potential projects and proposed developments were assessed including marine aggregate dredging, the Perpetuus Tidal Energy Centre, Rampion Offshore Wind Farm and the Aldernay Connector. In addition nearby (Marine Conservation Zone) MCZ and Special Areas of Conservation (SAC) designations were assessed. None were found to be significant in relation to commercial fishing.

13.1.5 In all cases where the applicant identified significant impacts, commercial agreements with affected vessel owners were proposed. Further mitigation would be provided through a project-specific Fisheries Engagement Plan (FEP) establishing a formal system of communication between the developer and fisheries stakeholders. This would involve the appointment of a Fisheries Liaison Officer and is secured through the DCO Schedules 13/14 condition 11(d)(vi).

13.1.6 A limited number of Relevant Representations was made in relation to commercial fishing. The applicant responded to these in Appendix 4 – Schedule of Responses to Relevant Representations submitted for Deadline II [REP-3020]. In it the applicant referred back to the ES Volume B, Chapter 17 (Commercial Fisheries) [APP-83] and Volume D, Chapter 3 (Socio-economics and Tourism)[AP-103].

13.1.7 The applicant set out a commitment to a Fisheries Engagement Plan (FEP), commercial agreements with commercial fishermen and the potential use of fishing vessels as guard vessels, or to undertake surveys, as an alternative or additional source of income.

13.1.8 In subsequent responses to the Panel's questions, the applicant reiterated the evidence put forward in the ES and responded to the concerns of IPs through producing a set of Statements of Common Ground (SoCG).

13.1.9 The applicant's written response to Deadline IV (part 2) [REP-3313] paragraphs 4.1 to 4.5 dealt with outstanding matters. It committed to producing the FEP post-consent and this will secure a working group of representatives. The FEP will contain a co-existence strategy produced in consultation with the working group and the Southern Inshore Fisheries and Conservation Authority (SIFCA). It will also set out the Fisheries Liaison Strategy based on government recommendations and liaison with local fishermen. Finally it will also contain grievance procedures for dealing with claims for fishing gear loss and damage.

13.1.10 The applicant confirmed its commitment to the Cable Specification and Installation Plan to be submitted prior to construction. It had also agreed landing data with the MMO.

13.2 STATEMENTS OF COMMON GROUND

13.2.1 At Deadline II NBDL produced a SoCG with Poole and Dorset Fisherman Association [REP-3165] which accepted the level of compensation offered for the construction period, and that further compensation would be offered for the cable laying activities. It was also agreed that all commercial fishermen, affected by the project, would be compensated. Levels of compensation for cable laying and long-term displacement from the site had not been agreed at that time.

13.2.2 Further issues of noise during piling, modelling of sediment plumes and their impact on certain species had not been agreed. Longer term benefits to the fishing industry at Poole were also under discussion.

13.2.3 The SoCG with Southern Inshore Fisheries and Conservation Authority (SIFCA) [REP-3133] identified several areas where a need for further information was sought and a general desire for NBDL to provide more in the way of community benefit in return for the loss of fishing grounds .

13.2.4 The draft SoCG with the National Federation of Fishermen's Organisations (NFFO) submitted at Deadline II [REP-3138] lists the Relevant Representations made by the organisation and NBDL's responses to them. In conclusion there is agreement on the mitigation measures proposed and on the commitment to produce a FEP and establish a Working Group with relevant parties. Also there was agreement to produce a Fisheries Co-Existence Plan incorporating agreed elements specified in the SoCG. At Deadline III the SoCG was finalised with one outstanding matter in relation to the potential temporary

exposure of cables, an eventuality that the applicants considered would not be a risk because of the condition to make provision for a cable specification and installation plan.

13.2.5 The SoCG with the Marine Management Organisation (MMO) submitted at Deadline II [REP-3113] contained a section in relation to commercial fisheries. It revealed a considerable degree of agreement in relation to the Relevant Representations submitted by MMO including the need to appoint a Fisheries Liaison Officer (FLO), and to agree landings data.

13.3 PANEL'S REASONING AND CONCLUSIONS

13.3.1 The Panel is satisfied that the applicant has addressed the adverse impacts identified in the ES through agreement with the relevant IPs and as expressed in the SoCGs. The Panel is not convinced that there are further requirements for community benefits over and above the commercial settlement made with individual fishing owners. More general socio-economic consequences of the wind farm are addressed elsewhere through the s106 agreement.

13.3.2 Further mitigation has been reflected in the DCO through the Deemed Marine Licence Schedules 13 and 14, Condition 6 aids to navigation, Condition 9 concerning chemicals, drilling and debris, Condition 11 (b) through the submission and approval of a construction and monitoring programme, (c) a construction method statement and (d) a project environmental management plan including the appointment of a fisheries liaison officer. In addition, provisions in condition 11(e) covering scour protection, (g) a cable specification and installation plan and (j) a diver mitigation plan which would cover commercial as well as recreational divers, add further safeguards to commercial fishing interests.

13.3.3 Construction monitoring, under Condition 16, would ensure the observation of other conditions by the developer as would post construction surveys required by Condition 17.

13.3.4 The Panel concludes that the impacts of the proposed wind farm have been addressed by the applicant and sufficient mitigation proposed in line with NPS requirements and MPS advice. In this respect the applicant has sought to design the proposal, in consultation with the industry, in order to minimise the impact. Adverse impacts in the short and long term have been mitigated and the measures of mitigation have been incorporated in the DCO satisfactorily. The Panel has carried these conclusions forward into Chapter 21.

13.4 TURBINE AREA MITIGATION OPTION (TAMO)

13.4.1 The applicant, in introducing the Turbine Area Mitigation Option (TAMO) in the Applicant's Response to Rule 17 Request for

further information relating to the Mitigation Option [REP-3313], claimed that a reduction in the turbine area would result in less disturbance to commercial fishing vessels that operate in the north of the original turbine area. However, the applicant admitted that few commercial fishing vessels frequent fishing grounds within the original turbine area and that the major effect on vessels would be located within the cable corridor. This corridor remains unaffected by the TAMO. Consequently only limited adjustments would be made to disruption agreements with those vessels active within the original turbine area.

13.4.2 Some IPs pointed out that the benefits of new fishing opportunities within the exclusion zone of the original turbine area would no longer accrue.

13.4.3 The Panel considers that while there would be some benefit to those vessels currently fishing in the proposed turbine exclusion zone this would account for relatively few, and that the greater impact on trawling vessels from the cable route would remain. The loss of benefit from extending static fishing activities within the exclusion zone was also considered very limited. In any event the Panel had been satisfied that the impacts of the original application had been adequately mitigated and hence only marginal overall benefits would be achieved through adopting the TAMO. This conclusion is taken forward to Chapter 21.

13.4.4 There are no significant implications for the DCO in regard to commercial fishing, were the TAMO to be adopted.

14 OPERATIONAL AND NAVIGATION SAFETY

14.0 THE POLICY CONEXT

14.0.1 National Policy Statement EN-3 advises that development consent should not be granted where the development would cause interference with the use of recognised sea lanes that are essential to international navigation. The decision maker "*should be satisfied that where a proposal is likely to affect major commercial routes, for instance by causing appreciably longer transit times, (it) should give those adverse effects substantial weight in its decision making*"(para 2.6.162). In addition, for less strategically important shipping routes, the decision maker should expect the applicant to minimise negative impacts to as low as reasonably practicable (ALARP).

14.0.2 EN-3 also advises that consent should not be granted where unacceptable risks to navigational safety would be posed and after all possible mitigation measures have been considered. The scheme should minimise effects on recreational craft with built-in mitigation measures such as buffer zones. Regard should be paid to cumulative effects of other relevant proposed, consented and operational offshore wind farms. Moreover the Maritime and Coastguard Agency (MCA) will use the Navigational Risk Assessment (NRA), prepared by the applicant, when advising the ExA about any mitigation measures proposed.

14.0.3 The ExA should not recommend consent for applications that pose unacceptable risks to navigational safety after all possible mitigation measures have been considered. Such mitigation measures will include site configuration, lighting and marking projects.

14.0.4 The MPS (paragraph 3.4.6) states that "*environmental impacts can be through accidental pollution from ships in the course of navigation or lawful operations.*" While it goes on to say that (para 3.4.7) "*increased competition for marine resources may affect the sea space available for the safe navigation of ships…. Decision makers should take into account and seek to minimise any negative impacts on shipping activity, freedom of navigation and navigational safety and ensure that their decisions are in compliance with international law*."

14.0.5 This Chapter also includes consideration of aviation safety. EN-1 states in paragraph 5.4.13 that the decision maker should "*be satisfied that the effects on civil and military aerodromes, aviation technical sites and other defence assets have been addressed by the applicant*." It goes on to suggest possible forms of mitigation including the use of Grampian conditions and for interference with communications and navigation systems, the use of lighting, changes in operational airspace and upgrading of

infrastructure to which the applicant may be required to contribute.

THE APPLICANT'S CASE

Navigational Safety

14.0.6 The applicant's case was set out in the ES Volume B Chapter 16, document 6.1.2.16 [APP-082] and described the navigational risk assessment (NRA), the assessment methodology for the study area including both the turbine area and the offshore export cable corridor. It described the determination of the baseline environment for various types of vessels as well as impact assessment. The impact assessment included a presentation of the realistic worst case scenario (RWCS), collision risk modelling results during construction, operation and maintenance, and decommissioning phases of development. It concluded with a description of mitigation measures and cumulative impacts.

14.0.7 All assessments fell into either the 'tolerable' or 'broadly acceptable' categories. Mitigation measures were suggested as follows:

- Advanced dissemination of information and warnings
- Use of temporary aids to navigation
- Construction and decommissioning work planning
- Use of route planning for wind farm associated vessels
- Continued communication with stakeholders
- Cooperation with local VTS services
- An advanced ERCoP (Emergency Response Cooperation Plan)
- The SMS (Safety Management System) to be coordinated through the marine coordination centre
- Turbine area design to avoid increased risk and to comply with the principles of the shipping template
- Establishing a works vessel coordination centre
- O&M vessels to use their own fendering system
- To consider limited towage capability to be installed on some vessels
- Emergency towing vessels to be considered
- Availability of quick response vessels
- Contractual assistance to deal with pollution
- Advanced medical training and equipment for offshore personnel
- Continued communication with the recreational community through a stakeholder communication plan
- Advanced information regarding cable installation
- Marking of areas that pose a specific risk to navigation

14.0.8 Projects considered for assessment of cumulative impacts were the Rampion offshore wind farm off the Sussex coast, which at the time was in planning, five French offshore wind farms in

various stages of planning, construction and operation at Le Treport, Fecamp, Courseulles-sur-Mer, Saint-Brieuc, Cote d'Albatre and the Alderney Interconnector. The potential congestion risk associated with these projects was considered broadly acceptable.

14.0.9 In the summary table of impact assessments for all receptors, taking into account mitigation measures, all were classified as being 'not significant'.

Aviation Navigation Safety

14.0.10 The applicant addressed the issue of aviation and military activity in ES Volume B – Offshore Chapter 18 – Aviation and Military Activity, [APP-084]. It assessed the potential impacts of the wind farm on aviation and military activity. It set out its methodology, an assessment of impacts including cumulative impacts, and baseline environment for the construction, operation and decommissioning phases of the development.

STATEMENTS OF COMMON GROUND AND EXAMINATION

14.0.11 Numerous Relevant Representations were made by recreational, commercial and statutory bodies in response to the application and at Deadlines I and II. NBDL responded to these representations, to the Panel's questions and produced a series of SoCGs with relevant bodies.

14.0.12 The following sections set out a summary of the issues raised by the representations and the Panel's questions, the applicant's response to these, and of the SoCGs agreed with IPs. It is divided up into three parts dealing in turn with issues raised by recreational bodies, commercial organisations and statutory bodies.

Recreational Bodies

14.0.13 The Royal Yachting Association (RYA), like other recreational bodies, such as the Cruising Association, emphasised that the development would increase the risk to navigation and that it opposed the application of operational safety zones. Particular concern was expressed in relation to the North-West edge of the proposed wind farm and its proximity to the main channel leading into the Needles Channel. Proposals, such as high standards of marking and lighting and an increased buffer distance provided between the channel and the turbines, were suggested.

14.0.14 In response to these representations the applicant drew attention to a series of Deadline I SoCGs agreed with recreational sailing bodies. However some of these SoCGs only confirm the level of disagreement between the parties. For example the Royal Yacht Squadron (RYS) [REP-0228] and the Royal Motor Yacht Club [REP-3127] concluded that the proposed development was wrong

in principle and should be rejected. Similarly the Hornet Services Sailing Club [REP-0287] and Chichester Sailing Club enumerated a number of concerns in their Relevant Representations and were dissatisfied in all respects.The thrust of their argument was that the proposed wind farm created a new and substantial obstacle to sailing and posed an unnecessary risk which could not be adequately mitigated. The Royal Armoured Corps Yacht Club acknowledged that that some concerns about hazards to navigation had been partially mitigated but remained opposed to its implementation [REP-0303].

14.0.15 The Cruising Association, post application, [REP-1074] came to an agreement with the applicant over a number of matters concerning navigational safety and while it did not agree or disagree with NBDL over the 500m buffer zone on the North-West edge of the turbines, it deferred to Trinity House's judgement.

14.0.16 The RYA in its SoCG at Deadline II [REP-30125] agreed to the data used in the impact assessment, the NRA methodology, the cumulative impact assessment and a number of mitigation measures including the imposition of safety zones during construction and maintenance. However it also expressed concern regarding the impact of the presence of the wind farm on cross Channel recreational vessel routes. A point made by a number of IPs during the issue-specific hearing (ISH) on navigational safety. In addition, the RYA did not agree with the applicant in respect of the following issues:

- Loss of amenity to leisure boaters and small and medium sized enterprises
- Potential impact on water depth from the export cable and its protection
- The imposition of 50m operational safety zones not considered necessary
- Layout of turbines to be defined in planning stage to enable recreational and search and rescue vessels safe transit through the wind farm
- Construction traffic should be excluded from the Western Solent and Needles fairway.

Commercial Organisations

14.0.17 The UK Chamber of Shipping, the trade organisation of the UK shipping industry, enumerated a comprehensive set of agreed issues on data, methodology, navigational risk assessment (NRA), and cumulative impact. There remained questions relating to the obstruction of shipping routes, specifically ferry operations from Poole, the assessment of adverse weather routes, further data collection and future risk assessment.

14.0.18 In its Deadline II SoCG with Brittany Ferries [REP-3126] the applicant came to a set of agreements addressing the ferry

operator's concerns. These involved mitigation measures such as the imposition of safety zones around construction, maintenance and operation sites, a 2nm passing distance for large commercial passenger ferries and safe adverse weather routeing.

14.0.19 Hanson Aggregates and Lafarge Tarmac have active marine licences to the North of the turbine area and six new application areas for potential future extraction operations to the East. In a SoCG at Deadline II [REP-3128] the companies agreed with the proposed measures put forward by NBDL to mitigate any potential impacts by imposition of safety buffers and agreed procedures in the laying and maintenance of cables.

14.0.20 Bournemouth Airport, submitted a Relevant Representation which opposed the development on the grounds that *"the turbines …are going to produce a constant and unacceptable level of clutter on the air traffic controllers display at Bournemouth Airport. This will have a drastic and pronounced effect on the ability of Bournemouth Airport to operate and provide air traffic services to aircraft operating in the area."* It subsequently, agreed a SoCG with the applicant at Deadline II [REP-3137]. The agreement covered the following points:

- Prior notification of wind turbine construction in detail
- Production of a Bird Management Plan, as part of the Landscape and Ecological Management Plan (LEMP), to control bird strike risk during onshore cabling works.
- An agreement to work together to identify and secure the implementation of a mechanism for the protection of the Bournemouth Airport air traffic management systems

Statutory Bodies

14.0.21 Comprehensive agreement was achieved with the Maritime and Coastguard Agency (MCA) in the SoCG of August 2014 [REP-2691]. It covered baseline data, methodology, NRA, mitigation measures, cumulative impacts and an ongoing commitment to produce an ERCoP and other post permission measures set out in the DCO. The SoCG with Trinity House [REP-2692] demonstrated a similar level of agreement together with a commitment to produce further details pre-construction.

14.0.22 The SoCG with the Ministry of Defence (Defence Infrastructure Organisation Safeguarding) [REP-2689] demonstrated agreement on all areas in relation to aviation and military activity. Only concerns about noise generation in construction and operation remained.

14.0.23 Nats En Route plc (air traffic navigation services) confirmed [REP-2718] that it was satisfied with the location of the proposed turbines and that they would not have any detrimental effect on its radar infrastructure

FURTHER EXAMINATION

14.0.24 Specific issues in relation to operational and navigational safety were further examined at the ISH.

14.0.25 Sailing and boating organisations continued to express concerns regarding cross Channel recreational journeys and whether the wind farm would cause an obstruction or whether sailors would be able to navigate safely through the turbine array. The applicant agreed to and subsequently produced a report examining the impact on recreational cross Channel transit times. That report was produced as Appendix 4 of the applicant's response to Deadline IV (Part2) [REP-3317] The analysis was undertaken for nine different routes based on daylight hours and tidal conditions that would be experienced in August 2015, both before and after the wind farm's construction, assuming the vessel does not transit through the array. In the worst case for Poole to Cherbourg (the route most badly affected by the location of the array) the largest increase in transit time was 11% but over the entire tidal cycle an average of 0.02% was calculated by the applicant's consultant.

14.0.26 Challenge Navitus engaged a consultant to contest the findings of the applicant's NRA. The data and modelling utilised in the NRA were the subject of extensive debate at the ISH and, at the request of the Panel, the two parties sought to resolve their differences following the hearing. The subsequent joint statement (Appendix 9 to the Response to Deadline IV (part2)) [REP-3322] indicated a coming together of the parties in respect of the data used and a narrowing of the differences in interpretation. The applicant also published (Appendix 8 of the same document) [REP-3321] the Peer Review Report, by third party consultants, of their original NRA.

14.0.27 Despite the resolution of some differences between the two parties, the concerns of Challenge Navitus remained unanswered in their view and at Deadlines IV and V they reiterated their concerns, namely:

- Experience in other wind farms is not comparable because of their size, location and tidal conditions.
- The potential displacement of recreational and fishing vessels into commercial shipping areas.
- Non-commercial craft collisions are not undertaken in the quantitative model but 66% of vessels through the zone are recreational.
- While there is no barrier, in principle, to passage through the array in benign and predictable conditions, it is the unexpected that causes accidents.
- The addition of risk introduced by turbines, has been acknowledged by Trinity House at the ISH, leading to avoidance and greater congestion around the boundaries.

- The collision risk analysis fails to take into account the increase in traffic caused by the wind farm.
- No quantitative risk assessment was made for recreational craft because of a lack of data.

14.0.28 In its Written Response to Deadline V [REP-3490], the applicant dismissed the Challenge Navitus concerns stating that there is "*therefore no issue with the modelling undertaken with the consequences being calculated in a conservative manner and showing impacts that were within tolerable or broadly acceptable parameters"* (Part 1, para 15.1). It went on to assert that the NRA has covered all required detail as demonstrated by the SoCGs from key stakeholders and Relevant Representation from the MCA.

14.0.29 Elsewhere, in the same document, the applicant accepted the MMO's proposed wording on Aids to Navigation and incorporated these in the draft DCO version 4 [REP-3491].

14.0.30 At Deadline VII (Written Response to deadline VII (Part 1 – Summary of Issues No. 27)) [REP-4030] the applicant reported that in respect of the consultations with Bournemouth Airport over mitigation arrangements, these have been *"ongoing since 2010 …and that commercial discussions are underway with regards to the identification of appropriate technical mitigation."* This submission was received on 5 March 2015 shortly before the closure of the examination.

14.1 PANEL'S REASONING AND CONCLUSIONS

14.1.1 The Panel accepts that the development of a substantial area of turbines would introduce a new element of risk for navigation both during the construction and operation phases. It also accepts that the risks to cross Channel recreational sailors are increased by the very presence of up to 194 wind turbines and three substation platforms that were not previously there. Furthermore for commercial shipping there would be more limited sea space within which to navigate causing an inevitably greater risk of congestion and collision in the vicinity of the array. It is accepted that this is a relatively densely navigated maritime area and that this brings with it further risks of collision and accident.

14.1.2 However the Panel accepts, on the advice of the relevant statutory bodies, such as the MCA and Trinity House, that the applicant has undertaken an appropriate risk assessment and plans to introduce mitigation measures which address the concerns raised by the adverse impacts of the proposed wind farm.

14.1.3 In regard to Bournemouth Airport, despite nearly five years of negotiation, an agreement has yet to be reached regarding the impact of the turbines on aircraft navigation. Requirement 9

provides that no operation of the wind farm may commence until such an agreement is in place and that the Secretary of State in consultation with the CAA is satisfied that appropriate mitigation measures have been put in place. The applicant has argued that *"(the) first offshore works could be approximately two years before commencement of operations (and that) this time will also be needed by the Airport and its supplier to manufacture, install, commission and test the solution."* The applicant offered an alternative amendment for the Secretary of State to consider which would word the requirement *"No construction of any wind turbine generator …. shall commence until the secretary of State having consulted with the operator and the CAA is satisfied …".* However the Panel is content that the recommended wording provides sufficient safeguards to address the potential adverse impact identified. Bournemouth Airport made no further representations and the Panel has no reason to believe that an agreement would not be forthcoming.

14.1.4 The necessary mitigation measures to make the application acceptable are secured in the DCO/DML in the following ways:

- In Schedule 1, Part 3,
- Requirements 2 to 6 – Detailed offshore design sets out the parameters for turbine and substation platform construction, their layout, location, cable length and type.
- Requirement 8 – Offshore Lighting for air navigation purposes.
- Requirement 9 – Air traffic services at Bournemouth Airport restricts the operation of the wind farm to the approval of the Secretary of State in consultation with the airport operator and CAA to ensure appropriate mitigation.
- In Schedules 13/14, Part 2
- Conditions 1 to 4 – Design parameters for the generation and transmission assets.
- Condition 5 – Notification and inspections, licensing the undertaker and the vessels used and requiring notification of activity to appropriate bodies in advance.
- Conditions 6 and 7 – Aids to navigation, requiring the developer to prevent danger to navigation by notifying appropriate bodies and using aids to navigation such as lights and colouring of structures.
- Condition 8 – Aviation safety, by notifying the Defence Infrastructure and Bournemouth Airport, in advance, of commencement of the scheme.
- Condition 9 – Chemicals drilling and debris, notifying the MMO of the use of material that may endanger other maritime users, including reporting dropped objects.
- Condition 10 – Force majeure where, in extreme circumstances unauthorised deposits are made, notification to the MMO within 48 hours.
- Condition 11 – Pre-construction plans and documentation. The notification of various plans and programmes to the

MMO and others, including aids to navigation and an Emergency Response and Co-operation Plan (ERCoP).
- Condition 16 – Construction monitoring including monitoring of traffic in accordance with the outline marine traffic and navigational monitoring strategy.

14.1.5 The Panel concludes that while there are adverse impacts from the construction of the wind farm involving the introduction of greater risks to navigation of boats and aircraft. While the applicant has and would be providing mitigation sufficiently to meet the standards set by statute and statutory bodies, the risk to navigation carries weight against making the DCO.

14.2 TURBINE AREA MITIGATION OPTION (TAMO)

14.2.1 The applicant, in introducing the Turbine Area Mitigation Option (TAMO) in the Applicant's Response to Rule 17 Request for further information relating to the Mitigation Option [REP-3313], claimed that a reduction in the turbine area would result in "*only minor changes in risk due to the decrease in the size of the area and the number of structures within it* (table 4)."

14.2.2 This view was supported by a consultant's report, appended as Appendix 4 to the above document. It concluded that the changes in impacts could be summarised as follows:

- Decrease in allision risks due to smaller development area and reduced number of turbines.
- More East – West routeing options for all receptors but in particular commercial and recreational vessels.
- Increased sea room to the North of the site increasing routeing options, decreasing densities and reducing collision risk.
- The potential for shorter construction periods and reduced number of wind farm associated vessels may further decrease collision risk.
- Increased distance from other marine activities such as marine aggregate extraction dredging areas.

14.2.3 The assessment only considered the impacts of the turbine development area and not the impacts associated with the export cable, which would be longer and presumably more of a risk to vessels than previously. However, this is not an issue addressed either by the applicant or IPs.

14.2.4 Overall the Panel accepts that there would be reductions in risk with the TAMO and that these would be more significant than the applicant claimed. The additional navigational space between the coast and the array would reduce the dangers of congestion while the reduction in sea space occupied by the wind farm would provide greater room for manoeuvre for commercial shipping and recreational vessels. Add to that the reduction in construction

area, construction traffic and distance from aggregate extraction then the benefits in navigational safety terms are even more apparent.

14.3 PANEL'S OVERALL REASONING AND CONCLUSIONS

14.3.1 The Panel concludes that the impacts of the Application Project have been addressed by the applicant and sufficient mitigation proposed in line with NPS requirements. In this respect the applicant has sought to design the proposal, in consultation with the industry and responsible authorities, in order to minimise the impact.

14.3.2 More specifically in terms of maritime navigation the applicant has undertaken a NRA that has met the requirements of the MCA and Trinity House. The Panel also concludes that adverse impacts in the short and long term have been mitigated and the measures of mitigation have been incorporated in the DCO satisfactorily. However it also concludes that some adverse impacts remain and by its very presence the wind farm would represent a greater risk to marine navigation than existed previously.

14.3.3 In relation to aviation some matters in respect of Bournemouth Airport remain to be resolved but the Panel has no reason to believe that it could not be overcome. In any event, the DCO adequately covers the necessary agreement between the operators and the developer, subject to the agreement of the Secretary of State, before electricity generation can begin.

14.3.4 The Panel also concludes that the TAMO represents no greater harm than the original proposal and it does offer a significant degree of increased mitigation. The benefits lie primarily in the additional navigational space allowed in the area to the North of the array where most traffic is currently located and where vessels deflected from their preferred route are most likely to end up. This also better meets the objections of some sailing clubs that argued for greater navigational space in this area. There would however be a risk to navigation, and the matter weighs against making the DCO.

15 HIGHWAYS, TRAFFIC, TRANSPORTATION

15.0 THE POLICY CONTEXT

15.0.1 Policy in relation to highways, traffic and transportation is set out in EN-1 paragraph 5.13 in which the decision-maker is required to ensure that the applicant has sought to mitigate impacts on surrounding transport infrastructure and consider the requirements necessary to mitigate such impacts. Detailed suggestions into appropriate types of mitigation are given in paragraphs 5.13.8 to 5.13.12.

15.0.2 Paragraph 5.13.6 states that "*where the proposed mitigation measures are insufficient to reduce the impact on the transport infrastructure to acceptable levels, the (decision-maker) should consider requirements to mitigate adverse impacts on transport networks arising from the development*" and also that "*applicants may be willing to enter into planning obligations for funding infrastructure and otherwise mitigating adverse impacts."*

15.0.3 In relation to mitigation measures EN-1 proposes in paragraph 5.13.8 that "*where mitigation is needed, possible demand management measures must be considered and if feasible and operationally reasonable, required, before considering requirements for the provision of new inland transport infrastructure to deal with the remaining impacts*." It goes on to propose, in paragraph 5.13.9, that the decision-maker "*should have regard to the cost-effectiveness of demand management measures compared to new transport infrastructure, as well as aiming to secure more sustainable patterns of transport development when considering mitigation measures*."

15.0.4 Where it is likely that substantial HGV traffic will be generated paragraph 5.13.11 sets out three potential mitigation measures, as follows:

- Control numbers of HGV movements to and from the site in a specific period during its construction and possibly on the routing of such movements;
- Make sufficient provision for HGV parking, either on the site or at dedicated facilities elsewhere, to avoid overspill parking on public roads, prolonged queuing on approach roads and uncontrolled on-street HGV parking in normal operating conditions, and
- Ensure satisfactory arrangements for reasonably foreseeable abnormal disruption, in consultation with network providers and the responsible police force.

15.1 HIGHWAYS, TRAFFIC AND TRANSPORTATION – THE APPLICANT'S CASE

15.1.1 As a result of the proposed development and particularly the construction of the electricity network connection, extensive impacts on surrounding transport infrastructure and communities is anticipated, especially during the construction period but also to a lesser extent through the operational and decommissioning stages.

15.1.2 The applicant's case was set out in the ES Volume C –Onshore, Chapter 14 – Traffic and Transport, document 6.1.3.14 [APP-100]. It set out the legislative framework, the assessment methodology, an assessment of impacts and their mitigation including cumulative impacts.

15.1.3 In terms of traffic and transport impacts all identified receptors were assessed for construction, operation and decommissioning stages as being not significant. In relation to pedestrian severance four links were identified as having major impact significance and two as having moderate impact significance. In terms of pedestrian delay, minor or negligible significance was assessed in all cases, and for pedestrian amenity four major and three moderate impacts were identified. In terms of location the routes identified as having major adverse impacts for both pedestrian severance and amenity were Harpway Lane, Fish Street and Pinehurst Road. Pitthouse Lane being major for severance and moderate for amenity and Gore Road major for amenity alone. While a moderate assessment was made for Lyndhurst Road in both categories as were Milford Road (severance) and Burley Road (amenity).

15.1.4 The mitigation measures for severance formed part of the design process with further mitigation included in the Construction Traffic Management Plan (CTMP) and the CoCP.

15.1.5 Particular attention was paid to three specific locations; Sopley Primary School at the junction of Fish Street and Harpway Lane, Pitthouse Lane and Pinehurst Road/Elmhurst Road. At Sopley it was proposed that no HGV traffic associated with the project should be permitted to route via this junction. It was proposed to limit the length of cable corridor served by Pitthouse Lane to limit the construction traffic using this access. Similarly with Pinehurst Road/Elmhurst Road the proposal was to restrict the length of cable corridor served and where possible to schedule outside peak school times. Overall the residual impact on Pitthouse Lane was assessed as moderate.

15.1.6 Mitigation for pedestrian amenity involved rerouting some of the HGV traffic away from Gore Road. Fish Street/Harpway Lane junction would not be used by HGVs (as for severance). The restriction on cable corridor served by Pinehurst Road/Elmhurst

Road and by Pitthouse Lane would be limited (as for severance), and no further mitigation was proposed for Burley Road.

15.1.7 Residual impacts for amenity on Pinehurst Road were assessed as major, for Burley Road as moderate, also in the amenity category, while for Pitthouse Lane impacts were assessed as moderate in both severance and amenity.

15.1.8 For specific reasons of a localised character the applicant revised its actual assessment of impact in all the above locations as 'minor adverse'.

15.1.9 The cumulative impact assessment took into consideration a solar energy farm and an anaerobic digestion facility, both at Chapel Lane, Parley, and mixed commercial and industrial development at Bournemouth Airport. None of these developments were seen as presenting significant traffic cumulative impacts.

15.2 LOCAL IMPACT REPORTS AND STATEMENTS OF COMMON GROUND

15.2.1 Local Impact Reports (LIRs) were received from a number of local authorities and those relevant to transport matters were; Hampshire County Council [REP-2680] and Dorset County Council [REP-2678], while New Forest District Council [REP-2681] makes reference to the policies of Hampshire CC.

15.2.2 Hampshire CC acknowledged that there would be adverse impacts on local roads and communities through increases in traffic, diversions, congestion and inconvenience. However it was not of the opinion that these impacts were so severe as to stop the development going ahead. It believed that the DCO provided sufficient opportunity for the County Council to apply its powers as highway authority to mitigate and minimise any adverse effects.

15.2.3 The DCO also deals with the stopping up of rights of way and is supported by a Public Rights of Way Strategy. These safeguards satisfied the County Council in relation to its responsibilities in this respect.

15.2.4 Dorset CC considered the long-term highway impact to be negligible and that short term impacts can be mitigated satisfactorily by the use of traffic management measures.

15.2.5 Statements of Common Ground (SoCGs) were produced with a variety of organisations, both statutory and non-statutory. Dorset and Hampshire County Councils entered into a joint SoCG with the applicant [REP-3153] while the Highways Agency was the other statutory body with highways responsibilities to do so. The Parish and Town Councils of Hurn [REP-3123], Milford on Sea [REP-3124], New Milton [REP-2690] and Sopley [REP-3170]

agreed SoCGs while the Ramblers Association and British Horse Society also entered into agreements with the applicant.

15.2.6 Hampshire and Dorset CCs SoCG confirmed that the two highway authorities were content with the baseline data and details in relation to accesses, street works, stopping up of streets, and the draft Construction Traffic Management Plan (CTMP). There were no matters outstanding.

15.2.7 In a second SoCG relating to public rights of way (PRoW) [REP-3154] the authorities agreed that sufficient information had been supplied to give them comfort that PRoW crossings would be properly managed during construction and reinstated on completion. In addition they expressed the opinion that the DCO secured a detailed PRoW rights of way diversion and closure scheme in accordance with the principles of the PRoW Strategy. Further agreement was achieved in respect of signage, temporary diversions, communications, and involvement of PRoW officers.

15.2.8 The Highways Agency (HA) SoCG [REP-3119] set out agreement on definitions to be included in the DCO, details in relation to proposed works on the A31 and references to temporary lighting in the Construction CoCP. The HA would also be party to the signing off the CTMP.

15.2.9 The SoCG with Hurn PC [REP-3123] highlighted areas of disagreement with the applicant in relation to access to the cable corridor via Pitthouse Lane.

15.2.10 The Milford on Sea PC SoCG [REP-3124] identified that agreement had been reached over the minimisation of impacts on the A337 and that there would be no closure of the coastal footpath. However further assurances were sought in relation to the B3058, the timing of works, techniques of cabling and replanting.

15.2.11 New Milton TC [REP-2690] expressed concerns through the SoCG that despite proposals by NBDL to minimise traffic and transport impacts that there would, over five years of construction, be adverse impacts on local people and the tourist economy.

15.2.12 Sopley PC [REP-3170] failed to agree on either of the two issues it had raised in relation to the impact of the construction compound proposed in the vicinity of Tyrells Ford Hotel and access over small bridges in the area.

15.2.13 The SoCG with the Ramblers Association [REP-2706] was based on agreement that the PRoW Strategy provided sufficient detail to give comfort regarding PRoW crossings, their management and reinstatement. Further agreement was achieved in respect of signage, diversions, communications and involvement of the Ramblers Association throughout the development process.

15.2.14 The British Horse Society's (BHS) SoCG [REP-3121] was very similar to that agreed with Ramblers Association but also included further signage requirements for bridleways, increased awareness for construction workers as set out in the Code of Construction Practice (CoCP), and an agreed grievance procedure in relation to incidents reported by members of the BHS, to sit within the community relations strategy developed within the CoCP.

15.2.15 A number of the outstanding issues were pursued through the ISHs. At Deadline IV the applicant reported on the responses to the matters raised. The draft CTMP was updated to include matters agreed with the HA, and Hampshire CC had agreed a number of measures to address the concerns of Milford on Sea PC and Milton TC.

15.2.16 The use of Pitthouse Lane had been raised by Hurn PC and the Panel had conducted an unaccompanied site visit to examine the suitability of the access and an alternative suggested by the Parish Council. Following the ISH the applicant approached Tarmac Southern Ltd who had gained consent for a spur road to serve a quarry site, yet to be constructed. This spur road offered an alternative route to accessing the cable corridor and Tarmac had confirmed their willingness to enter into discussions concerning its potential use by NBDL.

15.2.17 In addition the applicants also responded to other matters. One concern expressed by the Panel was in respect of traffic generated by activity in any port selected by the applicant for construction or operational purposes. As a result a Port Travel Plan will be developed and approved by the relevant planning authority and highway authority once a port has been selected.

15.2.18 At Deadline VI the applicant reported on issues arising from the second ISH. Specific concerns had been raised about impacts on Tyrrells Ford Hotel relating to noise and air quality in respect of its proximity to the construction compound on the B3347. In the Written Response document [REP-3643] the applicant responded comprehensively to this matter and concluded that no significant impacts are anticipated, that noise levels would be well below British Standard criteria and that the events referred to in the IP's evidence were not comparable. This matter is further considered in Chapter 18.

15.3 PANEL'S REASONING AND CONCLUSIONS

15.3.1 The Panel is satisfied that the applicant has addressed the adverse impacts identified in the ES through agreement with the relevant IPs and as expressed in the SoCGs. Primarily the CTMP addresses the strategic concerns of the highway authorities and the Highways Agency and is to be approved by them. Additional documents such as the PRoW Strategy would address particular

aspects of road and footpath use while the CoCP would deal with the related matters of communications and developer behaviour.

15.3.2 More specifically the outstanding matters relating to Pitthouse Lane have been addressed and further negotiations with the quarry operator are left with the applicant to pursue.

15.3.3 The Panel is satisfied that there will not be undue impacts on residents and guests at Tyrrells Ford Hotel and that sufficient safeguards have been taken. (See Chapter 18 of this report)

15.3.4 Other matters raised by Parish and Town Councils have also been addressed and the Panel's concerns about port traffic would be dealt with through the Port Travel Plan.

15.3.5 The DCO secures both the applicant's ability to undertake the development and the mitigation of impacts. Articles 14 (Street works), 15 (Public rights of way), 16 (Temporary stopping up of streets), 17(Access to works) and 18 (Agreements with street authorities) provide the applicant with the powers to undertake the work in relation to traffic and transport.

15.3.6 Schedule 1 Part 3 of the DCO sets out the Requirements which secure mitigation, as follows:

- 10 – Port Travel Plan requires that Works 1,2 and 3A shall not commence until a port travel plan is approved by the relevant LPA in consultation with the highways authority
- 13 – Highway Access requires written details of any new access to be submitted and approved by the highways authority before connection works commence
- 14 – Public Rights of Way requires a public rights of way diversion and closure scheme in accordance with the PRoW Strategy
- 19 – Construction Traffic Management Plan also requires approval by the relevant highways authority before connection works may commence

15.3.7 Schedule 2 sets out the streets subject to street works while schedule 3 lists those streets to be temporarily stopped up. Schedule 4 lists the public rights of way to be temporarily stopped up and Schedule 5 lists the access to works. Schedule 6 identifies land to which public access is to be temporarily suspended.

15.4 TURBINE AREA MITIGATION OPTION (TAMO)

15.4.1 The applicant, in introducing the Turbine Area Mitigation Option (TAMO) in the Applicant's Response to Rule 17 Request for further information relating to the Mitigation Option [REP-3429] set out the implications for Traffic and Transport. The implications of the TAMO in transport terms are much the same as for the

Application Project except that there would be some reduction in activity.

15.4.2 The applicant predicted that traffic would be reduced by a third in respect of excavation, installation and jointing of the cables and cable ducts. In total it was anticipated that a 15-20% reduction in traffic at the peak would occur.

15.4.3 The applicant noted that for the Application Project the impacts would be negligible to minor adverse. Consequently for the TAMO it was not considered that further mitigation would be necessary.

15.4.4 Overall the Panel concludes that while the TAMO would have a reduced adverse impact on highways traffic and transport, that adverse effects of the Application Project would be satisfactorily addressed in any event. In addition the reduction in adverse impacts would not be comparable in scale to the one third reduction in electricity generation output.

15.4.5 There are no significant implications for the DCO from the adoption of the TAMO.

15.5 PANEL'S OVERALL REASONING AND CONCLUSIONS

15.5.1 The Panel concludes that the impacts of the proposed wind farm have been addressed by the applicant and sufficient mitigation proposed in line with NPS requirements. The applicant has sought to design the proposal, in consultation with the responsible authorities and local communities in order to minimise the impact. Adverse impacts in the short and long term have been mitigated and the measures of mitigation have been incorporated in the DCO satisfactorily.

15.5.2 The Panel also concludes that the TAMO represents no greater harm than the original proposal. In respect of highways, traffic and transport there is a measurable but limited difference between the two options with the TAMO having less adverse impact.

15.5.3 The Panel is satisfied that considerations relating to highways, traffic and transportation do not weigh against or for the Application Project or the TAMO. The matter is carried forward to the planning balance in Chapter 21.

16 DRAINAGE, FLOOD RISK AND WATER QUALITY

16.0 THE POLICY CONTEXT

National Policy Statements

16.0.1 Drainage is referred to in Section 4.10 of EN-1 under the broader consideration of pollution control and other environmental regulatory regimes. Paragraph 4.10.3 states that the decision-maker should work on the assumption that other regulatory regimes, "*including those on land drainage, water abstraction and biodiversity, will be properly applied and enforced by the relevant regulator*" and seek to complement them.

16.0.2 EN-1 paragraph 4.10.7 advises that the decision-maker "*should be satisfied that development consent can be granted taking full account of environmental impacts. Working in close cooperation with EA .... and other relevant bodies such as the MMO, Natural England, ... drainage bodies and water and sewerage undertakers"* the decision-maker should be satisfied that potential pollution will be adequately regulated and that cumulative effects are not unacceptable.

16.0.3 Flood risk is also addressed in Section 5.7 of EN-1. Paragraph 5.7.4 states that applications for energy projects of one hectare or greater in Flood Zone 1 and all proposals for energy projects located in Flood Zones 2 and 3 should be accompanied by a flood risk assessment (FRA). Paragraph 5.7.12 states that consent should not be given for developments in Flood Zone 2 unless Sequential Test requirements have been met and that Sequential and Exception Test requirements must be met for developments in Flood Zone 3. Paragraph 5.7.17 notes the need to take account of climate change.

16.0.4 In terms of mitigation, EN-1 paragraph 5.7.19 refers to a range of sustainable approaches to surface water drainage management and paragraphs 5.7.20 to 5.7.23 refer to the design of site layout, surface water drainage and storage systems.

16.0.5 Water quality is dealt with in Section 5.15 of EN-1. As with drainage, paragraph 5.15.4 states that the considerations set out in paragraph 4.10 on the interface between planning and pollution control apply.

16.0.6 EN-1 paragraph 5.15.2 states that the applicant should undertake an assessment of the existing status and impacts of the proposed project on water quality, water resources and physical modifications to the water environment.

16.0.7 In terms of mitigation, EN-1 paragraphs 5.15.8 to 5.15.10 suggest that producing a construction management plan may

help codify mitigation as would careful design to facilitate good pollution control practice and the efficient use of water including recycling.

16.0.8 EN-3 paragraph 2.6.189 mentions offshore water quality impacts arising from the disturbance of seabed sediments or release of contaminants.

UK Marine Policy Statement

16.0.9 The UK Marine Policy Statement (MPS) paragraph 2.6.4.3 refers to the need to comply with the Water Framework Directive and to take account of impacts on the quality of designated bathing waters. Paragraph 2.6.4.4 refers to the requirement to ensure that concentrations and effects of contaminants are kept within acceptable limits.

The Development Plans and Core Strategies

16.0.10 Local policies have been summarised in the LIR and ES, including:

- Christchurch and East Dorset Local Plan Part 1 - Core Strategy (2014) Draft Policy ME6 (flood risk) [APP-093];
- The Borough of Christchurch Local Plan (2001) Policy ENV7 (flood risk) and Policy ENV8 (flood risk) [APP-0093];
- East Dorset District Local Plan (2002) Saved Policy WENV1 (water quality), Saved Policy WENV2 (flood risk) and Saved Policy WENV3 (flood risk) [APP-093];
- New Forest District Local Plan Part 1: Core Strategy (2009) Policy CS6 (flood risk) [REP-2681]; and
- New Forest National Park Core Strategy and Development Management Policies DPD (2010) Policy CPs (water environment), Policy DPs (water quality) and Policy DP4 (flood risk) [APP-093].

16.1 INTRODUCTION AND BACKGROUND

16.1.1 The applicant's assessment was set out in ES Volume C Onshore Chapter 7 [APP-093] and Volume B Offshore Chapter 6 [APP-072]. These were supported by appendices that contained the onshore substation flood risk assessment [APP-275], considered Source Protection Zones [APP-276] and provided a schedule of watercourse crossings [APP-277].

16.1.2 Through the course of the examination issues were identified and addressed in a number of representations, SoCG, the Panel's written questions and ISH [REP-3676, table 3 and table 20]. The main issues included:

- onshore substation surface water management;
- cable trench drainage;
- watercourse discharges and crossings;

- works in the vicinity of the Milford flood attenuation dam;
- bentonite release at the landfall;
- turbidity at Blue Flag beaches; and
- pollution due to offshore collisions and allisions.

16.1.3 This section of the Report deals with onshore and offshore impacts on human receptors. Biodiversity impacts are addressed in Chapter 6.

16.2 ONSHORE DRAINAGE, FLOOD RISK AND WATER QUALITY

The applicant's overall assessment

16.2.1 Section 7.4 of the ES [APP-093, section 7.4] described the baseline environment for the Landfall site, Onshore Cable Corridor and Onshore Substation site. An assessment of the flood risk, waterbody impacts and consideration of the Water Framework Directive classifications for individual watercourses was also provided. Climate change was considered in the flood risk assessment [APP-275].

16.2.2 The applicant [APP-093] concluded that, following implementation of the measures adopted as part of the Project and pollution prevention techniques contained in the Code of Construction Practice (CoCP), the impacts were not significant and there was no requirement for additional mitigation measures. The CoCP is a certified document under the DCO.

16.2.3 In reply to a written question from the Panel, the applicant clarified [REP-3018] that "*the onshore cable route will be located in Flood Zones 2 and 3. No above ground built development (i.e. the onshore substation) will be located in Flood Zones 2 and 3. Therefore, it is not necessary to meet the requirements of the sequential and exception tests.*" Furthermore, the applicant stated that "*impacts from construction on flood risk have been assessed in Flood Zones 2 and 3 and will be mitigated through the implementation of measures contained in the Construction Environmental Management Plan*."

16.2.4 The applicant [REP-3018] noted that "*measures to address areas of known or suspected contamination (including landfill sites) are described in the Code of Construction Practice and provide the basis of a Contaminated Land Management Plan and an Environmental Incident Control Plan*" and later noted [REP-3313] that "*section 4.12 of the Code of Construction Practice identifies the locations of known or suspected contaminations and secures pre-construction site investigation as well as measures to deal with identified contamination*." DCO Requirement 26 provides for a contaminated land plan to be approved by the relevant planning authority in consultation with the Environment Agency (EA). At the issue-specific hearing (ISH) the EA stated that they were

satisfied that contaminated land mitigations were secured sufficiently.

16.2.5 In the Statement of Common Ground (SoCG) between the applicant and the EA [REP-3111] it was agreed that:

- in relation to the water environment the applicant's baseline and impact assessment were acceptable and that with the mitigation and requirements for submission of detailed plans for approval set out in the CoCP and Landscape and Ecology Management Plan (LEMP) the impacts from the project should not be significant;
- the flood risk assessment (FRA) undertaken for the onshore substation was appropriate and would be followed up by a full detailed FRA as part of the detailed design; and
- the EA had no issues with regard to ground conditions and contaminated land, provided that any required mitigation was undertaken in accordance with the environmental assessments that had been undertaken.

16.2.6 In the SoCG between the applicant and Hampshire CC [REP-3145] Hampshire CC confirmed that it was "*not currently aware of any reasons why in principle Land Drainage Consent could not be issued*." Although the applicant [REP-3018] suggested that Dorset CC gave a similar undertaking in the same SoCG, that was not the case as Dorset CC was not a signatory. However, Dorset CC did provide a similar undertaking in separate correspondence [REP-3043].

Onshore substation surface water management

16.2.7 During the examination the EA [REP-2922] and Dorset CC [REP-3389] recommended that a detailed surface water management scheme should be included as a requirement or similar within the DCO. These points were covered in a written question from the Panel and discussed at an ISH.

16.2.8 In response, the applicant [REP-3313] amended Requirement 23 to ensure that the EA and lead local flood authority were included as consultees for the approval of a detailed surface water management scheme. The EA [REP-3382] confirmed that wording had been agreed.

16.2.9 Following a request from Dorset CC in its Local Impact Report (LIR) [REP-2678], DCO Requirement 15 was amended to include consideration of flood risk.

Cable trench drainage

16.2.10 The applicant stated [APP-088] that "*at certain locations along the cable route it will be necessary to install additional drainage measures to prevent water logging of the cable trench and surrounding area after installation of the cable ducts*." Challenge

Navitus [REP-2947] noted that they "*could not find any description of what was envisaged, where it could happen, or the consequent environmental impacts. Some areas will be sensitive to any change in water conditions either directly or indirectly caused by draining the cable route.*"

16.2.11 The applicant responded [REP-3313] that "*the cable route and re-instatement will be designed to provide the same drainage arrangements and land topography after works are complete as in the pre-existing condition, so there would be no adverse effect on the drainage of surrounding areas. Reinstatement of land used temporarily for construction is secured through Requirement 3[2]*."

16.2.12 Dorset CC raised concerns in an ISH and subsequently in writing [REP-3389] "*that the in-filled trench-line does not unintentionally act as an underground flood conveyance route. We would wish to see the inclusion of clay stanks as a provision in the CEMP to address this potential issue.*" The applicant noted [REP-3313] that "*the use of clay stanks is referred to within the CoCP*."

Watercourse discharges and crossings

16.2.13 In response to a written question from the Panel the applicant noted [REP-3018] that Requirement 27 (watercourse crossings) made specific reference to the maintenance of drainage systems throughout the construction period, whilst under Article 19 (discharge of water) the applicant had the power to discharge into drainage systems with the permission of the owner of the drain or sewer.

16.2.14 Hampshire CC's LIR [REP-2680, paragraph 3.9] stated that there were no issues in dispute with the applicant regarding Ordinary Water Course crossings, the exact methodology for which would be determined through the application for Land Drainage Consent. The Council also requested that the methodology for watercourse crossings be consulted with the Lead Local Flood Authority. At the ISH the applicant noted that Land Drainage Consent application was made to Lead Local Flood Authority, who would therefore have an opportunity to address the issue.

16.2.15 Christchurch BC's LIR [REP-2677] and East Dorset DC [REP-2679] requested that measures set out in the CoCP to prevent pollution from drilling below watercourses and flooding from materials washed into rivers be secured in the DCO. The CoCP was secured by DCO Requirement 15.

16.2.16 Following a request from Christchurch BC [REP-3085, paragraph 11.19], the applicant amended Requirement 15 to ensure that the EA was consulted prior to the approval of the Construction Environmental Management Plan (CEMP).

16.2.17 New Forest DC's LIR [REP-2681, section 5.12] stated that "*in relation to drainage of water there are no significant issues in principle*", although over-pumping and reinstatement of watercourse banks required further consideration. This matter was discussed at the ISH, where New Forest DC stated that they were satisfied that sufficient provisions were included in the flood defence consents procedures. Requirement 24 requires relevant planning authority approval of the water and sediment plan, including particulars of discharges into watercourses.

16.2.18 In response to concerns raised by New Forest DC the applicant stated that the Water and Sediment Management Plan would be agreed with the relevant local authorities (LAs). It would provide detail and control measures for the transfer of sediment into sensitive areas [REP-3018] and for restrictions on discharges adding water or increasing the flow of watercourses [REP-3273].

16.2.19 Christchurch BC and East Dorset DC stated [REP-3640] that in their view Article 19 (discharge of water) "*needs to set out who will be undertaking monitoring of the work to avoid pollution incidents*." The applicant did not respond to this request. Requirement 24 requires relevant planning authority approval of details of the Water and Sediment Management Plan, which is to include particulars of discharge into watercourses.

16.2.20 Following a request by the EA [REP-2922], the applicant [REP-3313] advised that the draft DCO would be amended to note that the scheme was to include details of monitoring of any environmental impacts on watercourse crossings during construction. The wording agreed by the EA [REP-3382] is included in DCO Requirement 27(2).

16.2.21 The EA [REP-2922] requested corrections to the DCO with regards to the approving bodies for watercourse crossings. DCO was amended accordingly [REP-3133]. Requirement 27(1) subsequently required relevant LA approval of a scheme and programme for major river and ordinary watercourse crossings. The EA stated at the ISH that it was satisfied that processes were in place to capture the consents at the relevant time.

16.2.22 In response to a written question from the Panel [REP-3093], and in a further representation [REP-2922], EA recommended that impacts from bentonite releases or seepages should be addressed in the DCO. The applicant responded [REP-3313] that controls would be provided through an amendment to the Water and Sediment Management Plan (Requirement 24). At the ISH the EA stated that they were satisfied.

16.2.23 With respect to the methods of construction at watercourse crossings, and in response to a written question from the Panel, the EA recommended [REP-3093] the use of an auditing process to ensure that the use of Best Practicable Means mitigated the

potential impacts. The applicant noted [REP-3643] that "*the use of Best Practical Means form part of the Construction Environmental Management Plan and would inform the Watercourse Crossings schedule. The Environment Agency is a consultee to both of these requirements and, through the development of these plans, Best Practical Means would be discussed and agreed*." The applicant then stated [REP-4034] that it "*does not agree that an auditing process should be included in the DCO as it is an implicit part of agreeing and enforcing the management plans*."

16.2.24 At the ISH, Prof. Sharpe and Mr Searle suggested that there was a lack of detailed information on watercourse crossings and the impacts of access requirements for large and heavy equipment. The applicant [REP-3313] referred to the watercourse crossings schedule [APP-277] and the DCO requirements to produce programmes and detailed schemes for approval. The applicant [REP-3018 and REP-3273] also highlighted the Trenchless Crossings Plan referred to in DCO Article 39.

Works in the vicinity of the Milford flood attenuation dam

16.2.25 In the SoCG between the applicant and the EA [REP-3111] it was agreed that the crossing of the flood alleviation scheme was acceptable subject to the measures described in the CoCP and continued consultation with the EA.

16.2.26 The EA subsequently [REP-2922] recommended that provision be included in the DCO "*to secure a detailed agreed method of construction for works in the vicinity of Milford Dam prior to the works commencing."* The applicant [REP-3313] acknowledged the points and proposed revised wording to CoCP section 4.8. The EA [REP-3382] advised that they were satisfied.

16.2.27 Prof Sharpe [REP-3366] raised concerns about impacts on a further secondary dam 100m from the cliff edge. The applicant [REP-3490] and EA [REP-3634] responded that this dam would not be impacted by the Project.

PANEL'S REASONING AND CONCLUSIONS

16.2.28 The Panel considers that the applicant has addressed the main areas of disagreement between the parties sufficiently for the purposes of EN-1.

16.2.29 The DCO now recommended includes modifications made by the applicant in response to the representations made by interested parties and as agreed in the SoCGs and raised by the Panel during the examination. The Panel is satisfied that the DCO sufficiently mitigates the impacts on onshore drainage, flood risk and water quality.

16.2.30 Although impacts on the secondary dam near the cliff edge mentioned by Prof. Sharpe were not explicitly considered in the assessment, following the comments from the applicant and the EA, the Panel is satisfied that the impacts are not likely to be significant.

16.2.31 Some detailed issues, design matters and approvals remain to be resolved. The Panel is satisfied that these would be adequately addressed through application of the recommended DCO, including the CoCP and CEMP, and through proper enforcement of other regulatory regimes.

16.2.32 The Panel therefore concludes that the application meets the requirements of EN-1 for onshore drainage, flood risk and water quality. The matters neither weigh against or for the Project.

16.3 OFFSHORE WATER QUALITY

The applicant's overall assessment

16.3.1 ES Volume B Offshore Chapter 6 [APP-072] described the baseline environment and stated that "*designated bathing waters are assessed on bacterial concentrations. The proposed cable would not significantly affect bacterial concentrations in the seawater, so designated bathing waters have been scoped out*."

16.3.2 Impacts on blue flag beaches arising from increased turbidity, remobilisation of contaminated sediments and spillages during construction, operation and maintenance and decommissioning were assessed [APP-072 section 6.5 and table 6.14]. The magnitude of effect of turbidity at Blue Flag beaches during construction of the cable corridor was low and the residual impact negligible.

16.3.3 The applicant undertook an assessment against Water Framework Directive requirements and assessed contamination and turbidity [APP-072]. The residual impacts following design mitigation were negligible or minor and not significant.

16.3.4 Cumulative impacts were considered in the ES [APP-072]. In each case the applicant considered that the impacts were not significant.

16.3.5 In a SoCG between the applicant and Marine Management Organisation (MMO) it was stated [REP-3113] that "*the MMO confirms that it does not wish to comment on matters relating to Water Quality*." This was later interpreted by the applicant [REP-3313] as "*the MMO has confirmed that it has no comments regarding the water quality assessment undertaken*." A similar interpretation was offered elsewhere by the applicant [REP-3643]. The Panel considers that the applicant's later interpretations could be misinterpreted and has therefore relied on the original SoCG instead.

Bentonite release at the landfall

16.3.6 The Panel noted that the potential impacts on offshore water quality due to bentonite breakout during the drilling at the landfall had not been explicitly assessed in the ES. The applicant stated [REP-3018] that "*investigations would be conducted during the detailed design stage*", that "*drilling practice for the release of drilling muds into the marine environment means that the effects are negligible and therefore further assessment was not required*" and further that "*the low release rate and significant dispersion and dilution that would occur along this stretch of coast would remove the possibility of significant concentrations accumulating*."

16.3.7 The MMO stated [REP-2992] that "*The volume of (bentonite) releases into the sea have not been quantified within the ES. However it is not anticipated that this will be of sufficient volume to create an adverse impact given the assimilation into the water*."

16.3.8 In a further representation on this topic the applicant provided [REP-3313] a summary of the Conditions in the DML that controlled the construction processes that potentially impacted on offshore water quality.

Turbidity at Blue Flag beaches

16.3.9 This section should be read together with Chapter 5, which addresses sediment transportation.

16.3.10 The SoCG between the applicant and Bournemouth BC agreed [REP-3149] that "*for all water quality pathways, effects and receptors identified, including blue flag beaches, the ES presents a detailed and adequate assessment of potential impacts, arising from all phases of development"* and that *"the impacts on all water quality receptors identified and assessed, including the assessment of turbidity, will be negligible or minor and therefore not significant*." Nevertheless, Bournemouth BC asked for cable-laying nearest to the shoreline to be timed to avoid holiday seasons.

16.3.11 The issue was discussed at the ISH and was an area of conflict between the applicant and Bournemouth BC. In written representations Bournemouth BC initially [REP-3390] explained that its concerns were "*that the export cables to Taddiford Gap, and the inter-array cabling, could cause an increase in sediments being re-suspended which will impact on turbidity. This will then be transported along the shore with a potential impact on the blue flag status*" and suggested that restrictions be introduced on the periods when these offshore works were undertaken in order to avoid any risk of increased turbidity during the peak summer season from Easter to October. Bournemouth BC also stated that

the MMO agreed to an amendment to the DML to require the MMO to consult with relevant coastal LPA before details of the cable installation were approved. Bournemouth BC stated that "*at the very least this would inform LPA's of the proposed timetables and duration to enable them to manage any water quality implications appropriately."*

16.3.12 The applicant did not agree to the proposed amendment to the DML [REP-3643], stating that "*any increases in turbidity at the beaches are unlikely to be detectable against the naturally variable turbidity fluctuations at the Blue Flag beach locations*." The applicant's view was that the Project would not cause abnormal changes to turbidity or cause impacts to Blue Flag beaches and that therefore no restriction on construction works was required. The applicant later stated [REP-4032, paragraph 53] that it "is not considered appropriate for local authorities to be consulted as part of the approval of the plans required under the DMLs by the MMO, as they are purely related *to offshore matters. This is consistent with the treatment of other offshore wind NSIPs.* "

Pollution due to offshore collisions and allisions

16.3.13 This section should be read together with Chapter 14, which addresses navigation.

16.3.14 The applicant stated [REP-3018] that "*with the majority of allisions involving small craft to be low energy and therefore low impact; indicating that it would be unlikely that the consequences of an allision would result in a pollution incident*." The applicant further stated [REP-3273] that "*Breach of a vessel's fuel tank is considered unlikely and in the case of vessels carrying hazardous cargoes, e.g., tanker or gas carrier, the additional safety features associated with these vessels would further mitigate the risk of pollution*."

16.3.15 Challenge Navitus [REP-2943] stated that "*the quantification of the risk of pollution only considers the effect of what Anatec's define as "major" collisions which is approximately 3% of all collisions*."

16.3.16 In response to a written question from the Panel the Maritime and Coastguard Agency (MCA) confirmed [REP-3062] that "*MCA is satisfied the NRA was conducted in accordance with MCA guidance and that it has covered a worst case scenario*."

16.3.17 The matter was discussed at an ISH at which disagreements between Brookes Bell (acting on behalf of Challenge Navitus) and Anatec (acting on behalf of the applicant) were not resolved. At the Panel's request there was a follow-up between the parties where historical data and modelling were discussed in more detail. It was subsequently agreed [REP-3322] that "*the number*

of incidents in which pollution might have occurred is not under-predicted in Anatec's results." The applicant later commented that "*there is therefore no issue with the modelling undertaken with consequences being calculated in a conservative manner and showing impacts that were within tolerable or broadly acceptable parameters*."

PANEL'S REASONING AND CONCLUSIONS

16.3.18 The Panel is satisfied that the risks of bentonite breakout at the landfall have been considered sufficiently during the examination and particularly notes the MMO's representation. Based on the information provided the Panel concludes that the impacts are not significant.

16.3.19 On the matter of turbidity at Blue Flag beaches, the Panel is mindful of the concerns expressed by Bournemouth BC but considers that sufficient evidence has not been provided to contradict the applicant's overall assessment and that the MMO can be relied on to liaise with and notify the LAs as necessary.

16.3.20 The Panel concludes that disagreements between parties on the risks of pollution arising from offshore collisions and allisions are largely attributed to certain detailed information not initially being available to all parties. Following the outcome of further discussions between the parties and the comments received from the MCA, the Panel is satisfied that the impacts have been assessed satisfactorily and are not significant.

16.3.21 The DMLs now recommended include modifications made by the applicant and by the Panel in response to the representations made by interested parties and raised by the Panel during the examination. The Panel is satisfied that the DMLs sufficiently mitigate the impacts on offshore water quality.

16.3.22 Some detailed issues, design matters and approvals remain to be resolved. The Panel is satisfied that these would be adequately addressed through application of the recommended DMLs and through proper enforcement of other regulatory regimes.

16.3.23 The Panel therefore concludes that the application meets the requirements of EN-1 and the MPS for offshore water quality.

16.3.24 The considerations relating to drainage, flood risk and water quality do not weigh against or for the Application Project.

16.4 TURBINE AREA MITIGATION OPTION (TAMO)

The applicant's case

16.4.1 For onshore drainage, flood risk and water quality the applicant stated [REP-3429] that the changes would be a slight reduction in the working width along the cable corridor, which would result in

a reduction in permanent easement and which would lead to a reduction in the length or watercourses affected by the TAMO.

16.4.2 The applicant said [REP-3429] that "*the slight reduction in working width is not considered to cause a measurable change in impact*."

16.4.3 With respect to offshore water quality the applicant has stated [REP-3429] that the changes include:

- reduced number of turbines and offshore substation platforms;
- reduced disturbance to the seabed and water quality;
- reduced frequency, extent and cumulative duration of the impacts of increased turbidity from drilling and cable laying;
- reduced frequency and likelihood of vessel collision and accidental spillage; and
- increased distance between offshore development activities and receptors.

16.4.4 The applicant stated [REP-3429] that "*all impacts assessed as part of the Application scenario remain Not Significant, but with reductions in the magnitude of each effect*."

Other representations

16.4.5 A number of representations have highlighted that in general terms the TAMO would have onshore impacts similar in scale to the Application Project, although little mention was made of specific changes to the impacts considered in this section. Some minor reductions in adverse impacts were implied due to the narrower onshore cable route.

16.4.6 During an ISH it was suggested that the narrower cable route would allow more flexibility for any adverse onshore at specific locations to be mitigated by micro-siting within the redline boundary.

PANEL'S REASONING AND CONCLUSIONS

16.4.7 The Panel concludes that the impacts of the TAMO have already been addressed by the applicant. The mitigation of impacts have already been covered sufficiently for the Application Project. The measures of mitigation have been incorporated in line with NPS requirements and captured in the DCO and DMLs satisfactorily. There are no significant implications for the DCO or DMLs were the TAMO to be adopted.

16.4.8 The Panel therefore concludes that the TAMO meets the requirements of EN-1 for onshore drainage, water quality and flood risk, and for offshore water quality. The matter is carried forward to the planning balance in Chapter 21 on the basis that it neither weighs in favour or against the TAMO.

17 EMF, AIR QUALITY AND OTHER HEALTH

17.0 THE POLICY CONTEXT

NATIONAL POLICY STATEMENTS

17.0.1 EN-1 paragraph 4.10.7 advises that the decision-maker "*should be satisfied that development consent can be granted taking full account of environmental impacts*" and should be satisfied that potential pollution will be adequately regulated and that cumulative effects are not unacceptable. EN-1 paragraph 4.10.3 provides guidance that the decision-maker "*should work on the assumption that the relevant pollution control regime and other environmental regulatory regimes … will be properly applied and enforced by the relevant regulator*."

17.0.2 Section 4.13 of EN-1 requires the applicant to assess and mitigate any adverse health impacts of the project and to consider any cumulative impacts. EN-1 notes that "*the direct impacts on health may include increased traffic, air or water pollution, dust, odour, hazardous waste and substances, noise, exposure to radiation, and increases in pests*."

17.0.3 Section 5.6 of EN-1 specifies the approach to be taken to a wide range of nuisances, including odour, dust, steam, smoke and infestation of insects.

17.0.4 EN-5 paragraph 2.10.2 advises that Electric and Magnetic Fields (EMF) can have both direct and indirect effects on human health. It explains that although putting cables underground eliminates the electric field, they can still produce magnetic fields, which are highest directly above the cable. EN-5 paragraphs 2.10.5 and 2.10.9 refer to the requirement to comply with EMF exposure guidelines published by ICNIRP in 1998.

17.0.5 Section 5.2 of EN-1 sets out the parameters for the assessment and management of air quality and emissions. Paragraph 5.2.1 observes that "*construction, operation and decommissioning phases can involve emissions to air which could lead to adverse impacts on health*." Paragraph 5.2.8 notes that many activities involving air emissions are subject to pollution control.

UK MARINE POLICY STATEMENT

17.0.6 The UK Marine Policy Statement (MPS) paragraph 2.6.2.1 notes that emissions to air from shipping, vehicle emissions as a result of increased coastal activity and dust from construction could lead to adverse impacts on human health. MPS paragraph 2.6.2.2 refers to the need to ensure that air quality impacts have been taken into account and for the need to liaise with terrestrial authorities, particularly with respect to Air Quality Management Areas (AQMAs).

17.0.7 The MPS also mentions the need to consider any health impacts arising from noise and vibration, mobilisation of contaminants in sediments, waste disposal, pollution of shellfish waters and water quality.

THE DEVELOPMENT PLANS AND CORE STRATEGIES

17.0.8 Relevant local policies have been mentioned in ES and LIRs, including:

- The Borough of Christchurch Local Plan (2001) Policy ENV2 (pollution) and Policy ENV3 (pollution) [APP-094];
- East Dorset District Local Plan (2002) Saved Policy DES2 (pollution) [APP-094];
- New Forest District Local Plan Part 1: Core Strategy (2009) Policy CS5 (safe and healthy communities) [REP-2681]; and
- New Forest National Park Core Strategy and Development Management Policies DPD (2010) Policy CP6 (pollution) [APP-094].

17.1 INTRODUCTION AND BACKGROUND

17.1.1 The applicant's assessment was set out in ES Volume C Onshore Chapter 2 [APP-088], Volume C Onshore Chapter 8 [APP-094], Volume C Onshore Appendix 2.1 [APP-264] and Volume B Offshore Chapter 7 [APP-073].

17.1.2 Through the course of the examination issues were identified and addressed in a number of representations, Statements of Common Ground (SoCGs), the Panel's written questions and issue-specific hearings (ISH). The main issues included:

- EMF along the onshore cable route;
- dust emissions during construction;
- effects on air quality due to construction traffic, particularly in the Lyndhurst AQMA;
- impacts on local or micro-climates; and
- fog being caused by the turbines (fogging).

17.1.3 This section of the Report deals with onshore and offshore impacts on human receptors. Offshore EMF health impacts are addressed in Chapter 17. EMF and air quality impacts on Biodiversity are addressed in Chapter 6. Other Chapters relevant to health issues include:

- Chapter 5 – physical processes;
- Chapter 15 - highways, traffic and transportation;
- Chapter 16 – drainage, flood risk and water quality; and
- Chapter 18 – noise and vibration.

17.2 THE APPLICATION PROJECT

THE APPLICANT'S CASE

17.2.1 The ES [APP-088 and APP-264] stated that the maximum magnetic field strength for the onshore cables was calculated to be 29.7μT and that the highest magnetic field known to occur with the Onshore Substation equipment was 29.7μT, which are "*significantly less than the 100 μT as referenced in the ICNIRP guidelines*."

17.2.2 Referring to comments from Mr Sharpe, the applicant [REP-3273] stated that it would comply with national grid frequency and harmonics requirements both onshore and offshore.

17.2.3 Replying to a suggestion from the Panel that an EMF limit should be secured, the applicant [REP-3273] stated that it would comply with ICNIRP guidelines and suggested that no DCO requirement was therefore necessary.

17.2.4 Dust emissions from onshore construction activities were assessed in the ES [APP-094] as negligible following the mitigation measures, for which the applicant [REP-3273] gave examples of water spraying, speed limits, vertically directed exhausts and surface treatment to unsurfaced haul roads, which were accepted by the Institute of Air Quality Management to reduce dust by 90%. The mitigation is included in the Code of Construction Practice (CoCP) [REP-3692], which is a certified DCO document.

17.2.5 The applicant [REP-3273] stated that slight adverse air impacts predicted in the Lyndhurst AQMA would be mitigated through the timing of vehicle movements and the use of minimum emissions class HGVs, as identified in the Construction Traffic Management Plan (CTMP) [REP-3496].

17.2.6 The mitigation of onshore air quality impacts during construction is further secured by Requirement 15(3)(f) and Requirement 22, which require the submittal of an air quality management plan for approval by the relevant LA.

17.2.7 The ES [APP-094] scoped operational air quality impacts out of the assessment, as electricity transmission would not directly produce any emissions and maintenance traffic levels would be very low. Similarly, it was not anticipated that any activities at any stage of the project would produce any odours, and therefore this was also scoped out.

17.2.8 The ES [APP-073] assessed that the impacts on air quality from offshore vessel movements were negligible and that there were no significant cumulative impacts. The ES [APP-071, APP-113 and APP-115] also considered potential impacts on micro-climate, which was found to be of minor to negligible significance; and due

to fogging in the lee of turbines, which was considered likely to be very infrequent.

17.2.9 During the examination the applicant [REP-3273] noted that fogging in the lee of turbines was a physical effect, had no impact on pollutant concentrations and was not considered to be a significant air quality effect.

OTHER REPRESENTATIONS

17.2.10 New Forest DC [REP-2681] raised concerns regarding the potential for construction traffic to raise nitrogen dioxide levels within the Lyndhurst AQMA. At an ISH, New Forest DC commented that it was satisfied with the applicant's overall approach, including the provision of an air quality management plan, and later [REP-3395] referred to further amendments being required to the CTMP.

17.2.11 Christchurch BC and East Dorset DC [REP-3393] considered that the CoCP provisions for mitigating pollutants and dust were sufficiently robust.

17.2.12 Prof. John Sharpe [REP-3366] considered that the power generated from the wind farm would contain many harmonics of frequency and that it was therefore not possible to determine the effects of the radiation from the cables.

17.2.13 The Poole and Christchurch Bays Association (PCBA) [REP-2908 and REP-3472] raised concerns regarding fogging and impacts on the local micro-climate. Photographs were provided of fogging in Denmark and references to research suggesting reductions in air temperatures due to mixing of air by the turbines. PCBA suggested that more research was required to establish that the local microclimate would not be damaged.

17.2.14 Poole Agenda 21 [REP-3387] suggested that fogging was almost invariably a local effect that cleared within a short distance and that the image provided by the PCBA was the only recorded image of the generation of significant downwind fog.

PANEL'S REASONING AND CONCLUSIONS

17.2.15 The Panel finds that risks of EMF exposure are adequately addressed by the applicant's commitment to comply with industry guidelines.

17.2.16 The Panel concludes that compliance with national grid and ICNIRP guidelines are likely to be sufficient to address concerns regarding frequency harmonics. It also considers that although evidence has been provided of fogging, there is no indication that this would either be longer lasting or more extensive than assessed by the applicant. The Panel is not convinced of suggestions of changes to the micro-climate, as there is no

evidence that temperature changes in the vicinity of the turbines would result in differences for receptors at the coast.

17.2.17 The DCO includes modifications made by the applicant and by the Panel in response to the representations made by interested parties and raised by the Panel during the examination. Although some detailed issues, design matters and approvals remain to be resolved, the Panel is satisfied that these would be adequately addressed through application of the recommended DCO and through proper enforcement of other regulatory regimes.

17.2.18 Therefore, and also given the comments made by the local authorities, the Panel considers that the applicant's impact assessment and mitigation set out in the ES and further provided during the examination are robust and are sufficiently secured in the DCO.

17.2.19 The Panel therefore concludes that the Application Project meets the requirements of EN-1, EN-5 and the MPS for EMF, air quality and other health impacts. Accordingly, the Panel takes the view that the Secretary of State can be satisfied that EMF, air quality and other health considerations are not matters that should attract significant weight in the decision as to whether to make the DCO or not.

17.3 TURBINE AREA MITIGATION OPTION

THE APPLICANT'S CASE

17.3.1 For onshore air quality, the applicant [REP-3429 and REP-3701] considered that there would be fewer traffic movements and less soil excavation along the cable route, therefore reducing the amount of vehicle fumes and the potential for the creation of dust, and that impacts at the substation would not change.

17.3.2 For offshore air quality, the applicant [REP-3429 and REP-3701] considered that the reduction in turbine numbers would result in a reduction in the number of vessel movements required, and therefore would reduce the impact to offshore air quality.

OTHER REPRESENTATIONS

17.3.3 No new issues were raised with regards to EMF, air quality or other health impacts for the TAMO.

PANEL'S REASONING AND CONCLUSIONS

17.3.4 The Panel finds that there is no evidence of any significant difference between the TAMO and the Application Project regarding EMF.

17.3.5 The Panel concludes that the impacts of the TAMO have been adequately addressed by the applicant and that the mitigation of

impacts identified for the Application Project are sufficient for the TAMO, have been incorporated in line with NPS requirements and captured in the DCO satisfactorily.

17.3.6 The Panel therefore concludes that TAMO meets the requirements of EN-1, EN-5 and the MPS for EMF, air quality and other health impacts. The matters should not attract significant weight in the decision as to whether to make the DCO or not.

18 NOISE AND VIBRATION

18.0 THE POLICY CONTEXT

NATIONAL POLICY STATEMENTS

18.0.1 EN-1 section 5.11 sets the context for the examination of issues relating to noise and vibration – "*excessive noise can have wide-ranging impacts on the quality of human life, health (for example owing to annoyance or sleep disturbance) and use and enjoyment of areas of value such as quiet places and areas with high landscape quality …. it promotes good health and good quality of life through effective noise management. Similar considerations apply to vibration, which can also cause damage to buildings*."

18.0.2 EN-1 paragraphs 5.11.4 to 5.11.7 set out what should be included in the applicant's noise assessment and refers to the need to assess operational and construction noise using the principles of the relevant British Standards. EN-1 paragraph 5.11.9, sets out the aims that must be satisfied by a proposal before a DCO can be granted:

- avoid significant adverse impacts on health and quality of life from noise;
- mitigate and minimise other adverse impacts on health and quality of life from noise; and
- where possible, contribute to improvements to health and quality of life through the effective management and control of noise.

18.0.3 With respect to mitigation measures, EN-1 paragraphs 5.11.12-13 state that these could include reduction of noise at the point of generation, containment, adequate distance between source and receptors, restricting activities allowed on site, specifying acceptable noise limits and, "*in certain situations, and only when all other forms of noise mitigation have been exhausted, it may be appropriate … to consider requiring noise mitigation through improved sound insulation to dwellings*."

18.0.4 EN-3 paragraphs 2.7.52 to 2.7.62 provide specific requirements for offshore wind farms. EN-1 paragraphs 2.7.54 to 2.7.56 set out what should be included in the applicant's noise assessment, notes that assessment should be made of noise created by wind turbines in operation, and states that "*the applicant's assessment of noise from the operation of the wind turbines should use ETSU-R-97, taking account of the latest industry good practice*", that "*this should include any guidance on best practice that the Government may from time to time publish*" and that "*noise limits will often influence the separation of wind turbines from residential properties*."

18.0.5 EN-3 paragraphs 2.7.58 and 2.7.59 state that "*where the correct methodology has been followed and a wind farm is shown to comply with ETSU-R-97 recommended noise limits*" the Panel "*may conclude that it will give little or no weight to adverse noise impacts from the operation of the wind turbines*" and that "*where a wind farm cannot demonstrate compliance with the recommended noise limits set out in ETSU-R-97*" the Panel "*will need to consider refusing the application unless suitable noise mitigation measures can be imposed by requirements to the development consent*". EN-3 paragraph 2.7.61 goes on to require that "*if the predicted noise levels from the proposed development only just meet the recommended noise limits set out in ETSU-R-97*" then the Panel "*should include a requirement setting such a noise limit*."

18.0.6 EN-3 paragraph 2.7.61 notes that "*mitigation should be inherent in good design of a wind farm*" but that the Panel should consider what other measures may be needed.

18.0.7 EN-5 paragraph 2.9.7 notes the different sources and types of audible noise from substation equipment and the factors influencing whether they can be heard from outside the substation. EN-5 paragraph 2.9.8 then refers to assessment using the relevant British Standards.

UK MARINE POLICY STATEMENT

18.0.8 The UK Marine Policy Statement (MPS) paragraph 2.6.3.3 states that "*noise from marine activities can also affect people*", noting that "*excessive noise can have wide ranging impacts on the quality of human life, health, and use and enjoyment of areas, including those with high visual quality*" and that "*its impact therefore needs to be considered and managed appropriately*". MPS paragraph 2.6.3.4 notes the need to "*consider how significant adverse effects on health can be avoided*."

THE DEVELOPMENT PLANS AND CORE STRATEGIES

18.0.9 Relevant local policies have been identified in the LIR and ES, including:

- The Bournemouth Local Plan: Core Strategy (2012) Policy CS3 (sustainable energy and heat) [REP-2676] and Policy CS38 (minimising pollution) [APP-074];
- Christchurch and East Dorset Local Plan Part 1 - Core Strategy (2014) Draft Policies ME5 (sources of renewable energy) and HE3 (landscape quality) [REP-2677 and REP-2679];
- The Borough of Christchurch Local Plan (2001) Policies ENV3 (pollution) and ENV17 (green belt) [APP-074];
- Dorset AONB Partnership Management Plan (2014-2019) Objectives L1c (conserve and enhance the special qualities

of the AONB); L2b (reduce noise and light pollution); CS3b (conserve tranquil areas along the coast) and PH1g (conserve and enhance rural character) [REP-2678 and REP-2683]
- East Dorset District Local Plan (2002) Policy DES2 (pollution) [APP-074 and APP-095];
- New Forest District Local Plan Part 1: Core Strategy (2009) Policies CP2 (design quality), CS4 (energy and resource use) and CS5 (safe and healthy communities) [APP-074 and APP-095];
- New Forest National Park Management Plan 2010-15 Special Qualities of the New Forest National Park - Tranquillity [REP-2682]; and
- Purbeck Local Plan Part 1 (2012) Policy REN (renewable energy) [REP-2683].

18.1 INTRODUCTION AND BACKGROUND

18.1.1 The applicant's assessment for onshore noise and vibration was set out in ES Volume C Chapter 9 [APP-095] and a supporting technical report [APP-278]. The assessment for noise arising from offshore, or in-air noise, was provided in ES Volume B Chapter 8 [APP-074] and a supporting report [APP-117].

18.1.2 During the examination a large number of representations were made on noise and vibration, particularly regarding potential impacts of noise from offshore piling and from the operational turbines on onshore receptors. Contributions were made by Local Authorities (LAs) and other Interested Parties (IPs) on matters where there was disagreement with the applicant, including on a series of technical issues where available guidance was challenged and where professional opinion diverged. The main issues included:

- onshore construction and decommissioning works - noise and vibration limits, variations in background noise levels and ground conditions, activities outside working hours, working methods, acoustic screening and effects on amenity, health, well-being and sleep;
- operation and maintenance of the Onshore Substation - noise limits and selection and isolation of equipment;
- piling of the turbines and other offshore structures - metrics and limits for impulsive noise, background noise surveys, atmospheric and shoreline effects, piling sound power outputs, re-radiation of vibration as sound, calculation methods and correction factors, predicted noise levels and effects on health, well-being and sleep;
- operation and maintenance of the wind turbines - metrics and noise limits, background noise surveys, atmospheric and shoreline effects, calculation methods and correction factors, predicted noise levels, noise contours, amplitude modulation, turbine sound power outputs, low frequency

noise, wind turbine syndrome and other effects on health, well-being and sleep; and
- mitigation of noise from offshore - mitigation measures, monitoring and complaints, communication and monitoring protocol, complaints at other wind farms, support to local authorities, the potential for a detailed assessment with background noise surveys, statutory nuisance and compensation.

18.1.3 To address these the Panel facilitated several cycles of exchange between the applicant and IPs through to the very end of the examination, by which point while a number of items had been agreed, a significant number had not.

18.1.4 The structure of this Chapter reflects the course of the examination. Impacts arising from onshore and offshore are considered separately. For each, the conclusions of the ES and the responses to it provided in Statements of Common Ground (SoCG) are first set out. Then the issues identified in the Local Impact Reports (LIR) and by IPs during the examination are addressed in turn, so that the different views on each issue can be considered together. The Panel's reasoning and conclusions are first given for noise arising from onshore, then for each group of related issues for noise from offshore and then overall for noise arising from offshore. The Turbine Area Mitigation Option (TAMO) is considered at the end.

18.1.5 This chapter deals with impacts on human receptors due to noise arising from onshore and offshore during construction, operation and maintenance and decommissioning for both the Application Project and the TAMO. Other relevant sections of the report include:

- Chapter 6 for noise and vibration impacts on biodiversity;
- Chapter 11 for noise impacts on diving;
- Chapter 15 for highways, traffic and transportation; and
- Chapter 22 for matters related to compensation.

18.2 NOISE AND VIBRATION FROM ONSHORE

THE ENVIRONMENTAL STATEMENT

18.2.1 Volume C Chapter 9 of the ES [APP-095] described the baseline environment for onshore, which included background noise surveys at the Onshore Substation Site. The ES stated that it was agreed with New Forest DC and East Dorset DC that baseline surveys for the Onshore Cable Corridor and Landfall were not required as fixed noise limits would be applied at noise sensitive receptors near the proposed construction works. The assessed realistic worst case impacts were considered to be due to various aspects of the construction works, construction traffic on local roads and site access routes, operation and maintenance at the

substation and decommissioning. No significant cumulative impacts were identified.

18.2.2 The ES [APP-095] identified specific mitigation measures of:

- a public awareness campaign during construction;
- a series of mitigation measures to ensure that noise limits would not be exceeded;
- temporary noise barriers at strategic locations;
- limits to construction activities within 5m of residential properties in very close proximity to the works;
- measures to be agreed with the MOD for works in the vicinity of the MOD premises at West Moors; and
- enclosures to certain items of plant in the Onshore Substation.

18.2.3 With this mitigation the ES concluded that residual impacts due to onshore noise and vibration were negligible or minor and not significant.

18.2.4 In a SoCG with New Forest DC [REP-3144] the Council agreed with the applicant's assessment methodology, impacts assessment, construction hours, principles of a noise and vibration management plan, noise limits and principles for a community relations strategy and it was stated that "*there are no matters outstanding or not agreed*. " There was no SoCG with East Dorset DC, in whose area the Onshore Substation would be located.

CONSTRUCTION NOISE AND VIBRATION FROM ONSHORE

Noise and Vibration Management Plan

18.2.5 The applicant's criteria for a noise and vibration management plan, to be agreed with the LAs, are secured in section 4.3 of the code of construction practice (CoCP) [REP-3692], a certified document under the DCO, and includes reference to:

- measures to minimise noise and vibration;
- a daytime construction noise limit;
- construction induced vibration and mitigation measures;
- noise and vibration monitoring;
- consent for work outside normal daytime hours;
- erection of physical barriers, the locations of which would be defined in consultation with the LAs; and
- the requirement for Contractors to "*identify as far as practicable, through design or monitoring, construction activities that may breach agreed noise limits and which may reasonably require additional mitigation*".

18.2.6 Christchurch BC and East Dorset DC [REP-4078] referred to the need for a public awareness campaign and suggested that the requirement for this to be included in the noise and vibration

management plan was captured in an additional Requirement 21(d).

Onshore cable routeing

18.2.7 Although some individual IPs questioned the route selection, New Forest DC [REP-2681] accepted that "*wherever possible, the 35 km (22 mile) onshore cable corridor has been routed to avoid noise and vibration sensitive receptors*."

Construction noise

18.2.8 The applicant [APP-095, REP-3019, REP-3215, REP-3273, REP-3643 and REP-4033] stated that:

- noise threshold levels had been agreed with Christchurch BC and East Dorset DC;
- a lower limit due to lower background noise levels was not felt necessary due to the transitory nature of the impact;
- noise limits did not need to be secured in the DCO as an agreed mechanism was already in place for limits to be established subject to LA approval;
- suggested noise limits for works outside construction hours would not be enforceable;
- some works, for example HDD drilling at trenchless crossings, may extend beyond normal daytime working hours to the possible breach of noise limits and may require section 61 notices;
- the noise limits on the roads identified by the LAs would not be breached and mitigation at those locations would be identified in the noise and vibration management plan;
- increase in road traffic noise on road links and site access roads had been assessed; and that
- Tyrrells Ford Hotel was approximately 230m from the corner of the construction compound, noise levels there would not exceed the threshold limits and the works were not expected to give rise to disturbances.

18.2.9 Comments received from the LAs [REP-2681, REP-4033, REP-4075 and REP-4078] and other IPs [REP-2893] included that:

- a threshold of 70dB$_{LAeq,10hr}$ was appropriate to avoid significant disturbance for the core daytime working hours, on the assumption that the works would be transient and that advance notice would be given to local residents;
- a threshold of 70dB$_{LAeq,1hr}$ was required;
- some LAs suggested that activities excluded from the normal working hours restrictions should be controlled with a noise limit of 35dB(A)$_{LAeq,15min}$;
- it was predicted that there would be no areas along the cable corridor that would qualify for noise insulation;

- a property in Hare Lane identified as being within 5m of the cable corridor was considered to be adequately addressed by the applicant's proposals;
- further consideration was requested for properties in Elmhurst Road, Forest Road and Moorlands Rise in West Moors; and
- there were concerns regarding noise impacts from a construction compound and construction traffic on the Tyrrells Ford Hotel, particularly with respect to disturbance to outdoor activities at the hotel and at night time due to traffic movements and HDD works.

18.2.10 New Forest DC [REP-2681] referred to lessons from previous large construction projects and the need for a robust community liaison system. The applicant's community liaison and noise monitoring and communication proposals are secured in the CoCP.

Construction vibration

18.2.11 The applicant [APP-095, REP-3019, REP-3273 and REP-4033] stated that:

- construction methods would ensure that vibration levels would be unlikely to exceed just perceptible levels and that vibration threshold limits would not be exceeded;
- ground investigation works would establish if there were any areas which had the potential for elevated vibration levels and, where necessary, revised construction methodologies would be used in accordance with the noise and vibration management plan;
- there was a mechanism within the noise and vibration management plan to carry out vibration monitoring at key receptors; and that
- vibration limits were not required as controls were set out in the CoCP and would be further defined in agreement with relevant LAs through the noise and vibration management plan.

18.2.12 New Forest DC [REP-2681] noted that there would be no significant effect and that it was content with the applicant's proposals for noise monitoring in tandem with the proposed communication strategy.

OPERATION AND MAINTENANCE NOISE FROM ONSHORE

18.2.13 The applicant [APP-095, REP-3019, REP-3144 and REP-3272] stated that:

- there was a potential for disturbance to noise sensitive receptors in the vicinity of the Onshore Substation site;
- mitigation measures include sensitive siting of equipment and the use of housing around equipment;

- Requirement 30 stated that the Onshore Substation could not commence operation until an operational noise management plan including monitoring, attenuation and noise limits had been approved by the LA; and that therefore
- a noise limit did not need to be secured in the DCO.

18.2.14 New Forest DC [REP-2681] noted that there were no significant noise or vibration effects for New Forest District from the cable corridor once operational.

DECOMMISSIONING NOISE FROM ONSHORE

18.2.15 The applicant [APP-095 and REP-3273] stated that:

- decommissioning works along the length of the onshore cable route were localised and for a short term only and were therefore scoped out of the assessment;
- activities to return the Onshore Substation site to its undeveloped state would result in noise levels broadly similar to the construction works and the residual impacts would be negligible and not significant;
- Requirement 34 provided for an onshore decommissioning plan to be approved by the relevant LA upon cessation of commercial operations; and that
- the decommissioning plan would take into account the environmental and legislative requirements at the time of decommissioning and that the impacts and controls would be considered in detail at that time.

THE PANEL'S REASONING AND CONCLUSIONS

18.2.16 The Panel has considered the applicant's noise and vibration assessments and, particularly given the comments made by the LAs, has no reason to doubt that the assessment of potential noise and vibration effects set out in the ES, is robust.

18.2.17 In considering the suggestion from Christchurch BC and East Dorset DC for a communications strategy, the Panel concludes that onshore communication and community liaison provisions are sufficiently covered by the CoCP.

18.2.18 The Panel considers that the applicant's assessment demonstrates that onshore noise and vibration issues are well understood, that they can be mitigated sufficiently and that this confidence is shared by the LAs. Construction noise and vibration limits during and outside normal daytime working hours and the final details of any additional mitigation methods such as acoustic screens are to be included in the noise and vibration management plan and agreed with the LAs. The Panel considers that the requirements for LAs to respond both to the applicant's detailed onshore proposals are consistent with their general responsibilities for the control of environmental health and

statutory nuisance matters for construction projects. The Panel therefore finds that the mechanism for finalising the detail of limits and mitigation is robust and provides an appropriate balance between flexibility for the delivery of the Application Project and safeguards for local residents living close to the proposed works. The Panel therefore concludes that it is not necessary to introduce Requirements for onshore noise and vibration limits in the DCO. Similarly, the Panel is satisfied that the operational noise management plan provides sufficient control for the Onshore Substation.

18.2.19 With regards to the issue as to whether the construction noise limit should be $70dB_{LAeq,10hr}$ or $70dB_{LAeq,1hr}$, the Panel notes that the CoCP specifies a limit of $70dB_{LAeq,T}$ and considers that the LAs would have sufficient opportunity to agree a value for T in the noise and vibration management plan.

18.2.20 The Panel concludes that, recognising the transitory nature of any impacts and in the light of the mitigation measures proposed, the noise and vibration associated with construction vehicle movements are unlikely to be significant.

18.2.21 On the particular case of Tyrrells Ford Hotel, the Panel is satisfied with the applicant's assessment that the impacts are not significant on the basis of distance of construction works from the property and the works would be short-term. The Panel notes the potential for night time working for the HDD crossing but considers that the appropriate controls are in place through the necessity for a section 61 agreement that would require a specific assessment of impacts and mitigation measures for approval by the LA.

18.2.22 With regards to Poole and Christchurch Bays Association's (PCBA's) [REP-4093] suggestion that the timing of the approval of the operational noise management plan should be consistent with similar provisions for the offshore works, the Panel considers that onshore and offshore noise differ in a number of respects and not least in the maturity of the relevant methods for assessment, mitigation and control. The Panel therefore concludes that the issues associated with the mitigation of noise and vibration from the Onshore Substation equipment are sufficiently well understood for it to be acceptable for mitigation to be finalised before operation commences, rather than before construction commences.

18.2.23 With regard to comments received from John Searle [REP-3588], the Panel considers that the timing of the approval of the decommissioning plan provides sufficient control and protection and that there is no clear case for it to be changed.

18.2.24 The DCO includes modifications made by the applicant in response to the representations made by interested parties and

to questions raised by the Panel during the examination. The Panel is satisfied that the DCO, and particularly the noise and vibration management plan [Requirement 15] and operational noise management plan [Requirement 30], sufficiently mitigate the impacts of noise and vibration arising from the onshore elements of the Application Project during the construction, operation and decommissioning phases. The weight accorded to this matter is not significant either for or against the Project.

18.2.25 As noted above, some detailed issues, design matters and approvals remain to be resolved. The Panel is satisfied that these would be adequately addressed through the application of the recommended DCO, as well as through the proper enforcement of other regulatory regimes.

18.2.26 The Panel concludes that subject to the measures set out in the DCO the application meets the requirements of EN-1, EN-3, EN-5 and the MPS for noise and vibration arising from onshore.

18.3 NOISE AND VIBRATION FROM OFFSHORE

THE ENVIRONMENTAL STATEMENT

18.3.1 With regards to noise arising from offshore, Volume B Chapter 8 of the ES [APP-074] stated that it was agreed with Bournemouth BC, Christchurch BC, Isle of Wight Council, Poole BC, and Purbeck BC that "*background noise monitoring within the study area was not required due to the distance of the Turbine Area from the shore*" and because construction and decommissioning working methods would "*ensure that appropriate fixed noise limits would not be exceeded*." The assessed realistic worst case scenario impacts were considered to be due to the installation of monopile foundations using percussive techniques and to be due to the emissions from 194 turbines during operation and maintenance.

18.3.2 The ES [APP-074] concluded that noise levels during construction would not exceed the lowest threshold criteria and that noise levels during operation and maintenance would be unlikely to exceed the threshold. On this basis it was stated that no impact was identified, that the impact was not significant and that no mitigation measures were required.

18.3.3 A SoCG was provided between the applicant, Bournemouth BC, New Forest DC, Christchurch BC and East Dorset DC [REP-3143] with appendices containing the applicant's details of comments received and explanatory notes for offshore piling vibration, offshore piling noise assessment and cylindrical spreading calculations. A further SoCG between the applicant and Isle of Wight Council [REP-3243] had an additional appendix of comments and clarifications on the ES.

18.3.4 The LAs agreed:

- with the applicant's methodology;
- that baseline surveys were not required provided that noise levels were below the threshold;
- that the key parameters for assessment and the realistic worst case scenario were appropriate;
- that the potential for vibration impacts as a result of offshore piling were negligible and not significant;
- that, subject to further discussions regarding inversion conditions, the noise impacts predicted during construction would fall below the threshold criteria and would be not significant;
- that there would be clear lines of communication during construction; and
- that a protocol for monitoring noise during construction would be captured in the DCO.

Some matters were either unresolved or not agreed:

- the distance at which noise propagation changed from spherical to cylindrical spreading;
- the potential for cylindrical spreading conditions to occur;
- that calculations of noise propagation over water were appropriate or that realistic worst case noise levels under inversion conditions had been calculated correctly; and
- that the DCO should not include a requirement for noise monitoring during the operation of the turbines.

CONSTRUCTION AND DECOMMISSIONING NOISE AND VIBRATION FROM OFFSHORE

Noise limits, impulsive noise and metrics

18.3.5 The applicant [APP-074] assessed offshore piling noise to threshold values derived from BS5228:2009-1 of 50dB$_{LAeq,T}$ at night-time, 60dB$_{LAeq,T}$ at evenings and weekends and 70dB$_{LAeq,T}$ at daytime. During the examination the applicant [REP-3019, REP-3273, REP-3313, REP-3342 REP-4030] stated that:

- the LAs stipulated that the most stringent criteria of BS5228:2009-1 Table E1 should be used of 45dB$_{LAeq,T}$ at night-time, 55dB$_{LAeq,T}$ at evenings and weekends and 65dB$_{LAeq,T}$ at daytime;
- those criteria were lower bound noise levels which would apply regardless of ambient noise levels;
- limits on working hours were not required because the predicted noise levels fell below the threshold criteria;
- impulsive noises were more disturbing but BS5228:2009-1 contained no guidance on how impulsive criteria should be determined;
- if an assessment of impulsive noise levels was undertaken using an LAFmax or LA01,T metric, then, based on WHO

guidance, the threshold criteria would be 10-15 dB higher than LAeq threshold levels;
- LA01,T noise levels were highly likely to be below this threshold and that it was not unreasonable to suggest that LAFmax noise levels would be approximately 15 dB higher than the predicted LAeq noise levels; and that
- BS5228 provided no guidance on appropriate criteria for assessing 'C' weighted noise levels.

18.3.6 New Forest DC [REP-3471] stated that experience of piling noise indicated that it was the repetitive percussive character that often led to complaint, particularly if it took place at night.

18.3.7 Challenge Navitus [REP-2947, REP-3788 and REP-4092] suggested that LAeq was a misleading metric for impulsive noises such as piling and was unlikely to correlate well with nuisance because it averaged out peaks of noise and therefore tended to underestimate the effect of the individual impulses, and that a 'C' weighting was more appropriate.

18.3.8 In response to the Panel's suggestion that noise limits be secured in the DCO, the applicant [REP-4030] and LAs [REP-3629, REP-3636, REP-3639, REP-3640 and REP-3711] replied that given the nature of the noise it was not felt that a noise limit would be sufficiently protective to prevent noise disturbance to onshore receptors and that a complaint-led process relying on LA Environmental Health Officer's experience of assessing nuisance based on their professional judgement would be preferable.

Atmospheric effects

18.3.9 In the ES [APP-074] the applicant stated that certain atmospheric conditions could lead to a lower rate of reduction of noise from the turbines over distance. In these conditions the modelling assumptions were that noise would initially propagate by spherical spreading, whereby noise would reduce by 6dB for every doubling of distance, but then from a certain transition distance the propagation would be by cylindrical spreading, whereby the noise level would reduce by 3dB for every doubling of distance.

18.3.10 In the ES [APP-074] the applicant adopted a transition distance of 1350m, being midway between values of 700m and 2000m quoted in papers by Boué (2007) and Johansson (2003), respectivelyThe LAs [REP-3143 and REP-3243] questioned the justification of this figure and Panel suggested that 1350m did not appear to represent a realistic worst case scenario.

18.3.11 In the ES [APP-074] the applicant's calculations considered that noise propagation during construction would be by spherical spreading. At an issue specific hearing (ISH) Challenge Navitus

suggested that the atmospheric conditions for cylindrical spreading could also occur during construction.

18.3.12 During the examination the applicant [REP-3232, REP-3342, REP-3343, REP-3687]:

- submitted piling noise calculations with cylindrical spreading at a transition distance of 700m;
- accepted that, following the publication of the Institute of Acoustics Good Practice Guidance (IOAGPG) to the application of ETSU-R-97 and Supplementary Guidance Note 6 (SGN6), there was a move towards using the 700 metre transition point in cylindrical spreading calculations;
- submitted a report in which the Met. office used 5 years of historical climate data to assess when particular atmospheric conditions would occur, using a range of input criteria defined by the applicant as being those required for the inversion conditions required for cylindrical spreading;
- stated that the report showed that conditions that could generate cylindrical spreading occurred less than 5% of the five year period tested and increased noise levels attributable to cylindrical spreading were therefore predicted to be an infrequent occurrence and were not representative of normal conditions;
- considered that ISO9613-2 did not state that it was not valid beyond the stated range of limitations, only that an estimate of accuracy is not provided, that the IOAGPG advocated the use of ISO9613 in situations that are similarly beyond its stated limitations; and
- noted that the $0.1s^{-1}$ sound speed gradient was based on information in ISO9613-2.

18.3.13 The LAs [REP-3353, REP-3391 and REP-3412] commented on the Met. Office report that:

- night-time period were less susceptible to inversion conditions, as were the summer months;
- conditions were more likely to occur during the day and outside the peak summer months and as such were at times when the effects may be less noticeable; and that
- in the case of Bournemouth, and also Swanage, the effects would be most likely to occur during the day in May when they could increase to 10 and 12% respectively.

18.3.14 Christchurch BC and East Dorset DC [REP-3393] considered that, based on the frequency indicated in the report, no further correction needed to be applied in the assessment.

18.3.15 Challenge Navitus [REP-2947, REP-3372, REP-3614 and REP-3788 and REP-4020], the PCBA [REP-2905, REP-3472, REP-3787 and REP-3996] and Dr Yelland [REP-3787] stated that:

- the criteria set by the applicant in the meteorological study were too stringent, cylindrical spreading occurred even for 'normal' wind-shear conditions and the conclusions of that study were therefore too optimistic about the infrequency of enhanced propagation;
- the Met. Office report did not consider that piling noise would be a problem in very still, quiet conditions when a temperature inversion occurred;
- there was nothing in a paper relied on by the applicant to suggest that one of the key criteria specified by the applicant for the Met. office report of $0.1s^{-1}$ was some sort of threshold for the onset of refraction;
- ISO9613-2 was not valid as the Project was outside its limitations, for example it was not to be used for propagation paths longer than 1000m; and that
- the applicant used an unrealistic temperature of 10ºC; 20ºC was more realistic, as it was on the warm summer evenings that noise would be most disruptive and that this would increase predicted noise levels by 0.6 to 0.7dB.

18.3.16 Poole Agenda 21 [REP-3387] suggested that indication in the paper by Boué (2007) of a 700m transition distance was not representative as it was based on significantly different meteorology in the Baltic sea.

Shoreline correction factor

18.3.17 In the ES the applicant [APP-074] applied a reduction of -3dB to cylindrical propagation calculations for noise as it crossed the coast. During the examination the applicant [REP-3343, REP-3490 and REP-3687] considered that:

- shoreline correction was identified in the papers used for the calculations of cylindrical spreading and there was a clear link in SGN6 to those papers;
- the papers stated that the sound speed was reduced due to greater friction from the ground surface and that the change in surface impedance produced a sound attenuation due to the partial reflection of sound waves;
- the -3 dB shoreline correction was required for consistence with the measurements that they were derived from; and that
- attempts by Challenge Navitus to bring precision to step changes in noise levels sought spurious accuracy from a general description of average sound propagation.

18.3.18 Isle of Wight Council [REP-3639] considered that cliff top properties and those close to shorelines may not benefit from any shoreline attenuation effect.

18.3.19 Challenge Navitus [REP-2947 and REP-3372] and PCBA [REP-3472] suggested that:

- a step change in sound pressure level in all altitudes as a flat coastline was crossed would break the law of conservation of energy;
- acoustical energy could only be dissipated at ground level and so the sound field would evolve over a distance and reduction was unlikely to take effect before the noise reached a dwelling close to the shore;
- there was no physical basis to assume that a reduction would apply to cliff-top properties; and that
- SGN6 did not mention a shoreline correction effect.

Piling sound power outputs

18.3.20 The applicant [REP-3019] clarified that assessment considered a maximum of two vessels installing piles simultaneously. Following consideration of impacts on salmon, the applicant introduced Condition 19(2) to provide a restriction of a maximum of one piling rig operating at any one time.

18.3.21 Whilst maximum pile diameters are secured in DCO Requirement 6 and Condition 4, the applicant suggested that maximum hammer blow energies did not need to be, due to the provision in Condition 16(3) regarding monitoring the installation of the first four of each type of driven or part driven foundation type.

18.3.22 The applicant [REP-3343, REP-3687 and REP-4030] and Challenge Navitus [REP-3372, REP-3600, REP-3788 and REP-4092] disagreed on the piling sound power output levels and spectral shapes that should be used in the assessment, which led Challenge Navitus to calculate higher noise levels.

Vibration

18.3.23 The applicant [REP-3243 and REP-3643] provided an explanatory note for offshore piling vibration which stated that noise levels inside buildings due to vibrations from offshore piling works would be less than 30dB, based on a considerable overestimate of the likely vibration, and that this was below the thresholds applied to the operation of underground railways

18.3.24 Isle of Wight Council [REP-3353] agreed that ground-borne vibration was not expected to give rise to any significant impacts while Swanage Town Council [REP-3777] was concerned that piling vibration may re-radiate through houses and cause disturbance at night.

18.3.25 Challenge Navitus [REP-3372 and REP-3788] agreed that vibration levels would be low but suggested that the applicant had ignored the cumulative effect with airborne noise.

Predicted noise levels

18.3.26 The applicant [APP-074 and REP-3342] predicted construction noise levels at the closest residential receptors as follows:

- 26.7dB $L_{Aeq,T}$ due to spherical spreading;
- 36.7 dB $L_{Aeq,T}$ due to cylindrical spreading; and
- 39.7 dB $L_{Aeq,T}$ due to cylindrical spreading without a shoreline correction factor.

18.3.27 The applicant [REP-3273; REP-3342, REP-3490 and REP-4030] stated that:

- the predictions were based on worst case criteria of cylindrical propagation conditions, continuous piling, shortest distances from piling rigs to coast, no allowance for wind-induced sea surface waves and a correction of +3 dB(A) to account for the effect of reflections from the receptor façade;
- the results demonstrated that under and using the most stringent construction noise criteria defined using the ABC method of BS5228, the noise levels from the offshore piling works would fall below threshold values adopted during night-time conditions;
- the predicted noise levels would be influenced by the spectral shape of the noise emissions, which would be established during the detailed design stage of the Project when a piling contractor was appointed, but that changes to the spectral shape were not predicted to result in noise levels exceeding the threshold; and that
- construction noise levels would be controlled via the noise communication and monitoring protocol (see below).

18.3.28 Challenge Navitus [REP-3372, REP-3600 and REP-3788] predicted construction noise levels at the closest residential receptors, assuming cylindrical spreading and no shoreline correction as follows:

- 43.6 dB $L_{Aeq,T}$ assuming that the applicant's piling power source information was correct; and
- 46.3 dB $L_{Aeq,T}$ with a façade correction.

18.3.29 Comments received from LAs [REP-3471 and REP-3639] and Challenge Navitus [REP-3372, REP-3600 and REP-3788] included that:

- piling noise may exceed WHO recommendations and would be a problem for residents in certain weather conditions;
- repetitive percussive character would lead to complaints and night time disturbance to residents;
- piling noise was likely to be annoying to residents trying to sleep with windows open;

- the LAs considered that the communication and monitoring protocol gave confidence that piling noise could be addressed if complaints were received; and that
- Conditions were warranted.

Decommissioning noise from offshore

18.3.30 In the ES [APP-074] it was stated that offshore decommissioning noise would be likely to be lower than during the construction phase due to the lack of piling activities and that best practice would be applied to ensure that appropriate fixed noise limits would not be exceeded. The ES stated that the impact was not significant and that no mitigation was required.

18.3.31 The applicant [REP-3019 and REP-3273] clarified that the Energy Act 2004 required the decommissioning scheme for offshore to be approved by the Secretary of State before commencement of construction. The applicant further stated that it would develop and consult on the decommissioning plan following a DCO being granted.

18.3.32 DML Condition 22 provides that the consent does not permit decommissioning of the Project until a programme in accordance with the Energy Act 2004 had been approved by the Secretary of State.

The Panel's reasoning and conclusions

18.3.33 The Panel has considered the applicant's noise and vibration assessments and, particularly given the comments made by the LAs, sees no reason to doubt that while much of the overall methodology and the assessment of the relevant construction and decommissioning effects set out in the ES is robust, that there are a number of areas of concern, which are addressed below.

18.3.34 The Panel concludes that the LAs' suggestion that the most stringent threshold criteria of BS5228:2009-1, which are 5 $dB_{LAeq,T}$ lower than those used in the applicant's assessment, are appropriate on the basis that the Panel considers that low ambient noise levels can be anticipated at the sections of coastline closest to the turbine area and that given the overall duration of over 3 years it does not consider the piling to be transient.

18.3.35 From the evidence provided it is clear to the Panel that nuisance is closely related to the impulsive nature of noise from piling and that these effects are better represented by metrics such as LAFmax, rather than the LAeq,T metric adopted in the assessment. Although the evidence suggests that a LAFmax metric would result in higher noise levels being identified, it is also accepted that the use of these metrics would lead to an increase in the threshold levels by a similar amount. The Panel

therefore considers that the LAeq,T metric is acceptable for the purposes of this assessment whilst recognising that other metrics may be more useful for the future monitoring and addressing of complaints.

18.3.36 In considering whether noise limits should be secured in the DCO, the Panel is mindful of the uncertainties of the piling noise spectrum and the influence of environmental and atmospheric effects, together with the experience at Westernmost Rough where a metric for impulsive noise would not have been sufficiently protective. On this basis the Panel accepts the advice of the LAs that limits should not be set, but that controls should be put in place through a complaints-led process, which is addressed further below under Noise Monitoring and Complaints.

18.3.37 Although the ES did not include calculations for cylindrical spreading during piling, it was included for operational noise and the applicant has not presented any evidence why it should not also apply to piling.

18.3.38 The proportion of time when atmospheric conditions for cylindrical spreading will exist is, however, less clear. Whilst the Panel considers that the modelling undertaken by the Met. Office was robust, doubts have arisen as to whether the criteria used by the applicant correctly identified all of the conditions in which cylindrical spreading would occur. The Panel considers that sufficient doubt has been provided on the criteria of a sound speed gradient of $0.1s^{-1}$, that compelling evidence has not been provided to conclude that the exclusive and complete set of criteria for cylindrical spreading has been identified and that it is unclear to what extent the criteria have been verified empirically. On balance, the Panel considers it likely that the 5% average for occurrence of suitable atmospheric conditions for cylindrical spreading identified by the applicant represents a lower bound approximation. It also notes that the figure could increase to 12% at the locations closest to the turbine area at certain times of year. The Panel therefore concludes that on balance of probability cylindrical spreading is likely to occur more frequently than suggested by the applicant, that the frequency will be significant and that cylindrical spreading should be included in the assessment.

18.3.39 From the evidence it is also clear to the Panel that a transition distance from spherical to cylindrical spreading of 700m, which also appears in SGN6, represents a realistic worst case scenario rather than the 1350m considered in the ES. With regard to comments made by some parties, the Panel considers that insufficient evidence has been provided for it to conclude that SGN6 is invalid either because it is based on unrepresentative assumptions, has not properly considered previous research, or that there is a relevant link between the reported noise levels and lack of complaints at Scroby Sands. The Panel therefore

concludes that cylindrical spreading from a transition distance of 700m should be included in the assessment.

18.3.40 With regard to the suggestion that a higher temperature should be considered in the assessment, the Panel notes that the Met. Office report indicates that the worst case scenario requiring cylindrical spreading is less likely during the summer and during warm conditions and considers that the applicant's use of the guidance provided by the Institute of Acoustics is satisfactory. The Panel therefore concludes that a 10°C temperature is appropriate for the assessment.

18.3.41 On the question of a shoreline correction factor, the Panel considers that applicant has provided robust evidence that a reduction would occur. However, other evidence suggests that it is unlikely that this would occur instantaneously and that it is more likely that the reduction would occur over a distance from the shoreline. The Panel is not able to conclude what the distance would be, but, given the evidence that the sound field would evolve over a distance, considers it likely that a shoreline effect would reduce noise levels at locations set back from the coast and that noise would be likely to reach residences close to the shore and on cliff tops before a reduction has occurred. On this basis the Panel concludes that including a shoreline correction factor does not represent a worst case scenario for properties on the coast but that it is relevant and should be applied for the identification of noise levels inland.

18.3.42 Whilst the Panel is mindful of the questions raised on an error in the ES and on the validity of the piling sound power output and spectrum adopted by the applicant, it considers that insufficient evidence has been provided for it to conclude that the figures used in the assessment are not robust. It is further noted that although the piling sound power output and noise spectrum have not been secured, the Panel is satisfied that these will be controlled by Conditions 11 and 16, which stipulate requirements for construction method statements and monitoring and that this will address the uncertainties. The numbers and sizes of piles and simultaneous piling have been secured in the DCO and DMLs.

18.3.43 The Panel considers that the applicant's vibration assessment and, particularly given the comments made by the LAs, gives it no reason to doubt that the assessment is robust and that the impacts will not be significant. With respect to re-radiated noise, the Panel notes that the assessed noise levels are based on a "*considerable overestimate*" of the likely vibration and therefore considers that the cumulative impact of this with in air noise is therefore also likely to be not significant.

18.3.44 Based on the consideration of the noise calculations and criteria addressed above, the Panel finds that applicant's predicted noise level of 39.7 dB $L_{Aeq,T}$ is robust and is lower than the threshold

level of 45 dB $L_{Aeq,T}$. Although a figure of 46.3 dB $L_{Aeq,T}$ has been suggested by others, the Panel considers that the differences in the derivation of this figure with the one provided by the applicant is not clear and has therefore not relied on it.

18.3.45 After carefully considering the representations on impulsive noise, Panel finds that there remains a possibility that the impulsive and repetitive character of the noise not fully addressed by the LAeq metric could occasionally create disturbance at night in certain atmospheric conditions. The likelihood of this is greater than considered in the ES when the margin between the predicted and threshold levels was 23.3 dB $L_{Aeq,T}$ rather than the 5.3 dB $L_{Aeq,T}$ now identified. The Panel therefore considers that a suitable mechanism is required to identify and mitigate these impacts should they materialise. This is considered further in the communications and monitoring protocol, below, following which the Panel's overall conclusions are provided for offshore noise and vibration.

OPERATION AND MAINTENANCE NOISE FROM OFFSHORE

Noise limits, standards and guidance

18.3.46 The applicant [APP-074] assessed offshore operation and maintenance noise to the ETSU-R-97 guidance stipulated by EN-3. The simplified method was adopted with a threshold value of 35 dB $_{LA90,10mins}$, and it was stated that no background noise surveys were required provided that the threshold was not exceeded. The threshold was then reduced to 32 dB $_{LA90,10mins}$ to allow for the largest tolerance of ±3 dB used for sound propagation calculations in ISO 9613-2. The applicant [REP-3019] later noted that the ETSU-R-97 standard procedure recommended "*that the criteria should be 35 to 40dB during the day, 43dB at night, or the background noise level plus 5dB, whichever is the higher*" and that using the simplified procedure and "*by adopting a 35dB threshold, the Project has been assessed against the most stringent criterion possible for operational noise impacts in the national guidance document*". The applicant's approach was agreed in SoCG [REP-3143 and REP-3243] with Bournemouth BC, New Forest DC, Christchurch BC, East Dorset DC and Isle of Wight Council.

18.3.47 Responding to the Panel's suggestion that noise limits be secured in the DCO, New Forest DC [REP-3711], Bournemouth BC [REP-3629] and Isle of Wight Council [REP-3639] suggested that they should be secured and should take into account corrections for tonal components; whereas Purbeck DC [REP-3636], Christchurch BC and East Dorset DC [REP-3640] considered that it was not advisable to set noise limits, but more appropriate to rely on LA officers judgment in assessing nuisance in accordance with their policies.

18.3.48 The PCBA [REP-2905] suggested that as the propagation distance was 25 times the ISO 9613-2 quoted maximum, refraction at greater path lengths could result in higher noise levels than predicted by ISO 9613-2 and that the ±3 dB uncertainty may well be exceeded.

Atmospheric effects

18.3.49 Cylindrical spreading, the temperature parameter and the shoreline correction factor were addressed earlier under Construction Noise and Vibration from Offshore.

18.3.50 In addition, PCBA [REP-3472, REP-3787 and REP-3996] stated that the applicant had not considered the contribution to wind shear and refractive conditions resulting from a blockage effect of the completed wind farm reducing wind speed by 20%. The applicant [REP-3687] responded that the PCBA's calculations did not demonstrate what the change in wind shear would be and "*the applicant would expect there to be local reductions in the sound speed behind the swept area of the rotor, which then increase again beyond each turbine as the faster surrounding air brings the speed up again due to frictional forces*."

Turbine sound power outputs and tonal noise

18.3.51 A 110dB(A) maximum turbine sound power output was adopted for the assessment in the ES [APP-074]. The applicant [REP-3273, REP-3343, REP-3490 and REP-3687] stated that:

- 112dB(A) was used on Rampion, Beatrice and East Anglia One offshore wind farms for a 8MW turbine and 111dB(A) in other assessments for a 6MW turbine;
- sensitivity calculations using alternative levels were within 0.1 to 0.2dB of the values in the ES;
- the spectrum of the turbine considered in the ES had a greater low frequency component than assumed by PCBA leading to assessed noise levels 1.8dB(A) higher than if PCBA's figures were used;
- PCBA's figures were based on extrapolating an old small turbine design and did not consider the significant noise reductions resulting from advances in turbine design;
- during the procurement process turbines could be selected with no tonal noise component; and that
- "*the applicant accepts that there is uncertainty on the point of turbine sound power levels, both in terms of the overall level and the frequency content, and it has been agreed that further calculations will be undertaken once these details are confirmed, secured through Condition 11(n) of the DML*."

18.3.52 PCBA [REP-2905, REP-3708, REP-3996 and REP-4093] and Dr Yelland [REP-3787] considered that:

- the applicant claimed the same power output of 110dB(A) for 5MW, 6MW and 8MW turbines, warranted not to be exceeded by an unspecified turbine manufacturer;
- 111.3dB(A) was more appropriate for a 8MW turbine if the figures for a well-established, optimised and documented design for a 3MW turbine were increased proportionately;
- IOAGPG required that 2 dB be added to the manufacturer's noise data that was not warranted; and that
- accredited noise measurements on 6 MW and 8 MW turbines and octave band measurements were required.

18.3.53 Challenge Navitus [REP-3372] stated that "*110dBA is quite a low guaranteed sound power level for a 5MW turbine and would need to be secured if it is relied upon to meet noise targets."*

18.3.54 Following a question from the Panel as to how turbines with a maximum of 110 dB(A) sound power output and no tonal noise component should be secured the applicant [REP-3273] replied that "*within the generation assets DML for the Project the Applicant has provided drafting for submission of a report setting out how the design details of the turbines will comply with the operational noise limits set out in the ES, to include the rerunning of the noise propagation models prior to both construction and operation of the authorised scheme. This will ensure noise propagation assessments are carried out for the selected turbine and associated sound output levels to determine noise levels received at coastal receptors*." The noise propagation report is addressed below.

Predicted noise levels

18.3.55 The applicant [APP-074; REP-3343] predicted operation and maintenance noise levels at the closest residential receptors of:

- 26 dB $_{LA90,10mins}$ due to spherical spreading;
- 34.8 dB $_{LA90,10mins}$ due to cylindrical; and
- 37.8 dB $_{LA90,10mins}$ due to cylindrical spreading and without a shoreline correction factor.

These figures were later [REP-4041] increased by up to 0.2 dB $_{LA90,10mins}$ for the 6MW turbine option and decreased by 0.1 dB $_{LA90,10mins}$ for the 8MW turbine option.

18.3.56 The applicant [APP-074, REP-3273, REP-3343, REP-3490, REP-3643, REP-3691, REP-3687 and REP-4030] further stated that:

- where spherical propagation conditions prevailed, operational noise from the wind turbines would be comfortably below the 35 dB$_{LA90,10mins}$ criterion recommended in the ETSU-R-97 guidance;
- under cylindrical propagation conditions the 35 dB LA90 threshold would be exceeded if the -3 dB shoreline were not

applied, however cylindrical propagation conditions would occur for less than 5% of the time;
- the shoreline correction of -3dB should be applied;
- a -2 dB correction was applied to convert wind turbine sound power outputs from the published LAeq value to the LA90 values as required in ETSU-R-97 and this correction was commonly applied;
- the procedure in the ETSU guidance for situations where the 35 $dB_{LA90,10mins}$ threshold was exceeded was that a detailed assessment should be undertaken, including background noise measurements and the ETSU guidance did not suggest that permission should be refused if the 35 $dB_{LA90,10mins}$ threshold was exceeded;
- there were a number of variables that were yet to be confirmed that would affect the calculated outcomes, principally the sound power levels and frequency content of the wind turbines themselves;
- Condition 11(n) of the generation assets DML would require the applicant to confirm the noise levels at the receptors once a turbine had been selected, and appropriate sound power level data was available;
- the form and basis of the supplementary calculations would be subject to agreement as part of the parameters for the noise propagation report;
- the PCBA had incorrectly applied an Agr term to cylindrical spreading calculations and that this increased the PCBA's predicted noise levels by between 2.3 and 2.7dB; and that
- noise contours were provided for spherical spreading, but as the cylindrical calculations had been carried out in a spreadsheet calculation it was not possible to provide contours for cylindrical spreading.

18.3.57 PCBA [REP-2907, REP-3472, REP-3996 and REP-4093] commented that:

- the subtraction of 2dB to achieve a correction from LAEq to LA90 correction due to background noise considerations should not be used as ETSU-R-97 and IOAGPG did not justify discarding the noisiest 90% of the turbine noise;
- ETSU states that "*the LA90,10 of the wind farm is likely to be about 1.5-2.5dB(A) less than LAeq*";
- 2dB should be added for turbine sound power output uncertainty as required by IOAGPG;
- an addition should be made for ground reflection at the receptor as this had been ignored by SGN6; and
- 3dB should be added due to propagation uncertainty from ISO 9613-2, as considered by the applicant in the ES.

18.3.58 Challenge Navitus [REP-3372] predicted that the operation and maintenance noise level at the closest residential receptors, assuming cylindrical spreading and no shoreline correction was

42.8 $dB_{LA90,10mins}$ and further stated [REP-3372, REP-3600, REP-3788] that:

- this would fail the test for the ETSU-R-97 simplified procedure;
- a 2dB correction to convert wind turbine sound power outputs would only apply to correct measurements made when there was background noise, rather than when the levels were computed and there was no background noise, and that
- potential exposure would be limited considerably as variations in wind direction meant that the observer would not always be downwind of the array and the turbines would not be radiating maximum noise levels all the time;
- "*if predictions are made taking full account of ambient noise, without assuming arbitrary corrections between LAeq,T and LA90,T levels, then there is no inconsistency in the results or with the guidance. Inaccuracies arise when fixed 'corrections' are used without considering when or where they should be applied*."

18.3.59 PCBA's [REP-3472] predictions of the operation and maintenance noise level at the closest residential receptors were between 40.7 $dB_{LA90,10mins}$ and 43.4 $dB_{LA90,10mins}$.

18.3.60 A number of comments on the predicted noise levels were made by LAs [REP-3471 and REP-3639]:

- if SGN6 were favoured then neither the 3 dB reduction for when the sound passes from sea to shore or the 2 dB reduction to convert the LAeq levels to LA90 would apply;
- if the approach put forward in IOAGPG was applicable and cylindrical spreading was the norm then the applicant's "*assertion that the 35dB(A) criteria would be achieved is in doubt, particularly if the reductions for shoreline and LAeq to LA90 conversion are not applied*";
- comments in relation to sensitivity checks on turbine sound power levels were addressed within the re-running of the propagation calculations once a specific candidate turbine had been identified; and that
- Conditions were warranted and could be incorporated into the DML.

18.3.61 Poole Agenda 21 [REP-3387] considered that the calculations undertaken by the applicant, Challenge Navitus and the PCBA were for predictive modelling against excessively conservative standards and that it was unlikely that;

- all turbines would emit their maximum noise at the same time;
- rather unlikely meteorological conditions would prevail;

- the sea would be sufficiently calm to give good reflection; and that
- there would be sufficient wind for the significant noise to be created by the turbines at the same time that wind speeds at the coast, and therefore background noise levels, were low enough for the noise to be observable.

Background Noise Surveys

18.3.62 Responding to a question from the Panel about whether background noise surveys were necessary to satisfy requirements of EN-1 for the existing noise environment to be characterised and for predicted changes in noise to be assessed, the applicant [REP-3273] stated that the requirements were in the context of "*where noise impacts are likely to arise*." The applicant's opinion was that noise impacts were unlikely "*and there is therefore no requirement under NPS EN-1 to quantify the effect of the proposed development on the background noise climate*."

18.3.63 Bournemouth BC [REP-3391] provided a copy of background noise survey results that it had commissioned at two locations on Bournemouth sea front. The report indicated minimum night time noise levels of 31 dB_{LA90} and 37 dB_{LA90} and concluded that "*the area in the vicinity of Bournemouth seafront currently experiences relatively low levels of both ambient and background noise levels*." The applicant agreed with Bournemouth BC that the data was insufficient to be used as part of an ETSU-R-97 noise assessment but noted that "*even the lowest background noise levels recorded would lead to a noise limit higher than the 35 $dB_{LA90,10mins}$ limit adopted in the Applicant's submissions*."

Noise propagation report

18.3.64 Following discussions between the applicant and the LAs, the applicant proposed DML Condition 11(n) whereby the MMO would be required to approve "*a noise propagation report, to accord with the parameters for the noise propagation report, setting out how the design details of the wind turbine generators to be employed for the authorised scheme will comply with the operational noise limits set out in the environmental statement*". The applicant [REP-4033] agreed with the PCBA's [REP-3708] suggestion that this be amended to require the MMO to consult with the LA and for the report to demonstrate compliance with the guidance in ETSU-R-97 and the IOAGPG and SGN6, except that local authorities did not need to be consulted on the approval as the factual basis for the report had been discussed with the local authorities and fixed in the 'parameters for the noise propagation report'.

18.3.65 The applicant stated [REP-4030] that it considered that the report best sat in the DML because MMO had the relevant offshore enforcement powers. The applicant also noted that "*should*

further advice be required in discharging Condition 11(n) it may be necessary for an independent consultant to be employed to provide such advice to the MMO in this capacity … the Applicant would be content to meet the costs of such advice if required."

18.3.66 The applicant further stated [REP-3273, REP-3643, REP-3995 and REP-4040] that:

- the report would ensure that noise propagation assessments were carried out for the selected turbine and associated sound output levels to determine noise levels received at coastal receptors;
- the applicant would revisit the noise propagation calculations at least four months prior to construction and once full turbine details were known including confirmation of the number of turbines to be installed, choice of foundation type, sound power output levels and sound spectrum of candidate turbines and any tonal component;
- the method of calculation would follow those set out within the ES for operational noise assessment and would therefore follow the methods outlined within ETSU-R-97 and other methods, as appropriate;
- in the event that the noise propagation report submitted prior to construction showed that the 35dB threshold set out in the ETSU-R-97 guidance was exceeded, the applicant would then move to a detailed assessment including background noise surveys;
- the ETSU-R-97 standard procedure was practicable as survey locations would be limited as the guidance stated that "*they could serve as a proxy for others, the basis for selection is that it can reasonably be claimed, from inspection and observation, to be representative of the non-surveyed locations*" , that ETSU-R-97 did not require wind speed at the receptors and that the guidance stated that "*the noise limit of the standard ETSU-R-97 procedure is not an absolute figure, but a relative figure of 5 dB above the greater of 35 dB(A) and the measured background noise*";
- the authorised scheme would not be permitted to commence until the noise limits was shown to comply with assessed limits; and that
- all LAs were in agreement with the process.

18.3.67 The LAs [REP-3353, REP-3412, REP-3471, REP-3629, REP-3636, REP-3639 and REP-3711] considered that a full reassessment demonstrating compliance with ETSU-R-97 and SGN6 should be undertaken if the 35dB(A) criteria was not met and that obtaining representative background noise levels would be problematic across a wide geographical area.

18.3.68 Challenge Navitus [REP-3788] stated that the specification needed to be clear and unambiguous and that the combination of ETSU-R-97 and SGN6 did set a reasonably clear framework within

which noise impacts could be assessed. It also suggested [REP-4091] that, given that the onshore noise was affecting onshore receptors, the relevant LA should at least be consulted before the report was approved by the MMO.

18.3.69 PCBA [REP-2905, REP-3995 and REP-3996] stated that the ETSU standard procedure was not practicable as it relied on a high degree of correlation between wind speeds at the turbines and wind speeds at the receptors which was not possible for the distances involved and that it was not practical to monitor background noise levels at a sufficient number of homes and that the project was too ambitious for the present state of knowledge.

Parameters for the noise propagation report

18.3.70 The applicant [REP-4033] did not agree with a suggestion from the Panel that a Condition should be included to require the assessment to consider cylindrical spreading from 700m and no shoreline correction factor "*as the details regarding cylindrical spreading and no correction for noise reduction at the shoreline are included within the parameters for the noise propagation report*."

18.3.71 The applicant [REP-3643, REP-4030 and REP-4041] stated that the document had been defined in consultation with the LAs, that the 'parameters for the noise propagation report' was a certified document in the DCO and would serve to guide the assessment prior to construction in order to produce the noise propagation report. The final version of the report provided by the applicant close to the end of the examination was titled 'draft parameters for the noise propagation report' and anticipated that the LAs would be "*informed on the content of this report*."

18.3.72 The 'draft parameters for the noise propagation report' [REP-4041] noted the parameters and methods outlined in the report that were to be applied in the calculations required to understand if the 35dB(A) will be exceeded and if the full ETSU assessment was required, including:

- noise limits to ETSU-R-97;
- time periods for noise limits and background noise surveys and requirements for simultaneous wind speed measurements;
- cylindrical and spherical spreading calculations;
- 10^{o}C temperature;
- 2dB(A) barrier attenuation if there is no line of sight between the wind turbine and the receptor;
- -2dB(A) to obtain LA90,10mins values from the calculated LAeq,10mins value
- potential reductions at the shoreline identified for cylindrical spreading;
- the basis of turbine sound power output data; and

- correction for amplitude modulation in accordance with RenewableUK December 2013 research and corrections for tonality in accordance with ETSU guidance.

18.3.73 The Panel notes that the report does not require the parameters set out in the report to be used for the full ETSU assessment and does not set out the approval and consultation process for the full ETSU assessment. However, the report notes that the next steps will be set out in the noise propagation report, that the locations of any baseline measurements shall be agreed with the MMO and relevant LA and that the results of the baseline measurements and implications for noise limits will be set out in further iterations of the report.

18.3.74 New Forest DC [REP-3471, REP-3711 and REP-4075] stated that:

- calculations should be based on those contained in the ES for comparative purposes and also on the formulae contained in SGN6 to provide a worse case assessment for cylindrical spreading from 700m, and in accordance with this guidance no reductions should be made for the transition of noise from sea to shoreline or conversion of LAeq to LA90;
- the decision whether a full ETSU was required should be based on the worst case assessment; and that
- the assessment should include the provenance of the source data and any corrections to be applied depending on the uncertainties of that data.

18.3.75 Challenge Navitus [REP-3788, REP-4020 and REP-4091] and PCBA [REP-4093] considered that:

- their previous comments were still relevant and should be addressed in the report;
- a clear definition of noise criteria and methods of calculation were required;
- SGN6 should be adopted as the realistic worst case scenario and not ISO9613-2;
- a new barrier attenuation correction had been introduced that had not previously been raised during the examination, should be deleted as it is not in SGN6, is inapplicable as rays of sound were curved by a refracting atmosphere and would have to be calculated and justified for particular circumstances;
- given that 158,000 residences could be affected, background noise monitoring should be carried out at 15,800 properties;
- the applicant should contemplate and indicate how many background noise survey locations would be required for the ETSU standard procedure and whether this was practical; and that
- the next steps outlined would need to be subjected to the same public scrutiny they would have attracted had they

been completed within the examination rather than after the examination.

Amplitude modulation

18.3.76 In the ES [APP-074] the applicant stated that "*if amplitude modulation were to occur from the Project, a phenomenon that, with current knowledge on the subject cannot be predicted in advance, a penalty up to 5 dB is likely to be applied to the predicted noise levels, taking account of the Renewables UK template condition, which itself comes from the most comprehensive study into amplitude modulation*."

18.3.77 During the examination the applicant [REP-3018, REP-3019, REP-3273, and REP-4030] stated that:

- there was considerable controversy both as to the frequency of occurrence of amplitude modulation and as to how it might be monitored or controlled;
- government sponsored research suggested that its occurrence was infrequent;
- in decisions made for onshore wind farms the Secretary of State has stated that amplitude modulation was a rare occurrence that could not be predicted and as such it was difficult to conclude that a condition would be necessary;
- it was not considered that there were any examples of planning conditions that were fit for purpose;
- the Institute of Acoustics had recently set up a working group to develop the technical elements of an assessment method for amplitude modulated noise; and that
- having noted the comments from the LAs, the applicant did not consider that a condition was required.

18.3.78 A number of comments were received by the LAs [REP-2681, REP-2988, REP-3412, REP-3629, REP-3636, REP-3639 and REP-3711] on amplitude modulation:

- the mechanism for amplitude modulation was complex, not fully understood and the evidence was still developing;
- industry could not predict the circumstances that caused it to be generated, including atmospheric, terrain, topographic and cumulative effects;
- the number of turbines operating in UK waters and the apparent lack of complaints received indicated that amplitude modulation would not be an issue;
- current practice was not to assign a planning condition; and that
- it could be accounted for as part of the calculations associated with the rerunning of the noise propagation model.

The noise propagation model is addressed below.

18.3.79 The PCBA [REP-4093] stated that:

- amplitude modulation was a long established feature of wind turbines and arose mainly from the turbulence caused by the blades passing the tower;
- a wind power acoustician suggested that amplitude modulation could be measured and that there should be no problem with an amplitude modulation condition; and that
- onshore wind farm applications where compliance had been demonstrated with the ETSU and the IOAGPG were "*normally consented with a planning condition to cover the risk of excess amplitude modulation*."

18.3.80 Dr Yelland [REP-2905], an acoustic specialist writing on behalf of PCBA, stated that "*the proposed RenewableUK planning condition offers little protection to onshore wind farm neighbours. However, for technical reasons beyond the scope of this document I consider that it is unlikely that amplitude modulation will be relevant for Navitus Bay or any other offshore wind farm that comprises a large number of turbines many km offshore",* Dr Yelland [REP-4093] later suggested that "*the condition proposed by ReUK has been discredited, and the IOA have declined to endorse it. The Den Brook condition would be more appropriate."*

Wind turbine syndrome

18.3.81 The applicant [REP-3018, REP-3031; REP-3490 and REP-4030] provided evidence from the Health Protection Agency, the author of a DEFRA report on low frequency noise, British Wind Energy Association, RenewableUK and others and stated that to date no offshore operating wind farms had reported issues of wind turbine syndrome (WTS) and that it was not an issue for the Project.

18.3.82 PCBA [REP-3351, REP3708, REP-3995 and REP-4093] provided a number of articles, press clippings and other references to health issues related to WTS and suggested that:

- the symptoms of WTS could be severe;
- developers contended that it was a psychological condition but victims' doctors said that it was physiological;
- evidence on the health effects of wind turbine syndrome was provided in a book by Nina Pierpoint; and that
- provision should be made within the DCO for the developer to compensate all those medically verified as suffering from WTS.

18.3.83 Richard Tasker [REP-3418] provided further references to the health impacts of WTS.

18.3.84 In response to a question from the Panel the LAs [REP-3711, REP-3629, REP-3636 and REP-3639] stated that, while they did not have any specialist knowledge in this area, they were not aware of any robust evidence that supported possible concerns

regarding low frequency noise effects and/or wind turbine syndrome.

The Panel's reasoning and conclusions

18.3.85 The Panel has considered the applicant's noise and vibration assessments and the comments made by LAs and other parties. Whilst the Panel sees no reason to doubt that much of the overall methodology and the assessment of the relevant operation and maintenance effects set out in the ES is robust, there are a number of significant areas of concern that are addressed below.

Noise limits, standards, guidance and atmospheric effects

18.3.86 The applicant's use of a ETSU-R-97 simplified assessment and adoption of a 35 dB $_{LA90,10mins}$ threshold are consistent with EN-3 and accepted by the Panel. A worst case approach has been adopted in terms of consideration of background noise and the Panel therefore considers that EN-1 requirements for consideration of the existing noise environment are satisfied, as they would be if a full ETSU-R-97 assessment with background noise surveys was carried out.

18.3.87 During the examination there was much debate on the relative merits of the applicant's use of ISO 9613-2 and the alternative approach in SGN6, which was published after the ES assessment had been undertaken, for the noise propagation calculations. From the evidence it appears likely that the propagation distance restrictions in ISO 9613-2 and allowances for calculation uncertainty are related to increasing uncertainties in the effects of atmospheric and environmental conditions over longer distances. However, evidence suggests that there is good correlation provided that ISO 9613-2 calculations include allowances for cylindrical spreading, which, as noted above, is accepted by the Panel as a factor for propagation beyond 700m. Although in the ES, but not in later calculations, the applicant included a ±3 dB calculation uncertainty specified by ISO 9613-2 for a propagation distance of 1000m, the correlation with SGN6 suggests that this correction is not required when cylindrical spreading is included from 700m. The Panel therefore concludes that for the purposes of the assessment, the use of ISO 9613-2 for the propagation calculations is robust if cylindrical propagation is included from 700m, a ±3 dB calculation uncertainty is not included and, for the same reasons noted for construction noise above, a shoreline correction is not applied. The Panel also considers that there is merit in the more recent guidance of SGN6 being used for any propagation calculations required for the future monitoring and addressing of complaints.

18.3.88 The Panel does not consider that sufficient evidence has been provided to demonstrate that the blockage effect of the wind farm would contribute significantly to the conditions for cylindrical

spreading, that this has not been covered sufficiently by the guidance or that it would result in the adoption of cylindrical spreading from 700m not being robust.

18.3.89 The Panel notes that the noise contours provided by the applicant are based on spherical spreading and has therefore not relied on them.

Turbine sound power levels and tonal noise

18.3.90 The applicant's recognition of uncertainty regarding the turbine sound power output level and noise spectrum used in the ES is evidence that these figures are not robust and reduces confidence in the robustness of the assessment. However, the Panel accepts that this is an area where advances in turbine design could have a bearing and that reassessment, once the details of the turbines to be employed are known, would lead to a more robust assessment. Based on other evidence the assessment should include any corrections required by IOAPG for the robustness of the manufacturer's turbine sound power level data.

18.3.91 The -2dB to convert turbine sound power levels from LAeq to LA90 is midway between the figures of 1.5 to 2.5dB(A) set out in ETSU-R-97 and is noted as being commonly applied. The suggestion that the reduction should not be taken for the simplified assessment is not supported by ETSU-R-97. Also, the suggestion that it is only accepted for a full assessment because that includes consideration of background noise appears inconsistent with the recognition that with low background noise levels the full assessment effectively becomes the same as the simplified assessment. Insufficient evidence has been provided for the Panel to accept the reduction should not be allowed because ETSU-R-97 has not sufficiently accounted for corrections for background noise effects or for discarding the noisiest 90% of the turbine noise. The Panel therefore concludes that the -2 dB adopted by the applicant is reasonable.

Predicted noise levels and background noise surveys

18.3.92 Based on the above, the Panel concludes that the predicted noise level of 37.9 dB $_{LA90,10mins}$ for 6MW turbines with cylindrical spreading, no shoreline correction, a temperature of 10^{o}C, is robust and represents a realistic worst case scenario for the assessment of the Application Project based on a turbine sound power level of 110dB(A), no tonal component and no correction for amplitude modulation. This level clearly exceeds the 35 dB $_{LA90,10mins}$ threshold limit under the simplified ETSU-R-97 approach. However, as a background noise survey has not been carried out it is not known whether the levels would be below the threshold for a full ETSU-R-97 assessment, although the Panel notes that they may not be if the results of the incomplete survey on Bournemouth sea front proved to be representative.

18.3.93 The differences between the 37.9 dB figure and the higher predictions made by other parties is predominately due to a different interpretation of the various uncertainty and correction factors specifically addressed by the Panel, to higher figures being used for the turbine sound power output and to a difference of between 2.3 and 2.7dB resulting from an application of the Agr term that the Panel considers there has been insufficient evidence to justify.

18.3.94 The suggestions that the assessment is invalid because excessively conservative standards were being used is not accepted by the Panel on the basis that the assessment is based on the methods required by the NPS and on standards and guidance provided by ISO and the Institute of Acoustics and accepted by the applicant, the LAs and other acoustic experts who contributed to the examination. The extent to which noise would be masked by the sound of the sea would be considered by a full ETSU-R-97 assessment.

18.3.95 In considering whether noise limits should be secured in the DCO, the Panel is aware of the comments received from the applicant and the LA and of the uncertainties of the noise predictions and variations in background noise levels. However, EN-3 provides clear guidance that a limit should be required if predicted levels just meet the recommended noise limits set out in ETSU-R-97. On this basis, and given the predicted noise levels, the Panel concludes that a limit should be secured as clearly and unambiguously as the requirement is expressed in EN-3. Therefore Condition 11(o)(i) is introduced in the DML for a noise limit in accordance with ETSU-R-97 of 35dB $_{LA90,10mins}$ or the background noise level +5dB $_{LA90,10mins}$, whichever is greater, and that this should be enforced by the MMO in consultation with the LAs through the noise communication and monitoring protocol.

18.3.96 It is clear to the Panel that these limits can be achieved although, depending on the outcome of the noise propagation report and associated assessments, to do so is likely to require the development of further mitigation measures in parallel with those assessments through the mechanism identified in the noise communication and monitoring protocol.

Noise propagation report and parameters for the noise propagation report

18.3.97 The Panel agrees with the LAs that further assessment is required if the ETSU-R-97 threshold criteria are to be met and notes the proposal for a noise propagation report and for further assessment to be carried out post-Consent.

18.3.98 The Panel recognises that the consideration of the issues is pushing the boundaries of normal practice into areas where there is limited precedent or empirical data and where there are

difficulties in reconciling the multitude of factors that influence the propagation of noise with available guidance and with the physics and mathematics of simulation and prediction. The examination has seen different professional opinions on the complex issues involved and it is clear to the Panel that the most compelling case has not always been made by any one party. The Panel is also of the view that the examination has greatly benefited from the contributions of a number of IPs, in addition to those from the applicant and LAs.

18.3.99 The Panel is concerned that the linkages between the reports and the assessment, particularly with respect to the applicability of the compliance requirements and calculation parameters proposed by the applicant, is not currently clear.

18.3.100 Therefore, the Panel considers that, in view of the above and in the interests of natural justice, the 'parameters for the noise propagation report' and any future assessments carried out through the mechanisms established in that report need to be robust and consistent with the Panel's findings during the examination. The Panel finds that the following compliance requirements and parameters should be adopted for the noise propagation report and any subsequent operational noise calculations and assessments:

- compliance with ETSU-R-97 and the IOA Good Practice Guide and its Supplementary Guidance Notes including SGN6;
- cylindrical spreading from 700m;
- no shoreline correction factor for the assessment of onshore impacts adjacent to the coast;
- -2dB(A) to obtain LA90,10mins values from the calculated LAeq,10mins value;
- any corrections required by IOAPG for the robustness of the manufacturer's turbine sound power level data;
- a temperature of 10^{o}C;
- any barrier effects justified for the specific geometry and for the structure of the incident sound field;
- corrections for amplitude modulation would be applied in accordance with RenewableUK guidance and corrections for tonality would be applied in accordance with ETSU-R-97 guidance; and that
- these parameters are to be used for all noise propagation calculations undertaken for the construction, operation and maintenance of the Project.

18.3.101 The Panel also anticipates that some new issues are likely to arise during any assessment, particularly in relation to the methodology for the background noise surveys, interpretation of the results, use of the background surveys in the assessments, considerations of barrier effects and potentially any mitigation

proposals and the associated consideration of the distance over which the shoreline correction occurs.

18.3.102 There was not sufficient time at the end of the examination for the above requirements to be addressed in the 'parameters for the noise propagation report'. Therefore the Panel finds that the 'parameters for the noise propagation report' and the subsequent 'noise propagation report' should be subject to agreement with the MMO in consultation with the LAs to ensure that the objectives intended are forthcoming. This requirement is secured in Condition 11(n).

18.3.103 In considering the merits of the approach of a noise propagation report, the Panel also notes the potential for developments in wind turbine design to reduce sound power output and reduce tonal noise components and, subject to other requirements of the Consent, it is consistent with the NPS for the applicant to have the flexibility to take advantage of these developments to maximise the number of turbines that can be employed, and thereby maximise the amount of electricity that can be generated, within the noise limits.

18.3.104 With regards to other concerns raised by PCBA the Panel considers that:

- ETSU-R-97 is stipulated by the NPS as the applicable assessment methodology and is considered acceptable;
- both the simplified and standard assessments are valid and there appeared to be no reason why they could not both be used at any time;
- various mitigation options were available pending the result of the further assessment and that the fact that the mitigation was not known in advance was not considered material provided that it fell within the Rochdale envelope as was the case here;
- following the Panel's consideration of the noise predictions the evidence of the number of homes potentially impacted is not accepted as the Panel does not accept the PCBA's noise calculations;
- the locations for background noise surveys would need to be approved by the local authorities; and that
- the applicant has undertaken to identify calculation tolerances.

18.3.105 The Panel has carefully considered the representations on the proposal for a 'noise propagation report' and 'parameters for the noise propagation report' made during the examination. The Panel is also mindful that the LAs are comfortable with the principles of the process and concludes that with the additional Conditions outlined above these proposals are robust and consistent with the requirements of the NPS.

Amplitude modulation

18.3.106 With respect to amplitude modulation the Panel considers that no robust evidence was provided of any occurrence in a situation similar to the Project and indeed the acoustic expert acting for the IP that most actively raised this issue considered that it was highly unlikely that it would be relevant. There was a clear consensus between the applicant and the LAs that amplitude modulation is difficult to predict although there were differing views about the effectiveness of any planning conditions, with the possible exception of those adopted for a relatively small onshore wind farm that was in far closer proximity to receptors. Although two of the LAs suggested that an assessment would be better carried out in conjunction with a full assessment following background noise survey, the Panel considers that insufficient evidence was provided to justify why this would be the case. Based on the evidence provided the Panel concludes that amplitude modulation is unlikely to be a problem and that a Condition is therefore not necessary.

Low frequency noise, infrasound and wind turbine syndrome

18.3.107 The Panel has carefully reviewed the suggestions of health impacts from low frequency noise, infrasound and wind turbine syndrome contained in various material provided by IPs and has no reason to doubt that there have been a number of cases of health issues for people living in close proximity to onshore wind turbines. However, the Panel considers that sufficient evidence has not been provided to establish that the health issues had been caused by noise from the turbines and also notes the lack of evidence of such effects in relation to turbines at an equivalent distance to the Project or in relation to offshore turbines. The views of the Health Protection Agency are also noted and given significant weight. On this basis the Panel concludes that health impacts from low frequency noise, infrasound and wind turbine syndrome are not proven, that the balance of probability is that they are highly unlikely to occur and that no provision for compensation is required in the DCO.

Overall conclusions

18.3.108 The Panel's overall conclusions for offshore noise and vibration are provided after the consideration of noise monitoring and complaints.

NOISE MONITORING AND COMPLAINTS

Other wind farms

18.3.109 The applicant [REP-3031] submitted a report on responses to a freedom of information request from 13 local authorities with wind farms off their coasts. The one operational report that had

been received was due to a faulty foghorn. Of the 44 construction complaints, 45% were related to piling activities from the Teesside offshore wind farm which lies just 0.9 km from the coast and 77% were associated with projects up to 6.7 km offshore. The applicant [REP-3490] suggested that the distance of the Project from the coast (over 14 km from the nearest coastal receptor) suggests that the potential for noise to be generated at levels that may raise complaint during construction was low.

18.3.110 In response to a request from the Panel to substantiate claims of complaints at offshore wind farms, PCBA [REP-3708] referred to Westermost Rough Offshore Wind Farm. The applicant [REP-4030] noted that no evidence was provided of operational noise complaints.

18.3.111 The MMO [REP-3703] noted that "*based upon experience at other operational wind farms, [the MMO] do not believe that operational noise is a significant issue while still acknowledging concern raised by other consultees including Local Planning Authorities*".

The need for noise monitoring

18.3.112 The ES [APP-095] did not consider that monitoring of noise from offshore during construction or operation and maintenance due to impacts on human receptors was required, although initial noise monitoring of piling had been identified due to potential biodiversity impacts.

18.3.113 In its LIR, Bournemouth BC [REP-2676] requested a noise monitoring programme to keep noise levels within SGN6 guidelines and a memorandum of agreement between the MMO and councils to identify cooperation in the event of complaints.

18.3.114 A number of comments were raised at an ISH regarding the potential for noise thresholds to be exceeded, for the potential for complaints and the need for noise monitoring:

- the applicant did not intend to do any operational noise monitoring, but the Councils were concerned about the growing uncertainties about the predicted noise levels being close to the 35dB(A) criteria and were concerned that they did not have the resources for monitoring;
- there were concerns about a lack of controls in the DCO and DMLs on controls for operational noise from offshore;
- MMO monitoring related to underwater impacts on biodiversity and were not focussed on onshore impacts on humans; and
- MMO considered that complaints were rare and noted that although 11am to 7pm piling restrictions had been placed in

certain conditions in the past that there was no indication that this was warranted in this case.

18.3.115 The applicant [REP-3273] stated that its position was that any noise complaints would be directed to and investigated by the MMO, who would take action as required and that if required the LA had their own powers to bring proceedings in respect of statutory nuisance under the Environmental Protection Act 1990. However, the applicant agreed to provide reassurance to the LA by putting in place a noise and communication protocol during construction and operation.

Noise communication and monitoring protocol

18.3.116 Following discussions between the applicant, MMO and the LAs, the applicant proposed DML Condition 11(o) whereby the MMO would be required to approve, in consultation with relevant LAs "*a noise communication and monitoring protocol in relation to potential noise impacts on onshore receptors during construction and operation of the authorised scheme … in accordance with the outline noise communication and monitoring protocol and to include details of … the procedure for investigation of noise complaints … the provision of a noise consultant for the construction period and up to one year from commencement of commercial operation of the authorised scheme, unless otherwise agreed with the MMO".*

18.3.117 Regarding the status of the related documents the applicant [REP-3643, REP-4030 and REP-4042] stated that:

- in consultation with the MMO and LAs it was agreed that a draft noise communication and monitoring protocol would be provided by the applicant, to present an outline structure of the protocol and to agree the principles of the protocol in terms of responsibilities, processes and procedures;
- the 'outline noise communication and monitoring protocol' [REP-4042] had been prepared in response to that agreement;
- the 'outline noise communication and monitoring protocol' was a certified document in the DCO to be taken account of for the production of the 'noise and communication monitoring protocol' required by Condition 11(o) and that it was to be agreed by the MMO in consultation with the relevant LAs; and that
- the 'outline noise communication and monitoring protocol' would be updated and finalised prior to construction, when the final project design and confirmation of the noise consultant appointed and detailed information on local liaison procedures was available.

18.3.118 Regarding the 'noise communication and monitoring protocol' the applicant [REP-3273, REP3490, REP-3643, REP-3680, REP-4030 and REP-4033] stated that:

- the protocol would be agreed with the MMO in consultation with relevant LA at least 4 months before the commencement of construction;
- the protocol would provide methods and procedures for investigating noise complaints on a complaint led basis;
- the protocol would include details of the procedure and processes in place for the investigation of any noise complaints received, including setting out the different roles and responsibilities at each stage of the process;
- the protocol would be in place for the full construction and operational periods of the wind farm although, unless otherwise agreed with the MMO, the applicant's responsibilities regarding monitoring would only extend to the first year of operation;
- the applicant would provide a noise consultant, to be approved by the MMO in consultation with the relevant LA as per the draft protocol, to ensure any noise complaints that require further investigation were investigated efficiently and effectively;
- it was considered by the applicant that the majority of operation noise claims would be during the first year of operation and so it was not thought necessary to extend the provision of a noise consultant beyond that; and that
- should a noise complaint be received that was considered justified and attributable to the wind farm, the relevant LA would inform the applicant and if the matter was not resolved by the applicant it would be escalated to the MMO as the enforcing authority to consider any action to be taken.

18.3.119 The methodology for establishing noise limits or calculating noise levels was not included in the 'outline noise and communication monitoring protocol' [REP-4033], but in response to a question from the Panel the applicant [REP-4030] stated that:

- the 'appropriate guidance' included in the protocol for assessing both construction and operational noise complaints and noise limits was with reference to BS5228 or ETSU-R-97;
- although the protocol did not specify a detailed methodology for the investigation of noise complaints, it would be up to the relevant LA to determine how it would carry out detailed investigations; and that
- with respect to how concerns raised by Challenge Navitus and PCBA regarding establishing noise limits and calculating noise levels could be addressed, reference was made to the 'parameters for the noise propagation report', which

addressed the two key areas of uncertainty raised by Challenge Navitus and PCBA.

18.3.120 The applicant [REP-4033] noted that any further action to be taken in case by the MMO when a complaint was not resolved by the applicant or LA was outside the scope of the 'noise and communication monitoring protocol' but earlier [REP-3643] stated that:

- mitigation measures that may be employed during construction included restricting piling activities during certain hours, restricting the number of piling rigs working simultaneously, restricting locations of piling activity during certain hours and providing sound insulation for affected properties;
- should noise complaints that were justifiably attributed to the Project be received during operation, which was considered to be extremely unlikely, then mitigation measures could be employed to alter operational aspects of the turbines in certain areas and under certain conditions to reduce the level of noise produced; and that
- the effectiveness of mitigation measures would be considered between the relevant local authorities, the MMO and the applicant in accordance with the procedures established through the 'noise communication and monitoring protocol' and tested through appropriate noise propagation calculations.

18.3.121 The Panel notes that the applicant did not include provisions for the consideration of the effectiveness of mitigation measures in the 'outline noise communication and monitoring protocol' or in the DCO or DML.

18.3.122 The MMO [REP-3703] requested that the wording "*any action to be taken*" was deleted from Condition 11(o) and that aspects regarding operational noise may better sit in the DCO and be considered by the Secretary of State due to concerns that:

- operational noise was included in the protocol;
- there was little mitigation in the event of noise limits being exceeded other than shutting down turbines; and that
- it may not be appropriate for the MMO to require the shutting down of turbines for an NSIP.

The applicant [REP-4030] stated that the protocol did not set out any action to be taken in the event that a matter could not be resolved and, as requested by the MMO, "*any action to be taken*" had been deleted.

18.3.123 Responding to a suggestion from the PCBA [REP-3708] that Challenge Navitus and PCBA noise experts should have a role in the protocol, the applicant [REP-4030] considered this was not

required and that the involvement of the LA environmental health officers was appropriate and sufficient given their capacities for dealing with noise complaints.

18.3.124 New Forest District Council [REP-3412, REP-3471, REP-3711 and REP-4075] stated that:

- the overall approach of a complaint-led protocol was agreed;
- parties should be notified of complaints on the same day or no later than the next working day;
- operational noise complaints could lead to monitoring by the applicant's acoustic consultant to assess for compliance against agreed noise criteria, whereas for construction noise related to piling at night the assessment was more likely to be based on an Environmental Health Officer's professional judgement as to nuisance rather than exceedance of noise limits;
- the protocol would need to link to the 'noise propagation report' for any subsequent operational noise assessment methodology and compliance criteria to be followed in the event of a justifiable noise complaint;
- the protocol should outline the action to be taken in the event that a complaint was found to be justified;
- should justified complaints occur then the MMO would have the sanction to vary the hours during which piling could take place; and that
- the effectiveness of mitigation measures should be monitored.

18.3.125 Other comments were received from other LAs [REP-3353, REP-3391, REP-3393, REP-3629, REP-3636, REP-3639, REP-3640, REP-4013 and REP-4073] who were all in agreement with the applicant's overall approach:

18.3.126 Challenge Navitus [REP-3788 and REP-4020] and PCBA [REP-3472, REP-3708 and REP-4093] broadly supported the New Forest DC approach and commented that:

- an effective communications and monitoring protocol needed to result in a quick and effective response to any problems that arose; and that
- only continuous noise monitoring at selected sites supplemented by wind speed, direction and temperature measurements was likely to provide good enough data to understand the reason for any complaints.

18.3.127 Alan Rayner [REP-3487] stated that it was essential that all costs of monitoring were under-written by the applicant and that the LAs had full discretion as to how they monitored the Project, subject only to arbitration if the developer alleged unreasonable levels of monitoring activity.

Statutory nuisance

18.3.128 EN-1 paragraph 4.14.1 states that the statutory authority for carrying out the development consented conferred by s158 of PA2008 is *"only for the purpose of providing a defence in any civil or criminal proceedings for nuisance. This would include a defence for proceedings for nuisance under Part III of the Environmental Protection Act 1990 (statutory nuisance) but only to the extent that the nuisance is the inevitable consequence of what has been authorised."*

18.3.129 EN-1 paragraph 4.14.3 then notes that *"the IPC should note that the defence of statutory authority is subject to any contrary provision made by the IPC in any particular case in a development consent order (section 158(3)). Therefore, subject to Section 5.6, the IPC can disapply the defence of statutory authority, in whole or in part, in any particular case but in so doing should have regard to whether any particular nuisance is an inevitable consequence of the development."*

18.3.130 EN-1 Paragraph 5.6.8 adds that "*If the IPC does grant development consent for a project, it should consider whether there is a justification for all of the authorised project (including any associated development) being covered by a defence of statutory authority against nuisance claims. If it cannot conclude that this is justified, it should disapply in whole or in part the defence through a provision in the development consent order*."

18.3.131 With respect to Article 14 of the applicant's DCO[28], the applicant [REP-3212, REP-3273, REP-3490, REP-3643 and REP-4030] stated that:

- Section 158 of the Planning Act 2008 provided a general defence to statutory nuisance that reflected the general principle of law that actions by a person with statutory authority, as would be the case here for the applicant if the DCO was granted consent, could not be subject to injunction and that an action in damages only was available to an aggrieved party;
- the statutory defence encapsulated in section 158 served an important purpose in preventing the construction and operation of consented NSIPs that the Government had decided was in the national interest to go ahead;
- the defence to statutory nuisance did not extinguish the LAs' duties under Part III of the EPA 1990 to inspect its area and take reasonable steps to investigate complaints of statutory

[28] APP-040, REP-3170, REP-3222, REP-3490, REP-3643, REP-4030, REP-3646 and REP-4031

nuisance, and to serve an abatement notice where satisfied of its existence, likely occurrence or recurrence;
- LA would also not be prohibited from taking action under the EPA 1990 for statutory nuisance;
- Article 14 did not in any way serve to water down an individual's recourse to law against statutory nuisance;
- the purpose of Article 14 was to clarify the terms of the general defence where noise claims by private individuals were brought and did not restrict the general defence to just apply to noise claims by private individuals and to no other forms of statutory nuisance, as other forms of nuisance continued to have the benefit of the general defence stated in Section 158; and that
- the applicant would need to ensure that it behaved in a non-negligent fashion and that any nuisance caused was an inevitable consequence of its sanctioned actions and that it abided by the relevant statutory provisions in the DCO.

18.3.132 Bournemouth BC [REP-2676, REP3390 and REP-3629] considered that Article 14 was not required as the rights of defence against a statutory noise nuisance were already well established and the Article 14 would simply serve to dilute or cloud these rights which have been well tested by case law; and that in essence Article 14 would potentially introduce a lower standard of care than that provided by existing established legislation.

18.3.133 New Forest DC [REP-3471 and REP-3711] stated that:

- it was understood that the applicant's intention in relation to Article 14 of the DCO was to make it clear to a private individual that the applicant would have a defence to an action for statutory noise nuisance in the circumstances specified in Article 14;
- Article 14 of the DCO provides a defence to proceedings brought by an aggrieved private individuals, rather than the LA, in respect of statutory nuisance in the specified circumstances;
- Article 14, as written, could be interpreted as restricting the defence of statutory authority to the specified circumstances listed by virtue of s158 (3) PA 2008 and that in all other respects it did not apply, for example to statutory nuisance action by the LA and statutory action for nuisance, other than noise, by a private individual;
- if the applicant's interpretation was correct then nobody could enforce a statutory nuisance against the applicant, and that
- further clarification was required on this matter particularly given the uncertainties highlighted over construction and operational noise from offshore.

Compensation

18.3.134 Responding to representations from the PCBA, the applicant (REP-4030) stated that:

- it did not believe that there would be noise impacting on qualifying property at all and that even if there was an impact, which is not anticipated or suggested by the Applicant, then the impact would be de minimus and not sufficient to have any effect on the value of the property to which the claim was being made;
- Wind Turbine Syndrome would not be an issue and that no compensation was necessary;
- there was no reason why advance funding was needed to secure the availability of compensation as at the time any claim could be made, the Project would exist and be operational and would provide a substantial asset base when any claim was made;
- PCBA had not justified the extent or number of properties that would experience noise levels in excess of limits;

18.3.135 PCBA [REP-2908, REP-3708 and REP-3995] stated that:

- noise was a 'physical factor' eligible for compensation as Part 1 claims through the Land Compensation Act 1973;
- freeholders, leaseholders with unexpired terms of over three years and landlords could all claim for depreciation of the value of dwellings within the 35 dBA operational noise contour;
- in addition, for wind turbine syndrome compensation should permit house moves for those who can provide medical evidence that this would be reasonable, and that
- an Article should be included in the DCO to seek to guarantee payment for compensation or provide an acceptable alternative form of security.

18.3.136 A number of IPs expressed concerns about noise levels being exceeded at their properties, that disturbance would be caused, that the value of their property would be reduced and that they should be entitled to compensation.

The Panel's reasoning and conclusions

18.3.137 The need for a noise communication and monitoring protocol during piling was agreed by all parties and in the Panel's view is clearly appropriate given the focus of complaints on other wind farms and the remaining uncertainties associated with low frequency sound. The case for the protocol being extended to operation became clear during the examination, as the predicted noise levels were challenged, more uncertainties were identified and it became more apparent to the LAs that complaints would

need to be addressed. The applicant agreed that protocol would be extended to cover the operational period.

18.3.138 The Panel considers that the involvement of the LAs in the protocol is essential to provide the link to their duties onshore, to provide them with a robust means for issues to be addressed without recourse necessarily being required to proceedings under the Environmental Protection Act and, importantly, to engage their expertise in assessing and addressing any issues. Although the MMO was less comfortable in being directly involved in the protocol, the Panel considers that their role is appropriate as their direct involvement is likely to result in any issues being addressed more quickly and that their experience at other offshore wind farms is likely to be valuable.

18.3.139 The Panel considers that the provision of a noise consultant to assist the MMO and LAs during the construction period and for the first year of each completed part of the project is necessary as expert support is likely to be required at the times when complaints are most likely to be experienced. However, reflecting similar issues for the noise propagation model, the Panel considers that it is important to ensure independence and that Condition 11(o) should therefore be amended to require that the selection of the consultant is approved by the MMO in consultation with the LAs. The Panel accepts the applicant's reasoning that the period that the noise consultant is provided for should be unless otherwise agreed by the MMO and considers that this would be supported by adding that the MMO would consult on this with the LAs. With regard to the suggested assistance from Challenge Navitus or the PCBA, the Panel considers that the availability of a consultant sufficiently addresses any concerns regarding the availability of independent skills and resources to the MMO and LAs.

18.3.140 The Panel considers that a number of the suggestions and other outcomes of the examination should be included in the 'noise monitoring and communication protocol':

- all parties should be notified on complaints on the same day or no later than the next working day, which the Panel considers will be helpful for accurate information to be obtained on the circumstances and for any necessary mitigation required to prevent harm to be made quickly;
- unless otherwise agreed by the MMO in consultation with the LAs, the applicant will provide continuous unweighted wide-band noise recording and wind speed, direction and temperature measurements of should be undertaken at four representative locations agreed with the LAs during the construction period and up to one year from the commencement of operation of each completed part of the authorised scheme and that this information should be published and made publicly available. The Panel considers

that this will assist with the understanding of the validity of a complaint, the assessment undertaken to identify measures required to avoid a reoccurrence, demonstrate compliance with the operational sound limits and provide transparency;

- operational noise calculations and assessments are to be in accordance with the 'noise propagation report', which the Panel considers is necessary for the reasons identified earlier; and that
- operational noise would be monitored and complaints assessed for compliance with the noise limits.

18.3.141 There was not sufficient time at the end of the examination for the above requirements to be addressed in the 'outline noise communication monitoring protocol'. Therefore the Panel concludes that the 'outline noise communication monitoring protocol' and the subsequent 'noise communication monitoring protocol' should be subject to agreement with the MMO in consultation with the LAs to ensure that the objectives intended are forthcoming. This requirement is secured in Condition 11(o) of DCO Schedule 13 and Condition 11(n) of DCO Schedule 14.

18.3.142 With regards to the concerns raised by Alan Rayner, the Panel notes that the applicant will be required to cover the costs of a noise consultant and monitoring equipment and is aware that the LAs have entered into a Planning Performance Agreement with the applicant that specifically addressed LA resource requirements for the discharging of the Consent. The Panel is not aware of any outstanding resource issues at the LAs and therefore has no reason to conclude other than that these concerns have been addressed sufficiently.

18.3.143 With regards to the concerns expressed by the MMO with respect to any action that it might be required to take in order to mitigate impacts and comply with noise limits, the Panel considers that this is consistent with its licensing and regulatory responsibilities and that its knowledge of the Project, on-going role and ability to call on the expertise of the LAs and an independent consultant make it is well positioned to identify and take the appropriate actions.

18.3.144 On the matter of statutory nuisance the Panel is satisfied that sufficient controls and mitigation measures have been secured in the DCO for it to be satisfied that it is not necessary to disapply any of the defence of statutory authority provided by Section 158(3) of PA2008. However, the Panel is concerned that the proposed Article 14 of the applicant's DCO[29] could serve to either

[29] APP-040, REP-3170, REP-3222, REP-3490, REP-3643, REP-4030, REP-3646 and REP-4031

confuse or to extend the defence under the Environmental Protection Act, particularly in regard to claims brought by private individuals under Section 82 of the Act. Although the applicant suggests that the Article does not water down an individual's recourse to law, it has not commented on the extent to which the Article would affect the outcome of a case. On balance, the Panel considers that insufficient evidence has been put forward for it to justify any additional defence. Furthermore the Panel accepts the view expressed by Bournemouth BC that rights of defence against statutory noise nuisance and are already well established and is further aware of helpful case law on this matter. The Panel therefore concludes that sufficient protection against statutory nuisance is provided through the Planning Act, that it has not been sufficiently demonstrated that the suggested Article 14 serves any useful purpose and that Article 14 should therefore be deleted. This is reflected in the DCO attached as Appendix A.

18.3.145 The Panel notes that the concerns raised by PCBA regarding compensation for noise under Part 1 of the Land Compensation Act 1973 are predicated on the assumption that threshold levels would be exceeded or that wind turbine syndrome would occur. The Panel does not agree with the PCBA's noise calculations supporting this view and does not consider that wind turbine syndrome represents a realistic worst case scenario. Furthermore the Panel's view is that is that the measures provided in the DCO are robust, that the balance of probability is that threshold noise levels will not be exceeded and notes that additional safeguards are in place through the noise communication and monitoring protocol. On this basis the Panel concludes that it is not necessary for security for compensations to be secured through the DCO.

18.4 THE PANEL'S OVERALL CONCLUSIONS FOR OFFSHORE NOISE AND VIBRATION

18.4.1 The Panel is satisfied that the DCO, the DMLs sufficiently mitigate the impacts of noise and vibration arising from offshore.

18.4.2 Provided that certain noise calculation parameters and requirements for noise survey, assessment and mitigation methodologies identified in 18.3.100 and 18.3.101 are included in the 'parameters for the noise propagation report', and that certain requirements identified in paragraph 18.3.140 are included in the 'outline noise communication and monitoring protocol', the Panel is satisfied that the onshore and offshore noise and vibration levels would be appropriately mitigated through the DCO/DMLs.

18.4.3 The 'parameters for the noise propagation report' and 'outline noise communication monitoring protocol' are certified documents under the DCO. The 'parameters for the noise propagation report', 'noise propagation report', 'outline noise communication

monitoring protocol' and the 'noise communication monitoring protocol' would be the subject of agreement with the MMO in consultation with the LAs to ensure that the objectives intended are forthcoming.

18.4.4 On this basis the Panel concludes that the application meets the requirements of EN-1, EN-3, EN-5 and the MPS for noise and vibration arising from offshore. Given this conclusion, the Secretary of State can be satisfied that the noise and vibration considerations should not carry significant weight for or against making the DCO. The matter is considered further in Chapter 21.

18.5 TURBINE AREA MITIGATION OPTION

NOISE AND VIBRATION FROM ONSHORE

The applicant's case

18.5.1 The applicant stated [REP-3429] that the number of cable circuits would be reduced by two to a maximum of four circuits, with an associated reduction in the amount of spoil, ducting and ancillary equipment required for the construction period but that the reduction in capacity would not affect the size of the Onshore Substation.

18.5.2 The applicant [REP-3429 and REP-3701] advised that there would be no change to the impact of noise and vibration arising from onshore and that there were no benefits identified for TAMO.

Other representations

18.5.3 A number of representations highlighted that in general terms the TAMO would have onshore impacts similar in scale to the Application Project, although little mention was made of specific changes to the impacts considered in this section. Some minor reductions in adverse impacts were implied due to the narrower onshore cable route.

18.5.4 During an ISH it was suggested that the narrower cable route would allow more flexibility for any adverse onshore impacts at specific locations to be mitigated by micro-siting within the redline boundary.

NOISE AND VIBRATION FROM OFFSHORE

The applicant's case

18.5.5 The applicant [REP-3429] stated that:

- during construction, the removal of turbines at the northern end of the turbine area would result in piling activities being undertaken at greater separation distances to sensitive receptors (18.8 km from Durlston Head instead of 14.3km

for the Application Project), which would reduce the noise levels experienced by the receptors;
- the foundation solution for the TAMO would adopt the use of gravity bases or space frame foundations in lieu of monopiles, which were proposed for the Application Project, and the noise levels associated with constructing gravity bases or space frame foundations would be lower than those associated with monopiles;
- the total number of turbines would reduce and the turbines that would be removed from the Project would be those at the northern end of the turbine area, thereby increasing the distance between the turbines and the closest sensitive receptors; and that
- during operation the noise levels at the receptors would reduce as a result of both the increased separation distance and the reduced number of turbines.

18.5.6 The applicant [REP-3435] predicted construction noise levels at the closest residential receptors for the TAMO as follows (figures for the Application Project are in brackets):

- 19.2 dB $L_{Aeq,T}$ due to spherical spreading (26.7 dB);
- 30.5 dB $L_{Aeq,T}$ due to cylindrical spreading (36.7 dB); and
- 33.5 dB $L_{Aeq,T}$ due to cylindrical spreading without a shoreline correction factor (39.7 dB).

18.5.7 The applicant [REP-3435] predicted operation and maintenance noise levels at the closest residential receptors for the TAMO as follows (figures for the Application Project are in brackets):

- 22.2 dB $_{LA90,10mins}$ due to spherical spreading (26.2 dB);
- 31.7 dB $_{LA90,10mins}$ due to cylindrical (34.9 dB); and
- 34.7 dB $_{LA90,10mins}$ due to cylindrical spreading and without a shoreline correction factor (37.9dB).

Figures for the TAMO were based on a turbine sound power level of 111dB(A), whereas 110dB(A) was used for the Application Project.

18.5.8 The applicant further stated [REP-3429, REP-3435, REP-3687, REP-3701 and REP-4030] that:

- the predicted noise levels attributable to the offshore piling works would be lower than the most stringent night-time threshold criterion of 45 dB(A) set out in BS 5228-1;
- the predicted noise levels would be influenced by the spectral shape of the noise emissions, which would be established during the detailed design stage of the Project when a piling contractor was appointed, however changes to the spectral shape were not predicted to change the outcome of the assessment and the noise levels would not exceed the most stringent threshold criterion;

- the operation and maintenance sound levels 35 dB $_{LA90}$ threshold even if the -3 dB shoreline correction was removed from the cylindrical spreading calculations for the onshore receptors, and the turbine sound power levels was increased to 111 dB(A);
- Condition 11(n) of the generation assets DML required the re-calculation of noise levels once the final parameters of the scheme were determined, as presented within the 'parameters of the noise propagation report' and this would ensure that noise levels calculated were within the noise limits as specified by appropriate guidance; and that
- it was content for the noise communication and complaints protocol to remain in place as required under Condition 11(o), should the TAMO be selected.

Other representations

18.5.9 A number of comments were received from the LAs [REP-3629, REP-3636, REP-3639 and REP-3711]:

- the re-run of the noise propagation model and the noise communication and monitoring protocol and the should also apply to the TAMO;
- there was a need for noise communication and monitoring protocol during construction and operation for the TAMO as for the Application Project; and that
- there was sufficient uncertainty as to warrant the imposition of Conditions as part of the DML.

18.5.10 Challenge Navitus [REP-3788 and REP-4020] stated that:

- the predicted construction noise level for TAMO for a single piling rig was 39.6 dB(A) and 45.6dB(A) with two piling rigs, which would be increased by about 1dB if the air temperature was raised to a more realistic worst case of 20^{o}C;
- the predicted operation noise level was 35.8dB(A) or 34dB(A) if the correction from LAeq,T to LA90,T was justified; and that
- the predicted operation noise level would increase to 37.3 dB(A) if a more representative turbine sound power level of 110.8dB(A), 20^{o}C temperature and no correction for LAeq,T to LA90,T were all considered.

18.5.11 PCBA's [REP-3996] prediction of the operation and maintenance noise level for TAMO at the closest residential receptors, assuming cylindrical spreading and no shoreline correction was 43.7 $dB_{LA90,10mins}$, which was corrected from an earlier [REP-3787] figure of 40.6 $dB_{LA90,10mins}$.

18.5.12 PCBA [REP-3708, REP-3995 and REP-3996] and Dr Yelland [REP-3787] stated that they had the same concerns regarding the methodology used for the TAMO assessment and for the impacts and mitigation as for the Application Project and further commented that:

- the predicted operational noise level was well above the 35dB(A) limit imposed by the ETSU-R-97 simplified procedure, so a background noise survey and standard noise impact assessment as defined in ETSU-R-97 was essential;
- an addition of 2.7dB was made for ground reflection at the receptor as this had been ignored by SGN6;
- 3dB was added due to propagation uncertainty from ISO 9613-2, as initially considered by the applicant;
- the differences with applicant's calculations relate mostly to input data and were within about a dB when the points of contention were excluded from the arithmetic;
- the smaller scheme would reduce operational noise by a small amount but this would not be enough to avoid breaching the noise protection limit of 35 dBA at the coast;
- there would be some reduction in those suffering noise above this limit but the size of reduction was unknown;
- the 35 dB noise contour would be just over 5.6 km inshore at Durlston and would cause operational noise above the protection limit well inland from the coast; and that
- the 5.6km was "*considerably less*" than an earlier estimate following a correction to allow for attenuation due to onshore atmospheric absorption.

PANEL'S REASONING AND CONCLUSIONS

18.5.13 The Panel notes that the general findings for the Application Project with respect to noise limits and methodology for both onshore and offshore noise apply equally to the TAMO.

18.5.14 With regards to construction and operational noise from onshore the Panel concludes that as no significant differences in impacts or mitigation have been identified that the impacts and mitigation measures of the TAMO have already been addressed by the applicant in the considerations for the Application Project, that these have been incorporated in line with NPS requirements and captured in the DCO satisfactorily. There are no significant implications for the DCO or DMLs were the TAMO to be adopted.

18.5.15 Turning to noise from offshore, and based on consideration of the evidence on the criteria used for the noise calculations, the Panel finds that the applicant's predicted noise level for piling of 33.5dB $L_{Aeq,T}$ is robust, is comfortably within the threshold level of 45 dB $L_{Aeq,T}$, and that there is unlikely to be disturbance from the the impulsive and repetitive character of the noise at night. Although a figure of 39.6 dB $L_{Aeq,T}$ has been suggested by others the Panel considers that the differences in the derivation of this figure with

the one provided by the applicant have not been sufficiently justified for it to be relied on, although it is noted that it is still lower than the threshold.

18.5.16 The suggestions that piling noise from a larger number of smaller piles could be more disturbing that the use of monopiles considered for the Application Project is not accepted by the Panel on the basis that predicted noise levels with the TAMO are significantly lower and the low frequency component can also reasonably be anticipated to be significantly less.

18.5.17 The Panel also concludes that the applicant's predicted operational noise level of 34.7 dB $_{LA90,10mins}$ represents a credible worst case scenario for the assessment of the TAMO based on a turbine sound power level of 110dB(A), no tonal component and no correction for amplitude modulation. This level is marginally lower than the 35 dB $_{LA90,10mins}$ threshold limit under the simplified ETSU-R-97 approach, although the margin would be expected to vary depending on the power output and noise spectrum of the selected turbine and on the outcome of a full noise assessment including consideration of background noise. The prediction is close to the equivalent figure suggested by Challenge Navitus although differs significantly from that proposed by PCBA due to a different interpretation of the various uncertainty and correction factors that the Panel has specifically addressed and considered have not been sufficiently justified. PCBA's suggestion at the end of the examination that 2.7dB should be added is not accepted by the Panel as insufficient evidence was provided to convince it that SGN6 had not allowed for this effect. On the basis of these comments it, follows that the Panel does not accept the PCBA's figure that operational noise thresholds would be exceeded up to 5.6km inshore from Durlston.

18.5.18 The small margin between the predicted operational noise levels and the threshold leads the Panel to agree with the applicant and New Forest DC that a noise propagation report is required. The Panel also concludes that provisions for noise limits and a noise propagation model should be secured for the same reasons and with the same Conditions in the DML as for the Application Project. The Panel is also comfortable with the suggestion by the applicant and the LAs that the noise and monitoring protocol is adopted for the TAMO in the same way as for the Application Project, in which case the Panel considers that the same Conditions should apply.

18.5.19 The Panel notes that the noise contours provided by the applicant for the TAMO are based on spherical spreading and has therefore not relied on them.

18.5.20 The Panel considers that the noise impacts from the TAMO are significantly lower than for the 970MW Application Project and that, unlike the Application Project, the outcome of the noise

propagation report and associated assessment is unlikely to result in any significant reduction in generating capacity.

18.5.21 The Panel is satisfied that the DCO and the DMLs sufficiently mitigate the impacts of noise and vibration arising from offshore.

18.5.22 Some issues, including further assessment, mitigation and approvals remain to be resolved but the Panel is satisfied that these will be adequately addressed through the application of the recommended DCO and DMLs, and particularly the noise propagation report and the noise communication and monitoring protocol, as well as through the proper enforcement of other regulatory regimes.

18.5.23 The Panel therefore concludes that the TAMO meets the requirements of EN-1, EN-3, EN-5 and the MPS for noise and vibration arising from the offshore elements of the Project. The issue is considered in the planning balance in Chapter 21.

19 GOOD DESIGN

19.0 THE POLICY CONTEXT

NATIONAL POLICY STATEMENTS

19.0.1 NPS EN-1 (paragraph 4.5.1) acknowledges that the nature of much energy infrastructure development will often limit the extent to which it can contribute to the enhancement of the quality of the area. Nevertheless, it also recognises that applying 'good design' to energy projects should produce sustainable infrastructure sensitive to place, efficient in the use of natural resources and energy used in their construction and operation, matched by an appearance that demonstrates good aesthetic as far as possible. To achieve these aims, the NPS outlines what is required of the applicant and advises on the approach to decision making.

19.0.2 NPS EN-3 expects proposals for renewable energy infrastructure to demonstrate good design in respect of landscape and visual amenity, and in the design of the project to mitigate impacts such as noise and effects on ecology.

DEVELOPMENT PLAN POLICIES

19.0.3 Recognising that the concept of good design is not merely related to aesthetics but extends to considerations such as noise, flooding and ecology amongst other matters. Development Plan policies relating to individual factors contributing to good design are referred to in the relevant Chapters.

19.1 PANEL'S REASONING AND CONCLUSIONS

19.1.1 As many of the aspects of good design are covered in other Chapters relating to specific topics, the cases made by the applicant and IPs are not repeated here. Our reasoning and conclusions apply to the Application Project as well as the TAMO scheme.

OFFSHORE

19.1.2 The Panel recognises that there is very limited choice for the design and appearance of the turbines and offshore substations. The various components of any design brought forward within the Order Limits and other parameters set out in the recommended DCO are likely to be standard types or models of engineered turbine or associated equipment.

19.1.3 The scope for design lies principally in the layout and siting of the turbines. The applicant and Natural England agreed to a set of design principles [REP-4038], which is the subject of a certified document in the recommended Order. The principles are intended to minimise the impacts of the offshore elements of the projects

on the Areas of Outstanding Natural Beauty, Heritage Coasts and the New Forest National Park. Furthermore, as described in paragraph 7.3.261, design measures were introduced to reduce the visual impacts of the development offshore. The TAMO structures exclusion zone would provide a further design measure to mitigate the visual impacts of the turbine array.

19.1.4 The Panel is therefore satisfied that the applicant has sought to make the offshore elements of the project as attractive, durable and adaptable as they can be. Functionality and aesthetics have been taken into account, as required by NPS EN-1 (paragraph 4.5.3).

19.1.5 Nevertheless, the Panel finds that, despite the applicant's attempts to implement the principles of good design, the siting of the turbine array relative to sensitive receptors would cause adverse harm in terms of landscape and visual amenity. It would fail to contribute to the quality of the area.

ONSHORE

19.1.6 During the constructional phases of the landfall and cable installation elements of the projects, the quality of the immediate areas would be affected visually and by the inevitable increase in noise and disturbance. The DCO includes a number of measures (Requirements 15, 16, 21, 22 and 29, for instance) which would help to lessen the environmental impacts of construction and should be imposed. Subject to these measures in place, the Panel is satisfied that the temporary and reversible nature of the works would not lead to longstanding implications for the quality of the areas affected.

19.1.7 The post-construction consequences of the landfall and cable installations are considered in some detail in Chapter 8. The Panel accepts that the range of measures incorporated into the design of the projects and additional ones secured through plans (such as the Landscape and Ecology Plan) adequately demonstrate the applicant's commitment to the principles of good design. These include undergrounding of the cables, trenchless techniques in selected locations, a reinstatement, replanting or restoration programme and future management of trees, hedgerows and other vegetation.

19.1.8 The applicant has also demonstrated to the Panel's satisfaction that alternatives for the cable route had been adequately explored to avoid the most sensitive areas, and taking account of engineering and other constraints.

19.1.9 In relation to the Onshore Substation, ES Volume C Chapter 4 described the alternatives considered for location of the Onshore Substation. The Panel accepts the reasons for locating the

substation at Three Legged Cross for reasons explained in Chapter 8 of this Report.

19.1.10 The Design and Access Statement (DAS) [REP-4047] also explained the site selection process and confirmed that the site was selected partially for its high level of natural screening. The landscaping proposals took account of existing landscape character and include additional landscaping on the site.

19.1.11 There is limited scope for achieving a substation building of high architectural merit. However, there is potential for controlling its scale and layout and to ensure that the final design takes account of the Green Belt location. At the ISH the Panel pursued with the applicant a proposal to re-word the Requirement relating to Work No 73 (the Onshore Substation), as at the time there was very little information in the DAS accompanying the application [APP-319] to be assured that the final design would have regard to the area's Green Belt status. Bearing in mind the representations from Dorset CC and East Dorset DC in relation to the importance of mitigating the adverse impact on the Green Belt, the Panel believes that a more specific and detailed requirement is necessary than that proposed by the applicant. Chapter 8 of this Report explains the Panel's reasons for wording Requirement 12(2) of the DCO along the lines suggested.

19.2 OVERALL CONCLUSIONS

19.2.1 Subject to effective implementation of measures to reduce as far as is practicable the visual and other consequences of the onshore elements of the projects, the Panel considers that the principles of good design would be met. Equally, through the use of design parameters, and the 'turbine area design principles' the Panel is satisfied that the applicant has shown a commitment to achieving functional but aesthetically acceptable designs within the limitations of operational and other constraints. The Panel's conclusions on the project's ecological, noise and flooding implications (amongst others) also show that, with measures in place, it would meet those aspects of design considerations that contribute to functionality and sustainability.

19.2.2 However, neither the measures incorporated into the designs, nor those secured through the Order, would be effective in overcoming the significant harm caused by the offshore components of the project, as described in Chapters 7, 9 and 10. The implications on environmentally sensitive areas, heritage assets and visual amenity have been shown to be significant, and lead us to conclude that the project would not contribute to the quality of the area but would cause significant harm to it. The matter is considered further in the overall balance in Chapter 21.

20 FINDINGS AND CONCLUSIONS IN RELATION TO HABITATS REGULATION ASSESSMENT:

20.0.1 The findings and conclusions reached by the Panel in this Chapter on nature conservation issues in relation to the Habitats Regulations are intended to inform the Secretary of State in performing her duties under the Habitats Regulations as the competent authority for the purposes of the Habitats Directive.

20.0.2 This Chapter is set out as follows:

- Explanation of the process;
- Project location and its relation to European sites;
- Potential effects of the Application Project and the Turbine Area Mitigation Option (TAMO) ;
- The applicant's approach to the assessment
- European sites considered in the screening process for Likely Significant Effects (Stage 1);
- Assessment of likely significant effects resulting from the project, alone and in-combination;
- Conservation objectives;
- Findings in relation to adverse effects on the integrity of European sites;
- Consideration of Alternative Solutions, Imperative Reasons of Overriding Public Interest and Compensatory Measures;
- Conclusions.

20.1 EXPLANATION OF THE PROCESS

20.1.1 The Secretary of State is the competent authority for the purposes of the Habitats Directive and the Habitats Regulations. Consent for the proposed development may only be granted if, having assessed the potential adverse effects the project could have on European sites or European offshore marine sites, the competent authority considers it passes the relevant tests in these Regulations. The Offshore Marine Regulations (which apply the same tests as the Habitats Regulations), will also apply because a large part of the site is beyond the 12nm limit.

20.1.2 Planning Inspectorate Advice Note 10 (Version 5, published August 2013) summarises the four stage process to be followed to ensure sufficient information is available to support the competent authority in satisfying the regulations. The four stages are:

- Stage 1: screening;
- Stage 2: appropriate assessment;
- Stage 3: assessment of alternative solutions;
- Stage 4: IROPI (imperative reasons of overriding public interest).

20.1.3 The process is also set out by Natural England (NE) in its Written Representation as an eight step process [REP-2900].

20.1.4 The screening stage is carried out to determine whether significant effects alone or in-combination with other plans and projects are likely to occur. If a likely significant effect (LSE) can be excluded on the basis of objective evidence and if the Secretary of State, as the competent authority, agrees this is the case, then no further action is required and the project can be consented.

20.1.5 If LSEs cannot be excluded, the competent authority must undertake an appropriate assessment (AA) of the implications of the project for the European site in view of the site's conservation objectives. The competent authority must decide if the information provided by the applicant is sufficient to demonstrate that an adverse effect upon the integrity of the European site can be excluded. If this cannot be demonstrated, then the applicant's assessment needs to move to Stages 3 and 4 of the HRA process as listed above.

20.1.6 The applicant submitted a HRA Screening Report [APP-059] and HRA Report [APP-060] and an Environmental Statement (ES) [APP-062] under Regulation 5(2) (g) of the Infrastructure Planning (Applications: Prescribed Forms and Procedures (APFP) Regulations 2009), which were deemed sufficient to accept for examination. A number of Relevant and Written Representations were submitted from the statutory bodies including Natural England (NE) [REP-2900], the Environment Agency (EA) [REP-2407], the Marine Management Organisation (MMO) REP-2992], Christchurch BC [REP-1769], Dorset CC [REP-1494], East Dorset DC [REP-1768] and New Forest DC [REP-1662]. A large number of non-statutory organisations also made Relevant and Written Representations, including the Royal Society for the Protection of Birds (the RSPB)[REP-2961], Hampshire and Isle of Wight Wildlife Trust (HIWWT) [REP-1695] Christchurch Harbour Ornithological Group (CHOG) [REP-1975], Dorset Bird Club [REP-2359], Challenge Navitus [REP-2938, REP-2939, REP-2941, REP-2948] and Whale and Dolphin Conservation [REP-3012]. These representations made it clear that there was a difference of opinion relating to some sites and features of some European sites between the applicant and NE as to whether LSE could be excluded in relation to the Application Project and also whether an adverse effect on integrity (AEOI) could be excluded for a small number of European sites.

20.1.7 The Panel, through a process involving two rounds of written questions, biodiversity issue-specific hearings (ISH) and Rule 17 requests, has considered these differences, and provides its opinion on whether or not an LSE can be excluded for European sites and whether we agree to no AEOI for those European sites taken forward to Stage 2.

THE REPORT ON THE IMPLICATIONS FOR EUROPEAN SITES (RIES)

20.1.8 The purpose of the RIES [PD-014] and the consultation responses received in relation to it is to compile, document and signpost information provided within the DCO application, and the information submitted throughout the examination by both the applicant and interested parties. The RIES for the Application Project was issued for consultation, including to the statutory nature conservation bodies, for the purposes of Regulation 61(3) of the Habitats Regulations. This process may be relied on by the Secretary of State. The RIES is not updated upon receipt of consultation responses; these responses form additional information which was used in preparing this report and which the Secretary of State can use to inform an appropriate assessment (if considered necessary).

20.1.9 The Panel issued the RIES [PD-014] on 20 February 2015, with a deadline for responses of 5 March 2015. As responses from the applicant [REP-3679] and EA/NE [REP-3634] continued to demonstrate that there was failure to reach agreement on piling restrictions to protect migrating adult Atlantic salmon by this date, the Panel issued a Rule 17 request for further information [PD-015] on 26 February 2015 with a deadline seeking responses by 5 March 2015. The Rule 17 request letter set out clarification of changes to the DCO related to piling restrictions. Written responses to the request for comments regarding the RIES [PD-014] and the follow-up Rule 17 request were received from the applicant [REP-4054], EA and NE [REP- 4085] and Challenge Navitus [REP-4021, REP 4088]. These responses have been taken into account in the Panel's recommendation.

20.2 PROJECT LOCATION AND ITS RELATION TO EUROPEAN SITES

20.2.1 Detailed descriptions of the project and its location are provided by the applicant in its HRA Screening Report [APP-059], HRA Report [APP-060] and its Environmental Statement (ES) [APP-062]. A summary of the main features of the proposal are presented in Chapter 2 of this Report.

20.2.2 No party disagreed with the applicant's statement that the project is not connected with or necessary to the management for nature conservation of any of the European sites considered within the applicant’s assessment [APP-059].

20.2.3 A total of 125 terrestrial, coastal and marine European sites were considered in the applicant’s screening assessment [see Table 5.2 of APP-059 for full details of site names, distance to the project and features] to have the potential for being affected by the project. The assessment included European sites located in

England, Scotland, Wales, Ireland, France, Germany, Denmark and the Channel Islands.

20.2.4 Of all of these, the project is within or adjacent to the following sites:

- River Avon Special Area of Conservation (SAC);
- Avon Valley Special Protection Area (SPA);
- Avon Valley Ramsar site;
- Dorset Heaths SAC;
- Dorset Heathlands SPA;
- Dorset Heathlands Ramsar site.

20.2.5 A number of European sites were included in the assessment despite being located some distance away from the application site. This is because birds from these European sites could forage within the application site and/or may pass through the application site on migration. Other European sites some distance away were assessed because of the potential for hydrological connections with the application site.

20.2.6 The Alderney West Coast and the Burhou Islands Ramsar site is outside of UK jurisdiction and therefore not covered by the Habitats and Species Regulations. However, a number of representations relating to this site were received during the examination and consideration has been given to it in this Chapter.

20.3 POTENTIAL EFFECTS OF THE APPLICATION AND TAMO PROJECT

20.3.1 In Table 5.1 of the HRA Screening Report [APP-059], the applicant detailed the potential effects of the proposed development on European sites and provided details on the pathway of effect, potential causes and their geographic extent.

20.3.2 The potential effects were grouped into the following broad categories:

- loss, damage or degradation of habitats (coastal, marine, terrestrial and freshwater habitats);
- disturbance / displacement of fauna (coastal, marine, terrestrial and freshwater habitats);
- collisions of fauna with wind turbines and other infrastructure, and
- the barrier effect.

20.3.3 The same grouping of potential effects was used for the turbine area mitigation option (TAMO).

20.4 THE APPLICANT'S APPROACH TO THE ASSESSMENT

20.4.1 The applicant's methodology for identifying European sites was detailed in section 2.2 of the HRA Screening Report [APP-059]. It states that "*key to determining which European sites are included is an understanding of the potential impacts associated with the Project and the geographical scale over which these may be detectable*." The parameters identified in Table 5.1 of the HRA Screening Report were used to define search areas for European sites. The applicant stated that the screening methodology and the baseline data used to inform the screening assessment was agreed prior to submission with NE, EA, MMO, Centre for Environment, Fisheries and Aquaculture Sciences (Cefas) and the RSPB through the Evidence Plan process.

20.4.2 The applicant defined how it determined what would constitute a "*likely significant effect*" within its HRA Screening Report as "*any identified effect that retains the potential to result in a change in the conservation status of one or more designated feature of a European site after all aspects of the plan or project have been considered alone and in-combination with other plans and projects*." This follows EC guidance on habitats assessment: Assessment of plans and projects significantly affecting Natura 2000 sites (2001).

20.4.3 The scope of the applicant's in-combination assessment is detailed in section 2.3 of the HRA Screening Report [APP-059] and is described as being the effects on European sites "*by a proposed development, alone and/or in conjunction with other plans or projects*." The in-combination assessment was discussed with NE, RSPB and the MMO in a meeting on 10 May 2013 and between NE and RSPB in a conference call on 16 May 2013 [APP-060]. A list of projects and plans assessed by the applicant is contained in Appendix A of the HRA Screening Report.

SURVEYS

20.4.4 The assessment of impacts on ornithological features of European sites was supported by onshore and offshore ornithological surveys which were developed in consultation with a number of bodies including NE, RSPB, Dorset Wildlife Trust and Hampshire & Isle of Wight Wildlife Trusts [APP-078 and APP-097]. The results of the surveys were presented in APP-126 to APP-134 and APP-285 to APP-288.

20.4.5 A number of IPs raised concerns relating to the adequacy of the applicant's surveys during the examination.

20.4.6 CHOG raised concerns about the adequacy of the wintering bird survey in the Avon Valley [REP-2871] and provided its interpretation of survey data for a number of species. Of

relevance to the HRA assessment, CHOG did not agree with the survey results for nightjar, Dartford warbler and woodlark.

20.4.7 The applicant provided further ecological survey data at Deadline II [REP-3036 and REP-3037] for onshore areas that it was unable to access during the pre-application stage; however CHOG [REP-3384] still considered the surveys inadequate.

20.4.8 The Statement of Common Ground (SoCG) between the applicant and NE [REP-3696] agreed that the winter bird surveys undertaken provided an overview of the types and distribution of species commonly wintering within the Onshore Development Area and provided suitable baseline information, when used alongside the data gathered during the desk-study, to determine their nature conservation value. It agreed that the wintering bird survey programme provided suitable baseline data on which to base an assessment of the impacts of the project on wintering birds when within the terrestrial environment.

20.4.9 The SoCG also stated that "*the breeding bird survey programme provides suitable baseline data on which to base an assessment of the impacts of the Project on breeding birds when within the terrestrial environment*."

20.4.10 Likewise, the SoCG between the applicant, Dorset Wildlife Trust and Hampshire & Isle of Wight Wildlife Trust [REP-3117] agreed that the surveys undertaken to inform the assessment within the Onshore Ornithology Chapter were suitable.

20.4.11 PCBA in its Written Representations [REP-2907, REP-3351] and Dorset Bird Club in its Written Representations [REP-2966, REP-3571] contended that the applicant failed adequately to consult local experts and that the survey methods for offshore ornithology were inadequate. Their main concerns were:

- the applicant failed to adequately consult local expert organisations such as CHOG, Dorset Bird Club and Hampshire Ornithological Society. The applicant, in REP-3176, acknowledged that most of the consultation was with NE and RSPB but that data was procured from local ornithological groups. The SoCG between the applicant and NE [REP-3696] confirmed agreement on the adequacy of ornithological data;
- the applicant's survey methods were inadequate. The total survey time had been insufficient to meet the stated objectives of the survey programme. However, PCBA accepted that there are no expert recommendations or guidance on this topic. NE [REP-3696] was consulted by the applicant and was in agreement with it that the methodology used to undertake the field survey programme and boat-based transect surveys (including level of effort) was suitable. NE did, however, consider that the land and boat-

based migration surveys did not provide sufficient information but as the options for gathering suitable field data on migrating birds was limited, NE and the applicant agreed to determine impacts following a modelling approach;

- the offshore surveys failed to comply fully with industry accepted guidelines. This is discussed in paragraphs 20.4.13 to 20.4.15 below;
- no nocturnal observations were made nor radar surveys used. The applicant [REP-3313] and NE [APP-078] agreed that radar surveys had too many limitations to provide suitable information for an assessment of potential impacts. These limitations included the lack of capability to identify species of passerine birds, limited detection range of radar type, 'clutter' from waves preventing detection of low flying birds, poor weather conditions and the absence of offshore structures on which to mount the radar;
- the results of the applicant's collision risk modelling (CRM) do not reflect the abundance of birds in the area. CRM modelling is discussed in detail in paragraphs 20.4.18 to 20.4.22 below.

20.4.12 The RSPB did not enter into a SoCG with the developer [REP-3161] however it did not query the survey methodology in any of its representations.

20.4.13 Throughout the examination, Challenge Navitus maintained [REP-3370, REP-3603, REP-4021] that the applicant's survey methods, particularly marine surveys, were not adequate as they did not conform to industry guidelines as set out by Ware and Kenny (2011). Dorset Wildlife Trust (DWT) and HIWWT [REP-2934] also expressed concerns that the data gathered is not sufficiently robust to identify the potential impacts on offshore and migratory bird species.

20.4.14 The applicant's response [REP-3176] was that the detailed approach to the benthic ecology characterisation survey was provided in Chapter B of the ES [APP-118]. Surveys were designed following the guidance of Ware and Kenny (2010) and the specification, coverage, data analyses and reporting was approved by the MMO and its advisers Cefas.

20.4.15 NE, in its SoCG with the applicant [REP-3696] agreed that *"the benthic ecology survey was appropriate and of sufficient scale and timing to characterise the area in relation to benthic ecology."* It also agreed that the offshore development area including the turbine array and export cable corridor had been appropriately mapped with regard to biotope classification and valued ecological components. NE concluded by stating *"that the information presented to describe the baseline conditions within Volume B, Chapter 9 of the ES and supporting benthic ecology characterisation technical report at Appendix 9.1, provide an*

accurate representation of benthic ecology of the study area and utilises best available information, as agreed in writing with Natural England on 15th August 2013."

20.4.16 Challenge Navitus [REP-2937, REP-2939] wqas concerned about deficiencies in survey data collected for a number of terrestrial species including great crested newts, otter, dormouse, bats, smooth snake and sand lizard. These concerns have been addressed in Chapter 6.

20.4.17 The Panel accepts that differences remain between the applicant, PCBA and Challenge Navitus regarding the frequency of sampling and timing of the marine and ornithological surveys. While the Panel believes that the applicant could have benefited from wider consultation it is satisfied that the ornithological data is adequate. Having followed the debate and carefully assessed the various documents, the Panel is content that the applicant has complied with relevant legislation and guidance to the satisfaction of the regulators.

COLLISION RISK MODELLING

20.4.18 NE confirmed [REP-2461] that the applicant's CRM focussed on Option 1 of the Band model (but with these outputs augmented by those from Options 2 and 3 of the Band model) and considered this to be an appropriate approach to assessing and presenting collision risk estimates.

20.4.19 However, NE identified a number of methodological issues and uncertainties in relation to CRM apportionment and the calculation of Biologically Defined Minimum Population Scale (BDMPS) values both in its Written Representations [REP-2461, REP-2900] and during the examination. A number of other interested parties (IPs), including Challenge Navitus [REP-2937], PCBA [REP-2907], Wildlife Trusts and ornithological groups also challenged the methodology and modelling used by the applicant.

20.4.20 PCBA were concerned both at the ISH and in its Written Representation [REP-3351] that NE had not consulted with local organisations to expand its database of knowledge of bird populations and movements. NE's response was "*Natural England reviews the developers scoping opinions and form our own judgement; we do not consult with other organisations in this process. It is the developer's duty to engage with other interested parties*."

20.4.21 During the examination the applicant discussed these issues with NE and re-ran the CRM assessments for all key seabird species [REP-3132] taking into consideration the recent review of avoidance rates (ARs) presented by Marine Scotland Science (Cook et al 2014). NE [REP 2900] agreed to accept ARs of 99.5% for herring gull, great and lesser black-backed gull and 98.9% for

gannet with a recommended AR of 99.2% for kittiwake for use in the basic Band Model. NE agreed that "*while there remained concerns over the reference/BDMPS populations used by the Applicant we also note that in our own calculations using what we consider to be the appropriate BDMPS methodology, the conclusions arrived at by the Applicant remain valid*" and no further work was needed.

20.4.22 The updated SoCG between the applicant and NE [REP-3696] confirmed *"it is agreed that the approach to collision risk modelling used to inform the assessment is suitable following the provision of clarification. Use of Option 1 of the Band model (see Appendix 12.4 of the ES) is appropriate and precautionary for the key seabirds and migratory birds listed in Tables 12.31 and 12.41 and Option 2 for migratory seabirds (Appendix 5.1 and 5.8). It is also agreed that the range of avoidance rates presented are appropriate.*" The Panel is content that while there were differences in opinion regarding methodological issues and uncertainties in relation to CRM, the conclusions from the modelling are appropriate.

20.5 EUROPEAN SITES CONSIDERED IN THE SCREENING PROCESS FOR LIKELY SIGNIFICANT EFFECTS (STAGE 1)

20.5.1 As detailed above, the applicant considered 125 European sites in the HRA Screening Report [APP-059]. The applicant produced detailed screening matrices for 19 individual European sites. However, during the examination, as a result of submissions by NE and questions from the Panel, further assessment work was undertaken and updated matrices were produced for both the Application Project [REP-3326] and the Turbine Area Mitigation Option (TAMO) [REP-3431] which was put forward by the applicant at Deadline III (see Chapter 2 for further explanation of the Application Project and the TAMO). Additional details of this process are described in paragraphs 2.24 and 2.25 of the RIES. The final list of European sites with detailed screening matrices is:

- River Avon SAC;
- Avon Valley SPA;
- Avon Valley Ramsar site;
- Dorset Heaths SAC;
- Dorset Heathlands SPA;
- Dorset Heathlands Ramsar site;
- Solent and Southampton Water SPA;
- Solent and Southampton Water Ramsar site;
- Poole Harbour SPA;
- Poole Harbour Ramsar site;
- River Itchen SAC;
- Chichester and Langstone Harbours SPA;
- Chichester and Langstone Harbours Ramsar site;

- Alderney West Coast and the Burhou Islands Ramsar sites;
- Dungeness to Pett Level SPA;
- Isles of Scilly Complex SAC;
- Alde-Ore Estuary SPA;
- Flamborough and Filey Coast potential Special Protection Area (pSPA);
- Flamborough Head and Bempton Cliffs SPA.

20.5.2 NE confirmed that the correct features have been identified in the applicant's HRA Screening Report for all relevant UK sites [REP-3070]. NE did however note that little egret (Egretta garzetta) associated with Poole Harbour SPA and Ramsar site and Chichester and Langstone Harbours SPA and Ramsar site are only identified as a qualifying feature for both European sites in the SPA review (Stroud et al. 2001) and are therefore not legally a qualifying feature for either SPA. However, NE advised including this species in an HRA Assessment for both European sites and that the species is listed as being present in nationally important numbers for both the Ramsar sites.

DESIGNATED EUROPEAN SITES OTHER THAN THOSE FOR WHICH A SCREENING MATRIX WAS PRODUCED

20.5.3 Of the remaining European sites identified in the HRA Screening Report [APP-059] for which no screening matrix was produced, LSE was ruled out on the basis of no loss, damage or degradation of habitats, no disturbance or displacement of fauna, no collisions of fauna with wind turbines and other infrastructure or no disturbance of bird movements due to the barrier effect.

20.5.4 Challenge Navitus in its Written Representation [REP-2937] identified that no designation information had been provided for Ribble and Alt SPA, Morecombe Bay SPA, Bowland Fells SPA, Fetlar SPA. However, the applicant had included designation features associated with these sites in Table 5.2 of the HRA Screening Report [APP-059] and concluded no LSE for these European sites. Challenge Navitus also considered that the potential impacts on submerged or partly submerged sea caves and annual vegetation of drift lines features of the Solent Maritime SAC had been unreasonably dismissed. Again, the applicant included designation features associated with these sites in Table 5.2 of the HRA Screening Report [APP-059] and concluded no LSE for these European sites "*due to sediment deposition. This is because although the potential range over which sediment may be deposited could overlap with the designation the level of sediment deposited would be very low and is unlikely to be detectable against background levels*…" and no LSE "*due to changes in coastal processes as, at the distance between the proposed wind farm and the designation, effects will be indistinguishable from natural variation in the system*." The Panel, therefore, concludes that there is sufficient evidence to

demonstrate that the relevant features and sites have been considered within the HRA Screening Report.

20.5.5 Challenge Navitus also contended [REP-2937] that the applicant "*fails to consider impacts on the Littoral Seino Marin SPA even though the screening assessment identified a LSE on that site (on razorbill, fulmar, guillemot, common scoter and manx shearwater)*." The applicant [REP 3175] accepted that there was an error in the HRA Screening Report [APP-059] and confirmed that there was no LSE predicted for the Littoral Seino-Marin SPA. The Panel also accepts that the applicant made an error and concludes that no LSE can be accepted.

Wight Barfleur SCI

20.5.6 In addition to the European sites considered above, NE [REP-2461] and Challenge Navitus [REP-2939, REP-3369, REP-3614] raised concerns regarding potential sediment deposition on the Wight Barfleur Site of Community Importance (SCI). Although the applicant did not provide a screening or integrity matrix for the site either with its application or during the examination, the applicant's HRA Screening Report [APP-059] identified the potential for smothering of reef features of Wight-Barfleur Reef SCI during construction and decommissioning and potential habitat change during the operation phase. A conclusion of no LSE was reached in the HRA Screening Report on the basis that:

(a) although the potential range over which sediment may be deposited could overlap with the designation, the level of sediment deposited would be very low and is unlikely to be detectable against background levels; and
(b) because of the distance between the proposed wind farm and the designation, effects on coastal processes would be indistinguishable from natural variation in the system.

20.5.7 NE in its Relevant Representation [REP-2461] sought further clarification to better understand the potential impact of sediment load/deposition to sensitive reef habitats and species within the SCI.

20.5.8 The applicant provided a clarification note at Deadline II [REP-3132] illustrating that the SCI is approximately 2km south of the southernmost extent of the array and that the sediment plume is unlikely to reach such a distance. It also outlined that the Wight-Barfleur SCI would be outside the axis along which sediment plumes could extend i.e. east to west instead of north to south and the tidal ellipses are rectilinear and therefore not expanding southwards carrying sediment. NE acknowledged in its Written Representation [REP-2900] that the habitats and communities within the SCI are found in a high energy environment which

would not promote sediment deposition and confirmed the clarification had helped allay its concerns. NE [REP-4072] agreed with the applicant's conclusion of no LSE for the site. The Panel is, therefore, satisfied that a conclusion of no LSE can be reached.

20.5.9 The European sites and qualifying features for which there was no dispute during the examination over the conclusions reached by the applicant, and for which the Panel see no reason to disagree with the applicant's conclusions, have not been considered further in this Chapter. The sites where there was some disagreement between the applicant, regulators and IPs are considered below.

EUROPEAN SITES TAKEN FORWARD FOR STAGE 2: APPROPRIATE ASSESSMENT

20.5.10 The applicant's HRA report [APP-060] concluded the potential for a LSE on the European sites and features for which the UK is responsible, as identified in Table 1. These were taken forward to Stage 2, Appropriate Assessment, which considered the potential for adverse effects on the sites' integrity.

20.5.11 Table 1: European sites and features for which a LSE was identified in the applicant's HRA report [APP-059].

Site	Feature
River Avon SAC	Atlantic salmon (Salmo salar)
Avon Valley SPA	Bewick's swan (Cygnus columbianus bewickii) gadwall (Anas strepera)
Avon Valley Ramsar site	gadwall (Anas strepera)
Dorset Heaths SAC	northern Atlantic wet heaths with Erica tetralix European dry heaths depressions on peat substrate of the Rhynchosporion
Dorset Heathlands SPA	Dartford warbler (Sylvia undata) nightjar (Caprimulgus europaeus) woodlark (Lullula arborea)
Dorset Heathlands Ramsar site	northern Atlantic wet heaths with Erica tetralix depressions on peat substrate of the Rhynchosporion
River Itchen SAC	Atlantic salmon (Salmo salar)

20.5.12 The applicant's HRA Report [APP-060] concluded that there would be no adverse effects on the integrity on any European sites as a result of the proposed development. However, in its Relevant Representation [REP-2461], NE stated that it could not be satisfied beyond all reasonable scientific doubt that the project would not have an adverse effect on the integrity of the following:

- Avon Valley Ramsar site
- Avon Valley SPA
- Dorset Heathlands Ramsar site
- Dorset Heaths SPA and SAC
- River Avon SAC
- Flamborough Head and Bempton Cliffs SPA
- Flamborough and Filey Coast pSPA
- Alde-Ore Estuary SPA
- Alderney West Coast and Burhou Islands Ramsar site

20.5.13 Although the applicant's HRA Screening Report [APP-059] concluded a LSE for the European sites detailed below, the updated screening matrices submitted at deadline IV [REP-3326] incorporated further assessments undertaken during the examination phase and ruled out a LSE for these European sites.

- Dorset Heaths SAC
- Dorset Heathlands Ramsar site

20.5.14 Screening matrices were not provided for the following European sites in the applicant's HRA Screening Report [APP-059], however they were included in the updated screening matrices with a LSE being ruled out:

- Flamborough and Filey Coast pSPA
- Flamborough Head and Bempton Cliffs SPA

20.5.15 The applicant's updated matrices [REP-3326] identified a LSE for additional European sites and features that were not included in the original matrices and integrity matrices. These are listed in Table 2 below.

Table 2: Additional European sites and features screened into the applicant's updated integrity matrices [REP-3326]

Site	Feature
Solent and Southampton Water SPA	common tern (Sterna hirundo) little tern (Sternula albifrons) Mediterranean gull (Larus

	melanocephalus) roseate tern (Sterna dougalli) Sandwich tern (Sterna sandvicensis)
Poole Harbour SPA	common tern (Sterna hirundo) Mediterranean gull (Larus melanocephalus) Sandwich tern (*Sterna sandvicensis*)*
Poole Harbour Ramsar site	common tern (Sterna hirundo) Mediterranean gull (Larus melanocephalus)

*Sandwich tern is not identified as a qualifying feature but the applicant was recommended by NE to include the feature as NE were extending the boundary of the SPA, to include Sandwich tern.

TURBINE AREA MITIGATION OPTION

20.5.16 The Panel issued a procedural decision [PD-009] determining that the Turbine Area Mitigation Option did not constitute a new application and could be considered within the existing application. Subsequently, the applicant submitted updated screening and integrity matrices for the Turbine Area Mitigation Option [REP-3431].

20.5.17 The outcomes of the applicant's screening and integrity matrices are the same for each European site and feature in the Turbine Area Mitigation Option matrices [REP-3431] and for updated application matrices [REP-3326]. This Chapter therefore considers the findings and conclusions drawn for the application scheme as this represents the worst case scenario that has the potential to be granted development consent.

20.6 ASSESSMENT OF LIKELY SIGNIFICANT EFFECTS RESULTING FROM THE PROJECT, ALONE AND IN COMBINATION

20.6.1 A number of issues relevant to the screening exercise were discussed during the examination. These are detailed in the following sections.

DISPLACEMENT OF KEY BIRD SPECIES

20.6.2 Although there are no SPAs for auk species (guillemots and razorbills) within breeding season foraging distance, the HRA Screening Report [APP-059] considered impacts on auk during the non-breeding season. Displacement matrices were provided in [APP-128] and a LSE for auk species of all European sites were screened out.

20.6.3 In its Relevant Representation [REP-2461] NE suggested that a precautionary approach for auk species should be considered, given the almost total uncertainty concerning realistic levels of mortality of displaced birds, although NE did not specifically attribute displacement to any particular European site(s). The applicant provided further clarification [REP-3132], including updating density figures, and concluded that there would still be no significant impacts when the appropriate population scale is considered, again not specifically attributing this to any particular European site(s). Whilst NE [REP-2900] had minor concerns regarding the methodology, they agreed that there is no significant impact on guillemot and razorbill populations due to displacement.

20.6.4 A LSE for displacement of gannets of all European sites was also screened out by the applicant in its HRA Screening Report [APP-059]. The applicant also discussed gannet displacement in the SoCG with NE [REP-3132], again not specifically attributing this to any particular European site(s) but confirming no LSE on the species. The matter of displacement was not discussed further nor disputed during the examination. The Panel therefore is satisfied that a conclusion of no LSE can be reached.

MIGRATORY NIGHTJAR AS A FEATURE OF DORSET HEATHLANDS SPA

20.6.5 A number of IPs, in particular Dorset Bird Club [REP-3367, REP-3571 and REP-4060], CHOG [REP-2870, REP-3384] and PCBA [REP-3351] raised concerns with the robustness of the applicant's conclusion of no LSE for collision risk for nightjar from Dorset Heathlands SPA [APP-059]. NE noted that the applicant's CRM assumed all birds were flying at collision height and the birds' avoidance rate was 98%, which resulted in a 0.60-0.72% increase in annual mortality rates. However, NE suggested greater consideration should be given to an avoidance rate of 95% as there was little direct scientific evidence of the risk of collision or migratory behaviour [REP-2461].

20.6.6 In response to the Panel's first written questions [PD-006] the applicant provided further CRM outputs [REP-3132] which included an Absolute Worst Case Scenario (AWCS) where the entire national population flew through the Turbine Area on both spring and autumn passage with all birds flying at collision height

and with an avoidance rate of 95%; this resulted in an increase of baseline mortality of between 1.5% and 1.8% (depending on inclusion of juveniles).

20.6.7 In its response to the RIES [REP-4072], NE stated that even though predicted mortality was greater than 1% "*baseline mortality would increase from 30% without the wind farm to 30.5% with the effect of the wind farm (i.e. increase by 0.5%) and the AWCS is considered to be very precautionary (due to reasons outlined in the Applicant's nightjar appendix note). When applying an AR of 98% (along with 100% of birds through the OWF and 100% at PCH). Therefore, a conclusion of no LSE can be reached for nightjar for operational CRM."* Having considered the information made available to the Panel, and accepting that there is little direct evidence of the flight characteristics of nightjars, the Panel is in agreement with NE that a conclusion of no LSE for the nightjar feature of the Dorset Heathlands SPA may be reached.

CONSTRUCTION IMPACTS ON BLACK-TAILED GODWIT

20.6.8 The applicant screened out LSE for collision risk, barrier effects and in-combination effects on black-tailed godwit features of Poole Harbour SPA and Ramsar site, Solent & Southampton Water SPA and Ramsar site [APP-059] and Chichester and Langstone Harbours SPA and Ramsar site [REP-3326].

20.6.9 However, CHOG [REP-2870] queried the numbers of individuals identified in the applicant's surveys. While acknowledging that black-tailed godwits are not a qualifying feature of the Avon Valley SPA, CHOG noted that WeBS data strongly suggested that godwits move between Avon Valley and Poole Harbour and that colour ring data also suggests interaction with other sites on the Solent coast. CHOG considered that the 'no work' period should extend from September to July to reduce the significant risk of harm from disturbance and vibration impacts, which would not provide a sufficient 'window of opportunity' for construction. As such, CHOG considered it would be inappropriate for the proposed cable route to pass through the Avon Valley, even with the use of HDD techniques. Its stance was reiterated in [REP-3384 and REP-3564] and supported by Dorset Bird Club [REP-3367, REP-3571].

20.6.10 Responding to the Panel's second round question [PD-011] the applicant [REP-3643] agreed that it may be assumed that large numbers of black-tailed godwit use the wet grasslands of the Avon Valley between September and March inclusive. However, it proposed restrictions on construction work within 250m of the Avon Valley SPA between November and February inclusive [APP-060], which was secured in Section 7.3 of the Landscape and Ecology Management Plan (LEMP) [REP-3035].

20.6.11 The applicant also noted that construction compounds would be outside of the Avon Valley SPA and screened by trees; therefore, any disturbance would likely be due to aural stimuli only. The potential to displace black-tailed godwit from large areas of feeding habitat was considered negligible, given the long distance movements made by these birds and the range of different feeding grounds they exploit in the area, hence the applicant concluded no LSE.

20.6.12 Disturbance from construction works were discussed at the ISH, where the applicant confirmed [REP-3313] that no vehicle access would be required within the Avon Valley SPA, which would minimise potential disturbance of breeding waders at the River Avon crossing. This has been secured through the draft LEMP

20.6.13 NE [REP-4072] agreed with the applicant's conclusion that there is no LSE for the black-tailed godwit feature on the nearby European and internationally designated sites. The Panel therefore consider that a conclusion of no LSE for construction impacts on black-tailed godwit can be reached.

DISTURBANCE IMPACTS OF ELECTRO-MAGNETIC FIELDS (EMF) ON FEATURES OF THE RIVER AVON AND RIVER ITCHEN SAC

Sea Lamprey of the River Avon SAC

20.6.14 As a result of the presence of export cables during operation, the applicant [APP-059] identified that impacts on migratory fish from the River Avon SAC were possible as EMF in marine and freshwater environments could prevent individuals reaching or leaving the mouth of the River Avon. However a conclusion of no LSE for these effects was reached by the applicant. This was queried by NE [REP-2461] and Challenge Navitus [REP-2937] who considered insufficient information had been provided to conclude no LSE.

20.6.15 Additional information was provided by the applicant [REP-3134] in which it noted that a stimulus between 2.5 and 100 mV/m has been reported to induce a 'cease swimming' response in migrating adults, but that was much higher than the predicted level of induced EMF from either inter-array or export cables proposed for the Application Project (up to 0.426mV/m for inter-array and 1.043mV/m for export cables). It referred to, but did not provide, a paper which identified a behavioural 'constant swim' response for parasitic lamprey at 10 μV/m, and stated stimulus at this level would be unlikely to be considered as an interruption to migration, particularly given that any such effect would be predicted to be limited in spatial extent from the cable locations.

20.6.16 An agreement was reached between the applicant and NE in the SoCG [REP-3134] that the clarification provided by the applicant was sufficient and that there would be no LSE on the River Avon SAC for sea lamprey. EA, in its SoCG with the applicant [REP-3135], agreed that "*EMF emissions from the export cable will not adversely affect migrating fish species, due to the limited depth that EMF will penetrate the water column and due to mitigation measures applied regarding cable burial and cable protection.*"

20.6.17 The Panel therefore consider that a conclusion of no LSE associated with EMF for sea lamprey on the River Avon SAC can be reached.

IN-COMBINATION EFFECTS

20.6.18 The applicant considered potential in-combination effects within its HRA Screening Report [APP-059] which are described as being the effects on European sites by a proposed development, alone and/or in conjunction with other plans or projects. The in-combination assessment was discussed with NE, RSPB and the MMO in a meeting on 10 May 2013 and between NE and RSPB in a conference call on 16 May 2013 [APP-060] during the pre-application stage.

20.6.19 Challenge Navitus was in disagreement with the applicant's approach to assessing these in-combination effects. In its Written Representation [REP2937] and its response to the RIES [REP-4021] Challenge Navitus identified three main errors in the applicant's approach:

- The criteria adopted to identify "*other plans and projects*" are too narrow;
- The applicant has failed to consider whether multiple "*de minimis" / "unlikely" / "minimised"* adverse effects could, together, give rise to a LSE for a European site;
- The applicant has adopted too narrow an approach to assessing the effects of other plans or projects "*in-combination*" with those of the project.

20.6.20 Challenge Navitus [REP-2938] also raised concerns about the applicant's approach to the in-combination assessment which required that there must be an overlap of effects for qualifying features of European sites which are mobile over large areas or which are migratory.

20.6.21 In response, the applicant [REP-3176] confirmed that it had agreed the in-combination methodology through the Evidence Plan process. The applicant stated that "[*w]here potential shortfalls in the in-combination assessment were identified by Natural England, further action has been taken with outputs supplied within the SoCG with Natural England* [REP-3132]."

20.6.22 In the final SoCG [REP-3696] NE and the applicant were in agreement with the methodology for determining which plan and projects should have been included in the in-combination assessment.

20.6.23 The Panel has carefully considered the issues that Challenge Navitus and other IPs raised together with the views presented by the applicant [REP- 3175, REP-4082], NE [REP-4072] and EA [REP-3135]. It is the Panel's view that as indicated by NE and EA, the applicant has complied with the legal obligations and that the Secretary of State does have sufficient information to allow a lawful determination of both the Application Project and the TAMO.

20.6.24 Specific issues raised by IPs in relation to in-combination effects were:

St Leonard's Hospital residential development on the Dorset Heathlands SPA, Dorset Heaths SAC and Dorset Heathlands Ramsar site

20.6.25 The applicant's HRA Report [APP-060] discounted the redevelopment of the St Leonards hospital site from the in-combination assessment as they considered that the hospital site redevelopment was due to be completed prior to the commencement of onshore works for the Application Project, and even with a delay the potential for overlap was low. However, NE [REP-2461] raised a concern that there was inadequate consideration of the potential for cumulative effects rising from visitor displacement on the Dorset Heathlands SPA, Dorset Heaths SAC and Dorset Heathlands Ramsar site. In response, the applicant submitted a Hurn Forest Visitor Survey [REP-3032] which concluded that given the relatively low level of visitor pressure experienced in the forest, visitor displacement impacts to surrounding/alternative sites would likely be minimal. NE confirmed that this survey resolved some basic information and set out a number of avoidance measures appropriate to the requirement to avoid displacement of visitors. Subject to specific visitor management measures NE concluded [REP-2900], no LSE alone or in-combination with the St Leonards Hospital residential development on the Dorset Heathlands SPA, Ramsar and Dorset Heaths SAC.

20.6.26 The updated SoCG between the applicant and NE [REP-3696] subsequently agreed that the mitigation measures outlined within the draft LEMP [REP-3692], secured through Requirement 20 of the DCO, provided the necessary management to ensure that displacement of recreational users would not result in increased impacts on habitats and species in Hurn Forest or surrounding areas.

20.6.27 The updated SoCG between the applicant and NE agreed to no adverse effect on the integrity of Dorset Heathlands SPA, Dorset Heathlands Ramsar site or Dorset Heaths SAC. This implies that NE considered a LSE should have been screened in for Dorset Heathlands Ramsar site and Dorset Heaths SAC (the applicant's updated integrity matrix [REP-3326] screened in a LSE for Dorset Heathlands SPA). However, NE also confirmed that with regard to the terrestrial SAC/SPA/Ramsar features, they agreed with the conclusions of the screening exercise presented in the applicant's updated matrices and the European sites taken forward to the Stage 2 integrity matrices [REP-3715]. The Panel, having considered the views of the applicant and NE, is of the view that no LSE can be considered for Dorset Heathlands SPA, Dorset Heaths SAC and Dorset Heathlands Ramsar site for in-combination effects resulting from the St Leonard's Hospital residential development.

Merlin and hen harrier associated with Dorset Heathlands SPA

20.6.28 The applicant's HRA Screening Report [APP-059] concluded no LSE on hen harrier and merlin features of the Dorset Heathlands SPA on the basis that "*the Onshore Development Area occupies a small area in comparison to the winter home-range size of this species. Within the SPA the Onshore Development Area covers under 0.05% of available habitat*." However, Challenge Navitus [REP-2938] believed that the impact should be subjected to a full and evidenced "*in-combination assessment*". The applicant was confident that its assessment was adequate on the basis that the assessment was agreed with the stakeholders involved in the Evidence Plan process [REP-3176] and considered that the subsequent extension of a trenchless crossing within the Dorset Heaths SAC resolved the issue. Agreement was gained from both Dorset Wildlife Trust [REP-3117] and with Christchurch BC, East Dorset DC and Dorset CC [REP-3150] that the extension of trenchless crossings provided a suitable methodology for avoiding impacts on the features of the Dorset Heathlands SPA.

20.6.29 Challenge Navitus [REP-4022] continued to express concern that the applicant demonstrated "*its failure to consider properly or at all "in-combination" effects*", however did not make specific reference to the merlin and hen harrier features of the Dorset Heathlands SPA.

20.6.30 NE further confirmed that with regard to the terrestrial SAC/SPA/Ramsar features, they agreed with the conclusions of the screening exercise presented in the applicant's updated matrices and the European sites taken forward to the Stage 2 integrity matrices [REP-3715]. The Panel, having considered the evidence provided during the examination, and giving weight to the advice from NE, are of the view that a conclusion of no LSE

can be reached for the merlin and hen harrier features of Dorset Heathlands SPA.

Tern species and certain migrant species associated with a number of SPAs

20.6.31 A LSE for collision risk for migrant species (including sandwich terns and common tern on migration) was screened out in the applicant's HRA Screening Report [APP-059]. The applicant predicted collision risk using Migropath modelling with generic potential collision height (PCH) data as no site specific data on flight heights was available. However, NE [REP-2461] and RSPB [REP-2961 and REP-3191] identified methodological uncertainties regarding in-combination impacts for tern species and certain migrant species (e.g. little egret) that are associated with a number of SPAs, including the need for further consideration of the appropriate population scales and regarding the use of Migropath modelling.

20.6.32 PCBA [Rep-3351, REP-3995] was concerned about the use of Migropath, contending that it is a new modelling system without any disclosed peer review or validation being quoted in the applicant's text or references. However, the applicant stated [REP-3313] that Migropath had been used for Hornsea P1, East Anglia ONE and Rampion. NE agreed [REP-3320] that after additional corroboration of the model for common tern, Sandwich tern, great skua, Arctic skua, dark-bellied brent goose and bar-tailed godwit, Migropath modelling was suitable to enable the likely level of impact on these species to be drawn.

20.6.33 For tern migrant species, the applicant provided clarification on migrant apportionment and collision risk [REP-3132]. This used the 'basic' Band model (Options 1 or 2) using PCH values from literature sources. The applicant's updated screening matrices [REP-3326] screened out a LSE for collision risk for all tern species of all European sites. NE [REP-2900] agreed that all increases to baseline mortality for common tern and Sandwich tern would remain below 1%.

20.6.34 Although NE [REP-2900] did not agree with some of the applicant's methodology, the updated SoCG between the applicant and NE submitted at Deadline VI confirmed that the apportionment exercise, with the Migropath model outputs, adequately described the baseline for migrating birds [REP-3696]. The Panel can see no reason for challenging the use of the model.

20.6.35 In response to a request by NE [REP-2900] for up to date population data and an in-combination assessment with Rampion offshore wind farm for little egret, this was provided by the applicant [REP-3132 and REP-3326]. The applicant concluded a change in baseline mortality rate of less than 1% at Poole

Harbour SPA or Chichester and Langstone Harbours SPA. In its response to the RIES, NE [REP-4072] stated that there was sufficient evidence to conclude no LSE for these sites for CRM from both the application site alone and in-combination with Rampion.

20.6.36 RSPB [REP-3191] also confirmed that, despite some concerns over the BDMPS and reference populations used, they were content that all increases to baseline mortality due to collisions for offshore migrants would remain below 1%.

20.6.37 The Panel therefore consider that a conclusion of no LSE for collision risk for tern and certain migrant species as described above can be reached.

Gannets and kittiwakes as features of Flamborough and Filey Coast pSPA and Flamborough Head and Bempton Cliffs SPA

20.6.38 While a screening matrix was not provided for Flamborough Head and Bempton Cliffs SPA and the impacts on gannets and kittiwakes features of Flamborough and Filey Coast pSPA, the applicant's HRA Screening Report [APP-059] acknowledged that gannet and kittiwake move through the English Channel whilst on migration and that Flamborough Head and Bempton Cliffs SPA was a key colony within the BDMPS for both species.

20.6.39 CRM for gannet [APP-059] resulted in one adult gannet from the Flamborough Head and Bempton Cliffs SPA being predicted to collide with the Application Project per annum. This level of loss was considered by the applicant to make no material difference and the potential for an in-combination effect was considered negligible by the applicant.

20.6.40 Similarly, CRM for kittiwake [APP-059] predicted that losses for the Flamborough and Bempton Cliffs SPA kittiwake colony would increase the mortality rate, relative to background, by 0.02% which was not considered by the applicant to represent a material difference to present conditions. The contribution of the Project to any in-combination assessment was also considered negligible by the applicant.

20.6.41 NE [REP-2461] had concerns over aspects of the CRM calculations for gannets and kittiwakes at these sites. The applicant was asked for clarification to allow NE to determine whether the impacts from the Application Project could be considered sufficiently small as not to materially influence either the in-combination collision total attributed to the sites or to result in the exceedance of additional mortality thresholds which otherwise would not be exceeded.

20.6.42 The applicant updated and re-ran the CRM [REP-3132] using Band model option 1 with 98% and 99% avoidance rates, which

demonstrated that the Application Project contribution to the overall in-combination mortality total for northern gannet at Flamborough SPA and pSPA was 0.32% (2 birds per annum for 98% AR or 1 bird for 99% AR). To calculate this figure, the applicant used the in-combination CRM totals for gannet for the North Sea OWFs and Rampion OWF presented during the Dogger Bank Creyke Beck OWF examination (Forewind 2014) and added the Application Project CRM totals to these to get an overall in-combination CRM mortality figure of 343.80 at Flamborough SPA and pSPA for the North Sea and Channel OWFs for a common currency approach of 98% avoidance rate (AR). During the examination the Marine Scotland Science (MSS) review of avoidance rates became available (Cook et al. 2014) and NE then accepted a 99% AR for gannet. As a result updated in-combination tables were produced for a common currency of 99% AR which reduced mortality figures to 177.

20.6.43 The applicant went through a similar update for black-legged kittiwake [REP-3132], again using Band option 1 and an AR of 98%. The Application Project contribution to the overall in-combination mortality total for kittiwake at Flamborough SPA and pSPA was 0.02% (2.9 birds per annum), NE [REP-4072] confirmed that no further work was required due to the non-discernible contribution from the site alone. To calculate this figure, the applicant used the in-combination CRM totals for kittiwake for the North Sea OWFs and Rampion OWF presented during the Dogger Bank Creyke Beck OWF examination (Forewind 2014) and added the Application Project CRM totals to these to get an overall in-combination CRM mortality figure of 395 at Flamborough SPA and pSPA for the North Sea and Channel OWFs for a common currency approach of 98% avoidance rate (AR). During the examination the Marine Scotland Science (MSS) review of avoidance rates became available (Cook et al. 2014) and NE then accepted a 99% AR for kittiwake. As a result updated in-combination tables were produced for a common currency of 99% AR which reduced mortality figures to 371.

20.6.44 NE confirmed [REP-4072] that LSEs can be excluded for all other qualifying features of the Flamborough and Filey Coast pSPA/Flamborough Head and Bempton Cliffs SPA and that no further work was required due to the non-discernible contribution from the site alone. The Panel is content that a conclusion of no LSE can be reached for these sites individually and in-combination.

Indirect impacts on tern species which prey on the noise-sensitive fish species

20.6.45 The applicant's HRA Screening Report [APP-059] acknowledged the potential for piling noise during the installation of wind turbine foundations to reduce prey availability for terns. Piling noise could potentially disturb fish and other prey items targeted

by tern species, causing them to avoid the construction and adjacent areas and potentially affecting their physiology and behaviour. However, LSEs from reductions in foraging efficiency were screened out on the basis that in the areas of most intense noise (>90 dBht) mobile species such as fish would show a strong avoidance action but in areas of lower intensity (75-90 dBht) there would be some avoidance action by the majority of individuals but habituation may occur or, where the levels of existing background noise are high, may result in a more limited effect.

20.6.46 NE considered that the applicant had provided insufficient information to assess the indirect effects of construction on prey availability of tern species alone and in-combination with Rampion Offshore Wind Farm. NE requested that the extent of the noise envelope for piling be presented in relation to the location of local breeding tern colonies, and more detailed discussion be provided in relation to the terns' prey and the foraging range [REP-2461 and REP-2900].

20.6.47 Tern species and their associated European sites identified by NE [REP-2900] as being potentially affected by the project were:

- Common tern (for the project alone) - associated with Poole Harbour SPA and Ramsar and Solent and Southampton Water SPA;
- Sandwich tern (for the project alone and in-combination with Rampion Offshore Wind Farm) - associated with Solent and Southampton Water SPA and Ramsar and Chichester and Langstone Harbours SPA;
- Little tern (for the project alone) - associated with Solent and Southampton Water SPA and Chichester & Langstone Harbours SPA; and
- Roseate tern (for the project alone) - associated with Solent and Southampton Water SPA.

20.6.48 The potential impact for terns was subsequently screened in to the applicant's updated matrices (with the exception of Chichester and Langstone SPA and Ramsar site) [REP-3326]. However, the applicant stated that noise attenuation within shallow waters in which terns usually feed would reduce the potential for any impact to occur. In addition, piling restriction in spring/early summer and the limited piling activity between mid-May and end of August [REP-3176] would further guard against impacts on these species. Considering the habitat preferences of terns, the location of local colonies and the relatively small mean foraging ranges, a conclusion of no adverse effect was drawn by the applicant [REP-3326].

20.6.49 The applicant and NE continued to disagree over this conclusion until Deadline VI, when the applicant provided a Tern Foraging and Underwater Noise HRA Technical Note [REP-3688]. This

identified that the predominant prey species of tern were species of sand eel (Ammodytidae). Modelling was subsequently completed for sand eel to create noise contours for this species in response to pile driving and to determine whether or not there was an overlap in contours from the associated European sites. The foraging ranges did not overlap for common, little or roseate terns of all SPA colonies, for either 75 or 90 dBht noise contours. Based on this evidence and with consideration of the piling restrictions in place throughout the majority of the breeding period, the applicant maintained that there would be no impact on terns within these colonies.

20.6.50 The mean maximum foraging range of Sandwich terns from Solent & Southampton Water SPA and Poole Harbour SPA displayed some overlap with the sand eel impact zone, however it constituted only a small fraction (less than one percent) of the overall foraging range for this species and there was no overlap of the mean foraging range. Based on this evidence, the limited use identified of the area by Sandwich terns during the boat surveys and with consideration of the piling restrictions in place throughout the majority of the breeding period, the applicant predicted there would not be any impact from piling on Sandwich tern, as sand eels within their foraging range would not be affected.

20.6.51 NE [REP-4072] in their comments on the RIES subsequently agreed to:

- no LSE for common tern, little tern and roseate tern at any European site
- no LSE for Sandwich tern at any European site except for at Solent and Southampton Water SPA and Poole Harbour SPA where a LSE cannot be excluded given the overlap of the mean maximum foraging range with the sand eel impact zone.

20.6.52 The Panel therefore consider that a conclusion of no LSE for common tern, little tern and roseate tern species can be reached, however the Panel concludes a LSE for Sandwich tern at Solent and Southampton Water SPA and Poole Harbour SPA which are considered further in paragraphs 20.7.64 and 20.8.65 below.

Lesser black-backed gull on Alde-Ore estuary spa

20.6.53 The applicant's HRA Screening Report [APP-059] confirmed that tracking data of the lesser black-backed gull, breeding in the Alde-Ore Estuary SPA, showed that they could migrate through the Application Project and that the colony has decreased in size substantially in recent years. It concluded that given the long distances of free flight recorded for the species over water, any deviation to avoid the turbine area would be minimal and that they have also been shown to regularly enter offshore wind farms

suggesting that no disturbance or displacement impact would be realised.

20.6.54 CRM was undertaken for lesser black-backed gull using Band model option 1 (Band, 2012), option 1 and option 3 [APP-059]. The applicant's CRM predicted less than 1 collision of lesser black-backed gull per annum being attributable to birds from the Alde-Ore Estuary SPA colony. In-combination with other plans and projects, the potential contribution to losses was considered small enough to ensure that no detectable additional effect would be apparent due to the Application Project. As such, the applicant did not provide a screening matrix for Alde-Ore Estuary SPA.

20.6.55 However, NE [REP-2461 and REP-2900] expressed concern over aspects of the applicant's CRM calculations. Further CRM outputs were provided by the applicant at Deadline II [REP-3132] and NE confirmed that the impact does not constitute either a LSE alone, or make any meaningful contribution to an in-combination effect [REP-3070 and REP-2900].

20.6.56 The applicant provided a screening matrix for the Alde-Ore Estuary SPA in the updated matrices at Deadline IV [REP-3326] which ruled out a LSE. NE, in its response to the RIES [REP-4072], agreed that the applicant's revised CRM assessment demonstrated that *"impacts of CRM on lesser black-backed gulls from the Alde-Ore Estuary SPA (and Ramsar site) during the non-breeding period were predicted to account for less than 1% baseline mortality."* NE also concludes that LSEs can be excluded for all other qualifying features of the SPA and Ramsar. The Panel is satisfied that a conclusion of no LSE can be reached for this site.

Dorset Heaths SAC and Dorset Heathlands Ramsar site

20.6.57 In the Application Project documents, trenchless crossing techniques were proposed to be used to cross the majority of the Dorset Heaths; however some surface works within the cable corridor were proposed within the West Moors Ministry of Defence (MoD) site which is located within the Heaths. A LSE was initially screened in by the applicant for the Dorset Heathlands Ramsar site and Dorset Heaths SAC as works within the site boundaries could result in the loss, change or damage of the habitats for which the site is designated; and as a result of the potential for degradation of habitats through losses of pollutants from the working area or by changes in the hydrology of the area and potential in-combination effects. Adverse effects on integrity were ruled out on the basis that standard pollution prevention measures would be implemented.

20.6.58 NE requested further details on the proposed working methods which would ensure the integrity of Dorset Heathlands Ramsar site and Dorset Heaths SAC would not be compromised;

specifically further detail on cable laying and re-instatement methods to ensure recovery of dry heath habitats within a reasonable timeframe and further certainty from the applicant that successful re-instatement of wet heath habitats could be achieved [REP-2461]. This position was supported by East Dorset DC [REP-2679] who identified concerns over potential habitat loss within the Dorset Heathlands Ramsar site and Dorset Heaths SAC [REP-1494 and REP-1768].

20.6.59 The RSPB [REP-2404, REP-2961] also queried the use of open cut methods and scrub clearance within the West Moors MoD site and considered that less damaging alternatives should be explored. Challenge Navitus [REP-2936, REP-2937, REP-3604] raised concerns regarding loss of foraging, lack of details for trenchless crossings and the effects on groundwater and hydrology.

20.6.60 As a result of these and other submissions from interested parties, and in response to the Panel's first written questions [PD-006], the applicant proposed to extend the trenchless crossing of the West Moors MoD site to ensure there were no surface works within the Dorset Heathlands Ramsar site and Dorset Heaths SAC [REP-3018]. All workings would be set back from the designation boundary in order to provide adequate opportunity to control potential pollutants, and the cable would be placed deeper using HDD compared to the open trenching previously proposed, therefore the potential for hydrological impacts were discounted. Trenchless crossings would also remove the need for scrub clearance [REP-3313]. The applicant confirmed there would be no temporary habitat loss or subsequent habitat creation within Dorset Heathlands Ramsar site or Dorset Heaths SAC [REP-3018] and as a result a LSE was screened out of the updated matrices submitted at Deadline IV [REP-3326]. This extension was shown on a revised Trenchless Crossing Plan [REP-3051] and secured by Article 39(1)(j) of the DCO.

20.6.61 It was agreed with Dorset Wildlife Trust [REP-3117] Christchurch BC, East Dorset DC and Dorset CC [REP-3150] that there would be no impacts on the Dorset Heathlands Ramsar site and Dorset Heaths SAC with the use of trenchless crossing techniques

20.6.62 However, NE [REP-2900] cautioned that the use of trenchless crossings under Dorset Heathlands Ramsar site and Dorset Heaths SAC had not been shown to be deliverable with a level of certainty appropriate to the strict tests of the Habitats Regulations 2010. This concern over the feasibility of HDD was also noted by Christchurch BC [REP-2677] and the RSPB [REP-3191].

20.6.63 The applicant provided further geotechnical site investigation information to NE. NE agreed [REP-4072] that there would be no LSE on the Dorset Heaths SAC and Ramsar site as the geological evidence and expert engineering advice confirmed that trenchless

techniques could be used to avoid harm to the protected features. A number of suitable trenchless techniques may be applicable providing further reassurance that the applicant had several alternative methods to avoid harm and is not reliant on a single approach. However, NE explained [REP-3357] that should it be found that trenchless crossing was not possible in any part of a designated site then additional assessments of other open trenching techniques and its impacts on designated sites would be required.

20.6.64 The EA [REP-3634] confirmed that it was content with the information that had been provided with regard to the proposals and environmental protection for trenchless crossings.

20.6.65 Challenge Navitus, in its Written Representation [REP- 2937] claimed that there could potentially be a LSE for great crested newts, which had been omitted from the Dorset Heaths SAC designation information provided by the applicant's HRA matrices [APP-059]. In response, the applicant [REP-3176] acknowledged that the HRA Screening Report should have noted the feature, however explained that the great crested newt survey showed that there are no great crested newts present within the area of the Dorset Heaths SAC within or close to the Onshore Development Area. Therefore, the applicant screened out a LSE on great crested newts of the Dorset Heaths SAC. NE made no comments about great crested newts in relation to European sites throughout the examination.

20.6.66 Having considered all of the information provided throughout the examination, and giving weight to NE's advice, the Panel is content that a conclusion of no LSE can be reached for the Dorset Heathlands Ramsar site and Dorset Heaths SAC.

ONSHORE BURIED CABLE HEATING

20.6.67 Challenge Navitus [REP-2947, REP-3375] raised concerns both in Written Representations and during the ISH regarding the potential for cable heat omissions on onshore European sites where trenchless techniques were proposed. The concerns included potential changes in the micro and macro biology of soils and the effects on existing trees and hedgerows.

20.6.68 The applicant [REP-3490] accepted that heating of soil could result in a change in the competitiveness of different species or alter the hydrological regime thereby changing the character of the habitat. However, the applicant would control cable core temperature by detailed design of the cable system and make-up of fill material. The applicant concluded that "*the presence of buried cables along the cable route (installed by open trenching or by trenchless techniques) would not be expected to result in changes in the soil temperature either above or adjacent to the Onshore Development Area that would result in any detectable*

surface changes to the structure of habitats." The applicant therefore confirmed no LSE due to soil heating on Avon Valley SPA and Ramsar site, River Avon SAC, Dorset Heathlands SPA and Ramsar site and Dorset Heaths SAC.

20.6.69 While Challenge Navitus [REP-3614] continued to question the applicant's conclusion of no LSE for these European sites on the basis of lack of quantitative analysis of impacts on heat emissions, the EA [REP-3634] confirmed that it was content with the information that had been provided with regard to the proposals and environmental protection for trenchless crossings. In its SoCG with the applicant, NE [REP-3696] agreed to no LSE for the above sites. The Panel, having considered all of the evidence produced during examination and giving weight to the EA and NE advice, is content that a conclusion of no LSE can be reached due to soil heating on Avon Valley SPA and Ramsar site, River Avon SAC, Dorset Heathlands SPA and Ramsar site and Dorset Heaths SAC.

CONCLUSION OF SCREENING EXERCISE

20.6.70 The Panel's overall conclusion relating to the screening exercise regarding all of the European sites considered in the examination is that LSEs may be excluded for the majority of sites when the application or the TAMO is considered alone or in-combination with other plans and projects. Having regard to all relevant information and evidence presented to the examination, the Panel concludes that the Secretary of State cannot rule out a likely significant effect on the sites and features identified in Table 4.

Table 4: European sites and features for which the Panel considers should be taken forward for Appropriate Assessment (Stage 2)

Site	Feature
Avon Valley SPA	Bewick's swan (*Cygnus columbianus bewickii)* gadwall (*Anas strepera*)
Dorset Heathlands SPA	Dartford warbler (*Sylvia undata*) woodlark (*Lullula arborea*)
Poole Harbour SPA	Mediterranean gull (*Larus melanocephalus*) Sandwich tern (Thalasseus sandvicensis)
Solent and Southampton Water SPA	Mediterranean gull (*Larus melanocephalus*) Sandwich tern (Thalasseus

	sandvicensis)
Avon Valley Ramsar site	gadwall (*Anas strepera*)
Poole Harbour Ramsar site	Mediterranean gull *(Larus melanocephalus*)
Alderney West Coast and the Burhou Islands Ramsar	gannet (*Morus bassana*)
River Avon SAC	Atlantic salmon (*Salmo salar*)
River Itchen SAC	Atlantic salmon (*Salmo salar*)

20.7 CONSERVATION OBJECTIVES

20.7.1 In order to determine whether the integrity of an individual European site may be affected by the Application Project or the TAMO it is necessary for the Secretary of State as competent authority to assess the impacts against the conservation objectives of the designated site.

20.7.2 The conservation objectives for the European sites assessed by the applicant for adverse effects on integrity were included within the applicant's HRA report [APP-060]. Further European sites (Solent and Southampton Water SPA, Poole Harbour SPA and Poole Harbour Ramsar site) were considered in Stage 2 of the assessment during the examination period as a result of NE providing additional advice that provided more detail on the attributes used to assess the condition of these sites (as discussed in paragraphs 20.6.46 and 20.6.51 above). The conservation objectives for these additional European sites were provided by the applicant in response to the Panel's second written questions [REP-3643].

20.7.3 Challenge Navitus [REP-4022] expressed concerns that the applicant had not taken due account of the conservation objectives in the LSE assessment. In response, the applicant stated [REP-4082] that the HRA Report "*makes it clear that consideration of conservation objectives, as outlined in the Waddenzee case (Case C-127/02) has been undertaken ….. and that the European Commission guidance has been followed.*"

20.7.4 The conservation objectives for the European sites for which a LSE has been identified have been taken into account by the Panel. The Panel has reviewed the mitigation measures proposed by the applicant in the LEMP [REP-3035] and Requirement 31 of the DCO, together with additional advice from NE and EA, to come to the conclusion that they will reduce or eliminate adverse effects and support the conservation objectives of the sites.

20.7.5 The Panel has carefully considered the available documentation and is also in agreement that conservation objectives have been considered in line with the current legislation.

20.8 FINDINGS IN RELATION TO ADVERSE EFFECTS ON THE INTEGRITY OF EUROPEAN SITES (STAGE 2)

20.8.1 The applicant's HRA Report [APP-060] and updated matrices [REP-3326] concluded that the Project would not adversely affect the integrity of any European site. At the close of the examination, the applicant and NE [REP-3696] had agreed to no AEOI at all European sites with the exception of on Atlantic salmon features of the River Avon SAC and River Itchen SAC [REP-4082, REP-4085] as a result of piling impacts. The EA [REP-4085] also did not agree to no AEOI for these two European sites.

20.8.2 In reaching agreement of no adverse effects for all European sites except the River Avon SAC and River Itchen SAC, a number of matters were discussed during the examination. These are detailed below.

CONSTRUCTION IMPACTS ON AVON VALLEY SPA AND RAMSAR SITE

20.8.3 The applicant's HRA Report relied upon a commitment to avoid both construction and decommissioning works between November and February inclusive within 250m of the Avon Valley SPA and Ramsar site boundary to reach a conclusion of no adverse effect on the integrity of the gadwall and Bewick's swan features [APP-060]. Christchurch BC [REP-2677] requested that this commitment be secured within the DCO. The restriction was subsequently included in the draft LEMP [REP-3692], to be secured through Requirement 20 of the DCO.

20.8.4 The applicant also stated [REP-3313] that no vehicle access within the Avon Valley SPA would be required during the construction of the River Avon crossing (i.e. forward of the trees screening the construction compounds) which would minimise potential disturbance of breeding waders at the crossing. Following questions from the Panel regarding how this would be ensured, the measure was included in the draft LEMP [REP-3692].

20.8.5 In response to the Panel's first round of written question [PD-006], NE confirmed [REP-3070] that the potential disturbance risk to gadwall and Bewick's swan at Avon Valley SPA and RAMSAR site from artificial light emissions had been reduced to an acceptable level by a number of mitigation measures including the design of site lighting to minimise light spillage and avoiding work in the vicinity during the darkest months. The locations of the HDD compounds remote from the area and existing tree screening provided a good suite of avoidance measures which allowed NE to reach the conclusion that the potential disturbance

risk would be at an acceptable level. NE requested "*The insertion of the text 'in consultation with Natural England' into requirement 27 would ensure that the relevant planning authority was directed to consult with Natural England to provide a suitable safeguard*." The applicant did include the additional text into Requirement 27, which is now Requirement 29(1) of the DCO.

20.8.6 The updated SoCG [REP-3696] between the applicant and NE agreed that there would be no adverse effects on integrity on the Avon Valley SPA and Ramsar site. CHOG [REP-2871] was also in agreement that Bewick's swan would not be harmed by proposals to place the cable route under this part of the Avon Valley using HDD. The Panel is content that the necessary commitments are secured in the DCO and that a decision of no adverse effects on the integrity of the site can be reached.

IMPACTS ON NIGHTJAR, DARTFORD WARBLER AND WOODLARK OF DORSET HEATHLANDS SPA

20.8.7 The applicant's HRA Report [APP-060] acknowledged that construction works may result in the loss of nesting and foraging habitat for Dartford warbler, nightjar and woodlark features of the Dorset Heathlands SPA during the construction phase and a LSE was screened in. However, the applicant considered that the birds present have the potential to adapt to a changing environment. To rule out an adverse effect on site integrity, the applicant proposed mitigation in the form of 31.5ha of suitable habitat to be created, 28.5ha of which would be managed as suitable habitat in the medium to long term. This mitigation was secured in the draft LEMP [REP-3035]. The amount of suitable habitat provided at construction would be greater than that to be temporarily lost and in the medium to long term the amount of suitable habitat created would be more than double that which would be temporarily lost (including restored habitat).

20.8.8 Adverse effects on the bird features of Dorset Heathlands SPA resulting from disturbance were ruled out by the applicant on the basis that techniques would be implemented to manage both construction activity and recreational users through information delivery and provision of suitable diversion routes. However, NE [REP-2461] requested further information on the proposed working methods, habitat re-instatement, habitat creation and management of recreational disturbance during the construction to be able to determine the likelihood of a LSE on nightjar, Dartford warbler and woodlark features of the Dorset Heathlands SPA. This was supported by Dorset CC [REP-2678] and RSPB [REP-2961].

20.8.9 Dorset CC also expressed concerns that the habitat management offered outside of the designations on land owned by the MOD and the Forestry Commission is habitat compensation and could not be considered within Habitats Regulation 61 in an appropriate

assessment of effects on site integrity. Further, it noted that the cable-laying operation would involve the temporary closure of two car parks and a significant length of footway in Hurn Forest and was concerned that this could lead to temporary or even permanent displacement for recreational activities such as dog walking to other places including nearby European sites [REP-2678].

20.8.10 Challenge Navitus [REP-2938] had similar concerns regarding suitable habitat measures being provided within the SPA boundary. Under Briel (Breil v Minister van Infrastructuur en Milieu, Case C-521/12) Challenge Navitus maintained that these measures could not be regarded as mitigation but compensatory measures.

Trenchless crossings

20.8.11 The applicant [REP-3176] acknowledged that case law emerged following submission of the Application Project, which had made it unsafe to rely on habitat restoration within a European site as mitigation. As such, the applicant extended trenchless crossings which would avoid surface works and potential disturbance within the Dorset Heathlands SPA (as detailed in paragraph 6.6.21 above). NE [REP-3070] noted that the effects on Dartford warblers, confined to open heathland areas, would be significantly reduced by this proposal.

Habitat reinstatement/creation

20.8.12 In response to a Panel written question, the applicant [REP-3018] confirmed that it had had been in discussion with NE, Dorset CC, New Forest DC, New Forest National Park Authority, Dorset Wildlife Trust and the Hampshire and Isle of Wight Wildlife Trust and provided a draft LEMP [REP-3692] which proposed that 28.5ha of land within the Forestry Commission estate would be targeted for heathland restoration/creation in areas outside of the Onshore Development Area. This would comprise:

- 12.5ha 'wooded heath' habitat within Hurn Forest;
- 5ha 'wooded heath' habitat within West Moors Plantation;
- 11ha of Ringwood Forest North targeted for management.

20.8.13 The LEMP also confirmed that approximately 6ha of the conifer plantation would not be re-planted.

20.8.14 NE welcomed the proposed heathland restoration methodology and confirmed that the provisions provide further levels of certainty that the nightjar and woodlark which may be displaced would have adequate habitat during the construction phase. NE stated [REP-2900, REP-3070] that if secured at a suitable time and location, the two areas of habitat (12.5ha and 5ha) would ensure that there is not an adverse effect on the integrity of the Dorset Heathlands SPA.

20.8.15 Christchurch BC [REP-2677] noted that ES Volume C, Chapter 11 Onshore Ornithology [APP-097] proposed mitigation to avoid potential impacts on breeding nightjar, woodlark and Dartford warbler through the identification of nest locations and exclusion zones around these and requested this be included in the DCO. The restriction was subsequently secured in the draft LEMP [REP-3692]. The LEMP was secured through Requirement 20 of the DCO.

Recreational disturbance

20.8.16 RSPB [REP-2961] was concerned that visitors would visit alternative sites to Hurn Forest which would lead to "*increased recreational disturbance on internationally important designated sites within the Dorset Heathlands SPA.*" It was not satisfied with the proposed mitigation given the limited information presented by the applicant. The applicant provided a clarification note regarding Recreational Disturbance [REP-3033] which considered whether recreational visitors to Hurn Forest during the bird breeding season could be displaced by construction activity from the main forestry track into other areas of Hurn Forest that support nightjar, woodlark and Dartford warbler. The note was informed by the Visitor Survey [REP-3032]. It determined that the risk of disturbance was relatively low as the majority of habitat used by the public in this area does not provide suitable nesting areas. Furthermore, within the Dorset Heathlands SPA the tendency is to walk along existing footpaths which would be likely to ensure that the impact of a small increase in visitors would make little or no difference to breeding success. RSPB [REP-3191] accepted the clarification and required no further information on this issue.

20.8.17 Provisions [REP-3692] for controlling potential increases in recreational disturbance included a warden, to be employed by the Forestry Commission and funded by the applicant, to be responsible for suitable liaison and signage to direct recreational users from the temporarily closed car park to the one that remains open (or to a car park for another nearby area that is not part of the Dorset Heathlands SPA). These measures are contained within the draft LEMP, and are secured through Requirement 20 of the DCO.

20.8.18 In their joint response to Deadline IV, Christchurch BC and East Dorset DC [REP-3640] noted that "[*f]urther detail should be provided in addition to measures set out in the 'Public Rights of Way Strategy' in relation to how the management of users away from sensitive habitats (Including heathland habitats).*" Provisions for recreational management are contained within the draft LEMP [REP-3692] and secured in the DCO.

Conclusion of impact on Dorset Heathlands SPA

20.8.19 The applicant's updated HRA matrices [REP-3326] screened in a LSE for temporary habitat loss, disturbance and displacement and in-combination effects. An AEOI on the site was ruled out in Stage 2: Appropriate Assessment.

20.8.20 NE [REP-3357] confirmed that the trenchless crossings, in-combination with the development consent agreement [REP-4083] and other works such as visitor management are sufficient to conclude no adverse effect on the integrity of the Dorset Heathlands SPA.

20.8.21 The development consent agreement [REP-4083] contained provision for a heathland habitat enhancement scheme to be agreed between the applicant and the Forestry Commission.

20.8.22 The Panel sought confirmation [PD-006] from the applicant and NE that the proposed creation and management of 28.5ha of suitable wooded heath habitat for woodlark, warbler and nightjar was sufficient to ensure no adverse effect on the integrity at Dorset Heathlands SPA. This was confirmed by the applicant [REP-3176] and NE [REP-3070, REP-3696] and is detailed in the draft LEMP secured through Requirement 20 of the DCO. The RSPB [REP-3191] also accepted a conclusion of no adverse effect, alone or in-combination, on the Dorset Heathlands SPA. Having considered the evidence provided during the examination and the conclusions of the NE and RSPB, the Panel is of the view that a decision of no adverse effects on the integrity of the site can be reached.

GANNET AS A FEATURE OF ALDERNEY WEST COAST AND THE BURHOU ISLANDS RAMSAR SITE

20.8.23 The applicant's HRA Screening Report [APP-059] concluded no LSE for gannet of the Alderney West Coast and Burhou Island Ramsar site.

20.8.24 Although NE confirmed [REP-2900] that it is not the Statutory Nature Conservation Body for the Alderney West Coast and Burhou Island Ramsar site, it noted that in combination impacts for the Application Project may impact on designated seabird sites in the Channel Islands as they were within mean maximum foraging range of a number of developments. NE [REP-2461] also expressed concern regarding the applicant's choice of avoidance rates (ARs) for gannet.

20.8.25 During the examination, the applicant carried out a revised methodology and CRM assessment [REP-3132] using 98% and 99% ARs applied to Band CRM Option 1 models (Band, 2012), with a site-specific derived figure for the percentage of birds at PCH. The results of the revised CRM were increased mortality rates relative to baseline of 3.99% for 98% AR (equivalent to 50

adult birds) and 2.00% for 99% AR (25 adult birds). (The Panel notes a discrepancy between the applicant's text, which states 50 adult birds and its Table 3.1 which states 51 birds, however this does not affect the results and we have adopted 50 birds for the purpose of this assessment.) The applicant assessed that with a starting population of 7,885 apparently occupied nests, as counted in 2011 (Alderney Wildlife Trust), the predicted annual mortality at which there was no more than a 5% probability of the Alderney colony going in to a decline was 114 adult birds per year, based upon the SOSS 04 population viability analysis (PVA) model for gannet (WWT et al., 2012). In both cases the applicant considered that the CRM results (at 98% and 99% avoidance rates) equated to an impact of low magnitude when the loss of between 25 and 50 adults is assessed as additional mortality, as both were well below the threshold tipping point of 114 birds that would risk sending the colony into decline.

20.8.26 In-combination CRM assessment was based on Rampion offshore wind farm (OWF). While other OWFs at Le Treport, Fecamp, Calvados, Saint-Brieuc and Cote d'Albatre I and II were within the mean maximum foraging range from the Alderney Ramsar colony detailed quantitative information on mortality rates from collisions was not available from these sites. Results of the assessment of the Application Project in-combination with Rampion OWF were increased mortality rates relative to baseline of 8.30% for 98% AR (equivalent to 106 adult birds) and 4.16% for 99% AR (53 adult birds).

20.8.27 The Alderney West Coast and Burhou Island Ramsar site was included in the updated HRA matrices [REP-3326], "*due to the potential for gannet to be impacted upon by the proposed Project due to potential displacement, increase in collision risk and through the barrier effect. Therefore an LSE has been assumed for gannet for the Project alone and in-combination with other plans and projects*." The Panel is in agreement with this conclusion and the site was screened into Stage 2: Appropriate Assessment.

20.8.28 A potential biological removal (PBR) model had been completed for the Alderney Ramsar colony [REP-3132], which predicted that when an f value of 0.3 was taken (the value that was recommended by NE) the number of additional collisions that the Alderney colony could withstand was 215 individuals. The applicant therefore concluded that "*the CRM results (at 99% and 98% avoidance rates) would equate to an impact of below the threshold tipping point of 114 and 215 birds that would risk sending the colony into decline*" and that the Application Project would not have a significant adverse effect on the Alderney Ramsar population of gannet.

20.8.29 Although a LSE on the Alderney West Coast and Burhou Islands Ramsar site was ruled out in the applicant’s HRA Screening

Report [APP-059], the ExA chose to invite the State of Alderney [SOA] to participate in the examination [PD-005], in order to give them opportunity to comment on potential impacts of the proposed wind farm. In response to the Panel's second written questions [PD-011], the SOA [REP-3608] stated that it had no specific concerns with the assessment. However, it did regard the methodology as limited in its ability to identify significant variations in foraging behaviour. In addition, the SOA did not agree with the UK's current use of collision risk only when assessing impacts on gannet populations, without further consideration of avoidance impacts. However, the SOA did not feel it appropriate to demand the applicant to undertake a new CRM assessment.

20.8.30 RSPB [REP-2961, REP-3191, REP-3355, REP-3583, REP-3714] had a continuing concern throughout the examination regarding the applicant's population viability analysis (PVA) for gannet and was of the view that a revised PVA for gannet breeding at the Ramsar site should be undertaken. The final submission by RSPB [REP-4069] recognised that the applicant's revised approach to CRM included a reduction in predicted breeding season mortality for gannet, but that the predicted increase was still considerably higher than the 1% threshold both for the project alone and in-combination with Rampion OWF. RSPB maintained their position that "*the only robust approach to determining the potential effects of the project alone and in-combination with other proposals (including Rampion Offshore Wind Park) on the Alderney colony is to carry out a site-specific Population Viability Analysis (PVA) calculating the "Counterfactual of Population Size."* Dorset Bird Club [REP-3571] concurred with the views of RSPB that a site specific PVA was required.

20.8.31 The applicant [REP-3176] maintained that the methods used, including PBR, were accepted by NE as valid and did not see the necessity to undertake further work. In addition, the applicant [REP-3490] noted that a PBR model and a PVA model had been submitted at Deadline II [REP-3132] for gannet and that these methods had been commonly accepted within the assessment of other OWFs.

20.8.32 NE [REP-3715] concluded that "*whilst a bespoke colony specific PVA may be desirable, it is not something we would insist upon given the degree of precaution in the 114 bird PVA mortality threshold used by the Applicant*."

20.8.33 The SOA [REP-3359] requested that environmental monitoring of the gannet colony of the Ramsar site should be considered and worked with the Dorset Wildlife Trust and Hampshire and Isle of Wight Wildlife Trust [REP-3716] on this issue throughout the examination process. SOA (with the Alderney Wildlife Trust) confirmed that it had reached agreement with the applicant for a condition in the DML [REP-3490] for post installation monitoring

of gannet to help extend the understanding of the island's gannet population use of Channel waters and their interaction with the Application Project. This provision has been secured in Condition 17(2)(c) of Schedule 13 of the DML.

20.8.34 The Panel has carefully considered the evidence provided throughout the examination, and acknowledge that CRM modelling does result in increases of greater than 1% of baseline mortality rates. We have also given weight to the SOA's views that while there remain differences relating to the CRM methodology and need for additional PVA, post installation monitoring using a combination of colour ringing, breeding success and GPS tagging will provide a greater understanding of the habits of the Alderney Ramsar colony. As the PBR assessment does indicate that mortality rates for gannet will be below the threshold for tipping the population into decline, the Panel is of the view that a conclusion of no adverse effect could be reached.

MEDITERRANEAN GULL AS A FEATURE OF SOLENT AND SOUTHAMPTON WATER SPA AND POOLE HARBOUR SPA AND RAMSAR SITE

20.8.35 CRM was not initially undertaken for Mediterranean gull from any of the European sites as the numbers of individuals observed during surveys were low and as the European sites are located on the edge of the species mean maximum foraging distance. The applicant [APP-059] considered potential impacts upon the SPA population to be low and as such a LSE was screened out. However, NE [REP-2461, REP-2900] identified methodological uncertainties regarding in-combination impacts for Mediterranean gull, with a suggestion to consider breeding season effects in-combination with Rampion OWF, the need for an appropriate population scale to be considered and a request for CRM to be undertaken to demonstrate de minimis effects.

20.8.36 The applicant provided a Revised Additional Analysis of Mediterranean Gull note [REP-3132] which reported upon CRM conducted using Band Option 1 with site-specific data on percentage of birds at PCH and a 98% avoidance rate. NE [REP-2900] had a number of concerns over the assessment, including:

- concerns over the use of site-specific data and the BDMPS used;
- the need to include WeBS count data for breeding season months; and
- the need to use an avoidance rate of 99.2%.

20.8.37 NE [REP-2900] considered further work was required by the applicant to reach a conclusion on the in-combination impact of collision risk to Mediterranean gulls from the Poole Harbour SPA and the Solent and Southampton Water SPA; including adding the extra mortality contribution from Rampion in winter to the year

round total at the Application Project and apportioning this to the SPAs accordingly; and revisiting the in-combination CRM at 99.2% AR and using generic date for percentage of birds at potential collision height. The applicant [REP-3176] undertook the further analytical steps and the revised CRM resulted in between 2 and 4 collisions per annum for the project alone and a further 0.1 to 0.3 collisions attributed to the Rampion OWF, which represented an increased mortality rate relative to baseline of less than 1%.

20.8.38 The applicant's updated HRA matrices [REP-3326] screened in a LSE for Mediterranean gulls at Solent and Southampton Water SPA, Poole Harbour SPA and Poole Harbour Ramsar site, on the basis that the designated populations of this species are small and as collisions were also predicted for the Rampion OWF. NE's response to the RIES [REP-4072] agreed a LSE cannot be excluded, impacts of CRM were predicted to account for more than 1% of baseline mortality for Navitus alone and in-combination with Rampion.

20.8.39 The applicant [REP-3326] concluded no adverse effects on the integrity of the Solent and Southampton Water SPA, Poole Harbour SPA and Poole Harbour Ramsar site as losses through collision were considered to be small in the context of the Mediterranean gull population of the south coast of England.

20.8.40 NE [REP-3357] confirmed that the applicant's revised CRM using the basic Band model calculations had used the black-headed gull flight height data from Johnston et al. (2014) as a proxy and a revised AR of 99.2% and that the applicant had completed an updated in-combination assessment with Rampion OWF for the respective south coast SPAs.

20.8.41 NE noted some disagreement with the methodology used in the in-combination assessment, however the updated SoCG [REP-3696] between the applicant and NE agreed to no adverse effects on integrity for Solent and Southampton Water SPA, Poole Harbour SPA and Poole Harbour Ramsar site. In its response to the RIES, NE [REP-4072] concluded that:

- for Solent and Southampton Water SPA "*a total of 0-0.5 collisions per year are predicted depending on the breeding season apportionment method used (0% of collisions or 50% of collisions are birds from this site). Baseline mortality would remain at 16% if 0% of breeding season collisions were birds from this site. If 50% of collisions during the breeding season were birds from this site then baseline mortality goes from 16% without the wind farm(s) to 21% with the effect of the wind farm(s) (i.e. increase by 5%), however, this is for 0.5 collisions per year. Based on this and bearing in mind the level of uncertainty, we can conclude no*

adverse effect on integrity arising from Mediterranean gull CRM both alone and in-combination";

- for Poole Harbour SPA and Ramsar site NE concluded "*Baseline mortality would increase from 16% without the wind farm(s) to 16.31-16.63% with the effect of the wind farm(s) (i.e. increase by 0.31-0.63%). Based on this, we can conclude no adverse effect on integrity arising from Mediterranean gull CRM both alone and in-combination.*"

20.8.42 The Panel, having considered the evidence and having given weight to NE's views, have agreed that a conclusion of no adverse effect on the integrity of Mediterranean gull either alone or in-combination can be reached.

ATLANTIC SALMON OF THE RIVER ITCHEN SAC

20.8.43 The applicant's HRA Screening Report [APP-059] did not consider disturbance of Atlantic salmon in the River Itchen SAC resulting from EMF. NE queried this omission [REP-2461] and a LSE was subsequently screened into the applicant's updated matrices [REP-3326]. Aural impacts on Atlantic salmon are addressed separately in the following section.

20.8.44 The applicant stated that EMF produced by the electrical cables would be shielded through cable design (i.e. use of sheathing material) and that the magnetic fields produced would fall rapidly due to distance and depth of burial of cables. The applicant concluded [REP-3326] that EMF levels that may be experienced by Atlantic salmon would be low and highly unlikely to result in a barrier to movement. Therefore, no effect on the integrity of the site was predicted. This was agreed by NE in the SoCG [REP-3696]. The Panel therefore consider that a conclusion of no AEOI from EMF for Atlantic salmon on the River Itchen SAC can be reached.

DISTURBANCE IMPACTS OF NOISE ON ATLANTIC SALMON FEATURES OF THE RIVER AVON AND RIVER ITCHEN SAC

20.8.45 There was disagreement throughout the examination between the applicant, the EA, NE and a number of IPs on the potential impacts of piling noise on adult salmon and juveniles (smolt) migrating to and from the River Avon SAC and River Itchen SAC and potential mitigation measures. This resulted in two sets of written questions [PD-006, PD-011] and a second Rule 17 request issued on 26 February [PD-015].

20.8.46 The applicant [APP-060] acknowledged that noise levels associated with piling of foundations within the marine environment had the potential to prevent adult Atlantic salmon reaching the mouth of the rivers or smolts leaving the rivers into the English Channel. However, the applicant concluded no adverse effect on the integrity of the site on the basis that:

- the area of ensonified sea would not prevent free movement of salmon in areas to the north and west of the Isle of Wight (i.e. noise will not create a complete barrier to movement),
- the piling works would only take place for approximately 388 hours across the 4.5 year construction period, and
- no piling would occur for 4 weeks at the peak of the smolt run (15th April to 15th May).

20.8.47 NE [REP-2461], the EA [REP-2407] and the MMO [REP-1581] raised their concerns over potential impacts of piling noise and considered that the proposed piling restriction gave insufficient protection for the species, given that piling could take place for consecutive multiple years and as there are uncertainties on coastal migratory behaviour. NE [REP-2900] also had concerns relating to the vulnerable status of the populations. The RSPB [REP-2961] also noted its concerns over impacts on Atlantic salmon, however deferred to the EA and NE on the matter.

20.8.48 The EA [REP-3135] stated that it was appropriate to consider the impact of piling activities on Atlantic salmon behaviour at two points in their life cycle; their emigration to marine feeding grounds as smolts and during their return to their natal rivers as adults. These different life stages exhibit differing behaviours and the risks to them are different.

Smolt

20.8.49 The applicant extended the temporal restriction for pin piles and monopiles to between 7th April and 15th May following discussions with NE and the EA in order to ensure that smolt are not prevented from leaving the mouth of the River Avon and River Itchen. At the same time, the applicant removed a provision of a maximum piling period of 8 hours in 24 hours between 1st April and 14th April that had been included within the DCO [APP-040] submitted with the application.

20.8.50 These revised piling restrictions were agreed in SoCGs with the MMO [REP-3112], NE [REP-3134] and EA [REP-3135], and are included as Condition 18 of both Deemed Marine Licences (DMLs) in the DCO.

Adults

20.8.51 Discussions regarding piling restrictions for adult Atlantic salmon continued between the applicant, NE and the EA throughout the examination. The MMO [REP-2992] deferred to NE and the EA on the matter, however wished to be consulted on the wording of any mitigation to be applied to the DML to ensure it was enforceable. A detailed record of the discussions is included in the RIES, but the main points are presented below.

20.8.52 In response to the Panel's first written questions, the applicant [REP-3018] proposed a piling restriction for the period 16 May to

15 August inclusive and to restrict the number of piling hours in these months (736 hour period) to ensure a notional exposure risk for adult salmon transiting the area. The EA [REP-2922] did not consider that the applicant had provided sufficient evidence to support the applicant's assertion that adult Atlantic salmon are less sensitive to noise than Atlantic salmon smolts, or that the salmon's migratory drive would overcome a behavioural response to noise levels above 75 dBht, or that the area of sea ensonified below this level would provide a sufficient corridor to allow adult salmon to migrate unhindered. The EA produced the note "A*dult salmon spatial and temporal risk assessment*" [REP-2922] and developed its own model based on the applicant's realistic worst case scenario. NE [REP-2900, REP-3070] confirmed its support to the EA's risk assessment.

20.8.53 The applicant [REP-3176] disagreed with some of the EA's modelling approach and provided its clarification note "*matters relating to migrating adult salmon*" [REP-3241] to facilitate continued discussion. The note concluded that only a minor proportion of migrating salmon, even during peak periods, could be exposed to noise levels >75dBht. The EA [REP-3135], while acknowledging that the applicant's clarification note was helpful, remained concerned that the applicant relied heavily on the intermittency of the piling regime to support its conclusion. The EA was of the view that the transit time for fish entering the area that would be ensonified during piling activity needed to be considered.

20.8.54 The applicant, EA and NE continued to discuss their differences. At Deadline VI the applicant submitted an update on the proposals for adult salmon mitigation [REP-3681] in which a number of key agreements had been reached with the EA and NE. However, the level of noise exposure risk and drafting of the DML conditions remained in dispute. The applicant stated that the EA's spatial and temporal risk calculations could be agreed and the applicant set out the hours of 'allowable activity' at a range of exposure risk levels within the mitigation period (16 May and 15 August); the EA considered the level should be 25% exposure risk level and the applicant considered the level should be 40%.

20.8.55 The EA and NE [REP-3634] set out their justification for the 25% piling noise exposure threshold and stated that this addressed many of the issues raised by the applicant by reducing the precaution at which the model makes its assessment of risk to an appropriate level. It also allowed flexibility for contractors by limiting the number of piling risk hours but not restricting to prescribed installation methods. EA and NE confirmed that should mitigation be secured to limit the risk of piling noise exposure to ≤25%, a conclusion of no adverse effect on the integrity of the River Avon and River Itchen SACs salmon populations could be reached.

20.8.56 The applicant [REP-3681] still considered the 25% threshold to be over precautionary. It also explained the differences in opinions between the applicant and the EA in defining the level of response in adult salmon when encountering noise at >75dBht (and <90dBht) and considered that adopting an exposure risk approach affords an additional layer of precaution to an already precautionary assessment.

20.8.57 With regards to drafting of the DML conditions, the applicant considered that it should be unambiguous, easily understood and allow clarity for demonstrating compliance and can be readily enforceable without the need for complex calculation or interpretation of piling records. The applicant proposed [REP-3681] to translate allowable hours of activity into setting a maximum number of foundations that may be installed in any of the relevant periods and revised the draft DCO (version 5) [REP-3644] to reflect this. On the other hand, the EA and NE [REP-3634] maintained that the mitigation should be expressed in the form of limits on noise risk piling hours, and set out a table of allowable noise risk hours.

20.8.58 In its response to the Rule 17 request [PD-015] the applicant [REP-4055] reiterated its belief that a 40% exposure limit provided enough precaution to offset the uncertainties related to the actual effects on adult salmon. However, the applicant continued with "*[t]he layering of precaution, in tandem with the inbuilt control provide*d by the design *parameters of the steel piles themselves, which limits the amount of time any single pile can be driven into the seabed, will ensure that noise exposure risk levels will remain well within the 25% threshold required to allow a conclusion of no AEOI*." The applicant remained of the view that mitigation should be on the basis of number of foundations constructed rather than noise limits.

20.8.59 The EA and NE response to the Rule 17 request [REP-4085] was that the proposed wording of the DCO "*does not take into account the different levels of risks provided by the drive only and drive/drill/drive installation methods, we do not consider that it meets the ≤25% exposure risk threshold that the Applicant appears to be trying to meet.*" Having set out their reasoning for their concern, the EA and NE conclude that "*we remain convinced that the Schedule 13: Condition 19 wording we proposed in our Deadline VII response (reflecting Option 9 put forward by the Applicant), with piling quotas based on hours, provides the best balance between controlling piling activity, being robust to variations in the duration of tasks associated with piling and providing the applicant with operational flexibility*."

20.8.60 The MMO's response to the Rule 17 request [REP-4076] was based on its role as enforcing body and the need for practicality of enforcement and not on the need for mitigation. Its view was that it was aware that other proposed conditions had included a

restriction limiting piling hours as opposed to number of piles. The MMO's preference was "*for the inclusion of the number of piles as, due to the simple nature, this is an easier metric to monitor for compliance. However, should the ExA, upon review of the issue, decide that hours are the appropriate metric the MMO is confident this could be enforced, subject to suitable wording*."

20.8.61 The Panel is content that the piling restrictions proposed to ensure that smolt are not prevented from leaving the mouths of the River Avon and River Itchen are appropriate and will result in no adverse effect on the integrity of the smolt populations of the River Avon and Itchen SACs.

20.8.62 Having considered all of the evidence, including the submissions of other IPs such as PCBC [REP-3995] and Challenge Navitus [REP-3375, REP-3600, REP-4088] the Panel is of the view that there remains considerable uncertainty regarding the effects of piling noise on adult Atlantic salmon. The Panel gives weight to the views of NE and the EA, who are not able to advise, beyond reasonable scientific doubt, that the impacts from piling mitigated by a restriction on number of foundations would result in no adverse effect on the integrity of the adult Atlantic salmon populations of the River Avon and Itchen SACs.

20.8.63 The Panel is in agreement with NE and EA that the prudent approach to mitigation is by imposing a limit on hours, being mindful of MMOs comments relating to suitable wording in the DCO. This, we believe, will provide the best balance between controlling piling activity, being robust to variations in the duration of tasks associated with piling, providing the applicant with operational flexibility and protecting adult salmon. The Panel has, therefore, adopted the wording contained in the EA's REP-4079 and substituted it into the DCO (Condition 19). On this basis, the Panel is agreed that an assessment of no adverse effects resulting from either the Application Project or the TAMO, alone and in-combination could be achieved for disturbance impacts of noise on adult salmon features of the River Avon and River Itchen SACs.

SANDWICH TERN AS A FEATURE OF SOLENT AND SOUTHAMPTON WATER SPA AND POOLE HARBOUR SPA

20.8.64 As detailed above, NE [REP-3715] considered that the Application Project may have had LSE on Sandwich tern features of Solent and Southampton Water SPA and Poole Harbour SPA due to the potential overlap of foraging range with potential noise sensitive areas of their main prey species.

20.8.65 However, NE [REP-3715 and REP-4072] subsequently agreed there would be no AEOI arising from indirect impacts during construction based on the limited proportion of total sea area available to foraging Sandwich terns that overlaps with the noise

sensitivity areas of the main prey species. The Panel, therefore, agrees that an assessment of no adverse effects could be achieved for indirect impacts of foraging for Sandwich tern features of Solent and Southampton Water SPA and Poole Harbour SPA.

CONCLUSION OF THE HABITATS REGULATIONS ASSESSMENT

20.8.66 Having regard to the relevant information contained in the application and its supporting documentation, together with the relevant information submitted during the course of the examination and referred to in this Report, the Panel's judgement is that there is sufficient information to enable the Secretary of State in her role as competent authority, to conduct, if necessary, an appropriate assessment of the Project in terms of the effects on integrity of the features discussed in this section. This is supported by NE's confirmation [REP-4072] that "*for all sites relevant to offshore ornithology and terrestrial European sites sufficient information has now been provided*."

20.8.67 The only sites that remain in dispute are the River Avon and River Itchen SPAs, in relation to noise impacts on adult Atlantic salmon. However, as detailed above, while the parties disagree in their approach to mitigation, the Panel's view is that by restricting piling hours an assessment of no adverse effects on the integrity of any European site can be reached for the Application Project.

20.9 CONSIDERATION OF ALTERNATIVE SOLUTIONS, IMPERATIVE REASONS OF OVERRIDING PUBLIC INTEREST AND COMPENSATORY MEASURES

20.9.1 The Panel invited comment or submission of further information regarding consideration of alternative solutions and imperative reasons of overriding public interest (IROPI) in its second Rule 17 request [PD-011] in case an AEOI in relation to adult Atlantic salmon features of the River Avon SAC and River Itchen SAC could not be ruled out. The applicant [REP-4055] stated that "[*t]here is no reasonable scientific doubt that there will be no adverse effects on integrity on the adult Atlantic salmon feature of the River Avon Special Area of Conservation (SAC) and River Itchen SAC. The point that is currently not agreed with Natural England and the Environment Agency concerns which of the approaches to the piling restrictions needs to be adopted to ensure that there will be no AEOI. The adoption of one or more of the draft DCO wording options provided in Appendix 1, all of which are presented with* (sic) *enable the conclusion to be drawn that there will be no AEOI. Therefore, there is no basis on which it is necessary to proceed to consider alternatives and IROPI*."

20.9.2 The Panel is content that sufficient information has been provided and tested during the examination to conclude there is no AEOI.

As such, the matters of alternative solutions, compensation measures and IROPI do not need to be considered.

20.10 CONCLUSIONS

20.10.1 The information before the Panel has been considered in accordance with the Conservation of Habitats and Species Regulations. The Panel's final conclusions and recommendations to the Secretary of State with regard to European sites are set out below. In coming to these conclusions, we have sought to ensure that they are proportionate and that they take full account of the relevance, jurisdiction, timing, planning stage and legality of proposed and planned projects in addition to projects in existence and under construction.

MITIGATION

20.10.2 The Panel concludes that the potential degradation of habitat at Dorset Heaths SAC and Dorset Heathlands SPA and Ramsar site which could have had an adverse effect on nightjar, Dartford warbler and woodlark is satisfactorily secured. Avoiding surface works by extending HDD drilling at West Moors MoD site has been secured in the DCO. Habitat reinstatement and creation and provision for recreational disturbance measures have been secured in the LEMP and development consent agreement.

20.10.3 Mitigation to avoid potential cumulative impacts with St Leonards Hospital residential development with Dorset Heathlands SPA, Dorset Heaths SAC and Dorset Heathlands Ramsar site has been secured in the LEMP which is in itself secured by the DCO by extending HDD and visitor management to avoid displaced recreational visitors disturbing species.

20.10.4 Potential construction impacts on black-tailed godwit have been mitigated by restrictions to construction works in the Avon Valley SPA between November and February, by screening compounds and having no vehicle access in the Avon Valley SPA. The Panel is satisfied that these measures are secured in the LEMP and DCO.

20.10.5 The monitoring programme agreed between the applicant and SOA has provided some mitigation to the Alderney gannet colony by providing accurate data on movements for future assessment, and has been secured in the DML.

20.10.6 While mitigation for Atlantic salmon from the River Avon and River Itchen SACs was the most contentious issue within the examination, the Panel's solution of restricting piling by the number of hours has been secured in the DMLs.

Concluding Remarks

20.10.7 The Panel's conclusions throughout this Chapter are based on the evidence set before us and in particular on the basis that no reasonable scientific doubt remains.

20.10.8 Of the 125 European sites originally identified by the applicant in its HRA screening report, there was no dispute during the examination over the conclusions reached by the applicant to screen out a LSE for the majority of European sites. Of the European sites for which detailed screening matrices were produced during the examination [REP-3326], the Panel agrees with the applicant's conclusions of no LSE for:

- Dorset Heaths SAC;
- Dorset Heathlands Ramsar site;
- Solent and Southampton Water Ramsar site;
- Chichester and Langstone Harbours SPA;
- Chichester and Langstone Harbours Ramsar site;
- Dungeness to Pett Level SPA;
- Isles of Scilly Complex SAC;
- Alde-Ore Estuary SPA;
- Flamborough and Filey Coast pSPA;
- Flamborough Head and Bempton Cliffs SPA.
-

20.10.9 The Panel considers that a conclusion of no adverse effects on integrity could be reached for the following sites for which a LSE was identified:

- Alderney West Coast and the Burhou Islands Ramsar sites;
- River Avon SAC providing that the EA/NE proposed piling restrictions are adopted;
- Avon Valley SPA;
- Avon Valley Ramsar site;
- Dorset Heathlands SPA;
- Solent and Southampton Water SPA;
- Poole Harbour SPA;
- Poole Harbour Ramsar site;
- River Itchen SAC.

20.10.10 All of the conclusions reached were supported by the NE as the relevant statutory nature conservation body. Many IPs continued to dispute some of the methodologies used and findings of the applicant, but it is the Panel's view that the assessments used to reach these conclusions and level of mitigation applied all have a reasonable level of precaution.

20.10.11 Finally, the Panel judge that there is sufficient evidence for the Secretary of State to determine if any European sites would be affected by either the Application Project or the TAMO.

21 CONCLUSION ON THE CASE FOR DEVELOPMENT CONSENT

21.0 INTRODUCTION

21.0.1 The recommendations of the ExA are based on its assessment of the evidence presented through the examination process including the application documents, the environmental statement, the Local Impact Reports, Statements of Common Ground, Relevant and Written Representations, submissions during the examination at the Hearings, answers to questions and the site visits undertaken by the Panel both accompanied and unaccompanied. All of this evidence is reviewed in the individual topic chapters and considered in the context of the NPSs for Energy (EN-1), Renewable Energy (EN-3) and Electricity Network Infrastructure (EN-5), other policy contained in development plans and marine planning documents.

21.0.2 In Chapter 3 of this Report we set out the legal and policy context that is considered both important and relevant to our examination and assessment of the application. In Chapters 4 to 20 we refer to specific parts of the NPS as our starting point, together with other relevant policies, in considering and concluding on the issues examined in those Chapters.

21.0.3 This Chapter is structured to first examine the case for the Application Project, undertaking the planning balance to arrive at an overall conclusion and a recommendation to the Secretary of State. The exercise is repeated with the Turbine Area Mitigation Option (TAMO).

21.0.4 The conclusions and recommendation in relation to the TAMO are predicated on the scheme falling within the ambit of the application submitted by NBDL (as recognised in our procedural decision on the matter [PD-009]). For clarity and readability of this Report, the TAMO has been examined separately within each topic chapter and these conclusions follow the same pattern. The policy background section applies to the Application Project and the TAMO.

21.1 NATIONAL POLICY STATEMENTS

21.1.1 Section 104 of the Planning Act 2008 sets out at subsection (2) the matters to which the Secretary of State must have regard where there is a relevant NPS. In particular Section 104(3) provides that: "*The Secretary of State must decide the application in accordance with any relevant National Policy Statement, except to the extent that one or more of subsections (4) to (8) applies.*"

21.1.2 Those subsections relate to breach of international obligations (4); breach of statutory duty (5); illegality (6); adverse impacts

outweighing benefits (7); and conditions prescribing the deciding of an application otherwise than in accordance with a NPS (8).

21.1.3 EN-1 addresses assessment principles in Part 4, stating at paragraph 4.1.1: *"[g]iven the level and urgency of need for infrastructure of the types covered by the energy NPSs set out in Part 3 of this NPS, the IPC should start with a presumption in favour of granting consent to applications for energy NSIPs. That presumption applies unless any more specific and relevant policies set out in the relevant NPSs clearly indicate that consent should be refused. The presumption is also subject to the provisions of the Planning Act 2008 referred to at paragraph 1.1.2 of this NPS."*

21.1.4 In considering any proposed development, and in particular when weighing its adverse impacts against its benefits, paragraph 4.1.2 of EN-1 expects the following to be taken into account:

- Its potential benefits including contribution to meeting the need for energy infrastructure, job creation and any long-term or wider benefits; and
- Its potential adverse impacts, including any long-term and cumulative adverse impacts, as well as any measures to avoid, reduce or compensate for any adverse impacts.

21.1.5 The presumption in favour of granting consent applies to both the Application Project and the TAMO.

21.2 THE APPLICATION PROJECT

THE APPLICANT'S CASE

21.2.1 Accompanying the DCO Application was a Planning Statement [APP-321], Section 3 of which considered the need for new energy NSIPs having regard to the relevant NPSs.

21.2.2 Section 4 of that document identified the assessment principles listed in EN-1 that are relevant to the Project and discussed how they had been applied in the preparation of the application for development consent for the Project. The process through which site selection and alternatives had been considered was explained.

21.2.3 Section 5 included the applicant's assessment of the Project's conformity with the relevant legal and policy framework, having regard to the findings of the environmental impact assessment (reported in the ES) and the mitigation measures to be secured in connection with the Project.

21.2.4 Section 6 presented a consideration of the planning balance of the Application scenario, noting NPS EN-1 paragraph 4.1.1 (quoted above).

21.2.5 NBDL argued that the benefits of the Project comprise the important contribution it would make to the mitigation of climate change, the delivery of energy security and the delivery of urgently required new electricity generating capacity. The Project can contribute some 4.5% of the UK's urgent need to replace 22GW of existing electricity generation infrastructure.

21.2.6 Through reductions in the scale of the Project and changes to the Project boundaries during the consultation process, NBDL claimed to have limited the likely significant effects so far as reasonably practicable and as advised by the relevant energy NPSs. It went on to argue that notwithstanding findings of localised significant impacts, the grant of development consent for the Project would not lead to a breach of any international or statutory obligation and would not undermine the integrity of the designated areas within which some locally significant impacts were predicted.

21.2.7 The conclusion reached by the applicant in its Planning Statement was that the Application Project accorded with the NPS, and that the significant benefits associated with it would outweigh the identified adverse impacts.

21.2.8 There are no other more specific and relevant policies in the relevant NPS (i.e. EN-1, EN-3 and EN-5) that clearly indicate that consent should be refused

- There are no other specific reasons (such as breach of international obligations, or illegality) why the relevant NPSs should not be followed
- There is no alternative layout that could reasonably be proposed which would minimise harm, taking into account other constraints, without reducing the generating capacity of the Project (see the Mitigation Option section for details)
- The layout of turbines is designed appropriately to minimise harm, taking into account other constraints.

IPS' CASES FOR THE APPLICATION PROJECT

21.2.9 The principal matters raised by interested parties and persons (IPs) supporting the Project are:

- the Project should be supported for its contribution to increasing the country's renewable energy capacity and reduce reliance on fossil fuels;
- the Project would help Dorset meet its renewable energy policy and targets;
- it would have the potential to create new habitats for marine plants, invertebrates, fish and mammals;
- development of renewable energy is the only long term solution to mitigating against climate change and its impact on marine and coastal processes;

- effects of climate change are more damaging to the quality of our lives than having to adapt to the sight of turbines on our horizon.

21.2.10 Finally, it is worth recording that a number of IPs objected to the misleading, inaccurate information presented against the Project and the opposition to it generated by such information.

REASONS FOR OUR CONCLUSIONS-

21.2.11 We have set out the reasons for our conclusions on each of the matters in Chapters 5 to 20 which in summary are:

Physical processes

21.2.12 The ExA considers that the applicant has addressed the main areas of disagreement between parties. The DCO and DMLs include modifications made by the applicant in response to the representations made by interested parties and as agreed in the Statements of Common Ground (SoCGs) and raised by the Panel during the examination. The Panel is satisfied that the DCO and DMLs sufficiently mitigate the impacts on offshore physical processes.

21.2.13 There was disagreement between the Borough of Poole and the applicant throughout the examination in relation to wave heights and coastal erosion, particularly in relation the need and cost of potential beach replenishment. The Panel agrees with the applicant's view that modelling demonstrates that the potential for littoral drift due to the presence of offshore wind turbines is small and that monitoring would not be able to separate drift solely caused by the presence of the Application Project from that due to natural causes.

21.2.14 The main consideration onshore relates to the cable landfall at Taddiford Gap. The Panel is satisfied that there is sufficient evidence submitted during the examination to demonstrate that the high directional drilling methodology proposed by the applicant would not have a significant impact on cliff stability.

21.2.15 The Panel does not consider that the issues concerning physical processes should attract weight in the decision as to whether or not to make the DCO.

Biodiversity, biological environment and ecology

21.2.16 The DCO includes modifications made by the applicant in response to representations made by interested parties and agreed in the SoCG and raised by the Panel during the examination. The Panel is satisfied that the DCO sufficiently mitigates the impacts on offshore benthic ecology, fish and shellfish ecology, marine mammals and ornithology and onshore ecology and ornithology.

21.2.17 Having considered the evidence submitted during the examination, the Panel is satisfied that there is no impediment to either the Marine Management Organisation (MMO) or Natural England (NE) in issuing EPS licences for harbour porpoise, bottlenose dolphins, smooth snake or sand lizard.

21.2.18 The ExA accepts that there remains considerable uncertainty regarding the effects of piling noise on Atlantic salmon, and also seahorse. However, these certainties are not within the applicant's power to resolve and the Panel accepts the regulator's precautionary approach to modelling and mitigation.

21.2.19 With regard to ornithological monitoring and collision risk modelling, the Panel accepts that more baseline monitoring could have been carried out, but considers that the applicant has complied with regulatory requirements. In terms of modelling, we have taken consideration of the models used and parameters assigned and given weight to NE's advice in coming to the conclusion that increases on baseline mortality, both for the Application Project and cumulatively, would be below the 1% accepted limit.

21.2.20 The Panel has taken particular notice of the potential impacts of the Application Project on designated sites. We note that there remained disagreement between the applicant and the Environment Agency (EA) and NE by the end of the examination regarding mitigation measures for Atlantic salmon associated with the River Avon SAC and River Itchen SAC. The ExA recommends that the prudent approach proposed by the EA and NE, and included in the DCO, is adopted to allow an assessment of no adverse effects on Atlantic salmon to be concluded. With the mitigation measures adopted, we are satisfied that the Application Project satisfies the requirements of Paragraph 5.3.211 of NPS EN-1 in relation to SSSIs, in that the decision maker "*should use requirements and/or planning obligations to mitigate the harmful aspects of the development and, where possible, to ensure the conservation and enhancement of the site's biodiversity or geological interest*."

21.2.21 Some detailed issues, design matters and approvals remain to be resolved. The Panel is satisfied that these would be adequately addressed through application of the recommended DCO, including the In Principle Monitoring Plan (IPMP) and Landscape and Ecological Management Plan (LEMP), and through proper enforcement of other regulatory regimes and enhancements.

21.2.22 Given the evidence, and with the mitigation and compensatory measures secured in the development consent agreement [REP-4083], the Secretary of State can be satisfied that issues concerning biodiversity, biological environment and ecology do not attract significant weight as to whether or not to make the DCO.

Seascape, landscape and visual impact

21.2.23 In Chapter 7 the Panel concluded that the applicant provided a comprehensive and detailed analysis of its assessment of the Application Project on a range of seascape, landscape and visual receptors. The assessments broadly accorded with industry guidance.

21.2.24 We take no issue with the applicant's assessments on the construction and decommissioning phases of the Project, recognising that impacts are likely to be short term. However, our findings differed from the conclusions reached in the Seascape, Landscape, Visual Assessment (SLVIA) in relation to a number of key receptors, and which has had significant bearing on the ExA's views on the merits of the Project.

21.2.25 During the long term (at least 25 years) operation and maintenance phase, our findings show that the Application Project would have widespread significant adverse effects on the defining characteristics and special qualities of the Dorset AONB and the Isle of Wight AONB. Similarly, the qualities of the Purbeck and Tennyson Heritage Coasts would be harmfully affected. The same concerns apply to the coastal portion of the New Forest National Park. Chapter 7 of this Report details the unique and outstanding qualities of the areas likely to be harmfully affected by the visual, intrusive presence of the turbine array and the offshore substations.

21.2.26 The Panel recognises the applicant's commitments to reducing the Project's potential impacts on receptors through measures such as the 'turbine area design principles' (certified document to be secured as part of Article 39(1)(s)). Reductions in the scale of the development area prior to submission of the application and introduction of the TAMO demonstrated a willingness to take account of the visual concerns. However, measures available to mitigate the visual effects of the Project are clearly limited. In Chapter 7 we highlighted the uncertainties in the effectiveness of the turbine area design principles. In any event, whatever care and attention might be accorded to turbine layouts through the agreed principles, or other layout considerations, would not overcome fundamental concerns about the scale of the Project and its proximity to environmentally sensitive designated landscapes.

21.2.27 Overall, our conclusions are that the adverse impacts of the Project on the qualities that merited the AONB and NP designations would be significant. The scale and location of the Project would affect important special qualities of the AONBs over a widespread coastal area of exceptional quality and sensitivity. The matter is accorded significant weight against the Project.

Landscape and visual impact

21.2.28 The Panel has had regard to the visual impacts that would occur during the construction phases of the landfall, cable laying and onshore substation works. Short and medium term impacts are inevitable and in some instances the effects would be significant. The Panel is however satisfied that the temporary and often reversible nature of the construction works, aligned with good practices secured through the DCO, would not have long term adverse effects.

21.2.29 The Panel notes that undergrounding the onshore cables is a substantial part of the moderating impacts of the onshore works. Specific measures proposed in the Landscape and Ecology Management Plan (LEMP) (such as replanting and restoration) with funding and heathland restoration would compensate or mitigate as far as is practicable the adverse impacts that would arise from construction and operational phases of the Project. The Panel is satisfied that the applicant has sought to minimise the harm and provided reasonable mitigation where possible and appropriate. For these reasons, the landscape and visual impacts of the onshore elements of the Project should not attract significant weight in the decision as to whether or not to make the DCO.

21.2.30 The Panel accepts that the scope for developing outside the New Forest National Park (NFNP) and the Green Belt is limited and that the applicant had adequately explored other options. We have had regard to the highest level of protection accorded to the NFNP and assessed the Application Project against the considerations listed in EN-1, which advises that consent for development in a National Park can be granted in exceptional circumstances.

21.2.31 The onshore elements of the Project have additionally been tested against Green Belt policy which applies a general presumption against inappropriate development in the Green Belt except in very special circumstances. In both instances, we conclude that exceptional or very special circumstances would exist only if the renewable energy benefits of the scheme, plus other benefits, were to outweigh its adverse impacts. The matter is concluded on subsequent to the ExA's consideration of the planning balance.

Dorset and East Devon Coast World Heritage Site

21.2.32 The offshore elements of the Application Project would, in the view of the Panel, bring about changes in the way that the World Heritage Site would be experienced or enjoyed in its surroundings and would have adverse implications for the Site's significance and its Outstanding Universal Value. There may be a risk that the Site would be presented and transmitted to future generations in

a form that is significantly different from what was there at the time of inscription until today.

21.2.33 The measures to mitigate the offshore visual impacts are limited, but have been considered by the Panel as a way of minimising conflict between conservation of the Site's significance and the proposal for development, as advised in EN-1 paragraph 5.8.12. Even with the measures in place, we conclude that the harm caused to the setting of the Site, the 'less than substantial' harm to its significance and the harm to its OUV, carry significant weight against the decision whether or not to make the Order.

Offshore and onshore archaeology and heritage environment

21.2.34 The Panel recognises the potential for harm to or destruction of features of archaeological interest lying offshore. However, provision is made in the generation and transmission assets DMLs (Schedules 13 and 14 Conditions 11(h)) for submission, and approval by the Marine Management Organisation (MMO), of a Written Scheme of Investigation (WSI). Delivery of the WSI through Condition 11(h) would provide the necessary protection or mitigation to adequately safeguard or compensate for loss of offshore assets, as required by NPS EN-3.

21.2.35 The intrusive construction techniques used to install the cables underground have the greatest potential to impact on below ground archaeological assets, more than any of the other works associated with the onshore elements of the Application Project. However, the Onshore Cable Corridor was designed to avoid known archaeological sites. Trenchless techniques at selected locations would also limit the harm to known remains. Furthermore, measures in the WSI (secured through Requirements 15(3)(i) and 25) aimed at mitigating the effects of the development during construction are appropriate. The Panel is satisfied that the impacts of the Application Project would be reduced sufficiently, to the point of achieving no significant effects on onshore archaeological remains during construction. The requirement to take account of such assets, as required by NPS, has been fulfilled. The matter of impacts on archaeological assets (offshore and onshore) does not attract significant weight in the decision as to whether or not to make the DCO.

21.2.36 The offshore components of the proposed development would however impact harmfully on the settings of a number of designated heritage assets located on the Dorset, Hampshire and Isle of Wight coastline. In our conclusions we find the settings contribute positively to the significance of the individual heritage assets and which would be subject to 'less than substantial' harm as a result of the Project. The level of harm identified does not equate to a less than substantial objection. It is a matter to which the ExA has accorded considerable importance and weight; it

carries weight against making the Order and requires us to consider the public benefits that would accrue from the Project.

Recreation

21.2.37 During construction the Project would have adverse effects on offshore diving due to subsea noise and turbidity. This would require the temporary phased closure of dive sites within a 2 km exclusion zone for safety reasons and would harm amenity over a wider area, evidenced by an avoidance area of 5.7 km being required to avoid divers having a startle reaction to noise. Diver mitigation plans would make information available on suitable diving locations and times to allow affects to be avoided and disruption agreements would mitigate effects on diving businesses to allow them to move to more distant diving sites. However, there would be significant residual disruption to recreational divers.

21.2.38 Harm to onshore recreational activities such as walking, cycling and horse riding along the onshore cable route during construction due to temporary closures of rights of way would be mitigated by provisions in the DCO such that any residual harms would be minor. Similarly, aviation warning lighting of the offshore turbine area would result in minor adverse harm to astronomy, although this could be reduced further if there are technological advances in lighting techniques.

21.2.39 There was insufficient evidence to conclude that there would be significant impacts to recreational sailing or motor boating, although we note the increase in navigational risk resulting from the Project.

21.2.40 Finding against the Project on recreational diving carries weight to be carried into the balance of issues. Other recreational related issues would not attract significant weight in the decision as to whether or not to make the DCO.

Tourism and other socio-economics

21.2.41 The Panel considers that the applicant has overstated the evidence from other wind farms that there would be no adverse effects arising from the Application Project; understated the evidence of the perception surveys that there would be adverse effects and understated the sensitivity of tourism businesses to change. The net effect is that the applicant has understated the adverse effects arising from the visual impact of the Project during operation and maintenance on tourism in the coastal areas. When this is considered for the area as a whole the minor adverse harm is not considered to be significant. However, the survey results have a high degree of variability and the Panel concludes that at a smaller geographical scale there would be significant adverse effects in the Purbeck coastal area. The

matter is accorded some weight in the decision as to whether or not to make the DCO.

21.2.42 A Tourism Fund is proposed through a Unilateral Undertaking. However, given the conclusion in Chapter 12 that this does not meet the NPS tests, it also follows that the Panel has not accorded it any weight in the conclusions reached.

21.2.43 The Panel also concludes that, with the mitigation measures secured in the DCO, the Project would result in no significant harm to tourism from noise, access, dust, visual impacts and other disturbances along the onshore cable route and at the onshore substation during construction or operation.

21.2.44 We find that the Project would bring employment and supply chain benefits to the local area and that these would be supported by the skills and supply chain funds provided by the development consent agreement.

21.2.45 For the Application Project the local benefits under each scenario assessed by the applicant would be:

- low – £130 million GVA supporting 70 jobs, including 20 long term operational;
- medium – £850 million GVA supporting 520 jobs, including 180 long term operational; and
- high – £1.6 billion GVA supporting 1,140 jobs, including 250 long term operational.

21.2.46 The ExA's view is that the medium impact scenario for employment and supply chain benefits represents the most realistic scenario. The number of jobs and GVA generated by the Project should be accorded significant weight in the planning balance and in the decision as to whether or not to make the DCO

Commercial fisheries and fishing

21.2.47 In relation to commercial fishing the Panel concludes that the impacts of the proposed wind farm have been addressed by the applicant and sufficient mitigation proposed in line with NPS requirements and MPS advice.

21.2.48 In this respect the applicant has sought to design the proposal, in consultation with the industry, in order to minimise the impact. Adverse impacts in the short and long term have been mitigated and the measures of mitigation have been incorporated in the DCO satisfactorily.

21.2.49 We conclude that the matter of commercial fisheries and fishing should not attract significant weight in the decision as to whether or not to make the DCO.

Operational and navigational safety

21.2.50 The Panel concludes that the operational and navigational impacts of the Application Project have been addressed by the applicant and sufficient mitigation proposed in line with NPS requirements. In this respect the applicant has sought to design the proposal, in consultation with the industry and responsible authorities, in order to minimise the impact.

21.2.51 More specifically, in terms of maritime navigation the applicant has undertaken a Navigation Risk Assessment that has met the requirements of the Maritime and Coastguard Agency and Trinity House. The Panel also concludes that adverse impacts in the short and long term have been mitigated and the measures of mitigation have been incorporated in the DCO satisfactorily. However it also concludes that some adverse impacts remain and by its very presence the wind farm would represent a greater risk to marine navigation than existed previously. This matter weighs against the proposal but not to a significant extent.

21.2.52 In relation to aviation, some matters in respect of Bournemouth Airport remain to be resolved. The Panel has no reason to believe that an agreement would not be forthcoming. The DCO, nevertheless, adequately covers the necessary agreement between the operators and the developer before electricity generation can begin. Accordingly we take the view that the Secretary of State can be satisfied that aviation is not a matter that should attract significant weight as to whether or not to make the DCO.

Highways, traffic and transportation

21.2.53 The impacts of the proposed wind farm have been addressed by the applicant and sufficient mitigation proposed in line with NPS requirements. The applicant has sought to design the proposal, in consultation with the responsible authorities and local communities, in order to minimise the impact. Adverse impacts in the short and long term have been mitigated and the measures of mitigation have been incorporated in the DCO satisfactorily. The Panel does not consider that the issues concerning highways, traffic or transportation should attract significant weight in the decision as to whether or not to make the DCO.

Drainage, flood risk and water quality

21.2.54 Potential onshore impacts arising from matters such as watercourse crossings, the use of bentonite, contaminated land, works in the vicinity of existing flood prevention measures and surface water management at the Onshore Substation would be appropriately mitigated through requirements within the DCO/DMLs and through proper enforcement of other regulatory regimes. The Panel finds no significant adverse effects on

drainage, flood risk or water quality and similarly no significant harmful impacts from offshore works.

21.2.55 The Secretary of State can be satisfied that flooding, drainage or water quality considerations are not matters that should attract significant weight in the decision as to whether or not to make the DCO.

EMF, air quality and other health

21.2.56 The applicant's commitment to adhere with ICNIRP guidelines would ensure no adverse health impacts from EMF.

21.2.57 Potential onshore impacts arising from air pollution, dust, odour, increases in pests, hazardous waste and substances would be appropriately mitigated through requirements in the DCO and through proper enforcement of other regulatory regimes.

21.2.58 The issues arising from EMF, air quality and health do not attract significant weight in the decision as to whether or not to make the DCO.

Noise and vibration

21.2.59 Any onshore noise and vibration during construction would be transitory. Levels during construction and operation have been assessed as being within threshold limits and necessary mitigation would be secured within the DCO/DMLs.

21.2.60 The Panel accepts that construction noise levels due to offshore piling would be within threshold limits. Provided that certain requirements identified by the Panel in Chapter 18 are included in the 'outline noise communication and monitoring protocol' (a certified document under the DCO) and the 'noise communication and monitoring protocol', residual concerns about the effects of repetitive and low frequency piling noise would be mitigated, as required by the MMO in response to a complaints-led process involving monitoring and further assessment.

21.2.61 Subject to the results of a reassessment following the confirmation of the design and layout of the turbines and background noise surveys, unmitigated noise levels during operation could exceed threshold levels at the nearest coastal locations during certain atmospheric conditions. The noise propagation report provides the mechanism by which the adjusted noise levels would be calculated and by which mitigation measures would be identified for approval by the MMO.

21.2.62 Provided that certain noise calculation parameters and requirements for noise survey, assessment and mitigation methodologies identified by the Panel in Chapter 18 are included in the 'parameters for the noise propagation report' (a certified document under the DCO) and the 'noise propagation report', the

Panel is satisfied that the onshore and offshore noise and vibration levels would be appropriately mitigated through the DCO/DMLs. The 'parameters for the noise propagation report', 'noise propagation report', 'outline noise communication monitoring protocol' and the 'noise communication monitoring protocol' would be the subject of consultation and agreement with the MMO and LAs to ensure that the objectives intended are forthcoming.

21.2.63 Subject to the updates to the 'outline noise communication and monitoring protocol' and the 'parameters for the noise propagation report' noted above, onshore and offshore noise and vibration levels would be appropriately mitigated through requirements and protective provisions within the DCO. This matter therefore should not carry significant weight in the decision as to whether or not to make the DCO.

Good design

21.2.64 Subject to effective implementation of measures to reduce as far as is practicable the visual and other consequences of the onshore elements of the Project, the Panel considers that the principles of good design would be met. Equally, through the use of design parameters, and the 'turbine area design principles' the Panel is satisfied that the applicant has shown a commitment to achieving functional but aesthetically acceptable designs within the limitations of operational and other constraints, and therefore met the NPS expectations of applying 'good design' to energy projects.

21.2.65 However, neither the measures incorporated into the designs, nor those secured through the Order, would be effective in overcoming the significant visual harm caused by the offshore components of the Application Project. The implications on environmentally sensitive areas, heritage assets and visual amenity have been shown to be significant, and lead us to conclude that, even with the design parameter and measures proposed, the Project would not contribute to the quality of the area but would cause significant harm to it.

CONCLUSIONS ON THE CASE FOR DEVELOPMENT OF THE APPLICATION PROJECT

21.2.66 The Panel considers that the following assessments are adequate in terms of statutory and policy requirements. We have taken them into account in reaching our recommendation and in our view the Secretaries of State can rely on them in determining the application:

- Environmental statement and environmental impact assessment
- Habitats Regulations Assessment

21.2.67 We have considered the following matters and, for the reasons given above, we have concluded that they should not attract significant weight in the decision as to whether or not to make the DCO:

- Physical processes
- Biodiversity, biological environment and ecology
- Onshore landscape and visual impacts (except for the NFNP and Green Belt tests)
- Offshore and onshore archaeology
- Recreation, except diving
- Commercial fisheries and fishing
- Operational and navigation safety
- Highways, traffic and transportation
- Drainage, flood risk and water quality
- EMF, air quality and other health
- Noise and vibration

21.2.68 We comment next on the matters weighing significantly in favour of making the DCO, then with those matters weighing significantly against, before concluding on the balance of issues.

MATTERS WEIGHING IN FAVOUR OF MAKING THE DCO

21.2.69 The proposed development would deliver a Nationally Significant Infrastructure Project (NSIP), the need for which has been demonstrated as a matter of Government policy. NPS EN-1 applies a presumption in favour of granting consent to applications for energy NSIPs. The NPS also expects substantial weight to be given to the contribution which projects make towards satisfying the urgent need for new energy infrastructure projects.

21.2.70 Delivery of up to 970 MW is a considerable benefit adding significantly to the case for making the DCO. The contribution that it would make to combating climate change is implicit in acceptance of the Project as a renewable energy NSIP.

21.2.71 The job creation opportunities likely to be generated by the Project comprise another significant benefit adding to matters favourable to making the DCO.

MATTERS WEIGHING AGAINST MAKING THE DCO

21.2.72 The Panel considers the following are matters weighing significantly against making the DCO:

- Significant harm to Dorset and Isle of Wight AONBs, New Forest National Park and Purbeck and Tennyson Heritage Coasts arising from the visual impacts of the offshore elements of the Project during operation.
- 'Less than substantial' harm to the significance of the WHS and harm to its OUV.

- 'Less than substantial' harm to the significance of designated heritage assets.
- The preceding three matters preclude a favourable conclusion in terms of achieving good design quality.

21.2.73 Although the risk to marine navigation is a matter weighing against the Project, it is not a significant issue, as confirmed by the agreements reached with the relevant bodies. Impact on recreational divers is not a matter that on its own adds significantly against consenting the DCO. Equally, the localised nature of the likely effect on tourism renders the issue of less weight than had it been regarded as widespread.

21.2.74 The Panel has concluded that the turbine array and offshore substations would impact harmfully on the designated landscapes of the Dorset and Isle of Wight AONBs, the NFNP, on the Purbeck Heritage Coast and on Tennyson Heritage Coast. For reasons described in Chapter 7 of this Report, the harm would be significant which weighs significantly against making the Order.

21.2.75 In respect of harm to heritage assets the NPS states that there should be a presumption in favour of the conservation of designated heritage assets. It follows that particular importance and weight attaches to situations where the proposed development would result in harm to designated heritage assets.

THE BALANCE OF ISSUES

21.2.76 The national need for this infrastructure is a powerful factor weighing in favour of making the DCO. This is reflected in the starting point of presumption in favour of granting consent to applications for energy NSIPs. The jobs likely to be forthcoming from the construction and operational/maintenance of the wind farm add to the benefits side of the argument.

21.2.77 The key issue of greatest concern to the Panel is the adverse impacts arising from the visual effects of the offshore elements of the proposed development on a range of national and international designations. The level of harm resulting from the Project's offshore elements is considered by the Panel to be of such seriousness as to outweigh its benefits.

21.2.78 NPS EN-1 cautions against refusing consent solely on the grounds of an adverse effect on seascape or visual amenity, unless an alternative layout can be reasonably proposed or the harmful effects are considered to outweigh the benefits of the proposed scheme. Save for the TAMO (considered below), alternatives to the Application Project layout are not before the Secretary of State for consideration. However, the Panel's conclusions in respect of the harm/benefits balancing exercise meets one of the two conditions specified in EN-1 for justifying refusal of consent.

21.2.79 We therefore find that the case for development of the Application Project has not been made out and recommend accordingly in Chapter 23.

21.2.80 It follows from these conclusions that the exceptional or very special circumstances required to justify development in the NFNP and the Green Belt do not exist. Furthermore, the public benefits ensuing from the development would not overcome the harm to heritage assets identified in Chapter 10, and which adds to the weight of issues against the Project.

21.3 THE TURBINE AREA MITIGATION OPTION

THE APPLICANT'S CASE

21.3.1 Notwithstanding its promotion of the Application Project in the terms set out above, the applicant chose part-way through the examination process to propose the TAMO scheme. Given the applicant's strong and unequivocal promotion of the Application Project, the ExA and others questioned rigorously the purpose of the reduced scheme, particularly because if permission were granted for the Application Project, the wind farm could be built to the dimensions of the TAMO without the need for amendment to the DCO.

21.3.2 However the Panel was assured by the applicant at the ISH and subsequently in the Applicant's Response to Rule 17 Request for Further Information relating to the Mitigation Option (part 1) [REP-3429] that "in the event that the Secretary of State decides that the *proposal does not strike the right balance between benefits and impacts, the applicant believes that it may assist the Secretary of State to at least have available the option to reduce the number of turbines, removing those closest to terrestrial viewpoints. Approval of a reduced number of turbines ….. would involve striking a different balance, because the Mitigation Option would involve a reduction both in the total installed generating capacity and the environmental effects associated with the construction and operation of turbines*."

21.3.3 In Part 2 of the Response to Deadline IV (Part 2) [REP-3313] the applicant explained that an urgent need exists for the additional generating capacity of both the Application Project and the TAMO, stating:

> "*Whilst the level of public benefit that would arise from the additional generating capacity would be greater for the Application scheme, which is relevant to the weight that attaches to the benefit, that does not alter the extent to which need is established for the Mitigation Option. An urgent need exists for the additional generating capacity in both cases. The difference in weight attributed to benefit from making a contribution to meeting that need (and any*

difference in impacts) would be relevant for the wider balancing exercise called for by Section 104 of the PA 2008, but it is clear that very substantial weight would properly attach to the additional generating capacity associated with the Mitigation Option."

21.3.4 The applicant referred to EN-1 which recognises that the benefit of providing additional generating capacity is so substantial that there is a presumption in favour of granting consent for all energy NSIPs covered by the policy (paragraph 4.1.2).

IPS' SUBMISSIONS SUPPORTING THE TAMO

21.3.5 Those supporting the Application Project continued to support the TAMO. While expressing concerns about the TAMO's reduced capacity, the scheme was supported for the benefits it would bring in terms of meeting the UK's renewable energy targets, for combating climate change and for stimulating employment/economic growth in the area.

REASONS FOR THE PANEL'S CONCLUSIONS

21.3.6 The matters not attracting any weight in relation to the Application Project should similarly not be factored into the decision as to whether or not to make the TAMO DCO. We focus only on the issues that can significantly add weight for or against the TAMO.

Seascape, landscape and visual impact

21.3.7 In Chapter 7 we accept that the TAMO represents a beneficial and meaningful reduction in the scale of the visual and landscape impacts that would result from it. On the other hand, our conclusion is that the TAMO would comprise a substantial development with landscape and visual effects considered significant in their own right.

21.3.8 When viewed from locations west of Worbarrow Tout or south of Freshwater the TAMO would be seen as a distant feature with little adverse impacts on those areas of the Dorset or Isle of Wight AONBs and Heritage Coasts that lie some distance from the proposed turbine array. Similarly the NFNP as a whole would not be harmed.

21.3.9 However, our examination of the evidence shows that significant adverse harm would be caused to the special qualities of the Dorset AONB and Purbeck Heritage Coast stretching from Studland to Worbarrow Tout and inland on the Purbeck Ridge. The sectors of the Isle of Wight AONB and Tennyson Heritage coast closest to the TAMO turbine array would be similarly affected. As explained in Chapter 7, the extent of the TAMO's presence alongside features symbolic of the area's attractions would lead to significant impacts on nationally designated

landscapes. The harm identified carries significant weight against making the TAMO Order.

World Heritage Site

21.3.10 The Panel concludes that the TAMO would intrude on important views from the coastal edges of the AONB towards the open sea, in particular from Durlston Castle (at its closet point at 18.8km), St Aldhelm's Head and Old Harry Rocks. The experiential aspect of the setting would be harmed to the point of resulting in 'less than substantial harm' to the significance of the WHS and to its OUV. The harm carries significant weight against recommending the TAMO Order.

Heritage Assets

21.3.11 Our conclusions in relation to the Application Project and impacts on offshore and onshore archaeology apply equally in the case of the TAMO. The 'less than substantial' harm on designated heritage assets, however, should carry significant weight against making the DCO.

Recreational Diving

21.3.12 As with the Application Project, there would be significant residual disruption to recreational divers. The matter carries weight against making the DCO.

Tourism and Socio-economic

21.3.13 The Panel concludes that are no significant differences in harm caused to tourism between the Application Project and the TAMO. The latter would similarly impact adversely on the local areas of the Purbeck District and should be accorded some weight against making the DCO.

21.3.14 For the TAMO, the local benefits under each scenario assessed by the applicant would be:

- low – £85 million GVA supporting 45 jobs, including 10 long term operational;
- medium – £560 million GVA supporting 340 jobs, including 120 long term operational; and
- high – £1.1 billion GVA supporting 750 jobs, including 150 long term operational.

21.3.15 The Panel's view is that the medium impact scenario for employment and supply chain benefits represents the realistic scenario.

21.3.16 The job opportunities and GVA benefits likely to be forthcoming are matters of significant benefit weighing in favour of the TAMO DCO.

MATTERS WEIGHING IN FAVOUR OF MAKING THE TAMO DCO

21.3.17 Although a number of IPs stressed that the scale of harm from the TAMO would not be reduced commensurately with the one-third reduction in energy output, the TAMO is an NSIP the need for which has been demonstrated by Government policy, and which is not diminished by the relative reduction in capacity. Delivery of up to 630 MW output from a renewable source would represent a considerable benefit adding significantly to the case for making the TAMO DCO.

21.3.18 The matter of employment opportunities and GVA gains arising from construction and operation of the wind farm are further benefits adding to the favourable case for the Order.

MATTERS WEIGHING AGAINST MAKING THE TAMO DCO

21.3.19 The matters weighing significantly against making the DCO are:

- Significant harm to Dorset and Isle of Wight AONBs, parts of the New Forest National Park and Purbeck and Tennyson Heritage Coasts arising from the visual impacts of the offshore elements of the TAMO during operation.
- 'Less than substantial' harm to the significance of the WHS and harm to its OUV.
- 'Less than substantial' harm to the significance of designated heritage assets.
- The preceding three matters preclude a favourable conclusion in terms of achieving good design quality.

21.3.20 The navigational risks arising from occupation of sea space by the turbines would not in itself cause the TAMO to add significantly against consenting the DCO. Equally the Panel considers that impact on recreational diving and tourism are not matters that should seriously count against making the DCO.

THE BALANCE OF ISSUES

21.3.21 The TAMO would represent an improvement over the Application Project in terms of impacts in relation to the above topics. It would nevertheless amount to a significant development with significant adverse visual impacts.

21.3.22 The visual impacts of the TAMO remains an issue of serious concern to the Panel, and the harmful effect it would have on national and international designations for which this area is known. The benefits described would not be sufficient to overcome the combined weight of the matters working against the TAMO (listed in the bullet points above). We find that the case for the TAMO has not been made out and we recommend accordingly.

21.3.23 The conclusion above cannot justify allowing development in the NFNP or inappropriate development in the Green Belt on the basis of exceptional or very special circumstances.

22 COMPULSORY ACQUISITION AND RELATED MATTERS

22.0 THE REQUEST FOR COMPULSORY ACQUISITION AND OTHER POWERS

22.0.1 The request for powers of compulsory acquisition was made in the application documents. The applicant provided a Statement of Reasons [APP-042], a Funding Statement [APP-043], a Book of Reference [APP-044 to 049], a Section 132 Statement [APP-050], Land Plans [APP-008] and Special Category Land Plans [APP-010].

22.0.2 The Book of Reference was revised throughout the examination [REP- 3347, 3502 and 4046[30]]. An updated Funding Statement was submitted by the applicant at Deadline VI [REP-3675] to explain the introduction of the new Article (Guarantees in respect of payment of compensation) in the DCO [REP-3643]. The extent and nature of the compulsory acquisitions sought applies to the Application Project and the TAMO. The reference to the Project in this Chapter applies to both options.

22.0.3 The land for which powers of compulsory acquisition are sought is to be used for the onshore infrastructure component of the project – that is:

- the Landfall which is located at Taddiford Gap, between Barton-on-Sea and Milford-on-Sea with transition joint bays to connect onshore and offshore cables;
- approximately a 35 km Onshore Cable Corridor, which would be entirely underground and is required to transmit the electricity generated by the offshore wind park to a grid connection point;
- a new Onshore Substation located in Three Legged Cross, which is required to transform the electricity voltage up to 400 KV appropriate for the UK transmission system network.

22.0.4 The land to be acquired is primarily agricultural land. There are a number of rights of way that would be crossed, and land over which statutory undertakers have freehold, leasehold or other interests.

22.0.5 The powers to acquire land are created in Articles 22-30[31] of the Development Consent Order (DCO).

[30] REP-4046 comprises the Book of Reference submitted towards the end of the examination and includes a separate tracked changes version

[31] Article numbering in this Chapter follows the numbering of the DCOs attached as Appendix A to this Report

22.0.6 The powers to obtain temporary possession or other rights over land are included in Articles 13 – 17, 20, 21 and 31-33.

22.1 THE PURPOSES FOR WHICH THE LAND IS REQUIRED

CONTEXT

22.1.1 The Statement of Reasons [APP-042] explained that the applicant is seeking the acquisition of a combination of freehold ownership, permanent rights (such as rights of cable installation and subsequent access) and temporary rights of possession and/or access. In addition to which, restrictive covenants are sought on most plots over which rights are sought, in order to protect the installed cables from being excavated or built over.

22.1.2 The Book of Reference [REP-4046] schedules all owners, lessees, tenants and occupiers, those with other interests in the land and those entitled to make relevant claims. Table 1 of the Book of Reference describes in detail the nature of the cable installation and maintenance rights sought. They are referenced POS 1, POS 2, A-A5, B, C-C1, D-R (207 plots). Rights S-Z refer to the nature of the access only rights sought for plots where permanent access is required to the Cable Corridor but no cable construction would occur (10 plots Table 2 in the Book of Reference). The restrictive covenant sought over some of the Order land feature in Table 3 and are referenced AA, BB and CC (143 plots).

22.1.3 In addition the DCOs seek further powers in relation to land which might or would also interfere with existing rights. These further powers are:

- The carrying out of street works for the purposes of the authorised Project, as specified in Article 14 and Schedule 2.
- The temporary stopping up, alteration or diversion of streets, as specified in Article 16 and Schedule 3.
- Forming and laying out means of access or improving existing means of access, as specified in Article 17 and Schedule 5.
- Discharge of water into watercourses, any public sewer or drain and the laying of pipes to achieve this, as specified in Article 19.
- Survey and investigation of land within the Order limits, including placing, leaving or removing apparatus to facilitate this, subject to serving of notice, as specified in Article 20.
- Temporary suspension of public access to Access Land, described in Schedule 6 and as specified in Article 21.
- Extinguishment of all private rights in land subject to compulsory acquisition under Articles 22 or 23.
- Acquisition of subsoil of land referred to in Article 22 or Article 25.
- Extinguishment of private rights over land subject to compulsory acquisition, as specified in Article 26.

- Acquisition of part of certain properties subject to notice to treat, as specified in Article 29.
- Entry on and appropriation of so much of the subsoil of any street within the Order limits and as may be required for the purposes of the Project, as specified in Article 30.
- Entry on and temporary possession of land specified in Schedule 9 and rights to within the land, subject to serving notices and as set out in Article 31.
- Entry on and temporary possession of land required for the purpose of maintaining the Project, as specified in Article 32.
- Subject to the Protective Provisions agreed between the applicant and Network Rail Infrastructure Ltd. (Schedule 12), acquisition of land or new rights or imposing restrictive covenants on land belonging to statutory undertakers, as set out in Article 33.
- Felling or lopping of trees and the removal of hedgerows within the Order limits, as specified in Article 37.
- The lopping of trees subject to tree preservation orders within the Order limits, as specified in Article 38.

SPECIFIC PURPOSES

22.1.4 The following describes the nature of the land interests required for the Project:

- Freehold rights are sought for the purpose of constructing and maintaining the substation compound and permanent access to that compound (Plots 338, 339 and 340).
- Permanent rights are sought to install underground cables, to facilitate access for installation and for maintenance of the offshore works. This is the nature of acquisition sought for the principal part of the Order land. Schedule 7 to the DCOs lists the lands over which new rights are sought and describes the rights.
- Temporary possession only is sought over land parcels listed in Schedule 9 to the DCOs for the purposes of construction laydown areas, welfare facilities and plant and equipment storage.

SPECIAL CONSIDERATIONS

Crown Land

22.1.5 The Order land includes land owned by the Crown, as shown on Crown Land Plan Offshore and Crown Land Plan Onshore [APP-032 & 033]. The Statement of Reasons confirmed that the applicant holds an agreement directly with the Crown for its offshore works.

22.1.6 In response to the Panel's second round of questions the Crown Estate Commissioners confirmed [REP-3628] that Article 13, which is protective to the interests of Crown authorities affected

by the proposals, was in a form specified by the Commissioners [REP-3086]. Furthermore, the Commissioners consented to the inclusion of rights of compulsory acquisition in the DCO, but reserved their rights as regards the consent of the Crown Estate to the exercise of such compulsory acquisition powers, as provided for in s135(1)(b) of the Act and expressly confirmed by Article 13.

22.1.7 The applicant does not seek to exercise compulsory acquisition against the freehold held by the Crown in any instance, and this is protected under Article 13 of the Order. It seeks instead to acquire or extinguish or override interests held from the Crown by other parties. The Crown Land in which the applicant seeks to acquire interests are as follows:

- Plots 237-262, 294-297, 336-339, 340. These comprise the Forestry Commission sites of Hurn Forest, West Moors Plantation and Mill Nursery Plantation, held for the Crown by the Secretary of State for Environment Food and Rural Affairs.
- Plot 256. The Secretary of State for Health has rights of drainage across a small area of the Onshore Cable Corridor within Hurn Forest, on land owned by the Secretary of State for Environment Food and Rural Affairs.
- Plots 264-267, 284-289. The lands are included to remove any third party rights that may prevent installation, operation and use of cables (or right of access to them) installed under the A31 Trunk Road and an existing access to the A31.
- Plots 298, 299 and 333. The Highways Agency Historical Railways Estate has rights of access for maintenance over land where the cables would be installed.
- Plots 300-307. The land is owned by the Ministry of Defence on behalf of the Secretary of State for Defence. The rights are required for the laying of cables and for temporary construction area on their land.

22.1.8 Letters sent in on behalf of the Secretary of State for Environment Food and Rural Affairs [REP-3027], Secretary of State for Transport [REP-3994], Secretary of State for Health [REP-3028], Highways Agency Historical Railways Estate [REP-3029] and Secretary of State for Defence [REP-3030] confirmed that consent was provided to compulsorily acquire interests other than those held by or on behalf of the Crown.

Statutory Undertakers

22.1.9 In responding to the Panel's second round of questions [PD-011], the applicant stated that the following nine statutory undertakers would be affected by the Project:

- Network Rail Infrastructure Ltd

- Wessex Water Ltd
- National Grid Electricity Transmission plc
- Perenco UK Ltd
- Southern Water Services Ltd.
- Southern Gas Networks plc
- Southern Electric Power Distribution Plc
- Telefonica Ltd
- Sembcorp Bournemouth Water Ltd.

22.1.10 In cases where s127 of the PA2008 is triggered by a representation that is not withdrawn, before authorising compulsory acquisition the Secretary of State must be satisfied that the land or right can be acquired without serious detriment to the carrying on of the undertaking; or alternatively that any determent can be made good by other land belonging to or capable of acquisition by the undertaker.

Special Category Land

22.1.11 The applicant's Statement (under s132 of the PA2008) [APP-050] explained that the cable route would pass through two areas of potential open space land comprising:

- The beach at Taddiford Gap, Barton-on-Sea (Plots 1 and 2), and
- woodland at Golden Hill, Hordle, Hampshire (Plots 29, 31 and 35)

22.1.12 The Special Category Land is included in Part 5 of the Book of Reference. The Statement sets out the applicant's position in respect of s132 of the PA2008, requiring the Secretary of State to authorise the acquisition of rights over open space land. The definition of Special Category Land is contained in Article 42 of the DCO.

Compulsory Purchase (General Vesting Declarations) Act 1981

22.1.13 Article 27 of the DCO seeks to incorporate the provisions of the Compulsory Purchase (General Vesting Declarations) Act 1981. It makes minor modifications to the provisions in that Act relating to:

- Giving notice.
- Defining persons having a relevant interest in the land.
- The means of publication of dates of execution of declaration.
- The provisions relating to constructive notice to treat.

22.1.14 None of these proposed modifications drew any objection in the course of the examination, and the Panel considers that they are proportionate and justified.

22.1.15 Section 120(5)(a) of PA2008 provides that a DCO may apply, modify or exclude a statutory provision which relates to any matter for which provision may be made in the DCO and s117(4) provides that, if the DCO includes such provisions, it must be in the form of a statutory instrument. Because of these provisions relating to the 1981 Act, s120(5)(a) is therefore engaged, and in consequence the DCO is in the form of a Statutory Instrument.

22.2 THE APPLICANT'S CASE

The case for acquisition of individual plots or rights along the cable route

22.2.1 The applicant's case is largely set out in the Statement of Reasons [APP-042] and was supplemented by responses to the Panel's written questions and in addressing issues raised by affected parties or those seeking to claim Category 3 status.

22.2.2 The applicant claimed that all of the Order land, shown on the Land Plan, is required either for the purposes of the Project, or to facilitate it or for purposes incidental thereto. In order to deliver the Project, the applicant is seeking acquisition of a combination of freehold ownership, permanent rights and temporary rights of possession and/or access. Land has been included even where agreement has been reached, to ensure that powers are available in the event of discovering interests that had not previously been negotiated away. Furthermore, minor interests may still be outstanding and have to be extinguished or overridden.

22.2.3 Table 9.1-9.4 in the Statement of Reasons identified in detail the nature of the new cable installation and maintenance, access only rights and restrictive covenants sought, the rationale for the rights required and which plots they apply to. Table 9.6 listed the plots over which the applicant seeks power to take possession during construction. Freehold or permanent new rights would not be required over those plots. Table 9.7 listed plots over which temporary access only is required during construction, but not to the exclusion of existing users.

22.2.4 Justification for acquisition of individual plots and rights was explained in the Statement of Reasons [APP-042] by reference to the components of the onshore works and the nature of rights for which powers are sought by the applicant.

Landfall/beach/cliffs and transition bays

22.2.5 The applicant is seeking to acquire a permanent cable easement of up to 150m width, due to the increased separation distance of Offshore Export Cables which would be brought in to the narrower width required for the rest of the Onshore Cable Corridor.

Onshore Cable Corridor

22.2.6 The right to install cables in a corridor within the Order limits of a width of 40m is required to accommodate the anticipated working space for construction. The space required is 20m above the 20m anticipated for a permanent cable easement. The additional space was justified on the basis that it would allow the installation works to be undertaken with minimum of convenience to affected landowners, and to allow for variances to avoid potential engineering difficulties. The Statement of Reasons provided a list of reasons for the powers sought for the additional width of the land.

22.2.7 In response to the Panel's questions at the hearing, the applicant produced a detailed note explaining the reasons for the 40m working width [REP-3313].

Cable route from the Onshore Substation to Grid Connection Point at Mannington

22.2.8 Two cable circuits would be required to connect to the grid connection point. Where they run in parallel to the six circuits connection (from the Landfall to the Onshore Substation) a wider working area and permanent cable easement would be necessary.

HDD locations

22.2.9 For large scale HDD, additional working areas outside of the general 40m width for cable installation may be required to accommodate the drilling rig, as well as ancillary equipment, offices, working facilities and storage of bentonite, water and drill pipes. Temporary access roads and a duct-stringing area at the exit site provide further justification for the amount of land included in the Order.

Temporary construction compounds

22.2.10 The Order includes land for a total of seven temporary construction compounds in locations shown on the Land Plan [APP-008] and listed in the Statement of Reasons.

Onshore Substation

22.2.11 Plot 340 is required for the Substation and associated landscaping and ancillary infrastructure. Plots 338 and 339 form the new access road from the highway.

Temporary accesses

22.2.12 A total of 73 temporary site accesses were identified for the Project. Plots listed in Table 9.6 of the Statement of Reasons comprise land over which temporary powers would be required

for either widening existing accesses or creating new ones for construction purposes.

Restrictive covenants

22.2.13 The Statement of Reasons explained that the plots set out in Schedule 7 of the DCO comprise covenants for the benefit of the Onshore Substation and the remainder of the Order land.

22.2.14 The covenants are said to be necessary to prevent use of the relevant parts of the Order land in ways that would make access to the cable more difficult or to prevent excavation. In other words, to prevent erection of new buildings, provision of hard surfacing or planting or growing of major trees or shrubs that might damage the cables.

22.2.15 Restrictive covenants are only being sought over that part of the Order land required for the permanent cable easement. Covenants are not sought for land where agreement with the relevant landowner and occupier can be relied upon or lands over which temporary possession is sought (Article 31). The applicant confirmed that the covenants being sought would be consistent with those contained in private agreements already concluded (44 land owners and 17 occupiers) [REP-3176].

Special Category Land

22.2.16 For reasons explained in the s132 Statement [APP-050] submitted with the application, the applicant claimed that neither exchange land nor Special Parliamentary Procedure (SPP) would be necessary for the Order to include powers of compulsory acquisition of new rights for the Beach Open Space Land or Hordle Open Space Land.

22.2.17 The Beach Open Space Land (Figure 2.1, APP050) was the subject of objections by Meyrick Estate Management Ltd (MEM) and is considered in detail below.

22.2.18 The Hordle Open Space Land (Figure 3.1, APP-050) is owned by Hordle Parish Council. The Parish Council and NBDL agreed terms for the acquisition of rights on 29 March 2012. The Statement explained, however, that powers of compulsory acquisition are still included to allow for the overriding of any other interest in land that may exist.

Acquisition by negotiation

22.2.19 The Statement of Reasons [APP-042] confirmed that negotiations had taken place with each of the affected parties at the Landfall, along the Onshore Cable Corridor and at the Onshore Substation site. It also indicated that the majority of interests were secured by negotiation.

22.2.20 The applicant stated that where agreement had been reached with a party, their interest would not be the subject of compulsory acquisition unless: a) at that time the relevant party is unable or refuses to grant an interest in accordance with their contracted obligations, or b) where any minor or third party interests exists in land the subject of agreement and which are necessary to override, suspend or extinguish.

22.2.21 Furthermore, a range of compulsory acquisition and temporary use or possession powers are necessary to acquire and/or use the remaining land and rights, or to capture those rights which, for whatever reason, cannot be secured by way of private treaty, including those vested in persons unknown.

22.2.22 The Statement of Reasons explained at paragraph 9.13.1 that full ownership details of a number of plots could not be discovered, despite diligent enquiry. It further explained that the applicant had sought to acquire the land interests it requires by agreement. At the date of the application, 44 consents with landowners and 17 occupier consents had been secured. Approximately 84% of landowners and occupiers (or the majority of Category 1 interests) affected by the cable route had signed agreement. That represented 65% of the cable route by length.

22.2.23 In response to the Panel's first round of questions [PD-006], a summary of the steps taken between August 2010 and October 2014 was provided to demonstrate the level of diligent enquiry undertaken to identify all parties in the Order land. [REP-3018].

22.2.24 REP-3041 listed the affected parties that had not signed an agreement at Deadline II (20 October 2014) stage and REP-3045 provided an affected party status report. By Deadline VI (29 January 2015) new agreements had not been secured [REP-3693]. However, subsequently letters on behalf of the following were received:

- Secretary of State for Transport confirming that consent was provided to compulsorily acquire interests other than those held by or on behalf of the Crown [REP -3994].
- National Grid Electricity Transmission plc confirming on 5 March 2015 that the terms of a confidential agreement had been settled and that the agreement was with the parties for execution [REP-4062]. That remained the position when the examination completed on 11 March 2015.
- Perenco UK Ltd agreed the terms of a Protective Provision Agreement (PPA) but were not prepared to formally withdraw its objections until the PPA had been completed [REP-3609].

22.2.25 The land and rights that remained to be acquired prior to the close of the examination are those listed in REP-3693. At the

hearing, the applicant confirmed that in addition to those listed above, agreement on commercial terms had been reached with:

- DM Guppy & EJM Guppy - Plots 277-280 and 281
- DGJ Tanner - Plots 197-200
- D Dalton and Son Ltd and T Dalton - Plots 189-196, 185 and 187
- New Forest District Council - Plots 1, 2, 9, 122 and 123

22.2.26 The applicant was unable to reach agreement with A Travers (Plots 334 and 335). Agreement was reached with Dorset CC (Plots 298, 299 and 315) and Hampshire CC (Plot 18) but they chose not to proceed to commercial agreement unless the Development Consent was granted. The Panel was also informed that, due to Mr Kyprianou's incapacity, negotiations with him could not continue (Plots 282 and 283). The interests on remaining plots on which agreement could not be reached are connected to the Meyrick Estate. They were represented by Meyrick Estate Management Ltd (MEM) [REP-3050]. The Panel was informed that MEM did not wish to enter into negotiations on agreements in relation to any of their land holdings [REP-3693].

22.2.27 At the close of the examination, the position with regard to statutory undertakers was as follows :

- Network Rail Infrastructure Ltd – Agreement concluded with Protective Provisions in the DCO (Schedule 12); objection was withdrawn in July 2014 [CORR-0016].
- Wessex Water Limited – Agreement concluded and Relevant Representation was withdrawn in January 2015 [CORR-0038].
- National Grid Electricity Transmission plc confirmed that the terms of a confidential agreement had been settled and on the date of the letter (5 March 2015) the agreement was with the parties for execution [REP-4062]. The position remained unchanged by the time the examination completed on 11 March 2015.
- Perenco UK Ltd. agreed the terms of Protective Provision Agreement (PPA) but was not prepared to formally withdraw its objections until the PPA had been completed [REP-3609]
- Southern Water Services Limited – Agreement concluded and the objection was withdrawn on 7 October 2014 [REP-3013].
- Sembcorp Bournemouth Water Limited – no representation made; negotiations were continuing.
- Southern Gas Networks Plc – no representation made; negotiations were continuing.
- Telefonica Ltd – no representation made; negotiations were continuing

Availability and Adequacy of Funds

22.2.28 The updated Funding Statement [REP-3675] showed how the applicant company (NBDL) is jointly owned by Eneco Round 3 Development Holding Limited and EDF Energy Round 3 Isle of Wight Limited, which are in turn wholly owned by Eneco and EDF respectively. Published accounts for NBDL, ENECO and EDF for year ending 2013 were included as Annex 1, 2 and 3 of the Funding Statement.

22.2.29 Total Project construction costs[32] were anticipated to be in the region of £3 billion. The applicant was advised that the total property cost estimates for acquisition of the required interests would not exceed £15 million. Article 44 would provide guarantee of funding for compensation.

Alternative to compulsory acquisition

22.2.30 The Statement of Reasons [APP-042] explained that the applicant had sought and was continuing to seek a negotiated solution to each of the identified required interests in Part 1 of the Book of Reference. All identified owners of interests have been approached.

22.2.31 ES Volume C Chapter 4 Onshore Alternatives [APP-090] presents the applicant's case setting out in detail selection of the Landfall, Onshore Cable Corridor and Onshore Substation options. It was claimed that there no suitable alternatives to the land scheduled in the Book of Reference. Compulsory acquisition powers are necessary to enable the Project to proceed within a reasonably commercial timescale.

Compelling case in the public interest

22.2.32 For plots where compulsory acquisition is being sought the applicant's case is that the Project would meet the tests in s122(3) and a compelling case in the public interest for the land to be acquired compulsorily is made in Section 9 of the Statement of Reasons [APP-042]. A summary of the compelling case [REP-3042] was presented in response to the Panel's first round of questions.

22.2.33 The applicant confirmed that the Order has the potential to infringe the human rights of persons who hold interests in the Order land but considered that there would be significant public benefit arising from the grant of development consent. That benefit would only be realised if the Order included powers of acquisition.

[32] For the Application Project

22.2.34 Those affected by compulsory acquisition may claim compensation in accordance with the Compensation Code. The Funding Statement was said to show that NBDL had the resources to provide such compensation.

22.2.35 The Statement of Reasons argued that Article 1 of the First Protocol to the European Convention on Human Rights would not be contravened.

22.3 THE OBJECTOR'S CASES

Meyrick Estate Management Ltd (MEM)

List of Rights of Manor

22.3.1 MEM provided the Panel with a list of rights of manor [REP-2954] that may be exercisable within the Order land by the Meyrick Estate. These had not been included in Schedule 2 of the Book of Reference.

Beckley Farm Plots 144-148

22.3.2 MEM claimed that it was not necessary to acquire rights of temporary occupation over Plots 144-148 [REP-3633]. This is the point at which the cable route would cross the B3055 (at Plot 142).

22.3.3 MEM's case was that the cable route could be easily accessed from the highway directly at the point where it would cross the highway, rather than along MEM's farm access at Plots 144-148. It was alleged that there is not *"a compelling case in the public interest"* to be granted temporary occupation rights and the plots of land should be excluded from the Order.

Special Category Land

22.3.4 In response to questions at the hearing, regarding status of foreshore land (Plots 1 and 2) as public open space, MEM submitted a letter [REP-4063], dated 1 March 2015, from a local farmer attesting to use of the beach and foreshore at Taddiford as public open space. Furthermore, it was said that public can and does use this space for recreation, including, for example, the Chairman of MEM and his young family.

22.3.5 The Written Representations [REP-2953] by MEM (representing the owners of the freehold reversion of the Beach Open Space Land) claimed that the land, when burdened with the Order

rights, would be considerably less advantageous to the persons in whom it is vested[33].

22.3.6 The argument was expanded at the hearing and subsequently in writing by MEM along the following lines [REP-3633 & 4063]:

- Open space that is subject to periodic disruption due to inspection and maintenance operations would be less advantageous than one that is not.
- s132(3) of the PA2008 does not limit the ordinary word 'advantageous' to matters of pleasure and recreational and similar purposes.
- The value of the foreshore land to MEM would be less as it would be burdened with the right to install, maintain etc. the cable;
- If the beach was burdened with the right to lay and maintain electricity export cables laid by NBDL, then it could not be used for a similar purpose for the benefit of some other electricity operator.
- The ability to develop the foreshore in the same place, e.g. to install another project's cable, would be limited and preclude use of the same landfall for another project.
- Landfall sites are rare and there are other projects in the English Channel such as the Alderney scheme or other offshore electricity generation projects in the future and during the lifetime of the Navitus Project.
- The Secretary of State cannot be satisfied and cannot in law properly certify that sub-section (3) of s132 applies. In these circumstances, any Order which may be made granting development consent would be subject to SPP.
- Compensation in full for the loss of the advantage in the future would be the only way in which NBDL could remove the disadvantage to the owners of the beach.

Restrictive Covenants

22.3.7 MEM took the view that the applicant was seeking very broad powers that were not appropriate and could not be justified, given the detrimental effect imposition of restrictive covenants can have on landowners. Landowners should not be forced to accept restrictive covenants to save the applicant engineering costs. The fairer solution would be for restrictive covenants to protect those sections of the route where restrictive covenants with landowners are agreed and elsewhere to employ the engineering solutions deemed necessary in the absence of restrictive covenants [REP-2953].

[33] Mr Craig-Mooney, Mr J.H. Edward and Mr John Richard Westmacott, c/o the Hinton Admiral Estate Office hold the freehold ownershipop. The tenants of the beach are the New Forest District Council.

22.3.8 MEM questioned the legality of imposing restrictive covenants on the following basis [REP-3633]:

- In order to be a restrictive covenant (and so qualify as an interest in land), there must be some identifiable land ('the dominant tenement') in the nearby area which would benefit from the covenant
- In this case, there is no dominant tenement, as the applicant does not own any land in the vicinity which could take the benefit of the restrictive covenant.
- Therefore, the rights sought (in order to maintain the cable, prevent obstructions) are not restrictive covenants which would run with the land. They are instead personal rights in land which would not bind successive owners of the land, but only the current owner.
- This would be of no use to the applicant, and so should not be provided for in the DCO.
- In any case, no restrictive covenant is needed as interference with the cables could be prevented using the general law of nuisance. That is, the cables could be laid under the powers provided by the DCO, and they would then be protected by provisions relating to general nuisance law.
- Covenant BB is too widely drafted and should be amended so as not to preclude (for example) normal agricultural activities such as the growing of crops.
- Covenant CC should be amended to provide for compensation to be payable if consent is unreasonably withheld or delayed.

The applicant's case in response to the objections

List of Rights of Manor

22.3.9 The applicant confirmed at the hearing and subsequently in writing [REP-3643] that the requested manorial rights were included in the revised Book of Reference [REP-4046]

Beckley Farm Plots 144-148

22.3.10 In response, the applicant referred to the draft Construction Traffic Management Plan (delivered through Requirement 19) and the following text added to it [REP-3692]:

"As far as practical, access AC28 will not be used by construction vehicles between mid - July and the end of August to avoid conflict with farm traffic (unless otherwise agreed with the landowner)."

Special Category Land

22.3.11 In its response to the MEM objections [REP-3176], the applicant questioned the status of the Beach Land as open space but could not rule out public access altogether.

22.3.12 The applicant countered MEM's case along the following lines[REP-3643 & 4030]:

- As cables would be installed under the beach using trenchless techniques, access during construction, operation or decommissioning would not interrupt access over the beach.
- Access at surface level would be required for the purpose of walk-over surveys by foot and would be unlikely to interfere with public or private rights.
- Definition of 'open space' to which s132 applies means land laid out as a public garden or used for purposes of public recreation or land being a disused burial ground under the terms of 19(4) of the Acquisition of Land Act 1981.
- The procedural protections are intended to deal with land of value to the public interest derived from its status as open space. The term 'no less advantageous' is not intended to apply to the financial value of the land per se, which is addressed through application of the compensation code.
- s132 is not dealing with value in the sense of putting the owner in the same financial position as if the Order had not been made. It is the use (consistent with its ongoing status as open space) rather than the financial value associated with that use that matters.
- MEM did not explain why the applicant's cables would be less advantageous to the owners than someone else's cable. Impact on the land and its use would not be materially different, and in both cases the owners would receive fair compensation. Another cable would give rise to the same issues.
- POS1 and POS2 would be redrafted in the Book of Reference to clarify that the right to enter land would be by foot at surface level only and any plant and machinery on the land would be below the surface[34].

Restrictive Covenants

22.3.13 The applicant's position was that PA2008 provides a broad power to allow for the imposition of covenants to protect infrastructure where appropriate [REP-3643]. A number of precedents were

[34] The suggested wording for POS1 and POS2 can be found in REP-4030 at page 84

identified. The case for the applicant was made along the following lines [REP-3643 & 4030]:

- Even though not considered to be necessary, by having a dominant tenement freehold land such as the substation, and the position of rights including restrictive covenants over the land required for connections to that substation, the test for 'interest in land' would be met.
- No rights can be implied if not expressly stated (Sovmots Investments Ltd v Secretary of State for the Environment [REP-4036]).
- Potential interference might give rise to a potential claim in nuisance, but a remedy in tort is unlikely to be available for all potential interferences, obstructions creation or further obstacles to cable access that may arise.
- Action in nuisance in the event of damage to the cables is inadequate, whereas existence of the express restrictions would be known to landowners and successors in title, and the certainty is less likely to lead to interference.
- The legal nature of the rights to be created by the DCO is spelt out in Article 2(2) of the DCO[35].
- Rights BB and CC were not too widely drafted and it is unnecessary to reword the rights in the way suggested by MEM [REP-3633].

Dorset County Council - Plot 298

22.3.14 The plot comprises part of the Castleman Trailway and is in the ownership of Dorset County Council.

22.3.15 The Council questioned the need for the Order land to extend to 55m at this point, and beyond the 40m Cable Corridor width. It was claimed that there was no justification for the additional 15m.

The applicant's case in response to the objections

22.3.16 The 40m working width refers generally to the Cable Corridor as measured perpendicular to the Order limits. The applicant explained that the Cable Corridor passes through the plot of land at an angle and would result in the extra width [REP-3702].

Poole and Christchurch Bays Association (PCBA) and others[36]

22.3.17 PCBA claimed that the wind farm would cause nuisance to a large number of residents, thereby affecting property values on a

[35] Additional wording was introduced by the applicant at Deadline VII stage [REP-4030]
[36] The list of names in Appendix F of this Report

significant scale in Bournemouth, Christchurch, Poole and other affected areas [REP-2908]. The cost to the developer was estimated in the region of £1.2 billion in claims, under Part 1 of the Land Compensation Act 1973.

22.3.18 A number of requests for IP status were made under s102A of the PA2008. The requests were made on the basis of entitlement to claims under Part 1 of the Land Compensation Act 1973 and alleging that future claims would result from impacts on residents and depreciation of property values. The request for IP status was granted by the Panel, but that did not indicate a pre-judging of their cases in advance of our deliberations.

The applicant's case in response to the objection

22.3.19 In responding to PCBA, the applicant stated that claims made under the 1973 Land Compensation Act, as a result of injurious affection to qualifying properties, would not be successful. The reasons being threefold:

- no nuisance would occur as a result of the physical factors listed under Part 1 of the 1973 Act;
- there would be no diminution in the value of the claimant's land; or
- the claim would not exceed the threshold of £50.00 specified in the 1973 Act.

22.3.20 The applicant did not accept that a relevant claim, as defined under s57 of the PA2008 could be substantiated, given that the evidence does not support the noise or lighting issues alleged. The applicant did not believe that such claims have any realistic prospect of success. The applicant therefore did not add to the Book of Reference as suggested by the IPs.

22.4 THE PANEL'S CONSIDERATION OF THE COMPULSORY ACQUISITION ISSUES

22.4.1 The Panel's approach to the question whether and what compulsory acquisition powers it should recommend to the Secretary of State to grant has been to seek to apply the relevant sections of the Act, notably s.122 and s.123, the Guidance[37], and the Human Rights Act 1998; and, in the light of the representations received and the evidence submitted, to consider whether a compelling case has been made in the public interest, balancing the public interest against private loss.

22.4.2 The Panel understands, however, that the DCOs deal with both the developments (the Application Project and the TAMO) and

[37] Planning Act 2008, Guidance related to procedures for compulsory acquisition (CLG, 2013)

compulsory acquisition powers. The case for compulsory acquisition powers cannot properly be considered unless and until the case for either the Application Project or the TAMO or both has been made. The Panel has shown in Chapter 21 of this Report that it has reached the view that development consent should not be granted for either of the two schemes. Should the Secretary of State agree with those conclusions then the case for the powers sought in the DCO falls away.

22.4.3 However, in the event that the Secretary of State takes a different view on either of the two options for development, the Panel has addressed the extent to which the case is made for compulsory acquisition powers necessary to enable the development to proceed. The considerations below apply to both Projects.

THE REQUIREMENTS OF THE PLANNING ACT 2008 (AS AMENDED)

22.4.4 Compulsory acquisition powers can only be granted if the conditions set out in sections 122 and 123 of the PA2008 are met.

22.4.5 Section 122 (2) requires that the land must be required for the development to which the development consent relates or be required to facilitate or be incidental to the development. In respect of land required for the development, the land to be taken must be no more than is reasonably required and be proportionate.[38]

22.4.6 Section 122(3) requires that there must be a compelling case in the public interest which means that the public benefit derived from the compulsory acquisition must outweigh the private loss that would be suffered by those whose land is affected. In balancing public interest against private loss, compulsory acquisition must be justified in its own right. But this does not mean that the compulsory acquisition proposal can be considered in isolation from the wide consideration of the merits of the project. There must be a need for the project to be carried out and there must be consistency and coherency in the decision-making process.

22.4.7 Section 123 requires that one of three conditions is met by the proposal[39]. The ExA is satisfied that the condition in s123 (2) is

[38] Guidance related to procedures for compulsory acquisition DCLG February 2010

[39] (1) An order granting development consent may include provision authorising the compulsory acquisition of land only if the Secretary of State is satisfied that one of the conditions in subsections (2) to (4) is met.
(2) The condition is that the application for the order included a request for compulsory acquisition of the land to be authorised.

met because the application for the DCO included a request for compulsory acquisition of the land to be authorised.

22.4.8 A number of general considerations also have to be addressed either as a result of following applicable guidance or in accordance with legal duties on decision-makers –

- all reasonable alternatives to compulsory acquisition must be explored;
- the applicant must have a clear idea of how it intends to use the land and to demonstrate funds are available; and
- the decision-maker must be satisfied that the purposes stated for the acquisition are legitimate and sufficiently justify the inevitable interference with the human rights of those affected.

HOW THE PANEL EXAMINED THE CASE FOR COMPULSORY ACQUISITION AND OTHER POWERS

22.4.9 The Panel examined the case for compulsory acquisition through -

- First and Second Round Written questions [PD-006 and 011];
- A compulsory acquisition hearing on 22 January 2015;
- Issue-specific hearings on the DCO on 27 November 2014 and 21 January 2015.

THE CASE FOR COMPULSORY ACQUISTION AND TEMPORARY POWERS

22.4.10 The Panel's analysis begins by examining the specific issues raised by affected parties or IPs, as they have a bearing on the wider considerations relating to compulsory acquisition powers. The analysis also looks at the position with regard to Crown land and statutory undertakers' land before considering the validity of the powers sought, with reference to Sections 122(2) and 122(3) of the PA2008.

MEM's objections

Manorial Rights

22.4.11 The Panel understands that the most recent Book of Reference [REP- 4046] includes the manorial rights requested by MEM.

(3) The condition is that all persons with an interest in the land consent to the inclusion of the provision.
(4) The condition is that the prescribed procedure has been followed in relation to the land.

Beckley Farm Plots 144-148

22.4.12 It appears to the Panel that the additional wording in the Construction Traffic Management Plan is intended to overcome conflict at the access currently used by farm traffic. We cannot be certain that the wording overcomes the concerns expressed, as no response was received on the matter from MEM. However, the impact on farming operations is likely to be short term and may be financially compensated for.

22.4.13 It appears to the Panel that the temporary powers and access sought are necessary to enable the construction works to proceed expeditiously and with least interruption to traffic flows on the B3055.

Special Category Land

22.4.14 Section 132 of the PA2008 applies to any land forming part of a common, open space or fuel or field garden allotment. An Order granting development consent is subject to SPP, unless the land (forming the subject of Article 42 of the DCO) will be no less advantageous to affected persons when burdened with the Order rights, than it was before imposition of the rights.

22.4.15 The nature of the rights sought for the Hordle Open Space Land and Beach Open Space Land are described under POS1 and POS2 in the Book of Reference. In essence, the applicant is seeking to install cables using trenchless techniques and retain the cables below ground. The rights are intended to allow access to the open space land to monitor progress of the installation and future access for surveys. This would be undertaken on foot and the use of heavy machinery at the surface is unlikely.

22.4.16 The Panel accepts that impact on the Hordle Open Space Land (Plots 28, 31 and 35) through which the cable route would pass would be limited. More importantly, the right to install, inspect and maintain the cables would not, in the Panel's view, cause the open space to be any less advantageous to the persons in whom the land is vested (Hordle Parish Council) or for any party currently interested in the land. Its use for public access would also continue largely unfettered by the rights. Although the applicant has reached agreement with the Parish Council, powers of compulsory acquisition are necessary to allow for the overriding of any other interest in the land that may exist.

22.4.17 With regard to the Beach Open Space Land (Plots 1 and 2), the applicant raised some doubts about the public status of the beach. It is privately owned but there is some indication that the public may have had access to the land. The level of public access may be limited and discouraged by signage. Nevertheless, public accessibility over Plots 1 and 2 cannot be ruled out and the powers sought warrant consideration under s132 of the PA2008.

22.4.18 As before, we are satisfied that public access to the land would not be prevented nor hampered by the rights sought to be acquired. Similarly, the Panel is satisfied that the level of interference in use of the land as open space by those with in interest in the land would be minimal.

22.4.19 The Panel is not persuaded that the owners of Plots 1 and 2 would be any more disadvantaged by installation of the applicant's cables than they would be if the land was used for a similar purpose by another (as yet unknown and unplanned) electricity operator. The same issues of reduced advantage are likely to arise. In any event, there is no known operator currently interested in the land other than NBDL. This being a narrow, steeply shelving and tidal stretch of beach, renders slim the prospect of uses, besides underground cable installation, coming forward.

22.4.20 Whether the owners (or anyone else with an interest currently in the land) would be financially disadvantaged by the applicant's proposal is immaterial to the considerations under s132(3) of PA2008, as financial value or levels of compensation fall outside the process. However, the Panel is satisfied that provisions are made in the DCO for the payment of compensation.

22.4.21 To conclude, the Panel agrees that the powers sought under Article 42 of the DCO are necessary, should the Secretary of State be inclined to the view that the Project should proceed.

Restrictive Covenants

22.4.22 The need for and legitimacy of restrictive covenants is well established, as shown by the applicant's reference to examples accepted by Secretary of State for equivalent provisions under the Electricity Act [REP-4048] and Transport and Works Orders [APP-042]. The PINS' Advice Note 15 (referred to by the applicant [REP-4030]) accepts the appropriateness of including a power to impose restrictive covenants, and highlights the benefit of the power to secure a continuous protection zone. The Panel also notes that similar provisions are made by the Secretary of State in other similar Orders made under the PA2008[40].

22.4.23 The plots over which restrictive covenants are sought are listed in Schedule 7. The Statement of Reasons [APP-042] confirmed that the applicant is seeking to secure restrictive covenants over that part of the Order land that is required for the permanent cable easement and not the whole of the Cable Corridor. This approach is proportionate to the needs of the operation and accords with the principles of acquiring no more than is reasonably necessary.

[40] The Rampion Offshore Wind Farm Order 2014 and The East Anglia ONE Offshore Wind Farm 2014

The Panel further accepts that the restrictions are necessary for the purposes of protecting the integrity of the Project for which consent is granted. The rights would not go any further than is necessary to achieve this objective. Preventing interference with the proposed development would be in the public interest, if the Secretary of State concludes that the Project should be granted consent.

22.4.24 To avoid any uncertainty as to the legal nature of the rights referred to in the DCO and the Book of Reference, the applicant added words to Article 2(2) which it was said would assist in making it clear that use of the term 'restrictive covenant' within the DCO "*is not intended to import private law concepts which apply to such restrictions, and that its meaning is governed by the statutory instrument itself*." [REP-4030]. The Panel recommends that the wording in the DCO be adopted, as it would clarify that use of the term 'restrictive covenant' is governed by the DCO. The applicant confirmed that similar wording was used in the M1 10a (Grade Separation) Order 2013.

22.4.25 In challenging the legality of restrictive covenants, MEM claimed that a restrictive covenant is only an interest in land if there is identifiable land in the nearby area which would benefit from the covenant. In other words proximity is essential but in this case there is no dominant tenement as the applicant does not own land in the vicinity. MEM referred to Kelly v Barrett [1924] 2 Ch. 379 Clapham in support of their case.

22.4.26 However, we prefer the applicant's arguments on the basis that the Book of Reference identifies that the rights in question are for the benefit of the Offshore Substation land to be acquired as part of the Project, which would become the dominant tenement. Although land subject to restrictive covenants may not directly adjoin the substation land, each parcel along the cable route would have the benefit and burden of neighbouring parcels in terms of cable rights and covenants. The Panel agrees that acquiring the dominant tenement freehold land and owning rights over land required for connections to the substation would ensure that the restrictive covenants would qualify as an interest in land, if indeed the Kelly v Barrett tests were applicable in this case.

22.4.27 As to whether the rights are necessary, given the general law of nuisance, the applicant referred to the House of Lords Case Sovmots Investments Ltd v Secretary of State for the Environment [1979] A.C 144 [REP-4036] where it was said that no rights can be implied if not expressly stated in a compulsory purchase order. The Panel sees no reason why similar principles should not apply here. Resorting to an action in nuisance relies on post-interference litigation to protect the cables, whereas the restrictive covenant would provide certainty to landowners and their successors in title on the restrictions that apply, and that

compensation is available for restrictions that might reduce the value of their land.

22.4.28 MEM called for modification to the wording of covenant BB, as currently it is regarded as being too widely drafted and could prevent normal agricultural activities such as the planting of crops. However, we agree that the sort of activities envisaged would fall in the category of 'de minimis' or would not cause the 'difficulty' intended to be resisted by the right. Thus, we see no reason to qualify the wording as suggested by MEM.

22.4.29 Covenant CC allows for the undertaker to grant consent for certain activities otherwise restricted by CC and such consent should not be unreasonably withheld or delayed. MEM objected to the absence of any redress in the event that consent was withheld or delayed. The Panel notes that CC places the undertaker under an obligation to act in a reasonable manner. Furthermore, Article 41 makes provision for resolving disputes through arbitration should that obligation not be upheld, and compensation would be available for imposing the restrictions. Given these safeguards, we see no requirement to introduce provision in CC for damages or compensation in the event of consent being unreasonably withheld or delayed.

Dorset County Council - Plot 298

22.4.30 The Panel accepts that when measured at right angles to the Order land boundaries, the Cable Corridor width as it passes across the Castleman Trailway would be 40m. However, because of the geometry of the location where the route crosses the Trailway, the width of the land over which the power is sought would increase to 56m. This is inevitable and necessary in the Panel's view [REP-3702].

Plots and interests listed in paragraph 22.2.26

22.4.31 No representations were made by parties that had not reached agreement or not proceeded to completing commercial agreements with NBDL (A Travers, Mr Kyprianou, Meyrick Estate, Dorset CC and Hampshire CC). For reasons explained later, the Panel accepts that the applicant made all reasonable efforts to acquire the rights by agreement and that the rights and powers sought are necessary for construction and operation of the Project.

PCBA and Others - Part 1 Claims

22.4.32 Chapter 18 of this Report examined the scope for claims made against the undertaker in respect of noise generated by operation of the wind farm. The Panel concludes as follows:

"….the Panel's view is that is that the measures provided in the DCO are robust, that the balance of probability is that threshold

noise levels will not be exceeded and notes that additional safeguards are in place through the noise communication and monitoring protocol. On this basis the Panel concludes that it is not necessary for security for compensations to be secured through the DCO."

22.4.33 In other words, the Panel is satisfied that a relevant claim, as defined under s57 of the PA2008, on the basis of depreciation of land value by physical factors caused by use of public works, is unlikely to have a reasonable prospect of success. For the same reasons, the applicant did not modify the Book of Reference to include those alleging to be entitled to a claim and Category 3 status, and the Panel sees no reason to disagree.

CROWN LAND

22.4.34 Given the consent granted by the Crown in the terms described in paragraph 22.1.6 above, the Panel is satisfied that the provisions of S135(1) of the PA2008 are met. Furthermore, consents granted for interests of land held on behalf of the Crown, as scheduled in paragraph 22.1.7 confirms that the requirements of s135(1) would be met in relation to those lands.

STATUTORY UNDERTAKERS

22.4.35 The Statement of Reasons [APP-042] showed that it would not be necessary to replace the statutory undertakers' lands over which rights are sought for the Project. It was submitted that the interests sought could be purchased (and not replaced) without serious detriment to the carrying out of the respective undertakings. Nothing in the evidence submitted or at the examination contradicted that view.

22.4.36 Section 138 of the Act, engaged by Article 33 of the DCO, permits compulsory acquisition of land or rights of undertakers or enable the applicant to extinguish or relocate their rights or apparatus. By the end of the examination National Grid Electricity Transmission plc and Perenco UK Ltd. had not withdrawn their objections, as they were waiting for the agreements to be confirmed formally. The Panel anticipates successful conclusions to the agreements of these two statutory undertakers to Protective Provisions. We were not informed by the parties of situations arising that might affect the exercise of their duties or powers as statutory undertakers. Similarly the Panel does not anticipate any difficulties with agreements being reached with Sembcorp Bournemouth Water Limited, Southern Gas Networks Plc or Telefonica Ltd. The Secretary of State may need to satisfy herself of the final position with regard to these statutory undertakers before issuing a decision.

THE NEED FOR THE LAND OR RIGHTS TO BE ACQUIRED

22.4.37 The applicant's case in the Statement of Reasons (and as summarised in paragraphs 22.2.1-22.2.12 of this Chapter) has demonstrated sufficiently to the Panel's satisfaction that the land and rights sought are necessary for the construction and operation of the Project. This includes the plots for which the applicant was unable to reach agreement or proceed to commercial agreement, as identified in paragraph 22.2.26. Furthermore, during the course of the examination the applicant provided adequate justification for acquisition of individual plots and rights that were disputed.

22.4.38 The width of the Cable Corridor formed the subject of some dispute in relation to visual impacts. However, as the applicant explained [REP-3313], factors such as having access to the haul road, temporary soil storage areas, cable trench widths, cable circuit separations areas, additional working areas and health and safety issues provide sound justification for the total Cable Corridor width. The Panel does not consider that the extent of the land over which powers are sought would be more than is reasonably required; it is proportionate to the needs of the Project.

ALTERNATIVES TO COMPULSORY ACQUISITION

22.4.39 The DCLG Guidance requires that the applicant should be able to demonstrate to the satisfaction of the Secretary of State that all reasonable alternatives to compulsory acquisition (including modifications to the scheme) have been explored.

22.4.40 Chapter 4 (section 4.3) of this Report examines the applicant's selection process and the alternatives considered for the cable route, Landfall and Onshore Substation sites. We concluded that alternatives had been explored to the extent required by policy. As confirmed above, the evidence shows that the applicant is not seeking to acquire rights in land any more than is strictly necessary.

22.4.41 The Panel is also satisfied that the applicant has been diligent in seeking to acquire interests through voluntary agreements. The efforts have proved successful in that a substantial number of interests (84% of landowners and occupiers) were secured by negotiation.

22.4.42 The applicant provided details of the approach taken to establish land ownership and other interests. The vast majority have been identified. Nevertheless, the Panel agrees that there is no alternative to the range of acquisition or temporary powers which are necessary where rights or ownership cannot be secured by way of private treaty, including those vested in persons unknown. Our conclusions in relation to the Beach Open Space Land and

restrictive covenants confirm the acceptability of the approach in the DCO.

22.4.43 The Panel concludes that the applicant has explored all reasonable alternatives to compulsory acquisition and no other credible alternative could be identified.

AVAILABILITY AND ADEQUACY OF FUNDING

22.4.44 In accordance with DCLG Guidance the applicant submitted a Funding Statement [APP-043] which was revised [REP-3675] in the light of the introduction of Article 43 (formerly Article 44).

22.4.45 The Funding Statement cited total construction costs of £3 billion and an estimated cost for property acquisition of £15 million but was short on detail. The applicant confirmed that commercial sensitivity precluded the disclosure of detailed costs estimates, especially in relation to land assembly.

22.4.46 Save for PCBA alleging that a shortfall would arise from s57 claims (addressed above), the figures were not challenged. The applicant claimed that the level of funding is very small in percentage terms for the overall Project and that the parent companies understand the costs of land assembly. The Panel can find no reason to question the applicant's acquisition estimates, particularly as completed agreements with 85% of owners/occupiers would provide a reasonable understanding of likely costs. The construction costs are comparable to the industry's review of capital costs, and were not disputed.

22.4.47 The Funding Statement [REP-3675] showed that one of the parent companies, Eneco UK, has a Scottish onshore wind portfolio and in November 2013 the company acquired its first solar project in the UK. The second parent company, EDF Group is developing its renewable portfolio in the UK through a joint venture between EDF Energy and EDF Energies Nouvelles (EDF EN). EDF EN is a global renewable developer and operator with over 6GW installed gross capacity and 1.5GW of assets under construction worldwide. The applicant explained that the Project is intended to be independently financially viable within the framework of the electricity market instigated by the Secretary of State.

22.4.48 The Funding Statement also concluded that the reputation, experience and support of its parent company would provide NBDL with the ability to procure the financial resources necessary to fund the works authorised by the Order. There was no indication that the required funding would not be available. EDF and Eneco are said to be experienced developers and operators of offshore wind farms and understand the level of costs required for construction and acquisition. EDF recently completed the 63MW Teeside offshore project and Eneco has experience of

operating and constructing offshore wind farms in the Netherlands.

22.4.49 At the hearing the applicant confirmed that the parent companies have significant experience of large infrastructure. While the Project is of a larger size than their previous offshore wind farm schemes, shareholders are frequently required to provide guarantees or other commitments of funding for a similar level. It was not envisaged that the size of guarantees being sought was in excess of what was normally expected of shareholders in relation to their previous developments. Based on the information provided by the applicant, the Panel sees no reason to doubt that the relevant companies are of sound financial standing; the matter remained largely uncontested during the examination.

22.4.50 PCBA suggested that appropriate guarantees for the decommissioning costs need to be in place before consent is granted. The applicant confirmed the Secretary of State would issue a decommissioning notice and a decommissioning plan would have to be submitted before construction starts (Requirement 7). As part of that process guarantees and securities would need to be in place. If financial security cannot be provided then construction could not commence. With the pre-construction controls in place the Panel is satisfied that the Project could not proceed without the Secretary of State being assured of sufficient securities in place to fund the decommissioning.

22.4.51 At the time of the application NBDL proposed unilateral planning obligations to the relevant County Councils [Annex 4 and 5 to Funding Statement APP-043] to guarantee funding for acquisition. However, concerns expressed by Dorset County Council in its LIR [REP-2678] and the approach adopted by the Secretary of State in the Hornsea One Offshore Wind Farm Order led to the inclusion of Article 43 (Guarantees in respect of payment of compensation) at Deadline V stage.

22.4.52 The article provides for a form of guarantee to be given to the Secretary of State before compulsory acquisition and related powers are exercised. The applicant explained that the effect of the article was to provide an absolute bar on the exercise of compulsory acquisition powers until the Secretary of State was satisfied that there was a reasonable prospect of the necessary funding for compensation being in place [REP-3643].

22.4.53 The evidence substantiates the ability of the company to deliver the Project and nothing in the funding arrangements described are out of the ordinary for this type of project. The liability for compensation is not substantial in relative terms and would not threaten the financial security of the companies involved.

22.4.54 Although at the hearing the applicant conceded that the mechanism for guaranteeing payment of compensation had not been tried and tested, there is a precedent for Article 43 and its adoption provides further guarantee that funding for compensation would be forthcoming. There was no indication from the applicant or disputed by the majority of IPs that there were financial impediments to the powers being exercised within the five years statutory timeframe.

COMPELLING CASE IN THE PUBLIC INTEREST FOR COMPULSORY ACQUISITION

22.4.55 The Panel's conclusions below on the public interest and human rights issues are predicated on the Secretary of State finding that the national need for a Project of the type that is the subject of the application represents a substantial public interest argument in its favour, as noted in paragraph 22.4.3.

22.4.56 In looking at the extent to which private interests would be affected the Panel recognises that the onshore element of the project has been designed so that the majority of works would take place beneath the ground. The cable route selected seeks to minimise or avoid urban areas, residential properties and utilities. The extent of any private loss has therefore been mitigated both through the selection of the route and the undergrounding of the cables.

22.4.57 The ExA considers that the applicant would be making minimum use of compulsory acquisition powers through the exercise of temporary and permanent powers to acquire new rights instead of freehold interests where possible, thus minimising the impact on individual owners. Use of restrictive covenants provides appropriate protection with the minimum necessary interference with owners of the land and limits the scope of the required acquisition.

22.4.58 The majority of interests sought have been acquired through voluntary agreement. The land over which the powers are sought is predominantly agricultural or pasture which would be returned to its former uses. The interests sought are expressed in terms of the 'least rights' necessary to construct and operate the Project. All reasonable alternatives to compulsory acquisition have been explored. The factors identified above demonstrate the extent to which the applicant has sought to minimise use of acquisition powers.

22.4.59 In the view of the Panel the applicant has demonstrated sufficiently and conclusively that the land and rights sought are necessary for the construction and operation of the Project. The purpose for each of the plots in the Book of Reference is clearly defined and the need for the development in each of the plots has been demonstrated.

THE CASE FOR OTHER LAND POWERS

22.4.60 In respect of the powers for temporary possession and other rights over land as contained in the DCO, the Panel considers that these are necessary and reasonable for the construction of the Project.

HUMAN RIGHTS CONSIDERATIONS

22.4.61 In assessing whether there is a compelling case in the public interest for the land to be acquired compulsorily or for permitting the interference in interests and rights through the DCO, it is also necessary to consider the interference with human rights which would occur if compulsory acquisition or other powers over land or interests were granted.

22.4.62 The European Convention on Human Rights was incorporated into domestic law by the Human Rights Act 1998. The Statement of Reasons [APP-042] identifies the following as being relevant:

- Article 1 of the First Protocol (the peaceful enjoyment of possessions and not to be deprived of possessions except in the public interest and subject to the conditions provided for by law and by the principles of international law)
- Article 6 (fair and public hearing within a reasonable time by an independent and impartial tribunal)
- Article 8 (right to respect for private and family life, home and correspondence)

22.4.63 Article 8 would be engaged to the extent that gardens or access to them would be necessary. Article 1 would be engaged in the acquisition of agricultural land and businesses.

22.4.64 At the end of the examination there remained only a handful of objections from affected parties to the applicant's acquisition of land and rights. The Panel has addressed those individually and considered the individual rights interfered with. We are satisfied that, in relation to Article 1 of the First Protocol and Article 8, the proposed interference with those rights would be for legitimate purposes that would justify such interference in the public interest. The extent of that interference would be proportionate. In reaching this conclusion, we have had regard to the compensation to which those individuals would be entitled.

22.4.65 In relation to Article 6, the applicant has consulted the persons set out in the categories contained in s44 of the PA2008, which include owners of the land subject to the compulsory acquisition and other powers sought. All affected parties were given the opportunity to express their concerns during the course of the examination through written representations, and a hearing was held. By the end of the examination no representations were made on the basis that rights under Article 6 had not been upheld and we are satisfied that its requirements have been met.

CONCLUSIONS

22.4.66 If the Secretary of State concludes that the case for the Project is made, the Panel considers that:

- the need to secure the land and rights required and to construct the development within a reasonable timeframe, and to ensure that the development would remain operational, represents a significant public benefit to weigh in the balance;
- the private loss to those affected has been mitigated through the selection of the application land; the undergrounding of the cables and the extent of the rights and interests proposed to be acquired;
- the applicant has explored all reasonable alternatives to the compulsory acquisition of the rights and interests sought. There are no alternatives which ought to be preferred where compulsory acquisition powers remain;
- adequate and secure funding would be available to enable the compulsory acquisition within the statutory period following the Order being made;
- that an appropriate framework for compensation exists, and
- the proposed interference with the human rights of individuals would be for legitimate purposes that would justify such interference in the public interest and to a proportionate extent.

22.4.67 If the Secretary of State is minded to accept the Project on the basis of its compliance with national policy, there would be a compelling case for the compulsory acquisition powers sought in the Order. The proposal would comply with s122(3) of the PA2008 and that other land related powers in the Order would be necessary and justified for the Project to proceed.

23 DEVELOPMENT CONSENT ORDERS AND RELATED MATTERS

23.0 INTRODUCTION

23.0.1 The Application Project Development Consent Order (DCO) was originally submitted on 10 April 2014, with the original application documents [APP-040]. It has been superseded by five further versions during the course of the examination, as follows; Version 2 [REP-3170], Version 3 [REP-3222], Version 4 [REP-3490], Version 5 [REP-3643] and finally Version 6 [REP-4030] submitted on 6 March 2015. In addition two versions of the Turbine Area Mitigation Option (TAMO) DCO have been issued by the applicant, Version 1 on 2 February 2015 [REP-3646] and Version 2 on 6 March 2015 [REP-4031].

23.0.2 This Chapter seeks to explain the process by which the DCOs (including the Deemed Marine Licences (DMLs)), have been amended and the rationale behind the changes made by the applicant. It will also set out the ExA's proposed changes to the DCO introduced between Versions 5 and 6 and the alterations to the applicant's final version which the Panel would recommend to the Secretary of State, should she choose to approve the application. This chapter will not make recommendations in relation to the outcome of the examination in any other respect.

23.0.3 The applicant chose to make amendments to the DCO as the examination progressed through its various stages and deadlines, responding to issues raised by the Panel and by IPs. Consequently Version 1 was issued with the application and Version 2 followed the receipt of Relevant Representations and Responses to the ExA's first round of questions [PD-006] at Deadline II. Version 6, the final draft from the applicant followed the receipt of and its response to the ExA's version of the DCO [PD-013] at Deadline VII.

23.0.4 On the advice of the ExA the applicant did not produce a DCO for the TAMO until Deadline VI by which time the ExA had issued its procedural decision [PD-009]. The second and final version of the TAMO DCO was also issued as a response to Deadline VII.

23.0.5 For the sake of clarity the ExA has produced two versions of the DCO, one for the Application Project and one for the TAMO. Should the Secretary of State be minded to recommend approval for the wind farm she has the opportunity to adopt either the Application Project or the TAMO. The ExA's recommendation is contained in Chapter 24. The final versions of the DCO as recommended by the ExA are appended to this report at Appendix A.

23.0.6 The following section of this chapter summarises and justifies changes made to the DCO during the examination and by the ExA by reference to the various elements of the Order.

23.0.7 The DCO is structured into a number of Articles, Schedules and Parts as follows;

- Articles- these contains the provisions in relation to the Order for interpretation, nature and benefit of the Order, other provisions, rights and powers and apply to both the Application Project and the TAMO
- Schedules – these describe the project and the rights necessary to implement it including the works provisions, acquisition of land, principal powers, Deemed Marine Licences and protection for statutory undertakers. Where there are differences between the Application Project DCO and the TAMO DCO, these are set out in section 23.3 below.
- Parts – these are subsections of the Schedules

23.0.8 The DCO was examined both through written questions and issue specific hearings (ISH). The hearings dealt with broader strategic questions initially and focused on more detailed issues towards the end of the examination. At Deadline VII the ExA produced its own version of the DCO in an attempt to resolve some areas of contention and uncertainty, and to incorporate wording proposed by statutory bodies. The applicant was able to clarify its position in relation to these proposed changes and the ExA is, as a result, able to recommend wording to the Secretary of State, which it believes is appropriate.

THE DEVELOPMENT CONSENT ORDER

23.1 ARTICLES

23.1.1 The Articles of the DCO set out the principal powers to be granted if the development is to be consented. Article 2, entitled 'Interpretation' provides the definitions of words or phrases that are critical to the meaning of the Order. A number of these have been subject to representation and amendment. Sections of the DCO not referred to below were largely uncontentious.

23.1.2 The definition of 'commence' was subject to a number of concerns. In Version 2 of the DCO the applicant chose to amend the definition to bring it into line with the decision on the East Anglia One Wind Farm Order 2014. However the Panel was aware that Secretaries of State in different departments have taken a variety of approaches to this definition, for example in the Decision Letter for the Daventry International Rail Freight Interchange Alteration Order, and in the Panel's version of the DCO, proposed that the definition be removed. The rationale for this was that, as written by the applicant in Version 5, the definition appeared to permit significant elements of the

development to commence before relevant approvals had been obtained from the planning authority under the requirements. The applicant rejected this proposal suggesting that removing the listed exemptions would create a "*circular restriction whereby the Project cannot commence until a particular requirement is discharged, but in order to do so activities must be carried out which are not excluded from the definition of commence."* [REP-4033].

23.1.3 However the applicant has not provided convincing justification for certain exemptions such as site clearance, demolition work, remedial work in respect of contamination or the diversion and laying of services. Given that the beginning of development is defined in the Planning Act the Panel is minded to recommend removal of the definition of 'commence'. However an alternative, that has not been put to the applicant, would be to adopt the wording used in the DCO in Appendix A. It defines 'commence' firstly in relation to marine activities which are not covered by the Planning Act and secondly in terms consistent with that Act, by excluding only those operations which do not constitute significant development

23.1.4 The definition of 'maintain' was also subject to question by the ExA and the version used in the Rampion Offshore Wind Farm decision was proposed in the Panel's version of the DCO. The Panel agrees that the applicant's wording should remain unchanged accepting the argument that the revised wording failed to mention the meteorological mast and achieved no greater clarity than the original.

23.1.5 Article 2(2) was reworded in Version 6 of the DCO, in accordance with wording suggested by the applicant [REP-4030]. The Panel recommends Article 2(2) in the form suggested, as it clarifies the legal nature of the rights to be acquired.

23.1.6 An amendment to Article 3 (Development Consent etc granted by the Order), proposed by Bournemouth BC, introducing an operational life of 25 years was rejected by the applicant because, it argued, control over the Project's duration was contained in Requirement 7 (Offshore Decommissioning) and is consistent with Secretary of State approaches elsewhere. Bournemouth's argument had been extensively set out in its LIR and its representations in response to Deadline VI responses [REP- 3971]. It argued that the fact that there would be a decommissioning plan does not ensure that the turbines would be dismantled after 25 years of operation. The concern was prompted by references made to the 25 year life span of the project in the Environmental Statement, eg Project Description Volume A Chapter 2 (Introduction) [APP-063]. Furthermore Bournemouth BC claimed that "*most, if not all, of the Environmental Statement findings are based on an operational life of 25 years*." Given that the operational phase of the wind

farm is assumed to commence post-completion of the construction phase and that there is no requirement to complete the installation of the turbines, there is a possibility of an open-ended operational life span.

23.1.7 The ExA is sympathetic to the arguments of Bournemouth BC and agrees that little weight should be attached to the notional 25 year life span of the project, given the options for non-completion of the construction phase and the uncertainties of the long term future of the turbines and the possibilities of their lives being extended, something not ruled out by the applicant. However, given the difficulties of defining the commencement of operations and the uncertainties of life span it does not appear practical to introduce a requirement restricting the life of the wind farm to 25 years.

23.1.8 The ExA asked the applicant why it had taken a bespoke approach to Article 6 (Procedure in relation to certain approvals) and Schedule 15 (Procedure for Discharge of Requirements) and why the statute applying to planning conditions cannot apply. The applicant responded that it found this approach useful and consistent with other DCOs. The ExA is of the view that the approach taken at Dogger Bank Creyke Beck, which relies on the existing legislation, is best practice and consequently proposes to change the wording in line with Dogger Bank Creyke Beck which is included in the DCO in Appendix A.

23.1.9 Adjustments were made to Article 7 (Transfer of benefit of the Order) in Versions 2 and 3 by the applicant and in response to MMO representations to ensure their notification of transfers of benefit. A further change was considered in the EXA's version to ensure that transfer of obligations was included but the Panel accepts the applicant's argument that this eventuality is already covered and takes the view that no further changes are necessary.

23.1.10 A rewriting of Article 10 (Abatement of works abandoned or decayed) was proposed in the ExA's version of the DCO to bring it in line with Dogger Bank Creyke Beck. The applicant rejected this change, because it argued that the article concerns only the offshore structures and that it was compatible with decisions on other offshore wind farms. Nevertheless, the Panel's view is that the replacement wording should be adopted because it extends the Secretary of State's powers to remove all the offshore works, including cabling, should she consider it necessary, not just the structures. This is reflected in the DCO in Appendix A.

23.1.11 Article 13 (Crown Rights) was revised on the advice of Crown Estates in Version 4 in order to clarify the effect of the DCO on Crown land.

23.1.12 Article 14 (Defence to proceedings in respect of statutory nuisance) of the applicant's versions of the DCO was subject to proposed changes by the local authorities, criticism from IPs and the ExA questioned the need for part of this Article in its DCO. While this was opposed by the applicant who considered the Article provided useful clarification, the Panel has concluded that sufficient controls and mitigation measures have been secured in the DCO for it to be satisfied that it is not necessary to dis-apply any of the defence of statutory authority provided by the Planning Act (2008). In fact the Panel is concerned that the proposed Article 14 could serve to confuse or extend defences under the Environmental Protection Act (see paragraph 18.3.144). Therefore, the Panel recommends deletion of this article. Consequently, all articles numbered above 13 have been altered in the remaining sections of this Chapter to take into account the deletion of Article 14 (Defence to proceedings in respect of statutory nuisance).

23.1.13 Articles 14 (Street works) and 17 (Access to works) were amended by the applicant after consultation with the Highways Agency in Version 2, to ensure coverage of the A31 and include the relevant highway authority. Article 19 (Discharge of Water) was similarly adjusted after consultation with the Environment Agency (EA) to correct the distance from a main river for EA permission. The Panel is of the view that these relatively minor amendments are acceptable and clarify the DCO.

23.1.14 Article 25 (Compulsory acquisition of rights) was amended by the applicant in Version 5 in response to the ExA's second round of questions and further to amendments made in Version 2. These changes involve amendments of wording in relation to plots not listed in Schedule 7. In Version 6 an additional amendment was made to this Article in respect of obstruction to the highway following representation by Dorset CC. These changes have been accepted by the Panel.

23.1.15 Article 31 (Temporary use of land for carrying out the authorised project) was subject to questioning by Dorset CC over concerns that the article could lead to temporary possession of land becoming permanent and also that the period of notice should be amended to 28 days. These changes were included in the ExA's version of the DCO. The applicant amended this article previously in Version 2 but did not agree with Dorset CC's proposal or the change in time period of notice. This is accepted by the Panel, because the suggested amendments would have created the situation where temporary possession notices would have had a longer notice period than serving notices to treat and entry for permanent acquisition.

23.1.16 Article 39 (Certification of plans) was amended by the applicant at Versions 2 and 5, to include additional certified documents,

including the in-principle monitoring plan. This is accepted by the Panel.

23.1.17 Article 42 (Special category land) was amended at Version 2, in response to the ExA's questions, to match the definitions of "*affected persons*" in the 2008 Act and is addressed in detail in the Compulsory Acquisition Chapter 22.

23.1.18 The ExA questioned the time period proposed in Article 43 (Guarantees in respect of payment of compensation) in its version of the DCO. The article was introduced at Version 4 of the DCO. The Panel is satisfied with the applicant's response, at Deadline VII [REP-4034], and proposes no change to Version 6.

23.1.19 Article 44 (Development consent obligation – enforcement) was introduced by the applicant at Version 5 of the DCO to provide a mechanism for the enforcement of payments under s106. The ExA questioned both the need for this article and why it was restricted to financial obligations. The Panel is satisfied with the applicant's answers received at Deadline VII [REP-4034], and proposes no change to the DCO.

23.2 SCHEDULES

SCHEDULE 1 –AUTHORISED PROJECT

Part 1 – Authorised Development

23.2.1 Part 1 of Schedule 1 defines the works both onshore and offshore. The onshore works are described by local authority jurisdiction while grid coordinates are given for the offshore works.

23.2.2 The extent of the wind farm and the number of turbines, as set out in paragraph 1, Work No. 1, was at the centre of much opposition before and during the examination. It is also the most significant difference between the Application project DCO and the TAMO DCO (both in Appendix A).

23.2.3 In the ExA's version of the DCO [PD-013] the Panel tested the applicant's response to imposing a minimum threshold of electricity output and minimum number of turbines by introducing a minimum capacity of 630MW and 79 turbines. These figures were chosen because the applicant had previously indicated that the scheme would still be viable at that level. Imposing a minimum threshold reflected a concern expressed by a number of IPs that the benefits of the scheme were essentially linked to the generation of electricity and creation of jobs and that these benefits would fall proportionately if the wind farm were not constructed to full or near full capacity. The Panel recognised that the balance of benefits against adverse impacts was at the core of the decision making process for this scheme. We chose to test the applicant's response to imposing a lower limit on the output

capacity of any future scheme in recognition that the beneficiaries of any DCO would not be obliged to build out to full capacity, or any minimum level of generation, subject to their own assessment of viability Furthermore, the reduced level of output would not necessarily lead to a commensurate reduction in levels of harm.

23.2.4 However the applicant, in its response did not agree to the proposed amendment on two grounds; firstly that seeking to impose a minimum number of turbines "*would cut across the longstanding principle that it is lawful for less than the full extent of the consent to be constructed*" (Applicant's Written Response to Deadline VII – appendix 3)[REP-3225]; secondly that the NPPG states that "*conditions requiring a development to be carried out in its entirety will fail the test of necessity.*" The ExA accepts this argument that setting minimum levels for capacity and turbine numbers is neither reasonable nor enforceable

23.2.5 Schedule 1 was amended by the applicant at Version 2 to increase the extent of trenchless undergrounding of onshore cables to include the Dorset Heathlands SPA, A338, St Leonards and St Ives Heaths SSSI and Moors River.

Part 3 - Requirements

23.2.6 Requirement 1 (Time limits) was altered following representations by Poole and Christchurch Bays Association (PCBA) at Version 6. The phrase "*or such longer period as the Secretary of State may hereafter direct in writing*" was added. This is consistent with other DCOs granted by the Secretary of State.

23.2.7 It was noted by the ExA, in the applicant's Draft DCO Mitigation Option (version 2) [REP-4031] that the coordinates table in Requirement 3 points 4,51,52,53,54,55,56,60, 61 appear to have the latitude and longitude coordinates transposed. The ExA has corrected this.

23.2.8 Requirement 5 (Detailed offshore design parameters) was amended twice by the applicant during the course of the examination, at Version 3 when cable protection measures maximum figures were introduced and Version 4 when the figures were updated.

23.2.9 Requirement 6 (Detailed offshore design parameters) was amended on a number of occasions. In Version 2 in response to a question from the ExA, [PD-006] which introduced a restriction on the size of the meteorological mast monopile size. Further changes were made for the purposes of clarification in relation to foundation parameters at Versions 4 and 5.

23.2.10 The ExA's first round of question (4.1.9) [PD-006] on scour protection followed by representations by MMO at Deadline IV

[REP-3363] led to two additional alterations to Requirement 6 in respect of scour protection figures at Versions 2 and 4.

23.2.11 In the ExA's version of the DCO a 25 year period for decommissioning was introduced to Requirement 7 (Offshore Decommissioning), consistent with proposed amendments to Article 3 (above). The applicant was also consistent in deleting this element of the requirement and the Panel took the view that it could not impose such a restriction. The arguments surrounding this decision are set out in paragraph 23.1.7 above.

23.2.12 Also in Requirement 7 the ExA questioned whether guarantees were in place for the costs of decommissioning. The applicants confirmed that this was the responsibility of the Secretary of State when she requests a decommissioning programme.

23.2.13 Requirement 8 (Offshore lighting). The applicant was asked to respond to representations from New Forest National park Authority (NFNPA) and Wessex Astronomical Society to alter this requirement. The applicant declined to make such an amendment, referring back to its Response to Deadline VI [REP-3643] where it explained that the Air Navigation Order and Regulations allow for offshore aviation lighting to have zero spillage below the horizontal plane. While the applicant is not aware of any lighting manufacturers currently supplying lights with zero light spillage, that it will work with lighting manufacturers at the detailed design stage to minimise potential visibility of aviation lights installed to wind turbines. The Panel accepts that this is the best option at this stage and does not propose alteration to the wording of the DCO.

23.2.14 Requirement 9 (Air traffic services at Bournemouth Airport) has been the subject of on-going discussions between the applicant and the airport authorities. The applicant made changes to Version 2 of the DCO and subsequently in response to a proposed change by the ExA in its version of the DCO, suggested a further change. This would ensure, should the Secretary of State be minded, 'no construction' of any turbine would commence before the Secretary of State is satisfied that the appropriate mitigation would be implemented. This option has not been included in the DCO (Appendix A) because the Panel is satisfied with the 'no operation' restriction, but the option of adopting the alternative wording remains open to the Secretary of State.

23.2.15 Requirement 10 (Port travel plan) was introduced to Version 2, by the applicant, in response to the ExA's first round of questions, specifically question 1.23(b), which asked about the impact of onshore traffic during the construction period [PD-006].

23.2.16 Requirement 12 (Detailed design approval onshore) was subject to questions from the ExA and subsequently to representations by Dorset CC and East Dorset DC. At Version 2 the applicant

introduced changes to clarify the requirement but the ExA suggested further alterations in the DCO which related more specifically to the Green Belt location of the substation.

23.2.17 The applicant rejected these proposals on the grounds that new wording had been introduced into the Design and Access Statement (DAS) to reflect the Green Belt location. The Panel takes the view that the amendments to the DAS are insufficiently robust and believes that a statement of design principles submitted to and approved in advance by the LPA is the minimum required in a situation where harm to the openness and character of the Green Belt is likely to result. Consequently the ExA recommends to the Secretary of State that its wording of Requirement 12 should be adopted and is included in the DCO accordingly.

23.2.18 The applicant made changes to Requirement 13 (Highway access) at Version 1, partly in response to representations from the Highway Authority and is accepted by the ExA.

23.2.19 Requirement 14 (Public rights of way) was amended by the applicant at Version 3 in response to Dorset CC's LIR representation on access to open land. Subsequently, the ExA proposed changes to the wording of the requirement to cover the Castleman Trail and to include details of alternative routes together with greater publicity. The applicant did not accept these proposed changes and the Panel is satisfied with the explanation for not including such changes, given that the Castleman Trail would be unaffected by the proposal, due to the use of trenchless installation methods

23.2.20 Requirement 15 relates to the Construction environmental management plan (CEMP). Following representations from the EA changes were included in Version 2 requiring consultation with EA and NE before approval by the relevant LPA and to include flood risk management. Further changes proposed in the ExA's version of the DCO were rejected by the applicant. The Panel is satisfied with the reasons given for no further change to the DCO at Version 6.

23.2.21 Requirement 19 (Construction traffic management plan) was altered at Version 2 to make the discharging body the relevant Highway Authority. The ExA accepts this proposed change is appropriate.

23.2.22 The name of the Landscape and ecological management plan (LEMP) (Requirement 20) was changed to include the word "*Landscape*" at Version 2 and also to include consultation with the EA at its request. The ExA, having previously questioned the minimum girth size of replacement trees for felled Tree Preservation Order (TPO) trees, proposed in its version of the DCO that the wording should refer to "*a tree of size and species*

to be approved in writing by the LPA". Although this change was opposed by the applicant, the Panel believes that it is appropriate in the special case of TPO felling that the LPA should have the final say in terms of replacement and recommends its wording.

23.2.23 Requirement 21 (Noise and vibration management plan) was altered for Versions 2 and 4 and was the subject of proposed changes in the ExA's version of the DCO. The ExA had suggested that a restriction might be included on the number of days that construction noise might be experienced, but following the applicant's explanation [REP-4033] on the transitory nature of the works, decided that this was not necessary. Also, the need for advanced notice of works being provided was considered, but not felt to be necessary due to other communication plan provisions.

23.2.24 Requirement 23 (Landscaping design and management plan) was changed at Version 4 in response to the EA's request to include a surface water management scheme in the DCO. The Panel, in its version of the DCO, proposed a change to the period in which the replacement of planted trees would be required, from five to ten years. Ultimately the Panel accepts the applicant's argument set out in its Response to Deadline IV (part 2) [REP-3313] that a five year period was sufficient.

23.2.25 The Water and sediment management plan, Requirement 24 was changed at Versions 2 and 4 as a result of representations from the EA and New Forest District Council to include details of controls on bentonite leakage and discharge into water courses. The ExA considers the wording is now appropriate.

23.2.26 Details of Requirement 27 (Watercourse crossings) were changed at Versions 2 and 4 at the request of EA in order to ensure appropriate consultation with the lead local flood authority and to include monitoring during construction in the scheme for watercourse crossings. The ExA is content with this change.

23.2.27 Requirement 28 (Construction hours) was subject to proposed changes by the Panel in its version of the DCO. The ExA recommends the addition of the "*agreement of the local planning authority*" to the wording of paragraph (3) relating to the activities excluded from working hours restrictions. The ExA queried whether construction noise limits should be added, but is content that an agreed mechanism is in place for these to be established subject to LA approval.

23.2.28 Requirement 29 (External lighting and control of artificial light emissions) was changed at Version 4 at the request of EA. Requirement 30 (Control of noise during operational phase) was altered at Version 2 following agreement with EDDC and CBC. Requirement 33 (Interference with telecommunications) was added following questions from the ExA. All changes to these three requirements are accepted.

23.2.29 Requirement 36 (Amendments to approved details) was changed in the ExA's version of the DCO [PD-013], in order to limit the scope of any amendments to approved details. The applicant has accepted these as a rationalisation of the wording and included these in Version 6. The DCO is worded accordingly.

23.2.30 The ExA proposed in its version of the DCO to include a new requirement in relation to controlling public exposure to onshore electro-magnetic fields (EMF). This was rejected by the applicant as EMF levels would fall well below the proposed prescribed limit, that it undertook to comply with the International Commission on Non-Ionizing Radiation (ICNIRP) guidelines and that a similar approach had been accepted by the Secretary of State for the Rampion DCO. The ExA accepts that a limit does not need to be set in the DCO.

Schedules 2 to 12

23.2.31 These Schedules cover matters relating to street works and closure, public rights of way, access to land, acquisition of rights and temporary possession, hedgerows, TPOs and protective provisions. They proved to be uncontentious in the examination.

Schedule 13 – Deemed Marine Licence (Generation Assets) and Schedule 14 (Transmission Assets)

23.2.32 Schedule 13 deals with the generation assets of the licensed marine activities and Schedule 14 the transmission assets. In part 1 definitions and details of the licensed marine activities are set out. Part 2 sets out the conditions to the licence. The two Schedules are identical in most respects. Where there are differences these are identified below.

Part 1 – Licensed Marine Activities

23.2.33 In section 1 in relation to the definition of commence and references to MMO Coastal Offices, changes were made to Version 2 in response to the MMO's Relevant Representations. Furthermore the introduction of an "*in-principle monitoring plan*" and "*outline noise communication and monitoring protocol*" occurred in Version 5.

23.2.34 Further detailed changes introducing site references, wording clarification and grid coordinates were made to Sections 2, 3 and 5 in Versions 4 and 5.

23.2.35 In section 8 wording was included, by the applicant, in Version 5 to address concerns about the scope of 'tailpiece conditions'. These are now restricted in their application following discussions at the ISH and the ExA is now satisfied that this issue has been dealt with.

Part 2 – Conditions

23.2.36 The conditions imposed are described below and are considered by the Panel to be appropriate. Changes deemed to be necessary are also described.

23.2.37 Conditions 1 to 4 set out the design parameters for the wind farm and cabling offshore. The details differ for the two Schedules.

23.2.38 In condition 3 cable protection figures have been included and amended at Versions 3 and 4.

23.2.39 Condition 4 in respect of design parameters has been subject to a number of changes relating to definitions, dimensions and quantities in Versions 2, 3, 4 and 5 as a result of questions from the Panel and representations from the MMO.

23.2.40 Similarly changes have been made to Condition 5 (Notifications and inspections) following representations from the MMO. These involve changes to periods of notification, communication and wording, all accepted by the applicant. Some of the wording now in Condition 5 was previously contained in Condition 6 (Aids to Navigation).

23.2.41 For Condition 6 (Aids to navigation – formerly Condition 7) the original wording was removed at Version 3 and replaced at Version 4 and further amended at Version 5, following consultation with the MMO in order to ensure proper procedures. Similarly Condition 7 (also Aids to navigation - formerly Condition 8) was amended at Version 4 at the request of the MMO to clarify wording.

23.2.42 Condition 8 (formerly Condition 8A – Aviation safety) was included in Version 2 following Statements of Common Ground (SoCGs)with (SoCG) with MoD and Bournemouth Airport. Further amendment was made in Version 6 to confirm that notifications would be sent to the MMO.

23.2.43 Condition 9 (Chemicals drilling and debris) was significantly amended at Versions 2, 5 and 6, following representations with the MMO and ExA questions. Schedule 14 includes a requirement to undertake a survey of cables once they have been laid.

23.2.44 Condition 11 (Pre-construction plans and documentation) is a long and complex condition. The version contained in Version 6 has been agreed with the MMO and has been subject to further representations from NE, EA and LAs. It covers requirements for a design plan for the turbines and meteorological masts, a construction and monitoring plan, a construction method statement, a project environmental plan, a scour protection management and cable armouring plan, a marine mammal mitigation protocol, a cable specification and installation plan, a written scheme of archaeological investigation, a mitigation

scheme, a diver mitigation plan, an aids to navigation management plan, a coastal monitoring plan, an emergency response and co-operation plan (ERCoP), a noise propagation report, and a noise communication and monitoring protocol.

23.2.45 The part of Condition 11 that was originally contained in Condition 6 (Navigational practice, safety and emergency response) was amended at Version 2 to refer to the MMO rather than the Secretary of State as the enforcing body, and moved from its original position in the DCO at Version 4.

23.2.46 In the ExA's version of the DCO further amendments were suggested, as follows:

- 11(c) deletion of reference to the ES. This was not accepted by the applicant and the Panel accepts the reasoning.
- 11(g) an additional element to the cable specification plan to limit residual magnetic fields. This was not accepted by the applicant and the ExA accepts the reasoning, which is similar to that described above for onshore electro-magnetic fields
- 11(h) (v) the recommended version of the DCO introduces the word "*pre-construction*" to the requirement for monitoring of archaeological finds, for reasons explained in paragraph 10.3.6. This has not been subject to consultation with the applicant and should be subject to consultation by the Secretary of State should she choose to adopt this wording.
- 11(n) of Schedule 13 a noise propagation report which was accepted by the applicant but not that it be subject to consultation with the LAs. However the ExA believes that while it is for the MMO to accept or otherwise the report, this should be done in consultation with the local authorities. Also, as the parameters for the noise propagation report were not agreed before the end of the examination, the ExA feels that this should be subject to approval by the MMO, in consultation with the LAs. Should the Secretary of State choose to include these provisions, the applicant should be provided with the opportunity to respond.
- 11(o) of Schedule 13 the noise communication and monitoring protocol was accepted by the applicant except for a minor amendment by the applicant. However, the ExA has taken the view that further extensive changes to this sub-condition are necessary to ensure that the LAs have the opportunity to comment on the protocol and that a noise limit is required as operational noise levels are likely to be close to thresholds. The idea that the noise consultant's appointment should be subject to LA consultation and that the parameters for the noise propagation report should be approved have not been subject to consultation with the applicant. As the draft noise communication and monitoring plan was not agreed before the end of the examination, and that the LAs should have the opportunity to comment on the

appointment of an independent noise consultant, the ExA feels that these conditions should also be subject to approval by the MMO, in consultation with the LAs.

- The ExA has added an amended version of this as condition 11(n) of Schedule 14 as the works under this schedule also include piling. Similar requirements for the provision of a noise consultant to those under Condition 11(o) of Schedule 13 are also included by the ExA. As the applicant has not been previously consulted on these precise changes the Secretary of State may choose to provide the applicant with this opportunity.
- 11(p) the noise propagation assessment proposed by the ExA in its version of the DCO was not agreed by the applicant and the ExA is satisfied with the response to their proposal.
- The inclusion of a condition covering amplitude modulation proposed in the ExA's DCO, was rejected by the applicant and the reasoning is accepted by the ExA.

23.2.47 In Schedule 14 it was proposed by the ExA that the MMO should consult with the relevant LAs before approving the pre-construction plans of the offshore transmission assets (Condition 11) because of the impact of cable laying at the coast. Although the applicant has resisted this, the ExA believes it is good practice for consultation with the relevant LAs to take place and consequently has amended the DCO to this end.

23.2.48 Further alterations to Condition 11 were suggested for Schedule 14 in relation to the construction method statement (11(c)) and the cable specification and installation plan (11(g)). The applicant has rejected these and its argument has been accepted by the ExA. The ExA proposed in its version of the DCO to include a new requirement, in order to control public exposure to onshore electro-magnetic fields. This was also rejected by the applicant for the reasons set out in paragraph 23.2.30. Consequently no such condition was included.

23.2.49 Changes to Condition 12 (Pre-construction plans and documentation) were accepted by the applicant at Version 5 and proposed changes suggested by the ExA were also accepted by the applicant but moved to Part 1 of the DML.

23.2.50 Condition 15 (Pre-construction monitoring and surveys) was subject to changes initiated by the applicant at Versions 2,3 and 4. Further amendments, suggested by the ExA in its version of the DCO, were accepted by the applicant at Version 6.

23.2.51 Condition 16 dealing with Construction monitoring was amended by the applicant at Version 2 and at Version 6 following changes proposed by the ExA.

23.2.52 Condition 17 (Post-construction surveys) was amended at Versions 2, 3, 4, 5 and 6 following representations from the States of Alderney and the ExA's proposed DCO. There is a difference between the two Schedules with Schedule 14 having no reference to monitoring of the Northern gannet.

23.2.53 Condition 18 (Salmon smolt migration) was amended by the applicant at Version 2 and 3. It sets out a restriction on the period for pile driving and has been agreed with NE, EA and MMO. An earlier condition entitled "*Piling Restrictions*" was deleted.

23.2.54 For Condition 19 (Adult salmon migration), despite prolonged negotiation and changes suggested by the applicant at Version 3 and in response to the ExA's DCO, there has been no agreement between EA, NE and the applicant. Consequently the ExA has decided to impose NE's wording in both Schedules 13 and 14. This differs from the applicant's version in that it refers to a restriction on hours of piling during the salmon migration period rather than the applicant's preference of number of piles. Schedule 14, covering the transmission assets, does not include reference to monopiles.

23.2.55 The Ministry of Defence restriction period is covered by Condition 20. It was included following the SoCG with MoD at Version 2.

Schedule 15 – Procedure for Discharge of Requirements

23.2.56 This schedule has been deleted for reasons explained in paragraph above 23.1.8.

23.3 THE TURBINE MITIGATION OPTION

23.3.1 The DCO for the Turbine Mitigation Option is very similar to the DCO for the Application Project except for the following differences:

- Schedule 1, Part 1 (Authorised Development), section 1, work No. 1 in which the output capacity is reduced to a maximum of 630MW and the number of turbines reduced to 105;
- Work No.2 limits the number of offshore substation platforms to two;
- Works 3A to 74 refer to a maximum of four cables, where cables are mentioned;
- Part 3 (Requirements), Requirement 2 (4) sets out an exclusion zone where no turbine, substation platform or meteorological mast shall be built;
- Requirement 5 restricts the total length of cables and cable protection in line with the reduced scheme;
- Requirement 6 does not include a piled steel monopile exclusion zone;

- Requirement 12 (7) includes reference to a maximum width of cable corridor of 34 metres, except in certain circumstances;
- Schedule 13, Part 1 section 2 (Details of Licensed Marine Activities) reflects the reduced disposal of inert material in the mitigation scheme;
- Section 3 (1), Works No 1 contains details of the reduced scheme;
- Part 2 (Conditions), Condition 1 (Design Parameters) contains reference to the turbine exclusion zone;
- Condition 3 sets out the reduced length of cabling and quantity of cable protection;
- Condition 4 sets out the reduced quantity of scour protection needed and omits the reference to the monopile exclusion zone;
- Condition 19 omits reference to the monopile exclusion zone and has been amended by the ExA as for the Application Project;
- Schedule 14, Part 1 section 2 (Details of Licensed Marine Activities) reflects the reduced disposal of inert material in the mitigation scheme;
- Section 3 (1), Works No 2 contains details of the reduced scheme;
- Part 2 (Conditions) Condition 1 (Design Parameters) contains reference to the turbine exclusion zone;
- Condition 2 refers to the reduced number of offshore substation platforms;
- Condition 3 sets out the reduced length of cabling and quantity of cable protection;
- Condition 4 sets out the reduced quantity of scour protection needed;
- Condition 19 similarly omits reference to the monopile exclusion zone and has been amended by the ExA in line with the Application Project.

23.4 OTHER LEGAL AGREEMENTS/RELATED DOCUMENTS

23.4.1 The development consent agreement contained in the applicant's Written Response to Deadline VIII [REP-4083] was agreed with all local authorities in the area. The applicant provided a Schedule of Compliance with Community Infrastructure Regulations [REP-4051], outlining the nature of each item offered in the planning obligations and its compliance with the tests set out above.

23.4.2 The agreement covers a number of topic areas, as outlined in Section 1.7 of this Report. The appropriateness and necessity for the agreement were tested in Chapters 7, 8 and 12. For reasons given in paragraph 8.3.42, the provisions relating to 'Landscape Funds' should not be taken into account. All other aspects of the agreement meets the NPS EN-1 tests (paragraph 4.1.8) and have been taken into account in our considerations.

23.4.3 The applicant has also committed to a Unilateral Undertaking [REP-4084] which commits to the provision of a Tourism Fund. This is not accepted by the local authorities as mitigation but should be seen as compensation for impacts on the tourism economy. The LAs had argued throughout the examination for far higher levels of compensation and the Panel's views on this are contained in Chapter 12. For the reasons given, the Panel does not find the tourism fund would meet the NPS tests and has accorded it no weight in its considerations.

23.4.4 During the course of the examination the applicant and the local authorities agreed to negotiate a Planning Performance Agreement (PPA) to enable the LAs to carry out their responsibilities in relation to this application. The Panel was not a party to the PPA and consequently its agreement has played no part in the recommendation. However, the Panel is aware that the LAs expressed their contentment with the negotiation during the course of the ISH.

23.4.5 In its Written Response to Deadline VII [REP-4030] the applicant explained it was continuing to consider a package of community benefits to be offered and to work with the LAs and stakeholders to determine what would be appropriate. This package would be in place before the wind farm becomes operational. Such a package is not considered, by the Panel, to be necessary to the determination of the application and consequently plays no part in the recommendation.

23.4.6 During the course of the examination the question of compensatory community payments was raise by a number of IPs and particularly by Meyrick Estate Management Ltd. [REP-2953] who proposed that an article should be included in the DCO to provide for community benefit. While this has not been previous practice in other DCOs, Meyrick Estate argued that such an approach was possible within the terms of the Planning Act (2008) section 120, subsection (4) and that the payment of contributions may be properly included in the DCO and taken into account when weighing the benefits against adverse impacts. Meyrick also quoted DECC's "*Best Practice Guidance for England*" entitled "*Community Benefits from Onshore Wind Developments*" [REP-3633] as a precedent. The applicant's view, as expressed in Written Response to Deadline V [REP-3490] was that unless requirements met the tests of relevance as set out in NPS EN-1 paragraphs 4.1.7 to 4.1.8, they should not be used.

23.4.7 When asked for examples from other DCOs Meyrick quoted instances, such as Knottingly power station [REP-4086] and Rookery South [REP-3633], that were not entirely comparable to the Navitus Bay circumstances. The argument was not accepted by the applicant and the Panel did not consider that sufficient evidence or precedent was provided to warrant the level of community benefits or ownership sought. Consequently the Panel

did not see any merit in pursuing a novel approach when a development consent agreement and Unilateral Undertaking were under discussion, the latter offering compensation for impacts on tourism. The local authorities were content to pursue community benefits through the more traditional route and the idea did not gain any great support from other IPs. While the Panel did not dismiss the merits of Meyrick Estate arguments, the approach of embedding community benefits in the DCO is not recommended.

24 SUMMARY OF OVERALL CONCLUSIONS AND RECOMMENDATION

24.0 SUMMARY AND CONCLUSIONS

24.0.1 These conclusions apply to the Application Project and to the TAMO.

24.0.2 The case against the project is set out in Chapter 21. The Panel's conclusion is that the benefits are not sufficient to overcome the findings against the project. Having regard to all of the matters referred to in Chapter 21, our conclusion is that the matters against making the DCO are not outweighed by the matters in its favour. We find that the case for either the Application Project or the TAMO development is not made out and recommend accordingly.

24.0.3 In reaching this recommendation the Panel has had regard to relevant National Policy Statements (NPSs) and the Marine Policy Statement, 10 Local Impact Reports submitted, matters prescribed in relation to the development and other matters that are both important and relevant to the decision, as required by s104(2) of PA2008.

24.0.4 For the reasons explained in Chapter 9 (paragraphs 9.3.27-9.3.31), the Panel is satisfied that deciding the application in accordance with the relevant NPSs would not lead to the UK breaching its international obligations. Nor would it result in an unlawful action by the Secretary of State, or a breach of any duty imposed on her.

24.0.5 Nevertheless, the conclusions in earlier Chapters show conflict with the NPSs and the Marine Policy Statement for the following main reasons:

- Although the applicant has sought to provide reasonable mitigation where possible and appropriate, there would be a residual significant adverse impact on the qualities underpinning Dorset and Isle of Wight AONBs
- Conflict between conservation of the significance of heritage assets, including a World Heritage Site, and proposals for development would not be minimised or avoided.
- The very special circumstances required to justify the harm occasioned by inappropriate development in the Green Belt and other harm would not exist, as the benefits would not clearly outweigh the harm identified.
- For the same reasons, the exceptional circumstances required to justify granting consent in the New Forest National Park does not exist.

24.0.6 For these reasons the Secretary of State is advised that, because the adverse impacts of either of the development options would

outweigh the benefits, the presumption in favour of granting consent to applications for energy NSIPs (EN-1 paragraph 4.1.2) is not justified in this case.

24.1 RECOMMENDATIONS

24.1.1 For all the above reasons and in the light of the Panel's findings and conclusions on important and relevant matters set out in this Report, the Panel, as Examining Authority under the Planning Act 2008 (as amended), recommends that the Secretary of State for Energy and Climate Change should not make an Order granting development consent for the Application Project or its modification in the form of the Turbine Area Mitigation Option.

24.1.2 Should the Secretary of State disagree with the Examining Authority's recommendation for the Application Project, then the Order should be granted development consent, subject to modifications in the form set out in Appendix A

24.1.3 Should the Secretary of State disagree with the Examining Authority's recommendation for the Turbine Area Mitigation Option, then the Order should be granted development consent, subject to modifications in the form set out in Appendix A.

24.1.4 If the Secretary of State is minded to grant development consent, in relation to the application for compulsory acquisition (CA) within the Orders, the Examining Authority concludes that:

- The applicant has shown that all reasonable alternatives to CA have been explored and that there are no alternative which ought to be preferred.
- The applicant has demonstrated that the extent of land over which powers are sought would be no more than is reasonably required and it is proportionate to the needs of the Project.
- The private loss to those affected would be mitigated to a large degree by limiting the use of CA powers to land essential to deliver the project and by the use of temporary possession powers wherever possible to minimise both land-take and the extent of rights and interests to be acquired.
- adequate and secure funding would be available to enable the compulsory acquisition within the statutory period following the Order being made.
- The proposed interference with the human rights of individuals would be for a legitimate purpose that would justify such interference in the public interest and to a proportionate extent.

24.1.5 Taking these factors together, and only subject to the Order being made, the Secretary of State can be satisfied that there is a compelling case in the public interest for the CA and other powers sought in respect of the land shown on the Land plans. In respect

of CA, the Panel concludes that the proposal would comply with s122(3) of the PA2008.