Appendix F – Hornsea Two – Final submission on alternative solutions under the Habitats Regulations for the Royal Society for the Protection of Birds

The Royal Society for the Protection of Birds

1 April 2019

Planning Act 2008 (as amended)

In the matter of:

Application by Ørsted Hornsea Project Three (UK) Ltd for an Order Granting Development Consent for the

Hornsea Project Three Offshore Wind Farm

Planning Inspectorate Ref: EN010080
Registration Identification Ref: 20010702

rspb giving nature a home

Final submission on alternative solutions under the Habitats Regulations for The Royal Society for the Protection of Birds

10 December 2015

Planning Act 2008 (as amended)

In the matter of:

Application by SMartWind for an Order granting Development Consent for the

Hornsea Offshore Wind Farm – Project Two

Planning Inspectorate Ref: EN010053
Registration Identification Ref: 10031166

Introduction

1. The RSPB considers that it is essential that renewable energy, like all other development, is delivered through the least environmentally damaging schemes. Where funding of renewable energy schemes is constrained the RSPB considers that it is particularly important to prioritise investment towards those schemes which will be the least damaging. This covers issues such as the potential impacts of generating energy from biomass through to the likely impacts on internationally important wildlife sites.

2. This document updates the information provided in section 9 of the RSPB's Written Representation, submitted for Deadline 1. A significant number of figures about renewable energy supply were provided, and this document revises them to reflect the most up-to-date information available before the close of the examination.

3. The document also considers the implications of a number of planning decisions and policy announcements that have been made:

   - The Dogger Bank Teesside A&B Offshore wind farm scheme (2.4 GW) was consented on 5 August 2015.
   - At the same time the developer, Forewind, announced that development of Dogger Bank Teesside C&D (2.4 GW) had been discontinued[1].
   - The Navitus Bay offshore wind farm scheme (up to 0.970 GW) was refused on 11 September 2015. The rejection of this application has important implications for the understanding of how the Government is approaching the issue of alternative solutions, which we will return to below.
   - Updated DECC statistics on new supply to end of Q2 2015

4. In addition the Government have made a number of announcements about future funding of renewable energy schemes which have significantly shifted the context within which decisions on the funding of schemes will be made:

   - 22 July 2015: DECC announced a package of measures to "control the cost of renewable energy", including biomass and solar photovoltaic subsidies under the Renewables Obligation RO), and changes to Feed In Tariff accreditation[2].
   - 27 August 2015: As part of the package announced above, DECC launched a *Consultation on a review of the Feed-in Tariffs scheme*[3], for schemes below 5MW in size, proposing cuts of 76-87% for solar photovoltaic tariff payments. The Government announced that if it was not able to introduce new cost control measures "the only alternative would be to end generation tariffs for new applicants as soon as legislatively possible, which we expect to be January 2016" (para 4).
   - 18 November 2015: The Secretary of State outlined the priorities for the UK's energy and climate change policy for the coming Parliament including specific reference to offshore wind[4]. The Secretary of State then expanded upon this in a speech at the Institution of Civil

[1] http://www.forewind.co.uk/projects/dogger-bank-teesside-c-d.html
[2] https://www.gov.uk/government/news/controlling-the-cost-of-renewable-energy.
[3] https://econsultation.decc.gov.uk/office-for-renewable-energy-deployment-ored/fit-review-2015
[4] Written Statement, Wednesday 18 November 2015, Hansard,

Engineers (also on 18 November): the RSPB notes that the speech did not cover renewable technologies other than offshore wind[5].

5. The implications of these announcements are considered in detail in the section on Government funding below, starting at para 98.

6. In paragraph 2.2.14 of its Planning Statement, the Applicant advances the following contention:

> "In the case of renewables, applications should not be rejected simply because fewer adverse impacts would result from developing similar infrastructure on another suitable site. This is because it is possible that all suitable sites for renewable energy infrastructure may be needed for future proposals (NPS EN-1, paragraph 4.4.3)."

7. The Applicant develops upon this in paragraphs 3.2.2 and 3.2.4 citing DECC's Annual Energy Statement 2012 which suggests that electricity demand is likely to increase by 30% to 50% by 2050, and DECC's Energy Security Strategy (in 2012) which suggests that capacity will need to grow by between 30 and 100% by 2050.

8. In essence the Applicant is arguing that future electricity demands are such that this scheme must be consented. The RSPB consider that this position is incorrect on a number of grounds, which we detail below.

9. The RSPB has concerns about the Applicant's position and raised the issue of alternative solutions in its Relevant Representation of 22 April 2015[6]. This section develops those concerns further.

10. These concerns are due to the information set out in our Deadline 7 submission, in our view demonstrating that it is not possible, with the required degree of certainty, to conclude that Hornsea Project Two will not have an adverse effect upon the integrity of the Flamborough Head and Bempton Cliffs SPA or the Flamborough Head and Filey Coast pSPA either on its own or in combination with other offshore wind farm schemes. Consequently, it is important to consider the next decision-making steps set out in the Habitats Regulations.[7]

11. Avoiding damage to the species and habitats of European Sites is a key requirement of the Birds and Habitats Directives and damage should only be justified in exceptional circumstances. As set out in our Written Representations, *Section 3, Legislation and Policy Background*, the Habitats Regulations require a step by step approach to considering plans and projects likely to affect European Sites. If damage cannot be avoided further tests apply, namely the consideration of alternative solutions and imperative reasons of overriding public interest (IROPI) arguments – they are intended to make sure damage permitted to European Sites is both unavoidable,

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http://www.publications.parliament.uk/pa/cm201516/cmhansrd/cm151118/wmstext/151118m0001.htm.

[5] https://www.gov.uk/government/speeches/amber-rudds-speech-on-a-new-direction-for-uk-energy-policy. The speech suggests reliance on "New nuclear, new gas and, if costs come down, new offshore wind", but does not mention any other renewable technologies.

[6] http://infrastructure.planningportal.gov.uk/projects/yorkshire-and-the-humber/hornsea-offshore-wind-farm-zone-4-project-two/?ipcsection=relreps&relrep=30. The RSPB asked how the issue would be dealt with within the Examination by letter of 1 June 2015 to the Planning Inspectorate - http://infrastructure.planningportal.gov.uk/wp-content/ipc/uploads/projects/EN010053/2.%20Post-Submission/Representations/Additional%20Representations/The%20Royal%20Society%20for%20the%20Protection%20of%20Birds.pdf, and the Planning Inspectorate replied by email of 2 June 2015, advising the RSPB to make these points in its written representations. This the RSPB has duly done.

[7] Throughout this section the term "Habitats Regulations" should be read as including references to both The Conservation of Habitats and Species Regulations 2010 (as amended) and The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended).

necessary, imperative and that there is a genuine overriding public interest in the plan or project proceeding and ecological compensation is provided to ensure the overall coherence of the Natura 2000 network is maintained.

12. Therefore, the alternative solutions and IROPI tests should be about deciding, in the interests of wider society, where the balance lies between the public interest of conserving Europe's biodiversity and the public interest(s) provided by the plan or project but only in the absence of less damaging alternative solutions to the application.

13. In this context the aim of the alternative solutions test is to determine whether there are other ways the public need to be met by the plan or project can be delivered without damaging European Sites.

14. European Commission guidance states that the primary assessment criteria for considering alternative solutions are the conservation and maintenance of SPA and SAC integrity: economic criteria cannot be seen as overruling ecological criteria.[8] At page 42, para 5.3.1, the Commission Guidance states:

> "It should be stressed that the reference parameters for such comparisons deal with aspects concerning the conservation and the maintenance of the integrity of the site and of its ecological functions. In this phase, therefore, other assessment criteria, such as economic criteria, cannot be seen as overruling ecological criteria.
>
> **It rests with the competent national authorities to assess alternative solutions. This assessment should be made against the site's conservation objectives.**"

Identifying alternative solutions

15. We consider four basic steps are necessary to ensure the alternative solutions test is applied rigorously and fairly:

    i. **Identify the needs for (or benefits of) the plan or project and decide which are genuine public needs**. These should be objective and not restricted to the need or benefits claimed by the proponent;

    ii. **Identify all potential and feasible alternative solutions to meet the public needs.**

    iii. **Assess the impacts of these alternative solutions on Natura 2000 sites and their species/habitats.** This assessment will need to be undertaken by the competent authority. The RSPB recommends the use of a "common currency" approach as advocated by Natural England to ensure that the comparative impacts of the various possible alternative solutions are properly understood.

    iv. **Decide whether there are less damaging alternative solutions to the plan or project.**

16. The Habitats Directive requires a very wide range of options to be taken into consideration by the competent authority before a conclusion that there are no alternative solutions to a plan or

[8] *Managing Natura 2000 Sites – The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC* (European Commission, 2000) http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/provision_of_art6_en.pdf.

project can be reached. In considering the needs or benefits relevant to the Hornsea Project Two the RSPB has reviewed the Government's legal and policy framework on energy.

17. This document then considers the scope of alternative solutions that are permitted within Government Policy and by the Planning Inspectorate's guidance on alternative solutions and what in our view should be considered in determining this application[9]. This document details how the RSPB has approached the issue of alternative solutions, including the schemes that have been considered, its initial conclusions on the issue, and the RSPB's recommended further steps that may need to be taken by the Examining Authority and the Secretary of State before determining the Hornsea Project Two application.

18. Finally, the influence of Government funding decisions is also taken into account because even if the Application is consented it is likely that without Government funding support Hornsea Project Two may not actually be built.

19. Overall, on the basis of publicly available information, the RSPB considers that there are less damaging, alternative solutions to the Hornsea Project Two available, and these need to be considered by the Examining Authority in making its recommendations, and the Secretary of State in reaching a final decision on the Hornsea Two Project.

20. We set out below our detailed comments on these points. However, it needs to be noted that the RSPB has approached this on the basis of our conclusions that it is not possible to conclude that Hornsea Project Two will not have an adverse effect on the integrity of the SPA/pSPA and their bird species. If the Examining Authority and the Secretary of State agree that consideration of alternative solutions needs to be had then of course they will need to consider all relevant European Sites and their features (see also paras 117 to 120 below).

The context for considering alternative solutions

The project context

21. Hornsea Project Two is a proposal for a 1.8 GW offshore wind farm, which the Applicant indicates is expected to be generating energy by the end of 2022.[10] In addition to the private interest, commercial objectives and benefits, the project is clearly intended to contribute to meeting public interest objectives set out in the Government's legal and policy framework. These public interest objectives are considered in more detail below.

22. The timescale for delivery of the project sets a clear framework for the consideration of the environmental impacts of this scheme, and alternative and potentially less damaging schemes, within the Government's 2025 planning horizon set out in National Policy Statement EN-1, *Overarching National Policy Statement for Energy* ("EN-1") (see below).

Government legal and policy framework on energy

23. Under the EU Renewable Energy Directive (2009)[11] the UK is required to source 15% of its energy consumption from renewable sources by 2020, including electricity, heat and transport[12].

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[9] Both in terms of "alternatives" as required for Environmental Impact Assessment and "alternative solutions" as required under the Habitats Directive.

[10] Figure 14 – Indicative Programme for Project Two, *Round 3 Hornsea Zone Offshore Wind Farm – Development Update* (SMartWind, June 2014, issue 5).

[11] Directive 2009/28/EC on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC.

[12] Article 3(1) and Annex I, *National overall targets for the share of energy from renewable sources in gross final*

Alongside the National Policy Statements, there are a number of Government plans which outline the UK's delivery of renewable energy capacity against this 15% target. These include the National Renewable Energy Action Plan (NREAP), the UK Renewable Energy Roadmap and the Electricity Market Reform (EMR) Delivery Plan.

24. Beyond 2020, there is an EU wide target for at least 27% of the EU's energy consumption to be produced from renewable sources by 2030[13]: however there is currently little clarity on what the UK's contribution towards this target will be. This will be planned out in the UK's 5th Carbon Budget, which will cover the period from 2028-2032. The Committee on Climate Change[14] will publish its advice to Government on this in December 2015 with the Government proposing draft legislation for the fifth budget in 2016.[15] The UK's overall greenhouse gas emission reduction target is an 80% reduction (based on 1990 levels) by 2050, as stipulated in the Climate Change Act (2008)[16].

25. It is the 15% target from the Renewable Energy Directive 2009 that forms the basis for current published Government policy for securing future renewable energy supplies. This is set out in EN-1 and provides the policy framework within which Hornsea Project Two should be considered. It is important to note at the outset that in our consideration of alternative solutions the RSPB is not challenging Government policy, instead using it as a framework within which to structure its approach.

26. EN-1 sets out the Government's main priorities for energy: a secure and affordable supply, which it expects to be provided via market-based schemes[17]. It also sets out a clear picture of what the Government considers must be delivered by 2025. EN-1 anticipates an increase in demand from 85 GW of electricity in 2011 to 113 GW by 2025. The key element relevant to this project is that EN-1 anticipated that around 33 GW would come from renewable sources.[18] EN-1 goes onto list possible renewable energy sources including on and offshore wind farms, biomass, energy from waste and wave and tidal[19] and it is important to note that EN-1 expresses no views on the relative amounts of energy that these different renewable energy sources should provide. For convenience we set out the key excerpts from EN-1:

> 3.3.22 If we assume, as is prudent, that total electricity demand is unlikely to remain at approximately current levels (and may have increased) in 2025[33] and that a larger amount of generating capacity will be required to serve even the same level of demand[34] then, based on the UEP high fossil fuel and carbon price scenario, the UK would need at least 113 GW of total electricity generating capacity[35] (compared to around 85 GW now), of which at least 59 GW would be new build. A further breakdown

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consumption of energy in 2020.

13 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions*, A policy framework for climate and energy in the period from 2020 to 2030* COM/2014/015 Final.

14 The Committee on Climate Change is an independent, statutory body established under Part 2 of the Climate Change Act 2008. Its purpose is to advise the UK Government and Devolved Administrations on emissions targets and report to Parliament on progress made in reducing greenhouse gas emissions and preparing for climate change.

15 See The Committee on Climate Change http://www.theccc.org.uk/tackling-climate-change/reducing-carbon-emissions/carbon-budgets-and-targets/. Accessed 10 July 2015.

16 Section 1(1) of the Act:"It is the duty of the Secretary of State to ensure that the net UK carbon account for the year 2050 is at least 80% lower than the 1990 baseline."

17 EN-1, paragraph 2.2.19.

18 EN-1, paragraph 3.3.22 states "around 33GW of the new capacity by 2025 would need to come from renewable sources to meet renewable energy commitments as set out in Section 3.4".

19 EN-1 pages 26-27, paragraph 3.4.3

of this figure to illustrate the scale of the challenge facing us in terms of new electricity generating infrastructure provision by technology type would be as follows:

● around 33 GW of the new capacity by 2025 would need to come from renewable sources to meet renewable energy commitments as set out in Section 3.4;
● it would be for industry to determine the exact mix of the remaining 26 GW of required new electricity capacity, acting within the strategic framework set by the Government;
● of these figures of 33 GW and 26 GW respectively, around 2 GW of renewables and 8 GW of non-renewable technologies are already under construction[36]. This leaves a balance of 18 GW to come from new non-renewable capacity; and
● the Government would like a significant proportion of this balance to be filled by new low carbon generation and believes that, in principle, new nuclear power should be free to contribute as much as possible towards meeting the need for around 18 GW of new non-renewable capacity by 2025.

[33] See paragraph 3.3.14 on likely increases in electricity demand.
[34] See paragraph 3.3.11 on intermittency of renewable electricity generation.
[35] Annex J to the UEP shows total generation capacity.
[36] UEP 40 using National Grid figures April 2010. The Government is aware that there are also a number of energy projects (approximately 9 GW in total as of April 2010) that have obtained planning permission, but have not as yet started to be built. As we cannot be certain that these projects will become operational, the Government considers that it would not be prudent to consider these numbers for the purposes of determining the planning policy in this NPS. Such numbers evolve over time and are regularly updated by National Grid in their Seven Year Statement.

3.3.26 Reducing demand for electricity is a key element of the Government's strategy for meeting its energy and climate change objectives. The 2050 Pathways Analysis shows that total UK energy demand from all sectors (heating, transport, agriculture, industry and electricity demand) will need to fall significantly per head of population by 2050 and in the most extreme scenarios, total energy demand could be almost 50% lower than 2007 levels by 2050. The analysis highlights the importance of energy efficiency and the potential that this can have to help achieve our carbon emission reduction targets.

3.4.1 The UK has committed to sourcing 15% of its total energy (across the sectors of transport, electricity and heat) from renewable sources by 2020[40] and new projects need to continue to come forward urgently to ensure that we meet this target. Projections[41] suggest that by 2020 about 30% or more of our electricity generation – both centralised and small-scale – could come from renewable sources, compared to 6.7% in 2009[42]. The Committee on Climate Change in Phase 1 of its advice to Government in September 2010 agreed that the UK 2020 target was appropriate, and should not be increased. Phase 2 was published in May 2011 and provided recommendations on the post 2020 ambition for renewables in the UK, and possible pathways to maximise their contribution to the 2050 carbon reduction targets.

[40] DECC (2009): The UK Renewable Energy Strategy (p.30). (The original URL in the footnote no longer works.)
[41] It is important to recognise that we may reach our renewable energy goals in different ways, depending on how the drivers to investment, supply chain and non-financial barriers evolve. As a result, the lead scenario presented in the Renewable Energy Strategy should not be seen as a sector or technology target.
[42] DUKES 2010 (p.184)

27. In light of the 15% target and Government policy, nine Round 3 offshore wind farm zones, including Hornsea, were released by the Crown Estate in 2010, with a capacity of up to 32GW.

This followed the UK Offshore Energy Strategic Environmental Assessment in 2009 (the SEA). [20]

28. Due to the need for new energy capacity (52% of 2025 power supply is expected to come from newly constructed sources) national policy has a presumption in favour of consenting energy NSIPs, which applies unless more specific and relevant policies in the NPSs clearly indicate that consent should be refused[21]. Of course these must be in compliance with any relevant legal requirements such as the Habitats Directive. As the Government acknowledges within EN-1, project-level HRA may result in the refusal of consent for particular applications[22] and due to insufficient offshore data being available when the SEA for Round 3 was being carried out many important marine bird (and other wildlife) areas are only being identified once applicants are carrying out their marine surveys for their environmental impact and Habitat Regulations assessments.

29. Therefore, the key public interest objectives emerging from the Government's legal and policy framework are:

    i. **EU:** source 15% of UK energy consumption from renewable sources by 2020, under the EU Renewable Energy Directive (2009)[23];

    ii. **EU**: target of at least 27% of the EU's energy consumption to be produced from renewable sources by 2030[24] – UK contribution to be set by Government in 2016 through the 5th Carbon Budget;

    iii. **UK:** 80% greenhouse gas emission target under CC Act 2008[25].

    iv. **UK:** Government 2025 target of 33GW of renewable energy capacity [26].

30. The RSPB fully supports the UK Government meeting and exceeding its 15% target. However, it is essential that delivery avoids adverse effects on biodiversity in line with the requirements of the Birds and Habitats Directives.

Alternative solutions in National Policy Statements

31. As mentioned above, the other future large scale renewable energy technologies within the scope of EN-1 are onshore wind farms, biomass and waste[27]. Wave, tidal and solar are also mentioned but at the time of drafting (2011) these sources were seen to be intermittent and incapable of being relied upon to meet demand[28]. In preparing the NPSs only a very narrow range of technology-agnostic alternative approaches were considered (EN-1's alternatives were securing low cost energy, reducing greenhouse gas emissions, and reducing other environmental impacts of schemes[29]). Although the Government acknowledges that energy efficiency

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[20] See http://www.thecrownestate.co.uk/energy-and-infrastructure/offshore-wind-energy/working-with-us/leasing-rounds/round-3/. Accessed 11 July 2015.

[21] EN-1, paragraph 4.1.2.

[22] EN-1, paragraph 1.7.13.

[23] Article 3(1) and Annex I, *National overall targets for the share of energy from renewable sources in gross final consumption of energy in 2020*.

[24] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions*, A policy framework for climate and energy in the period from 2020 to 2030* COM/2014/015 Final.

[25] Section 1(1), Climate Change Act 2008 (as amended).

[26] EN-1, paragraph 3.3.22.

[27] EN-1, paragraph 1.4.5. EN-3 only considers these sources (EN-3, paragraph 1.8.1).

[28] EN-1, page 19, paragraph 3.3.11.

[29] EN-1, paragraph 1.7.5.

improvements will be vital it does not consider them as an alternative means of helping to meet the anticipated increase in demand by 2025.

32. EN-1 makes it clear that development should aim to avoid significant harm to biodiversity, including through the consideration of reasonable alternatives. It sets out a number of principles for dealing with alternatives[30]:

    i. The consideration of alternatives should be carried out in a proportionate manner;

    ii. The Examiners should be guided by whether there is a realistic prospect of the alternative delivering the same infrastructure capacity in the same timescale as the proposed development;

    iii. Where legislation imposes a specific target the Examiners should not reject an application on one site simply because fewer adverse impacts would result from developing similar infrastructure on another site, and the examiners are required to consider whether all the sites may be needed for future proposals (the RSPB consider this point in detail below);

    iv. Alternatives not among the main alternatives studied by the applicant (as reflected in the ES) should only be considered to the extent that the Examiners consider they are both important and relevant to the decision;

    v. If a hypothetical alternative proposal would not accord with the policies in the relevant NPS that alternative proposal is unlikely to be important and relevant to the IPC's decision;

    vi. Alternative proposals which are not commercially viable, or proposals for an unsuitable site can be excluded on the basis that they are not important and relevant to the IPC's decision; and

    vii. Alternative proposals which are vague or inchoate can be excluded on the grounds that they are not important and relevant to the IPC's decision.

33. Before moving on, it should be noted that the tests above are a statement of national policy and appear to be focused on EIA requirements and do not specifically cover the alternative solutions test as set out in reg. 62 of the Habitat Regulations. This is important: the RSPB respectfully suggests that if there is a choice for the Examiners between approving a scheme for which an adverse effect upon the integrity of a European site ***cannot*** be excluded in the knowledge that there are relevant schemes for which an adverse effect ***can*** be excluded they must reject the damaging scheme. In addition, the fact that a site may be needed at a subsequent time is an issue which can be returned to by decision makers at that future stage when the imperative *need* for damaging the site can be more clearly established.

34. The need to consider alternative solutions is not limited to other schemes within that area as confirmed in the Secretary of State's Dibden Bay Port Proposal Decision Letter, para 51:

[30] EN-1, paragraph 4.4.2.

"51. The Secretary of State notes, however, that the consideration of alternatives for projects which would have a significant impact upon a site designated in accordance with the Habitats Regulations must necessarily range more widely. The Secretary of State agrees with the Inspector's conclusion that the Applicant's proposal would have a significant effect upon the integrity of designated sites. It follows that consideration of alternatives must concern alternative ways of avoiding impacts on the designated sites. The Secretary of State considers that such alternatives would not be confined to alternative local sites for the project. He draws attention to the European Commission's methodological guidance on the Assessment of Plans and Projects significantly affecting Natura 2000 sites, which interprets article 6 (4) of the Habitats Directive. The guidance states that a competent authority should not limit consideration of alternative solutions to those suggested by a project's proponents and that alternative solutions could be located even in different regions or countries."

The Planning Inspectorate's Guidance for dealing with alternative solutions

35. The Planning Inspectorate's advice on this issue is set out in Advice Note 10: *Habitat Regulations Assessment relevant to nationally significant infrastructure projects* (version 6, June 2015). This brief section is repeated verbatim for ease of reference:

> **Stage 3: Assessment of alternatives**
> 4.33 The applicant's assessment should identify and assess alternatives that have been considered. Details should be provided in the applicant's HRA Report.
> 4.34 Alternative solutions can include a proposal of a different scale, a different location, and an option of not having the scheme at all – the 'do nothing' approach.

36. We consider the first of these two requirements below. We return to the second set of requirements under the heading "The RSPB's approach to alternative solutions to the Hornsea Project Two" below.

The alternative solutions considered by the Applicant

37. Despite, as set out above, arguing in its Planning Statement that future electricity demands are such that this scheme must be consented, the Applicant has confined its consideration of alternatives to those required by the EIA legislation i.e. project-level alternatives available to it as the applicant and not considered the broader requirements of the Habitat Regulations' alternative solutions test.

38. In addition, the Applicant's Environmental Statement has limited the consideration of alternatives to two different turbine sizes, with two different layouts per turbine size within the same overall scheme footprint, delivering the same 1.8 GW in total[31] The most recent changes by the Applicant propose a single scheme of 300 6MW turbines with the lowest point of the rotating blade 34.97m above Lowest Astronomical Tide (up from 26m) and a maximum rotor diameter of 241.03m (down from 250m)[32]. With the exception of paragraph 2.2.14 of its Planning Statement (see para 9.1 above), the Applicant has not considered the Habitat Regulations' alternative solutions test in detail. It is thought this is due to its HRA conclusion that there will be no adverse effects on the integrity of the European sites and their species due to Hornsea Project Two (HRA, Part 1, paragraph 5.8.350, page 167), either on its own or in combination with other schemes, even though paragraph 2.2.14 of its Planning Statement

[31] Set out in Figure 3.5 and Table 3.3, ES Volume 1, Chapter 4 *Site Selection and Consideration of Alternatives* (January 2015).

[32] Applicant, Appendix A to the Submission of 4 December 2015, *Tabular Review of EIA Conclusions in response to the amendments to the Project Design Envelope*.

clearly anticipates the potential need for consideration of the alternative solutions and IROPI tests.

SMartWind's approach to alternative solutions

39. The RSPB has taken careful note of the Applicant's response at Appendix J of Deadline 2 to our initial submission on alternative solutions[33], set out in section 9 of our Written Representation. We note that the Applicant:

> "does not consider the question of alternative solutions to be a relevant one as this question would only emerge in the event that the Secretary of State does not accept the Applicant's primary position"

that there are no risks of adverse effects upon the integrity of any European site. For reasons advanced in our main Deadline7 Submission we consider that the issue does arise at this point as we consider that it is not possible to discount the risk of an adverse effect on site integrity on a number of features.

40. In its response to the RSPB's initial submission on alternative solutions[34] the Applicant offers a number of observations on the legal framework within which the application should be considered. For ease of reference we set out the relevant text here:

> "The Applicant would make a very general point, however, that it considers the question of alternatives to be a false premise in the context of the Project.
>
> The concept of alternatives must be seen and gauged against the purpose and nature of the individual project subject to the assessment. In the case of the Project, as noted in Section 8 of the Statement of Reasons, the Project is principally designed to deliver renewable energy generating capacity for the UK to address the need for such in accordance with the UK's legal obligations.
>
> Regulation 3 of The Promotion of the Use of Energy from Renewable Sources Regulations 2011 (2011/243) places a duty on the Secretary of State to ensure that at least 15% of energy consumption in the UK is from renewable sources by 2020. Crucially, this key target is unconstrained. It is not a fixed percentage or a cap and, accordingly, the Applicant would submit that there can be no ruling out of projects meeting an unconstrained need on the basis of alternative solutions.
>
> The central objective of the current UK Government energy policy is to ensure the security of energy supply whilst responding to the challenge of climate policy by reducing carbon emissions. To meet these objectives, it is recognised that more energy infrastructure is needed with an increased emphasis on energy generation from renewable and low carbon sources. The need for this infrastructure is fully recognised in many areas of Government policy and the need to reduce carbon emissions is further enshrined in European law and international obligations, which has been transposed into a range of UK legislation. The Project will accord with these policies and help compliance with the relevant legislation and so will assist the Government in meeting its energy policy obligations."

41. The RSPB highlights a number of key issues from the text above, which it will consider further:

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[33] *The Applicant's Response to RSPB's Written Representation*, Appendix J to the Response submitted for Deadline II.
[34] Appendix J, section 2.

- The contribution of Hornsea Project 2 to the UK's renewable energy needs;
- The obligation upon the Secretary of State to ensure that at least 15% of energy consumption from the UK is from renewable energy sources by 2020;
- Whether the delivery of renewable energy is "unconstrained"; and
- The need for additional renewable and low carbon sources.

The contribution of Hornsea Project 2 to the UK's renewable energy needs

42. The RSPB does not dispute that Hornsea Project 2 *could* contribute 1.8 GW to the UK's renewable energy supply, but we do not consider that this means that the Secretary of State must therefore consent the scheme.

43. In our Written Representation the RSPB provided detailed information about the supply of renewable energy, both in terms of current generation capacity and in terms of the likely future supply from offshore wind farms that were either:

    - consented but unfunded; or
    - going through the planning process or likely to do so within the next 12 months.

44. As highlighted at the start of this document there have been some significant developments since our Written Representation. The revised figures are set out in Tables 1 - 4 below. The key message is that there has been a significant increase in renewable electricity supply and that the increased number of consented schemes is such that the UK Government can readily meet (and indeed exceed) its 2025 target of 33 GW of renewable electricity, set out at para 3.3.22 of NPS EN-1, without needing Hornsea Project 2. As we describe below (paras 54 to 70), recent decisions by the Government on other wind farm schemes demonstrate the Government's willingness to reject significant wind farm schemes due to their environmental impacts.

The obligation upon the Secretary of State to ensure that at least 15% of energy consumption from the UK is from renewable energy sources by 2020

45. As highlighted above (para 21), the RSPB notes that Hornsea Project 2 is not expected to be completed until 2022, which means it will not be able to contribute to the 2020 target.

46. Notwithstanding that, the RSPB observes that the 15% target is made up of contributions from electricity generation, heating and transport, and that the Secretary of State has a discretion in *how* to reach the target. Ultimately, it is for the Secretary of State to put in place a framework that ensures that this target is met. The RSPB fully supports the UK Government meeting and exceeding its 15% target, but considers that it is essential that delivery is sustainable and avoids adverse effects on biodiversity in line with the requirements of the Birds and Habitats Directives.

47. The 33 GW target in EN-1 was set *after* the Renewable Energy Directive's 15% target and took account of this figure. Para 3.4.5 of EN-1 includes the statement

    > "Paragraph 3.4.1 above sets out the UK commitments to sourcing 15% of energy from renewable sources by 2020. To hit this target, and to largely decarbonise the power sector by 2030, it is necessary to bring forward new renewable electricity generating projects as soon as possible."

48. The RSPB is also aware that on 18 November 2015 the Secretary of State has made clear policy announcements on the intended future funding for renewable energy. In making those announcements the Secretary of State would have been fully cognisant of the legal obligation

upon her.

Whether the delivery of renewable energy is "unconstrained"

49. The RSPB considers that in seeking to meet the UK's 15% target that the Secretary of State needs to take account of potential constraints imposed by the requirement to protect European sites designated under the Birds and Habitats Directives as well as the implications of financial constraints set by the Government. Consequently, where there are more schemes than funding is available for the least environmentally damaging should be preferred.

50. The RSPB respectfully contends that the recent refusal by the Secretary of State of two renewable energy NSIPs provides clear evidence that the Applicant's contention that need is unconstrained: if the demand was unconstrained the Secretary of State would have been obliged to consent the schemes. We consider these decisions, and their implications for Hornsea Project 2 below.

51. The RSPB notes that due to constraints on funding, the provision of new energy supplies will be moderated by the decisions the Government takes on funding schemes which require an element of subsidy. Funding decisions are therefore clearly a constraint and the Government is clearly aware of this. We return to this point in the section *The Government's funding decisions and delivery of Government policy* below.

The need for additional renewable and low carbon sources

52. The RSPB sets out below our revised analysis of the current and likely future supply of renewable energy. We contrast these figures with the most recent targets outline by the Government on 18 November 2015 in the section *The Government's funding decisions and delivery of Government policy* below.

53. The RSPB highlights the Secretary of State's announcements on 18 November 2015, which set out the approach that the Government intends to take to deliver its renewable and low carbon electricity supplies. The need for Hornsea Project 2 must be considered in this light. We return to this point in the section, *The Government's funding decisions and delivery of Government policy*, below.

The Government's approach to alternative solutions following the Navitus Bay decision

54. Since the RSPB submitted its original position on alternative solutions the Secretary of State has rejected the Navitus Bay offshore wind farm (on 11 September 2015). This is the first refusal of a Round 3 offshore wind farm proposal.

55. In rejecting the decision the Secretary of State considered the statements of need set out in NPSs EN-1 and EN-3. Despite accepting the need, the Secretary of State rejected the scheme on the basis of the impacts which the scheme would cause:

> "... The Secretary of State accepts that the need for the development of the kind represented by the Application Development and the TAMO is in accordance with the policy set out in the relevant NPSs (EN-1 and EN-3) but she considers that, in this case, the potential impacts of the Application Development or the TAMO are of such a scale that they

outweigh the policy imperatives set out in those Statements. ..."[35]

56. The decision makes it clear that the issue of need does not trump considerations of impact, and that consequently rejection of applications is justifiable if their impacts are considered sufficiently serious. This runs directly counter to the Applicant's contention at para {above} that "there can be no ruling out of projects meeting an unconstrained need". In the present case the RSPB contends that where the risk of harm to a European site cannot be excluded the Secretary of State would need to move on to consider the alternative solutions available to meet the need. We provide detailed information below to assist the Secretary of State on this consideration. On the basis of this information the RSPB considers that the Secretary of State will not be able to conclude that there are no alternative solutions to Hornsea Project 2.

57. The reasons that underpin the refusal demonstrate that visual impact upon the seascape was a reason which could be taken into account when rejecting the scheme:

> "19. The Secretary of State has considered the matter in some detail and feels that the ExA's assessment that there will be a significant adverse impact on the perception of viewers standing on the coastlines mentioned above is a reasonable one."

58. The Secretary of State also considered that impacts upon a National Park and Green Belt land would also justify refusal of the scheme. However, it is important to note that these were finely balanced considerations and only came into play as grounds for refusal because there were also other grounds that merited refusal.

> "21. The ExA accepted that the Applicant's scope for developing the necessary onshore works in alternative locations was limited. The ExA considered this policy in relation to the proposed siting in a National Park and in land designated as Green Belt where consents from developments can be granted only in exceptional or special circumstances respectively. The ExA concludes that these circumstances would not apply in the current case where it considers that the benefits of the project would not outweigh the significant impacts."

59. In relation to the National Park and green belt issues the Panel noted:

> "The Panel has had regard to the highest level of protection accorded to the NFNP [New Forest National Park] 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 benefits of jobs, were to outweigh its adverse impacts. The matter is considered in full in Chapter 21."[36]

60. The Panel considered the balance of these issues in Chapter 21 and concluded that:

> "The key issue of greatest concern to the Panel is the adverse impacts 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." (para 21.2.77)

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[35] Secretary of State's Decision Letter, 11 September 2015, Paragraph 52. The "TAMO" was a reduced 630 MW "Turbine Area Mitigation Option" scheme introduced by the Applicant in an attempt to address concerns expressed about the original 970 MW scheme's likely impacts.

[36] Panel's Recommendation to the Secretary of State, 11 June 2015, para 8.5.3.

61. Consequently:

> "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. ..." (para 21.2.80)

62. The World Heritage Site (WHS) is the only supra-national feature which was considered as part of the reasons for refusal. Again, the visual impact from the wind farm scheme upon the coastal WHS was considered sufficient to justify refusal.

> "29. In conclusion, the Secretary of State considers that the development, either the Application Development or the TAMO, though not damaging to the protected feature of the World Heritage Site, would adversely affect the use and enjoyment of that Site. This would have an adverse effect on the use of and enjoyment of the Site irrespective of the fact that the effects are essentially temporary. The Secretary of State, given the importance of the Site, and its utility and amenity value, does not consider the adverse effects, even if considered to be of a temporary nature, are acceptable."

63. It is worth noting that the visual impacts on the WHS were considered to be essentially temporary – capable of being addressed as soon as the turbines are removed. This needs to be contrasted with the likely ecological impacts of the Hornsea Project 2 scheme where the impacts upon the various populations of birds will require a number of years to recover, if indeed they can. The Hornsea Project Two impacts are not readily reversible.

64. The RSPB submits that if transient aesthetic impacts justify the refusal of an NSIP renewable energy scheme then ecological impacts upon the designated species of a European site clearly justify refusal of the Hornsea Project 2 scheme. The RSPB contends that the fact that the Secretary of State could justify refusal on the basis of visual, green belt and National Park impacts clearly demonstrates that it is acceptable to reject a scheme on Natura 2000 grounds.

65. The Secretary of State also rejected the Myndd Y Gwynt onshore wind farm NSIP application on 20 November 2015[37].

66. The Secretary of State gave only limited detail about the way in which consideration had been given to energy policy:

> "9. The Secretary of State has had regard to the Energy National Policy Statements ("NPS") EN-1 Overarching NPS for Energy) and EN-3 (NPS for Renewable Energy Infrastructure). ..."

67. Beyond this statement there was no consideration of energy issues such as need by the Secretary of State.

68. The Secretary of State refused the scheme because the Applicant had failed to provide sufficient ecological information in the HRA. The consequence of this failure was that:

> "38. The Secretary of State cannot grant development consent because she is not able to conclude that there is no adverse effect on the integrity of the red kite feature of the Elenydd – Mallaen SPA. She is therefore refusing the Application in accordance with regulation 61(5) of the Conservation of Habitats and Species Regulations 2010."

69. Two key points can be taken from these Government decisions:

[37] The Scheme was in Powys, located to the west of Aberystwyth.

- The impact of a scheme must be taken into account and may justify its refusal, even in the context of a clear national need for renewable energy generating infrastructure; and
- Applications must fully comply with the requirements of the Habitats Regulations. A failure to supply sufficient information to enable a proper conclusion at any stage of the assessment process is sufficient to justify the refusal of the application.

70. In the latter context the RSPB highlights at {was 9.30 and 9.31} above that the Applicant has provided insufficient information for the Secretary of State to consider any argument by the Applicant that there are no alternative solutions in respect of the tests set out in Regulation 62(1) of the Habitats Regulations. The RSPB contends that the information contained in this document is sufficient to demonstrate that there clearly are sufficient alternative solutions to meet the Government's clearly articulated need.

The RSPB's approach to alternative solutions to Hornsea Project Two

71. In accordance with EN-1 the RSPB has attempted to assess possible alternative solutions in a proportionate manner, focussing on schemes where there is a realistic prospect of delivering similar capacity in a similar timescale to meet Government targets and policy objectives and have concentrated on those that are relevant to the Government's overarching renewable energy targets for 2025. At this stage, we have excluded schemes where their promoters have concluded they are currently commercially unviable (for example Atlantic Array[38], Celtic Array Round 3[39] or Islay[40] offshore wind farm schemes). All the projects that we consider have sufficiently detailed information already prepared, or are sufficiently far advanced in pre-planning, to justify consideration as alternative solutions and therefore can be included as part of the alternative solutions assessment.

Installed renewable energy capacity since 2011

72. When it was published in 2011 EN-1 set a clear target of 33 GW for new renewable energy capacity, to be delivered by 2025. In order to identify post-2011 contributions to renewable energy sources the RSPB has identified changes in renewable energy capacity reported by DECC since the first quarter of 2011, as set out in Table 1 below. Given the lead-in times on preparing the NPS all 2011 contributions are included. The figures are up-to-date to the end of the second quarter of 2015. In this time the following additional capacity has been added.

[38] Potentially 1.2 GW.
[39] Potentially 2.2 GW.
[40] Potentially 0.69 GW.

Table 1: Changes in installed renewable energy capacity between 2011 and June 2015

Sources: First Quarter (Q1) of 2011 data from: DECC (2012) *Energy Trends* (June 2012); Q2 2015 data from: DECC (2015) *Energy Trends* (September 2015))

	Q1 2011 figure[41] (GW)	Q2 2015 figure (GW)[42]	Increase Q1 2011 to Q2 2015 (GW)
DECC's Total	9.563[43]	28.382	18.819
Onshore Wind	4.142	8.723	4.581
Offshore Wind	1.427	5.025	3.598
Solar	0.137	8.277	8.140
Plant Biomass	0.327	2.295	1.968
Other[44]	3.532	04.062	0.530

73. Therefore, as of the second quarter of 2015, DECC's figures show that since the first quarter of 2011, there has been an increase of 18.819 GW of installed renewable energy capacity, or over half the 33GW target. The figures originally provided for offshore wind in Table 1 represented the Q1 figure, coupled with several other offshore wind schemes (Gwynt y Mor[45], Humber Gateway[46] and Westermost Rough[47]) that had subsequently come fully on stream. The RSPB's figure given in the Written Representation is slightly higher than the Q2 figure, but as it is not possible to account for the difference we have opted to use the Q2 figure instead[48].

74. There was also a substantial increase in the amount of solar energy supply between Q1 (6.823 GW) and Q2 (8.140 GW). This contributed 1.454 GW of the overall increase of 1.934 GW in renewable energy.

75. Adding in this extra capacity means that since the first quarter of 2011, 18.819 GW of new renewable energy capacity has come on stream. This leaves 14.181 GW of new renewable energy to be delivered in order to meet the 33 GW target for 2025 set out in EN-1.

76. In considering PINS' guidance on alternatives (Advice Note 10, paragraph 4.34, page 11) we have included schemes of different scales and different locations, but due to the ready availability of information for offshore renewable NSIPs have focused on these. As set out above in paragraphs 3.16 to 3.24 of the RSPB's Written Representations, all other types of renewable energy capable

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41 Taken from DECC's *Energy Trends* (June 2012), Table 6.1 *Renewable electricity capacity and generation*, column headed "2011 1st quarter" (p47) and rows under the heading "Cumulative Installed Capacity".

42 Taken from DECC's *Energy Trends* (September 2015), Table 6.1 *Renewable electricity capacity and generation*, column headed "2015 2nd quarter" (p47) and rows under the heading "Cumulative Installed Capacity". It should be noted that these are provisional figures.

43 This figure is taken directly from DECC's *Energy Trends* (June 2012), Table 6.1 *Renewable electricity capacity and generation*, column headed "2011 1st quarter" and row "Total" under "Cumulative Installed Capacity". If the figures in the rows below are added this actually comes to 9,565 MW. As there is no explanation for the difference, the total figure given in the table has been kept: this feeds through in to the figure for the total increase 2011 to 2015 which is 2MW higher than indicated by the different sectors. The total figure for 2015 does match the sum of the different sectors.

44 This includes shoreline wave/tidal, small and large scale hydro, landfill gas, sewage sludge digestion, energy from waste, animal biomass (non-anaerobic digestion), and anaerobic digestion.

45 Officially opened in June 2015: http://www.bbc.co.uk/news/uk-wales-33168638; also mentioned by the Secretary of State in a speech: https://www.gov.uk/government/speeches/address-to-the-renewablesuk-offshore-wind-conference.

46 http://www.grimsbytelegraph.co.uk/power-hit-Humber-Gateway/story-26656844-detail/story.html (9 June 2015).

47 Officially inaugurated on 1 July 2015: http://renews.biz/91063/westermost-rough-has-lift-off/ Also mentioned by the Secretary of State in a speech: https://www.gov.uk/government/speeches/address-to-the-renewablesuk-offshore-wind-conference.

48 This also simplifies updating of the figures to reflect the Q3 and Q4 figures for 2015 when they become available.

of contributing within similar timescales are relevant to the consideration of alternative solutions. The RSPB's figures are based on DECC's Energy Trends publication and are up-to-date to the 2015 Q2 update (24 September 2015). The Q3 figure will be published on 22 December 2015 and the Q4 figures on 31 March 2016. The RSPB respectfully asks the ExA to take account of the Q3 figures in their report to the Secretary of State and for the Secretary of State to take account of the Q4 figures in reaching her final decision. We return to the implications of this at para 90 below.

77. Due to the renewable energy target for 2025 set by the Government we have not considered a 'do nothing' approach as required by the EIA requirements, but instead have considered the prospects of meeting the 2025 target of 33 GW of new renewable energy if the Hornsea Two scheme is not consented. We have later considered the influence of available levels of Government funding on the contribution of offshore wind to meeting the 2025 target.

Table 2: Capacity of offshore wind farms, operational, under construction or consented and funded

Main source: The Crown Estate (2015) *UK offshore wind – key facts 2015-16* (April 2015). See Appendix 1 for a fuller version including sources for each wind farm.

Scheme categories	**Capacity (GW)**
Operational	5.025
Under construction	1.980
Consented and funded	3.815
TOTAL	**10.820**

Note: Data is taken from *UK offshore wind – key facts 2015-16* (The Crown Estate, April 2015) *table: UK offshore wind project pipeline – April 2015* (The Crown Estate, 2015), and the *Digest of UK Energy Statistics, Table 5.10 Power Stations in the United Kingdom* (DECC, 2014). This information under the *operational* heading has been updated to reflect schemes that have come fully online since April 2015.

78. The total of 10.820 GW in Table 2 above is of particular importance. This exceeds the target of 10 GW of new capacity by 2020 mentioned in the Government energy policy announcement made by Amber Rudd on 18 November 2015. This point is returned to below in *The Government's funding decisions and delivery of Government policy*.

79. Including the schemes that are under construction (1.98 GW) reduces the amount of renewable energy required by 2025 to 12.201 GW. It is important to note that there is another 3.815 GW worth of consented and funded schemes that have yet to start construction. In the absence of evidence to the contrary, it is reasonable to assume that all of those schemes will go ahead[49]. Taking these schemes into account reduces the amount of renewable energy to be secured by 2025 to 8.386 GW. It is worth repeating at this point that this target is to be met from ***all*** renewable sources, not just offshore wind.

80. The RSPB notes that in the Committee on Climate Change's 2015 Report to Parliament, *Meeting Carbon Budgets – Progress in reducing the UK's emissions*, it is suggested that there are a further 2 GW of onshore wind, 2.1 GW of biomass and 0.8 GW of solar power "in the pipeline", which are schemes that have been awarded a CFD or are under construction.[50] No details are provided

[49] Recent information about these schemes is presented in Annex 6.

[50] *Meeting Carbon Budgets – Progress in reducing the UK's emissions, 2015 Report to Parliament,* (Committee on Climate Change, June 2015), Table 1.1 Overview of renewable deployment in 2014 (p53).

on the individual schemes and we have sustainability concerns around the large scale deployment of biomass, but this could represent a further 4.9 GW of capacity which is likely to be delivered. This would reduce the remaining figure to be supplied by 2025 to 3.486 GW.

81. A summary is provided in Table 3 below.

Table 3: Summary of progress towards installation of 33 GW renewable energy capacity by 2025

Sources: for detailed references, please see paras 73, 75, 79 and Table 2 above.

	Contribution to 2025 renewable energy target (GW)	**Amount of capacity still required to meet 2025 renewable energy target of 33 GW**
Renewable energy capacity installed between Q1 2011 and Q2 2015	18.819	14.181
Offshore wind schemes under construction	1.980	12.201
Offshore wind schemes consented and funded	3.815	8.386
Climate Change Committee "pipeline" renewable energy schemes (onshore wind, solar, biomass)	4.900	3.486

Note: The version of this table in the RSPB's Written Representation included a row adding in offshore wind schemes which had come on stream since Q1 2015. These figures have now been overtaken by the Q2 figures published in DECC's Energy Trends, and consequently the RSPB has replaced the two separate figures with one entry. This will facilitate the Examining Authority and the Secretary of State updating the figures to reflect revised data for Q3 (available 22 December) and Q4 (available 31 March 2016).

Alternative solutions to Hornsea Project Two

82. Based on the analysis above, the amount of energy capacity required to be installed from all renewable sources to meet the Government's 2025 target of 33 GW is 8.386 GW if consented and funded schemes are included. If the Committee on Climate Change "pipeline" figures are also included, then this reduces further to 3.486 GW. It is against the backdrop of these two figures that we consider the issue of alternative solutions to Hornsea Project Two in meeting the public interest objectives described above (see para 29).

83. The RSPB has considered additional alternative schemes under a number of headings, set out in Table 4 below). The headings are as follows:

I. *Consented but unfunded offshore wind farms;*
Those wind farm schemes which have received consent, but which have not yet secured funding via a Contract for Difference (CFD)[51]. The total capacity of these schemes is 9.502 GW.[52]

II. *Offshore wind farm schemes that are currently going through the planning process.*
There are two schemes which are currently being considered. The total capacity of these schemes (as applied for) is 1.214 GW.[53]

III. *Offshore wind farm schemes expected to be submitted in the next 12 months*

[51] See "The Government's funding decisions and delivery of Government policy" below for more details on CFDs.
[52] See Appendix 1 for full details.
[53] See Table 4 below for details. Navitus Bay is listed at the 0.970 GW as applied for, although an alternative scheme would bring this down to 0.630 GW and the overall total down to 3.03 GW.

Schemes listed on the Planning Inspectorate's website. The total capacity of these schemes (as listed on the Planning Inspectorate's website) is 1.2 GW.[54]

IV. Alternative offshore renewable energy sources

Although there are others the only alternative energy solution we have included is the recently consented Swansea Tidal Lagoon (0.320 GW). This offers 1/6th of the energy proposed for Hornsea 2 and should be taken into consideration.

V. Energy efficiency measures

The RSPB has not attempted to quantify any levels of energy efficiency that it considers should be achieved. However, we note that since the adoption of EN-1 which forecast an energy rise from 85 to 113 GW in 2025, the actual energy consumption rates in the UK have actually fallen by 4.6% (14.6 TWh) to 303 TWh[55]. The Committee for Climate Change noted "Relatively high temperature drove a quarter of this fall and there is evidence to suggest improved energy efficiency (and/or changes in consumer behaviour) and changes in industrial energy use accounted for most of the remainder, with a small contribution from increased embedded generation (i.e. rooftop solar)."

84. Before deciding to consent the Hornsea Project Two the Secretary of State would need to satisfy herself that there is no scope for further energy efficiency improvements to offset the need for this scheme.

85. We have excluded 0.3 GW of the Rampion Southern Array, which the developer has announced that they will not be proceeding with.

86. On this basis, we have set out the energy capacity of potential alternative solutions in categories I-IV in Table 4 below, as explained above, focusing on offshore renewable energy NSIPs due to this information being more easily available.

Table 4: Energy capacity of alternative solutions from the offshore marine renewable sector

Source: The Crown Estate (2015) *Energy and infrastructure key facts 2015-16, table: UK offshore wind project pipeline – April 2015.*

Scheme categories	**Capacity (GW)**
I - Consented but unfunded	
Aberdeen Demonstration	0.066
Dogger Creyke Beck A	1.200
Dogger Creyke Beck B	1.200
Dogger Teesside A	1.200
Dogger Teesside B	1.200
East Anglia One (unfunded part)	0.486
Inch Cape*	0.784
MacColl (Moray Firth)	0.372
Seagreen Alpha (Firth of Forth)*	0.525
Seagreen Bravo (Firth of Forth)*	0.525

[54] See Table 4 below for details.

[55] Committee on Climate Change, *Meeting Carbon Budgets – Progress in reducing the UK's emissions, 2015 Report to Parliament* (June 2015), Chapter 1: *Progress decarbonising the power sector*, page 47. Final consumption of electricity has fallen from 318.009 TWh in 2011 (*Digest of UK Energy Statistics 2012* (DECC, 2012), Table 5.2 *Electricity supply and consumption,* page 136), to a Final Consumption figure for 2014 of 303.409 TWh (*Energy Trends* (DECC, September 2015), Table 5.2 *Supply and consumption of electricity*, page 42).

Scheme categories	**Capacity (GW)**
Stevenson (Moray Firth)	0.372
Telford (Moray Firth)	0.372
Triton Knoll	1.200
Subtotal	*9.502*
II – Currently going through the planning process	
2-B Demo[56]	0.014
East Anglia 3[57]	1.200
Subtotal	*1.214*
III – Expected to be submitted within the next 12 months	
East Anglia Four (expected Q4 2016)	1.200
Subtotal	*1.200*
IV - Alternative offshore renewable energy sources	
Swansea Tidal Lagoon[58]	0.320
Subtotal	*0.320*
Total	***12.266***

87. The RSPB wishes to highlight that the decision to grant consent for the schemes marked with an asterisk "*" has been judicially reviewed by the RSPB. However as the ExA is aware judicial review is focused on the process undertaken by the decision maker and rarely considers the merits of applications. Therefore, even if the RSPB were successful in its judicial review the recourse is for the applications to be re-determined. This may be possible with the timescale being considered and therefore we have included these schemes within the above table. However we do set out below the possible capacity figures without these schemes.

88. Taken at face value, this suggests that there is up to 12.266 GW of alternative offshore renewable energy supply available to meet the current shortfall in meeting the 2025 target of between 3.486 GW and 8.386 GW (see para 9.41 above).

89. Given the stage in the planning process, Category I provides greatest certainty in being capable of delivering capacity in a similar timescale to Hornsea Project Two. Category I can deliver up to 9.502 GW. Category II schemes are in the planning process: They provide up to 1.214 GW. The total of 10.716 GW exceeds the maximum shortfall of 8.386 GW and comfortably exceeds the shortfall if the Committee on Climate Change's "pipeline" projects are taken in to account.

90. If Category III and IV projects are factored in, as we believe they should be, then the available offshore renewable energy alternative solutions could comfortably exceed the 2025 target of 33 GW and make a significant contribution to requirements beyond 2025. This strongly suggests to the RSPB that there is a wide range of alternative solutions available for consideration by the Secretary of State just from within the offshore renewables sector and that Hornsea Project Two does not need to be consented now to meet the 2025 renewable energy target of 33 GW.

91. It is important to note that other than the "pipeline" figures referred to by the Committee on Climate Change (set out in Table 3 above), the RSPB's calculations do not include any

[56] A lease for the two experimental twin-blade turbines was signed with The Crown Estate on 19 August 2014, with deployment anticipated in 2016 (http://renews.biz/72614/2-b-offshore-demo-wins-crown-lease/).

[57] Submitted on 18 November 2015.

[58] The RSPB is aware that this is funded from a different CFD pot to offshore wind, but considers that as this is an entirely domestic funding issue and therefore the funding pot should be overlooked when considering the requirements of the Habitats Regulations.

contribution from onshore renewables, beyond those included in Table 1 above, which only counts those sources generating electricity at the end of Q2 2015. Our calculations proceed on the extremely unlikely premise that the 4.9 GW of "pipeline" schemes represents the entire remaining contribution towards onshore renewables until 2025.[59] The reality is that significantly more capacity is likely to be available: in the four years since the adoption of EN-1 more than half the capacity required to meet the 33 GW target for 2025 has been installed.

Implications of the RSPB's judicial reviews

92. As mentioned above the RSPB has taken judicial review proceedings against the Scottish Ministers' decision to grant consent for the four Firth of Forth offshore wind farms. Only one of these projects is funded and their capacities are as follows:

    - Neart na Gaoithe (0.448 GW - funded)
    - Inch Cape (0.784 GW - unfunded)
    - Seagreen Alpha (0.525 GW - unfunded); and
    - Seagreen Bravo (0.525 GW - unfunded)

93. However even if these projects are excluded completely from the relevant categories the total impact would be a maximum reduction of 2.282 GW. The revised figures and the amount of the changes are set out in Table 5 and Table 6 below.

Table 5: Summary of alternative solutions from the offshore marine renewable sector without the Firth of Forth schemes

Note: Only category I is affected by the judicial reviews.

Scheme categories	**Capacity (GW)**
I - Consented but unfunded	7.668 *(was 9.502)*
II – Currently going through the planning process	1.214
III – Expected to be submitted within the next 12 months	1.2
IV - Alternative offshore renewable energy sources	0.320
Total	***10.402***

Note: Category I excludes Inch Cape (0.784 GW), Seagreen Alpha (0.525 GW) and Seagreen Bravo (0.525 GW), unfunded schemes totalling 1.834 GW.

[59] The Committee on Climate Change notes that for onshore wind alone there are a further 5.2 GW of onshore wind schemes with planning permission and a further 7.3 GW seeking approval. *Meeting Carbon Budgets – Progress in reducing the UK's emissions* (June 2015), Chapter 1: *Progress decarbonising the power sector*, page 53.

94. Based on this, in Table 6, we have produced an adjusted summary of progress towards installation of the 2025 target of 33 GW of renewable energy capacity.

Table 6: Revised summary of progress towards installation of 33 GW renewable energy capacity by 2025

Sources: for detailed references, please see paras 73, 75, 79, 90 and Table 2 above.

	Contribution to 2025 renewable energy target (GW)	**Amount of capacity still required to meet 2025 renewable energy target of 33 GW**
Renewable energy capacity installed between Q1 2011 and Q2 2015	18.819	14.181
Offshore wind schemes under construction	1.980	12.201
Offshore wind schemes consented and funded	3.367 *(was 3.815)*	8.834 *(was 8.386)*
Climate Change Committee "pipeline" renewable energy schemes (onshore wind, solar, biomass)	4.900	3.934 *(was 3.486)*

Note: The "Consented and funded" category now excludes Neart na Gaoithe (0.448 GW) on the basis of a successful judicial review and the scheme not being re-determined.

95. As the table above shows revisiting the figures set out in paragraphs 73, 75, 79 and Table 2 above, without the Firth of Forth schemes (if the applicant decided not to get the schemes re-determined), would be as follows: There would be up to 10.402 GW of alternative offshore renewable energy supply available to meet a shortfall in meeting the 2025 target of between 3.934 GW and 8.834 GW (see Tables 5 and 6 above).

96. Category I (Table 5) can deliver up to 7.668 GW while Category II still delivers up to 1.214 GW. The total of 8.882 GW exceeds the maximum shortfall of 8.834 GW by 0.048 GW, and comfortably exceeds the shortfall if the Committee on Climate Change's "pipeline" projects are taken into account.

97. Inclusion of Category III and IV schemes still means that the 2025 target of 33 GW could be comfortably exceeded.

The Government's funding decisions and delivery of Government policy

98. Granting consent for an offshore wind farm is not the last way in which the Government influences whether that scheme will be built. The funding that the Government offers to support the delivery of energy infrastructure which is not currently economically viable at current electricity market prices is key: without this support a scheme will not go ahead despite being granted consent. Through this price support the Government determines and controls the source and amount of new renewable energy supply that will be built. Recent Government announcements (see paras 102 to 104 below) confirm that the price of the electricity generated by offshore wind (and other sources) is a key element in the Government's policy framework determining what form of renewable energy will receive Government support.

99. In the context of the offshore wind sector, this has historically been through a combination of funding mechanisms including the Renewables Obligation Certificate (ROC) and the Final Investment Decision Enabling for Renewables (FIDER process) which took place in 2014. FIDER

funded five offshore wind projects, including Hornsea Project 1[60]. The Renewables Obligation will close to all new projects on 31 March 2017.[61]

100. From 2014 onwards, offshore wind is funded through the Contracts for Difference (CFD) mechanism. This is a competitive process in which renewable energy generators bid for 15 year contracts in an auction process, which guarantees the generator a fixed price for the energy produced known as the 'strike price'. If the wholesale cost of electricity is less than the agreed strike price, the Government pays the generator the difference; if it is higher, the generator pays the difference back to the Government. The rationale behind this process is that when bidding, the generators will submit the lowest possible strike price that they are willing to accept, therefore pushing down costs. By doing this the Government aims to bring competition into the low carbon energy market, and deliver the maximum amount of energy using a limited pot of money. The mechanism is funded through the Levy Control Framework (LCF) which levies an additional cost onto consumers' energy bills.

101. There are different 'pots' of money within the LCF; offshore wind is funded through Pot 2 (less established technologies). Projects must have received planning consent to qualify for entry in to the CFD auction process.

102. So far there has been one allocation 'round' for CFDs for projects commissioning from 2016/17 onwards. This was announced on 26 February 2015[62]. While there will have been several consented schemes bidding in this confidential auction process, only two offshore wind projects totalling 1.162 GW gained funding: EA1 in East Anglia (0.714 GW) and Neart na Gaoithe in the outer Firth of Forth (0.448 GW). It is worth noting that the limited funding available meant EA1 only received sufficient funding for part of its 1.2 GW scheme. .

103. Since the 2015 General Election the Government has, as highlighted at para 3 above, made a number of statements about its approach to the funding of renewable energy schemes. This started with a statement in relation to onshore wind:

> "The Electricity Market Reform Delivery Plan projects that we require between 11 - 13 GW of electricity to be provided by onshore wind by 2020 to meet our 2020 renewable electricity generation objective while remaining within the limits of what is affordable.
>
> We now have enough onshore wind in the pipeline, including projects that have planning permission, to meet this requirement comfortably.
>
> Without action we are very likely to deploy beyond this range.
>
> We could end up with more onshore wind projects than we can afford – which would lead to either higher bills for consumers, or other renewable technologies, such as offshore wind,

[60] The offshore wind funded via the FIDER mechanism were Beatrice (0.664 GW), Burbo Bank Extension (0.258 GW), Dudgeon (0.402 GW), Hornsea 1 (1.200 GW) and Walney (0.660 GW), a total of 3.184 GW. FIDER also funded 3 biomass-based schemes, Drax Unit #1 conversion (0.645 GW), Lynemouth (0.420 GW) and Teesside (0.299 GW), a total of 1.364 GW. In total 4.548 GW was funded, 70.01% offshore wind, 29.99% biomass.

[61] Note that Clause 60 of the Energy Bill which received its first reading in the House of Lords on 9 July 2015, proposes to close the Renewables Obligation for onshore wind on 31 March 2016. See: http://www.publications.parliament.uk/pa/bills/lbill/2015-2016/0056/16056.pdf, accessed 11 July 2015. Since then, at Report Stage in the House of Lords (21 October 2015) an amendment was passed to remove this provision. It is the Government's intention to reintroduce the clause in the House of Commons (letter from Andrew Leadsom, Minister of State, DECC, 23 November 2015).

[62] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/407059/Contracts_for_Difference_-_Auction_Results_-_Official_Statistics.pdf.

losing out on support.

...

We are committed to meeting our decarbonisation objectives. The changes I have outlined to Parliament will not change this."[63]

104. This statement clearly shows that the Government is seeking to constrain its funding of renewable electricity. The subsequent consultation of Feed In Tariffs (see para 113 below) demonstrated a further restriction. Finally, on 18 November, the Secretary of State announced the Government's revised approach to the provision of funding for offshore wind energy:

"Today I will announce that we will make funding available for three auctions in this Parliament with the first taking place by the end of 2016. This support will be strictly conditional on the delivery of the cost reductions we have seen already accelerating. If that happens we could support up to 10GW of additional offshore wind in the 2020s. We have already seen the cost of solar come down by 35% in the last 3 years."[64]

105. The Secretary of State expanded on this point in a speech to the Institution of Civil Engineers on the same day[65]:

"On current plans we expect to see 10 GW of offshore wind installed by 2020.

This is supporting a growing installation, development and blade manufacturing industry. Around 14,000 people are employed in the sector.

This ground breaking expertise has helped the costs of contracts for offshore wind come down by at least 20% in the last two years.

But it is still too expensive.

So our approach will be different we will not support offshore wind at any cost.

Further support will be strictly conditional on the cost reductions we have seen already accelerating.

The technology needs to move quickly to cost-competitiveness.

If that happens we could support up to 10GW of new offshore wind projects in the 2020s."

106. The implications of the Secretary of State's announcement and speech are that the supply of renewable energy from offshore wind is clearly constrained by the Government's willingness to pay for it. This is clearly demonstrated by the fact that the CfD auctions are "strictly conditional on the delivery of the cost reductions". Given these funding constraints, money should be prioritised for the projects that will deliver the most renewable energy for the least environmental impact.

107. Table 2 above supports the Government's expectation that 10 GW of offshore wind will be installed by 2020. Table 4 above indicates that there is already 9.502 GW of unfunded but

[63] Oral statement to Parliament on ending subsidies for onshore wind, 22 June 2015: https://www.gov.uk/government/speeches/statement-on-ending-subsidies-for-onshore-wind.

[64] Written statement to Parliament, 18 November 2015, https://www.gov.uk/government/speeches/priorities-for-uk-energy-and-climate-change-policy

[65] https://www.gov.uk/government/speeches/amber-rudds-speech-on-a-new-direction-for-uk-energy-policy. This extract is also set out in Appendix K to the Applicant's Deadline VI Response.

consented capacity able to bid for the "up to 10 GW" in the 2020s set out by the Secretary of State. This is capable of mopping up most of the likely funding to become available. In addition, it highlights the importance the Government attaches to controlling costs as funding has not been made available to these schemes even ahead of the 18 November 2015 announcement.

108. There is clearly going to be a competitive market within the offshore wind sector for the limited amount of public sector funding that the Government may make available. At present this funding is the only means by which individual offshore wind farm schemes can guarantee that they will be built.

109. Consequently, the RSPB questions the merit of consenting a scheme that is likely to cause an adverse effect upon a Natura 2000 site. The RSPB also notes that East Anglia 3 has just been submitted for examination. If this scheme is consented there will be more capacity seeking funding than the Government intends to make available. This strengthens our view that Hornsea Project 2 should not be consented, as there are sufficient schemes already consented that strike a better balance between the need for renewable energy and the protection of key wildlife sites.

110. The RSPB notes that the Applicant considers that this announcement by the Secretary of State has addressed the concerns expressed by E.ON about the likelihood of Hornsea Project 2 not being able to bid for a CfD round in the next few years.[66] However, we note E.ON's Deadline 6 submission, which highlights a number of critical qualifications:

> "The competition for funding through the auction mechanism has demonstrated that cost savings and efficiency improvements can be made; the Government has now introduced more conditionality into the process. The target level for cost reduction was not revealed nor the timetable for the next CfD auction; these details will need to be clarified by DECC over the coming months.
>
> ... There remains much uncertainty regarding projected spending under the Levy Control Framework, as well as the timing and format of future CfD allocation rounds. The size of the subsidy pot is not known, so it is impossible to estimate the volume of capacity that might be supported in the next or subsequent CfD auctions."[67]

111. The likelihood of Hornsea Project 2 being constructed cannot be seen in isolation from the issue of funding. Indeed, the RSPB note that the issue of funding for Hornsea Project 2 has been raised publicly by one of the SMartWind partners:

> "Brent Cheshire, the UK managing director of Dong Energy, said that plans to construct Hornsea 2 and 3 almost 200 kilometres off the Humber estuary were in serious doubt. "The question is what money is available after 2020," he said. "We don't know where the government's thinking is at the moment. We need that visibility or otherwise this will falter very badly."[68]

112. E.ON's submission strongly suggests that these funding concerns still remain. The RSPB concurs and takes the above quote as a clear indication that the scheme will only be able to go ahead with public subsidy. Consequently the decisions made by the Government on the amount of funding to make available, and the terms on which it is to be provided, are of direct relevance

[66] Appendix L to the Applicant's Deadline VI Response, para 2.4

[67] E.ON E&P UK Ltd, Deadline 6 Submission, Appendix 1: Assessment of Timescales for Development of the Hornsea 2 Project.

[68] The Times, *Funding row could suck the wind from power project's sails*, 14 September 2015, http://www.thetimes.co.uk/tto/business/industries/naturalresources/article4555888.ece.

to the likelihood of Hornsea Project 2 being built.

113. DECC's recent *Consultation on a review of the Feed-in Tariffs scheme*[69], for schemes below 5MW in size, proposed cuts of 76-87% for solar photovoltaic Tariff payments. The Government announced that if it was not able to introduce new cost control measures "the only alternative would be to end generation tariffs for new applicants as soon as legislatively possible, which we expect to be January 2016" (para 4). This is another clear indication that the Government expects to control delivery of new renewable energy capacity by reference to the cost of the electricity generated by the scheme rather than the need for renewable electricity.

114. It is therefore clear that the availability of Government funding is acting as a major and real constraint for the delivery of offshore wind farm schemes: there is a surplus of consented and planned offshore wind projects in the supply pipeline in comparison to the amount of Government funding that appears to be available (as shown above in Table 4). The Committee on Climate Change recently recommended that the Government should set out the intention to contract 1-2 GW per year of offshore wind, which provides a clear indication of the amount of capacity funding which is needed on an annual basis[70].The Category I schemes would therefore represent approximately 5-9 years of delivery, the Category II schemes a further 1-2 years, and the Category III schemes a further year, taking delivery to 2021 at the highest end of the funding range or beyond the 2025 target at the lower end.[71] It is important to note that this forecast is contingent on the strike price of offshore wind energy reducing to a level at which the Government is prepared to fund it. The recent announcement by the Secretary of State makes it clear that this cannot be taken as read.

115. The RSPB continues to be supportive of the overall Government policy objective in respect of large scale offshore wind but it is clear that the pot of money available for offshore wind is de facto constraining that policy to a more limited objective, namely that which can meet an as yet unspecified strike price and with a cap of 10 GW by 2020 (already exceeded) and up to a further 10 GW during the 2020s. Therefore, any consideration of the public interest objectives for offshore wind needs to take account of the practical influence on that policy of Government funding decisions. This properly rests with the Secretary of State who oversees all relevant elements. With Government funding decisions acting to constrain the contribution of the offshore wind sector to meeting stated Government renewable energy supply targets (both for 2025 and beyond), it is clear that there will be a significant number of alternative solutions competing for the pot of money the Government has chosen to allocate offshore wind to meet its contribution to the UK's renewable energy requirements. It is important to note that since the RSPB submitted its Written Representation a further 2.4 GW[72] of capacity has been consented, meaning that even more capacity is now competing for whatever funds the Government makes available.

Other Natura 2000 features (marine mammals, habitats)

116. As set out previously (para 15), where it is not possible to rule out an adverse effect on the integrity of an SPA or SAC and their species, the competent authority can go on to consider

[69] https://econsultation.decc.gov.uk/office-for-renewable-energy-deployment-ored/fit-review-2015

[70] Committee on Climate Change, *Meeting Carbon Budgets – Progress in reducing the UK's emissions*, *2015 Report to Parliament* (June 2015), *Overview, Table 6, Summary of recommendations – central Government*, recommendation 4 (page 40).

[71] The larger range for the first figure reflects the range from 5.268 to 7.102 GW depending on the outcome of the judicial reviews.

[72] Dogger Bank Teesside A&B, consented on 5 August 2015.

whether there are less damaging alternative solutions that meet the public interest objectives of the plan or project.

117. The purpose of the alternative solutions section above is explicitly to demonstrate that there are other schemes that could produce the energy proposed to be supplied by Hornsea Project Two which would need to be considered to determine if they have less harmful effects upon the ornithological features of affected SPAs. It explicitly does not address the implications of Hornsea Project Two for SAC features, nor does it address the implications for SAC features of those schemes the RSPB has identified as potential less damaging alternative solutions as these matters are outside the RSPB's area of expertise. The RSPB also does not comment upon the risk of harm to European Protected Species (e.g. harbour porpoise)[73]. These are matters for other parties to the Examination, as well as the Examining Authority and the Secretary of State.

118. However, the RSPB is aware from discussions with the Wildlife Trusts that some of those schemes that the RSPB has identified as potential alternative solutions to Hornsea Project Two may not be acceptable due to their impacts upon marine mammals, either as SAC features or as European Protected Species, during the construction or operational phases for example, the Dogger Bank SAC. The RSPB also notes the implications of the current consideration being given to the designation of one or more SACs to protect Harbour Porpoise.[74] As such, the potential alternative solutions that we identify will also need to be evaluated for their impacts upon these candidate SACs and their features by the Secretary of State.

119. The RSPB understands from the Wildlife Trusts that by a careful choice of construction methods and choice of turbine foundations it may be possible to reduce the impacts of those other schemes upon marine mammals and upon the habitat of the Dogger Bank SAC. The Wildlife Trusts are far better placed to advise on these matters and the RSPB defers to them on this issue. However, it is our view, following discussion with the Wildlife Trusts that appropriate safeguards could be put in place to make the potential alternative solutions we identify above acceptable in terms of their impacts on SAC features and European Protected Species. We would urge the Examining Authority and the Secretary of State to consider these safeguards alongside our proposed alternative solutions.

Conclusions

120. The RSPB advances the following views on the alternative solutions available in preference to Hornsea Project 2:

- The renewable energy schemes that have been consented are sufficient to meet the Government's target of 10 GW by 2020 (these schemes are already funded and/or under construction) and up to another 10 GW by 2030 (sufficient schemes have already been consented to take up the funding that the Government intends to make available, subject to price constraints);
- The Applicant has provided no information to suggest that there are no alternative solutions to Hornsea Project 2;
- The Navitus Bay decision has demonstrated that the requirements of the Renewable Energy Directive do not preclude considerations of environmental harm; and

[73] Listed in Schedule 2 of The Conservation of Habitats and Species Regulations 2010 (as amended).
[74] Set out in Natural England's Relevant Representation (paragraphs 4.2.2 and 4.2.3).

- Where there is a conflict between the requirements of the Renewable Energy Directive and the Birds and Habitats Directives the Government should prefer schemes which are best able to balance these conflicting demands and avoid adverse effects on biodiversity, including European sites.

121. Recent constraints on Government funding for renewables, especially offshore wind, mean that there are a substantial number of consented but currently unfunded alternatives that are environmentally less damaging alternatives to Hornsea Project 2, that in our view the Habitats Directive requires should be preferred to Hornsea Project 2.

Appendix 1: Wind farms operational, under construction or consented and funded

Scheme categories	Capacity (GW)
A – Operational	
Barrow	0.090
Beatrice*	0.010
Blyth	0.004
Burbo Bank I	0.090
Greater Gabbard	0.504
Gunfleet Sands Demonstration	0.012
Gunfleet Sands 1	0.108
Gunfleet Sands 2	0.065
Gunfleet Sands 3*	0.065
Gwynt y Mor[75]	0.576
Humber Gateway[76]	0.219
Inner Dowsing	0.097
Kentish Flats	0.090
Kentish Flats Extension[77]	0.050
Lincs	0.270
London Array 1	0.630
Lynn	0.097
Methil Demonstration (Fife Energy Park)	0.007
North Hoyle	0.060
Ormonde	0.150
Rhyl Flats	0.090
Robin Rigg (East & West)	0.180
Scroby Sands	0.060
Sheringham Shoal	0.317
Teesside	0.062
Thanet	0.300
Walney 1	0.184
Walney 2	0.184

[75] Officially opened in June 2015: http://www.bbc.co.uk/news/uk-wales-33168638; also mentioned by the Secretary of State in a speech: https://www.gov.uk/government/speeches/address-to-the-renewablesuk-offshore-wind-conference

[76] http://www.grimsbytelegraph.co.uk/power-hit-Humber-Gateway/story-26656844-detail/story.html (9 June 2015)

[77] Fully generating: http://www.businessgreen.com/bg/news/2425947/kentish-flats-extension-offshore-wind-farm-hits-full-power 15 September 2015)

West of Duddon Sands	0.389
Westermost Rough[78]	0.210
Subtotal	*5.170*
B – Under construction	
Burbo Bank Extension	0.258
Dudgeon	0.402
Galloper[79]	0.340
Race Bank[80]	0.580
Rampion (Southern Array)[81]	0.400
Subtotal	*1.980*
C – Consented and funded	
Beatrice[82]	0.664
Blyth Demonstration[83]	0.099
EA 1[84]	0.714
Hornsea 1 (Heron wind + Njord)[85]	1.200
Hywind 2 (Buchan Deep)[86]	0.030
Neart na Gaoithe[87,88]	0.448
Walney Extension[89]	0.660
Subtotal	*3.815*
Total	**10.965**

Sources: Unless stated otherwise, the source for the information above is *UK offshore wind – key facts 2015-16* (The Crown Estate, April 2015).
* Listed in Table 5.10 Power Stations in the United Kingdom, *Digest of United Kingdom Energy Statistics 2014* (DECC, 2014)

[78] Officially inaugurated on 1 July 2015: http://renews.biz/91063/westermost-rough-has-lift-off/ Also mentioned by the Secretary of State in a speech: https://www.gov.uk/government/speeches/address-to-the-renewablesuk-offshore-wind-conference.

[79] Construction was due to start at the beginning of November (http://www.bbc.co.uk/news/uk-england-suffolk-34677988)

[80] Clearance of unexploded ordnance on the cable export route has been undertaken (http://www.grimsbytelegraph.co.uk/Explosions-Dong-Energy-s-Race-Bank-wind-farm-site/story-27983748-detail/story.html) (15 October 2015).

[81] Construction began in September (http://www.businessgreen.com/bg/news/2433684/enbridge-ramps-up-eon-plans-for-400mw-rampion-offshore-wind-farm).

[82] Hi Def Surveying won a contract from SSE Renewables to provide survey work in 2015 (http://renews.biz/90182/hidef-woos-beatrice/ (15 June 2015))

[83] EDF Energy Renewables was scheduled to carry out site investigation works in June 2015. (http://www.newspostleader.co.uk/news/local/work-continues-on-350m-wind-farm-1-7313366)(17 June 2015)

[84] Iderdrola has selected Siemens to supply turbines for EA1: http://renews.biz/89668/siemens-lands-east-anglia-giant/ (5 June 2015)

[85] Hornsea 1 has awarded the contract to construct turbine blades to Siemens' Green Port Hull scheme: http://www.hulldailymail.co.uk/Siemens-Hull-factory-wins-UK-s-biggest-wind-farm/story-26642010-detail/story.html (5 June 2015)

[86] Statoil made its FID at the beginning of November (http://renews.biz/100318/statoil-commits-to-210m-hywind-2/) (3 November 2015)

[87] As mentioned above Neart na Gaoithe is one of the Scottish windfarms decisions that is currently subject to a Judicial Review by the RSPB.

[88] Neart na Gaoithe placed an order for Siemens' new offshore transmission module (http://www.rechargenews.com/wind/1396924/neart-na-gaoithe-offshore-wind-debut-for-siemens-otm) (13 April 2015)

[89] DONG Energy confirmed it had made a final investment decision (http://www.lancasterguardian.co.uk/news/business/offshore-wind-farm-to-become-world-s-largest-1-7554541) (8 November 2015)

Appendix 2: RSPB renewable energy figures – sources and calculations

1. This Appendix sets out how the RSPB has calculated the renewable energy figures set out in its alternative solutions text. The aim is to ensure transparency with the figures and also to ensure that the Examining Authority and the Secretary of State are able to update the figures ahead of (respectively) the Examiners' Report and the Secretary of State's decision.

2. The energy figures for Table 1: *Changes in installed renewable energy capacity between 2011 and June 2015* are derived as follows:

    - Q1 2011 figure – DECC's Energy Trends (June 2012), Table 6.1*, Renewable electricity capacity and generation*, column headed "2011 1st quarter" (p47) and rows under the heading "Cumulative Installed Capacity".

    - Q2 2015 figure – DECC's Energy Trends (September 2015), Table 6.1, *Renewable electricity capacity and generation*, column headed "2015 2nd quarter"(p47) and rows under the heading "Cumulative Installed Capacity". It should be noted that these are provisional figures.

    The differences between these figures were then calculated.

3. The information in Table 1 was used as a starting point for calculating progress towards the Government's renewable energy target of 33 GW for 2025. It represents the ***total*** increase in renewable energy from the start of 2011.

4. Table 2 was produced to evaluate the likely energy contributions of offshore wind farm schemes. It summarises the energy outputs from all wind farms that are operational, under construction or consented and funded. It represents schemes where delivery is considered to be more-or-less certain. When schemes listed as "under construction" have reached their full generation capacity they have been moved to the "operational" heading. Similarly, where a scheme has proceeded beyond the final investment decision and has started preparatory works (for instance the clearance of unexploded ordnance in the case of Race Bank) it is moved from the "consented and funded" to the "under construction" category. Google searches (under the "Web" and "News" options) have been used to identify recent changes to the schemes. The most recent set of searches were conducted on 11 November 2015. A fuller version of this table, listing all the individual schemes, is set out in Appendix 1.

5. Table 3 combined the information from Tables 1 and 2, along with information about pipeline schemes from the Climate Change Committee, to provide a summary of the amount of capacity that is still required to meet the Government's renewable energy target of 33 GW by 2025.

6. Table 4, contains sites listed by the Crown Estate[90], which has been updated to reflect recent changes in planning status as well as decisions by developers.[91] As with Table 2 Google searches have been undertaken to ensure that the non-NSIP schemes are caught (the only 2 are Hywind 2 and 2-B Demo). The remaining schemes are all NSIPs and information on consented schemes is picked up via Google searches, and for all other schemes via updates on the scheme page on the Planning Inspectorate's NSIP website. The Table 4 has 4 categories:

[90] Crown Estate, *Energy and infrastructure key facts 2015-16*, table, UK offshore wind project pipeline – April 2015.

[91] The table has been updated to reflect consent for Dogger Bank Teesside A&B, the refusal of Navitus Bay and Hywind 2 (Buchan Deep) reaching a post-consent Final Investment Decision.

I Those with consent but no funding

II Those currently going through the planning process

III Those we expect to be submitted for planning consideration within the next 12 months

IV Alternative offshore renewable energy schemes which have consent but no funding.[92]

7. The totals from Table 4 were then used to identify the potential to meet the outstanding renewable energy requirement identified in Table 3.

8. Tables 5 and 6 repeat the process set out in tables 2 and 3, but adjust it to reflect the impact on energy figures that a successful judicial review by the RSPB of the four Scottish offshore wind farms may have.

9. The RSPB's figures are based on DECC's Energy Trends publication and are up-to-date to the 2015 Q2 update (24 September 2015). The Q3 figure will be published on 22 December 2015 and the Q4 figures on 31 March 2016. The RSPB respectfully asks the ExA to take account of the Q3 figures in their report to the Secretary of State and for the Secretary of State to take account of the Q4 figures in reaching her final decision.

[92] At present the Swansea Tidal Lagoon is the only scheme within this category.