Department of Energy & Climate Change

UK Offshore Energy Strategic Environmental Assessment

OESEA3

Consultation Feedback

July 2016

Any enquiries regarding this publication should be sent to us at oep@decc.gsi.gov.uk.

Consultation feedback

The Department of Energy and Climate Change (DECC) prepared an Environmental Report as part of its Offshore Energy Strategic Environmental Assessment (SEA) programme, hereafter referred to as OESEA3. OESEA3 assessed a draft plan/programme to hold further offshore leasing/licensing for renewable energy, oil & gas, hydrocarbon gas and carbon dioxide storage and associated infrastructure. Public consultation on the Environmental Report was undertaken over a period of eight weeks between 3rd March and 29th April 2016. Comments were received from 22 organisations and individuals, which have been summarised in a Post Consultation Report (PCR), available on the OESEA3 page of the gov.uk website. Where appropriate, responses to comments are given in the PCR to provide factual and technical clarifications. The PCR also includes responses to comments on policy, regulatory and other controls, and future plans where these are relevant.

This document reproduces the comments received during the consultation in full (redacted as necessary). The organisations and individuals which responded include:

- Joint Nature Conservation Committee (JNCC), also representing a joint response from Natural England (NE), Natural Resources Wales (NRW) and Natural Environment Division, Northern Ireland Environment Agency (DOENI) – abbreviated to SNCBs. Note that there are also separate responses from NRW and SNH.
- Natural Resources Wales (NRW)
- Scottish Natural Heritage (SNH)
- Marine Scotland
- Marine Management Organisation (MMO)
- Scottish Environment Protection Agency (SEPA)
- The Crown Estate (TCE)
- Historic England (HE)
- Cadw (Welsh Government historic environment service)
- Historic Environment Scotland (HES)
- Whale and Dolphin Conservation (WDC)
- RenewableUK (RUK)
- Energy UK (EUK)
- Tidal Lagoon Power (TLP)
- Vattenfall
- DONG
- EDF Energy (EDF)
- Scottish Power Renewables (SPR)

- Alan Neale
- Isle of Man Government
- Ministère de l'environnement (French authorities)
- Norwegian Ministry of Climate and Environment

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Date: 29 April 2016

By email only[1]

UK OFFSHORE ENERGY STRATEGIC ENVIRONMENTAL ASSESSMENT (SEA): ENVIRONMENTAL REPORT CONSULTATION

Thank you for your invitation to comment on the UK Offshore Energy Strategic Environmental Assessment (OESEA3) Environmental Report, which was published for consultation on 03 March 2016.

The Joint Nature Conservation Committee (JNCC), Natural England (NE), Natural Resources Wales (NRW) and Natural Environment Division, Northern Ireland Environment Agency (DOENI)[2] have worked together closely to consider the OESEA3 and have agreed this letter to be a joint response. All place great importance on engaging with the SEA process. Scottish Natural Heritage (SNH) will provide their comments outwith this Statutory Nature Conservation Bodies' (SNCB) joint response. Please note that in addition to being a part of this joint response, additional comments may be provided by the SNCBs on an individual basis, where any SNCB feels that they can add particular value to the consultation on an issue specific to them.

[1] cc: [redacted] (JNCC), [redacted] (NE), [redacted] (NRW), [redacted] (DOENI), [redacted] (SNH)

[2] Abbreviated to SNCBs from here on in, though note continued separate response from SNH.

JNCC is the statutory adviser to the UK Government and devolved administrations on UK and international nature conservation. Its work contributes to maintaining and enriching biological diversity, conserving geological features and sustaining natural systems. Originally established under the Environmental Protection Act 1990, JNCC was reconstituted by the Natural Environment and Rural Communities Act 2006. Support is provided to the JNCC by a company limited by guarantee (JNCC Support Co) that the Committee established in 2005. JNCC delivers the UK and international responsibilities of the Council for Nature Conservation and the Countryside (CNCC), Natural Resources Wales, Natural England, and Scottish Natural Heritage (SNH).

Natural England is a non-departmental public body established under the Natural Environment and Rural Communities Act 2006 (NERC Act). Natural England is the statutory adviser to Government on nature conservation in England and promotes the conservation of England's wildlife and natural features. Under section 1(3) of the NERC Act Natural England's functions are exercisable in relation to England and the territorial sea adjacent to England up to 12 nautical miles. In addition, since December 2013, JNCC has delegated to Natural England the statutory powers to provide renewable energy casework advice in the English offshore region (12-200nm).

The NIEA is the agency within the Department of Environment for Northern Ireland which takes the lead in advising on, and in implementing, the Government's environmental policy and strategy in Northern Ireland.

The purpose of Natural Resources Wales (NRW) is to ensure that the environment and natural resources of Wales are sustainably maintained, sustainably enhanced and sustainably used now and in the future. Our comments are therefore provided in the context of this remit and our role as a consultation body under the Environmental Assessment of Plans and Programmes (Wales) Regulations 2004, as further amended by paragraph 189 of the Natural Resources Body for Wales (Functions) Order 2013, and as advisers to Welsh Government on the natural heritage and resources of Wales and its coastal waters.

Background

The main objectives of the draft plan/programme are to enhance the UK economy and contribute to the achievement of carbon emission reductions and security of energy supply, without compromising biodiversity and ecosystem function, nature conservation, heritage, human health, assets and other users of the marine environment.

The draft plan/programme includes the licensing/leasing of offshore oil and gas, the storage of gas and carbon dioxide (CO_2) as well as offshore wind farms (OWFs) and other marine renewable technologies such as wave and tidal stream.

- For renewable energy, the SEA considers the Exclusive Economic Zone and also the territorial waters of England and Wales.
- For gas and CO_2 storage, it considers UK territorial waters (except Scotland) and the UK Exclusive Economic Zone.
- For offshore oil and gas, all UK waters are considered in the SEA.

Overall conclusion

The SNCBs agree with the SEA that **alternative 3** to the draft plan/programme is the preferred option, with the **area offered restricted spatially** through the exclusion of certain areas together with a number of mitigation measures to reduce and offset significant effects on the environment.

Our comments are provided in two sections – **key comments** concerning the report's recommendations, and a series of **appendices** that highlight specific issues within sections of the report as well as its appendices. If any issue affects only one or more of the geographic areas contained within the assessment, this is highlighted in the comments.

We would, however, like to highlight one issue up front.

We feel that developers only rarely refer to the information gathered by the SEA within their applications. We would encourage measures to facilitate better access to information collated within the SEA (for example on receptors, monitoring impact pathways and mitigation measures) to ensure it is readily available to plan makers and developers to inform lower tier assessment of plans and projects that sit underneath this plan. We would also like to suggest that the SEA can learn from the ongoing streamlining processes within the Crown Estate for their aggregates and wave and tidal plan-level assessments. We acknowledge that there is a wealth of useful information on the SEA website, however much of the information presented within the SEA might usefully be presented in a form that can be used more readily (e.g. by subdividing regionally, by activity or by receptor). We note that some work is currently being led by the Crown Estate to achieve this for the wave and tidal stream sector.

Key Comments

Recommendation 1

- **Welsh marine spatial planning**

  Welsh Government are developing a Welsh National Marine Plan (WNMP). Many of the policies in the plan are aimed at managing interactions between marine industries and should help guide decision makers and users of the marine environment in avoiding conflicts between activities. It is our understanding that Welsh Government intend to finalise the WNMP in 2017 which is well within the currency of the Offshore Energy Plan. We recommend that DECC consult and utilise the WNMP once available.

- **English marine spatial planning**

  The first two marine spatial plans for English waters were published in April 2014 for the East Inshore and Offshore areas. The Marine Management Organisation are developing plans for the Southern Inshore and Offshore areas and it is our understanding the draft plans will be available for public consultation during 2016. They are also currently consulting on a draft scoping document for the sustainability

appraisal of the remaining area plans. All marine areas are scheduled to have a plan in place by 2021. We recommend that DECC consult and utilise any information as it becomes available.

- **NI marine spatial planning**

  With Decision 38 COM 7B:80, the World Heritage Committee reiterated its position that oil and gas exploration and exploitation are incompatible with World Heritage status (WHS) and urge State Parties to exclude WHS properties from petroleum exploration licenses. Seascape is a critical element of the setting for the Giant's Causeway and Causeway Coast World Heritage Site. Oil and gas platforms have the potential to significantly impact on this setting with no potential for mitigation at close quarters. In light of recent decisions in relation to impacts on seascape of OWFs, we suggest a limit of the release of sea bed within 12 nautical miles of the WHS in Northern Ireland and ensure any projects are fully assessed for landscape effects after this distance.

  The document references the Northern Ireland resource, whilst stating it does not form part of the SEA as it was subject to a previous SEA; we consider this a rational approach. However this approach is potentially confused by continued references to Northern Ireland resource and projects throughout the document.

Recommendations 2 and 8

- **Continued need for plan and project level HRA**

  We believe that the SEA does not negate or influence the need for a project specific HRA to be undertaken by the licensing authority on any aspect of the plan. The report recognises that there are a range of uncertainties associated with potential effects on receptors that cannot be evaluated in detail in relation to a plan at such a high level, but that nevertheless will need to be addressed with further information, assessment and consultation as part of the marine licencing process before any new development can be undertaken. We are pleased, therefore, to see these uncertainties captured in the form of recommendations for further work.

  We note that at project-level, cumulative assessment with other operational, consented, and proposed developments, will be required. This assessment should include the sources of effects as listed such as noise, introduction and spread of invasive species, behavioural disturbance, collision risks, changes/loss of habitats, trans-boundary effects and contamination in the form of discharges and emissions. These sources of effects on marine habitats and species, the wider environment and risks associated with accidents will require consultation with the relevant authorities in areas adjacent to or impacted by the proposed projects.

  The Plan is flexible and it is not essential to the implementation of the plan that any or all of aspects of the plan are taken forward to exploration, production or development. The plan thus acknowledges the risk that one or parts of the plan may not be developed due to a project level HRA identifying the possibility of adverse impacts.

- **Assessment within protected sites**

  We recognise that assessment of potential impact within protected sites is a process best left to the project level HRA, however, we feel that after reading the SEA, developers may not fully understand the potential implications of proposing development within a protected site. We feel that more comment should be made within the SEA about these potential complications. We would expect developers to gain some understanding of:

  - conservation objectives, and what an objective of maintain or restore (or the equivalent wording under the Marine and Coastal Access Act) would mean for any proposed development
  - assessment against conservation objectives and the level of evidence required for such an assessment
  - potential of using IROPI routes for project level operations.

- **Welsh MPAs**

  The decision to proceed with designating the proposed new Special Areas of Conservation and Special Protection Areas in Wales has not yet been taken by Welsh Ministers. NRW have launched a consultation on the proposed new sites, with a closing date of 3rd May 2016, and this will inform the decision whether or not to designate. The consultation documents nevertheless provide information which describe the new sites and the reasons for designation.

- **SSSIs**

  We believe that relevant SSSIs and their protected species should be included in Recommendations 2 and 8.

Recommendation 3

- **Lack of emphasis on coastal impacts**

  We understand that the SEA remit ends at the low water mark, but we still feel that not enough consideration has been given to impacts on waters closest to the coast, for example, the document does not appear to mention possible impacts to coastal habitats from cables / pipes in the intertidal or when making landfall (impacts of tunnelling under / through beaches, salt marshes and dunes).

  The tidal range component of the plan in particular means that large scale development at the coast is much more likely than has been the case within the timeframe of previous offshore energy plans. This will require careful consideration of a range of receptors that may be impacted by the plan, subsequent lower tier plans and any resulting projects that may have not been considered in detail previously. In particular, coastal defence and flood risk management, water quality management,

fish and shellfishery management are issues that have not typically been considered in detail by previous assessments of offshore energy plans and projects but are a particular concern in relation to tidal range.

Recognition of the need to fill evidence gaps associated with coastal topography is welcomed. It is also necessary to consider other key strategic baseline evidence gaps in relation to physical processes that would assist with strategic planning for newer technologies such as tidal range. These would include, for example, better wave data, information about bedform dynamics and longer term records of intertidal morphology.

Recommendation 7

- **Precaution concerning mobile species**

  We welcome the recognition that a precautionary approach will need to be taken where European Marine Sites may be affected by plan activities, though we note that precaution should also need to be applied outside sites when there are uncertainties about impacts and to species listed in the UK Biodiversity Action Plan (BAP) and NERC Act Section 74 species.

  Reliance on precaution can nevertheless be minimized by improving our understanding of potential effects to receptors and the SNCBs welcome DECC's continued support for research to help understand the effects of these activities.

  We consider that it may be possible to apply the principles of adaptive management[3] in deploying technologies when uncertainties about impacts remain. This is particularly relevant to new technologies like wave, tidal stream and tidal range. However, before adopting such an approach it would be necessary to exhaust all possible conventional assessment as part of the EIA or HRA processes. Adaptive measures would need to be demonstrably achievable to avoid incurring adverse effects that cannot be mitigated at a later date.

  Diadromous fish - In the case of tidal range, when 'facility siting', consideration should also be afforded to key areas of importance for diadromous fish, not just key areas of importance for bird and mammal populations.

Recommendation 9

- **Cumulative effect of noise on marine mammal populations**

  The SNCBs welcome the Marine Noise Registry as an important precursor to effective management of noise. However, we note here that the Registry is solely for impulsive sound, and is not meant to form a comprehensive database of noise within the sea.

[3] The SEA makes reference to the roles of risk-based approaches to consenting and adaptive management in minimising and managing environmental risk. These terms are increasingly used within the marine energy sector with little shared understanding or agreement for what they mean in practice. We believe that the SEA could usefully recognise this and consider how they might be developed in a consistent, transparent and proportionate manner for each of the sectors.

We welcome the recommendation that work to develop criteria to determine and regulate the cumulative effects of noise should be prioritised. This affects many technologies and, as a UK wide issue, is something that the SEA R&D programme could meaningfully address (see further comments on cumulative effects assessment framework in Section 5.3.3.1).

Recommendations 10 and 15

- **Beaked whales**

  We agree with the caution shown in the SEA around current mitigation measures for beaked whales and deep-diving species in areas such as the Rockall Basin and the Faroe-Shetland Channel. A possible increase in oil and gas exploration in areas like these raises conservation concerns given the large abundance and diversity of marine mammals (over 20 species of cetacean) and the presence of deep diving species, such as beaked whales, which may be particularly sensitive to noise.

  Should further, large scale, exploration take place in these areas, it may be advisable to review current mitigation measures, monitoring efforts, baseline information and the suitability of available environmental risk assessment approaches. For example, as highlighted in the SEA report there is uncertainty about the effectiveness of current mitigation measures for beaked whales. It would be helpful if the SEA report provided examples of measures that could be explored in order to reduce risk to this group of whales.

Recommendation 12

- **Tidal range developments**

  Tidal range developments, in particular, have the potential to have environmental impacts over large areas and, whilst some risks may be avoided or mitigated by careful siting of individual deployments (or through operation controls), it may not be possible to mitigate or compensate for others. Planning the deployment of these technologies, to ensure that they are deployed in locations that are 'appropriate' and take account of environmental risk, is therefore critical. We agree that more detailed analysis/assessment of tidal range locations, which are mostly now known, is desirable before sites are leased and that this should be undertaken on a strategic basis to allow for effective consideration of issues such as far field and cumulative effects.

  Furthermore, it will be critical to understand the geographical scale of the effects of tidal range technologies to ensure that the extent can be fully understood. We also agree therefore that the effects of projects alone and that act in-combination / cumulatively will need to be considered at different spatial, temporal and geographical scales.

  With large scale tidal range developments, there are likely to be a number of issues that, in some cases, would be better addressed strategically rather than at the project level. For example, the cumulative and/or in-combination effects of multiple developments in the Severn estuary (and possibly at other locations) and the identification of measures to compensate for potential adverse effects on European marine sites are both likely to present significant challenges.

We note the announcement by UK Government of a review into the feasibility of tidal lagoons and we are hopeful that this process will carefully consider the benefits of a coordinated and planned approach to development that is more efficient and effective for industry, regulators and advisors.

Recommendation 13

- **Cumulative Effects Assessment**

  We welcome the recognition that further clarity on cumulative effects assessment is needed as this is likely to be a major challenge for future consenting of a number of offshore energy technologies**.**

Recommendation 14

- **Conservation issues in Northern Irish waters**

  The report considers some migrating marine birds within the Irish Sea. However there is very little assessment provided on terrestrial bird movements across the Irish Sea, such as waders. There may be migration movements across the Irish Sea that have not been considered as a large number of birds migrate to and from Ireland (particularly during severe weather in the UK. The lack of knowledge on these and other movements could have been recognised as a data gap for future research and monitoring to inform projects.

Recommendation 18

- **Site integrity**

  We agree that there is a need to enhance our strategic level understanding of biodiversity and its patterns in UK waters to inform considerations of site integrity, and welcome discussions about this. The integrity of our MPA network as a whole, as well as on a site by site basis, should also be considered.

Recommendation 19

- **Interactions with submerged devices**

  We agree and note that it is recommended that for the deployment of single devices and small arrays, appropriately focussed surveys of animal activity and behaviour should be undertaken to inform commercial scale deployment risk assessments and consenting. However, because a method of mitigation is to avoid areas with high bird densities then it may be difficult if densities are so low that it is not possible to do any meaningful monitoring. Monitoring use of single devices or small arrays to test monitoring approaches as a proof of concept for a technology to monitor collision/avoidance, on the other hand, would be feasible. For example, trialling the use of underwater cameras could be considered to test a technology to see whether the clarity and resolution would be enough that we would be able to detect sensitive receptors, if they were there.

Recommendations 20 and 21

- **Topological evidence gaps**

  Recognition of the need to fill evidence gaps associated with seabed topography is welcomed. It is also necessary to consider other key strategic baseline evidence gaps in relation to physical processes that would assist with strategic planning of 'young' / 'new' marine renewable development technologies such as tidal range. These would include, for example, better wave data and longer term records of intertidal morphology.

- **OESEA**

  We consider that the marine energy element of the OESEA research programme should be guided by the evidence prioritisation work that the Offshore Renewables Joint Industries Programme for Ocean Energy (ORJIP OE) has undertaken for wave and tidal stream developments. ORJIP OE is now to include tidal range.

  We recognize it will take some time for the current ORJIP OE 'Call for Evidence' to result in a prioritisation of research requirements for tidal range and this is described in a Forward Look, similar to that provided for the wave and tidal stream sectors[4].

  SNCBs are individually preparing responses to the Call for Evidence and will provide these to DECC SEA when finalised.

Editorial issues

We suggest the document would benefit from a thorough proof-read to bring attention to the numerous editorial mistakes, to accommodate restructuring within individual sections and improve upon linkages between paragraphs.

Maps: At an A4 scale, it is hard to distinguish the many colours used on a number of maps.

Where 'biotope' is used within description of effect, we suggest it is amended to 'species, habitats and communities'. Impact can happen at a non-biotope scale.

Please do not hesitate to contact me with any questions regarding the above comments.

[redacted]

[4] The Forward Look; an Ocean Energy Environmental Research Strategy for the UK. ORJIP Ocean Energy. 2016.

Appendix A - Non-technical summary

Prospectivity

We note that gas storage activities are expected to take place in the same areas as existing oil and gas production or in areas of extensive halite deposits. We suggest that where methods such as seismic activities are used, cumulative impacts will need to be taken into consideration.

Overview of Main Sources of Effect and Controls in Place

Sources of Effect, xviii

We note where sources of effect have been listed, the indirect impact of prey disturbance / removal / change on marine mammals is missing.

Assessment Summary: Biodiversity, habitats, flora and fauna

On numerous occasions through the Environmental Report, it is mentioned that the impact of offshore energy development on benthic habitats is negligible relative to the impact of the demersal fishing industry, as the scale of impact is small (e.g. page 25 and 164).
We do not feel this is valid since habitats which are under stress, such as those which are exposed to fishing pressure, may be pushed to a tipping point where new pressures result in a further degradation of condition. In addition the pressures associated with energy development are different in character to those of fishing. For example offshore construction can result in smaller scale, acute, permanent impacts compared to lower intensity, larger scale, recoverable impacts which can sometimes be associated with fishing. Furthermore, Chapman and Tyldesley (2016) show that even small scale effects can prove to be adverse effects[5].

Paragraph 2, xx

We welcome the development of noise reduction technology and that the recommendations developed by the expert group are accepted by the SEA. However we query how DECC plan to translate this recommendation into concrete actions and in supporting initiatives for alternative quieter installation techniques and methods to reduce noise at source.

Paragraph 4, xxi

We suggest the following lines in paragraph 4 are reworded to "*... their potential location (i.e. when in foraging range of coastal breeding locations or when in areas of high abundance during the non-breeding season)".*

We do not believe that there is enough evidence to suggest that displacement always leads to habitat loss. We advise this section is slightly reworded so it does not imply displacement

[5] Chapman, C., & Tyldesley, D. 2016. Small scale effects: How the scale of effects has been considered in respect of plans and projects affecting European sites – a review of authoritative decisions. Natural England Commissioned Report, Number 205.

always results in habitat loss. We also believe the paragraph implies that collision is an afterthought. We advise that this is re-written to more clearly distinguish between impacts.

Paragraph 4, xxii

We question whether the conclusion that displacement, barrier effects and collisions are all unlikely to be significant to bird populations at a strategic level is realistic, especially in terms of CEA.

We advise there are important aggregations offshore as well, especially (but not only) when considering wintering seabirds. There are seabird breeding colonies inshore but also important wintering aggregations/foraging areas which can be offshore for breeding or wintering birds. Reference should be made to ESAS hotspots (Kober *et al* 2012) and to emerging tracking evidence. It is difficult to comment here though given that many of the 'important' aggregations which are likely to go forward as SPAs in offshore waters are in Scotland, and this report does not consider Scottish waters for renewable energy projects. This does not mean that there are not significant numbers of, or aggregations of, seabirds in offshore waters around the rest of the UK and there needs to be reference made to work showing these distributions.

Assessment Summary: Other users, material assets (infrastructure, other natural resources)

Paragraph 3, xxvii

We advise that this paragraph refers to infrastructure from tidal range and other coastal energy sectors, not just offshore wind.

Paragraph 1, xxix

While we generally support this statement we would also like to raise that there is the issue of displacement of shipping and restriction of access to ports which could particularly occur for tidal range schemes, which is not adequately considered here. Implications and environmental impacts from the displacement of existing activities should also be considered.

Assessment Summary: Transboundary Effects

Paragraph 3, xxxii

We advise that it is not just activities in UK waters which affect neighbouring countries but underwater noise from activities outside UK waters could also impact the OESEA3 region. These should be factored into the cumulative assessment.

Chapter 2: Overview of the Draft Plan/Programme & Relationship with Other Initiatives

2.7.6: Wave & Tidal Stream

Inshore Scottish waters are included in discussion of wave and tidal stream exploitation. We would note that these waters are not included in the remit of OESEA3, and comment should be included that these remarks are for comparative purposes only.

Chapter 3: SEA Approach

3.4: Surveys and Studies

There is no mention of the DECC SEA surveys from 2015.

3.5: SEA Objectives

Table 3.1

We believe that the 'valued ecosystem components' needs definition to aid understanding.

DOENI and NRW advise that the SEA Indicator should also recognise the potential impact upon cultural heritage sites and features that are otherwise unrecorded and not just designated and recorded sites and features. There needs to be a clear recognition of the potential importance of newly discovered sites and features that may arise as a result of activities. See for example p470 which includes "..., and areas of potential importance" in the first Guide Phrase.

Table 3.2

The Mode or Process section should be questioning whether there are technologies or methods that can meet the need with less environmental damage than obvious or traditional methods. While the most mature technologies are detailed, ways of limiting their environmental impact has not been detailed. This does not appear to have been done and as such we suggest re-wording.

The Location section should refer to Northern Ireland as well as Wales as examples.

Chapter 4: Overview of Environmental Baseline

4.2.1: UK Context

Water Environment

We advise that this section should make reference to chemical and microbiological contamination by soluble and dispersed discharges including e.g. produced water, saline discharges (aquifer water and halite dissolution), and drilling discharges (from wells and foundation construction) and accidental events - contamination of the water column by dissolved and dispersed materials from oil and chemical spills or gas releases.

4.3.1: Summary of Regional Seas

We suggest it would be useful as quick reference to have an Annex listing all current SAC's/SPA's per region along with any currently proposed.

We advise that there are ongoing consultations on proposed Special Areas of Conservation for harbour porpoise in the North Sea, Irish Sea, and west coast of Scotland. For more information please consult:

- http://jncc.defra.gov.uk/page-7059
- http://www.snh.gov.uk/protecting-scotlands-nature/protected-areas/2016-harbour-porpoise-consultation/

Features of Regional Sea 1

It is worth noting that there is increasing evidence that the coastline of Northumberland (the southern part of Regional Sea 1) is important for various marine mammal species, in particular the white beaked dolphin.

Features of Regional Sea 2

We advise that there is now a sizeable breeding colony of grey seals along the North Norfolk coast (in 2015, it recorded more pups than at Donna Nook). Annual reports on seal populations are available from the Special Committee on Seals (SCOS)[6].

Features of Regional Sea 3

It should be noted that both species of seals are also present in the Thames Estuary.

[6] http://www.smru.st-andrews.ac.uk/pageset.aspx?psr=411

4.4: Likely Evolution of the Baseline

4.4.8: Other Users

This section appears to be very focussed on offshore wind and needs better consideration of displacement, implications and impacts to the environment by the existing activities particularly in the nearshore environment and in estuaries due to tidal range.

4.5 Relevant existing environmental problems

4.5.2: Hazardous Substances

We question what standards are referred to when metal concentration is considered unacceptable. We suggest reference is made to barium, which in the form of barite is used as a weighting material to increase the density of drilling muds and thus can be considered an indicator of drilling contamination.

We suggest utilising papers by Jepson et al (2016)[7] and Murphy et al (2015)[8] that investigated the levels of contaminants (organochlorine pesticides and polychlorinated biphenyls) in various species of marine mammals, concluding that these contaminants are likely to cause population decline or suppress population recovery.

4.5.7: Damage to Seabed Habitats

We question why only shallow sediment and reefs have been referred to here as being damaged by bottom fishing practices.

4.5.7.1: Implications for SEA

The sentence "*Safety zones around surface infrastructure will likely locally reduce trawling activities in these areas thereby reducing trawling pressure on benthos*" should be removed, as it is a specific, biased instance of impact in a paragraph concerning high-level description.

4.5.8: Poor Knowledge of the Status of Marine Mammals

It should be noted that due to the cryptic nature of their preferred habitat along the Welsh and southwest English coastlines (e.g. in caves), there is a national under-reporting of grey seal abundance by SCOS (the Special Committee on Seals). This is an issue that requires further research in the future.

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[7] Jepson, P.D. et al (2016) PCB pollution continues to impact populations of orcas and other dolphins in European waters. Scientific Reports, **6** pp 1-17.

[8] Murphy, S., Barber, J.L., Learmonth, J.A., Read, F.L., Deaville, R., Perkins, M.W., Brownlow, A., Davison, N., Penrose, R., Pierce, G.J., Law, R.J. and Jepson, P.D. (2015) Reproductive Failure in UK Harbour porpoises *Phocoena phocoena*: Legacy of pollutant exposure? PLOS ONE,10 (7).

4.5.9: Problems Associated with the Conservation of Species and Habitats

Lophelia pertusa and *Atrina fragilis* are considered here to be some of the most sensitive features in the UK; however no further reference is made to *Atrina fragilis* in the main report or Appendix A1a2.

Chapter 5: Assessment

5.1: Assessment Approach and Methodology

Figure 5.1

We suggest it would be useful to include feedback links in the figure to identify gaps in knowledge and lessons learnt for future assessments.

5.2: Potential Sources of Significant Effect

Paragraph 2, p96

We note that, while we generally recommend standardisation of evidence, we also suggest inclusion of a degree of flexibility here so that, as knowledge gaps are filled, further effects can be added.

5.3.2.3.2 Other Geophysical Surveys

We advise that sub-bottom profiler use by the oil and gas industry requires regulatory consent, but currently their use by other industries is not regulated and a system of voluntary notifications is used instead.

5.3.3.1 Marine Mammals

The SEA is consistent with the scientific consensus that underwater noise generated during seismic surveys, impact pile-driving and explosive use has the potential to cause injury to marine species at close range, with marine mammals being particularly sensitive. Such activities may also cause some level of disturbance at greater ranges. The SEA has considered the protection required for European Marine Species under the Habitats Directive and has had regard to the JNCC mitigation guidelines.

We welcome further efforts by government to publish legacy seismic data as well as to release data from government-led large-scale geophysical surveys of underexplored areas. This should contribute to lowering need for multiple seismic surveys in the same area by different operators, ultimately helping to reduce underwater noise.

The SEA rightly highlights the value of field research on marine mammal behaviour during industrial activities in order to increase our limited understanding of the effects of noise disturbance on these species. We welcome the work funded by DECC on the effects of piling on seals in the Wash and call for more offshore research to be undertaken on a wider range of species e.g. harbour porpoise. This is particularly important given that existing evidence comes from the installation of smaller scale wind farms in coastal, shallow water areas and therefore uncertainty remains on how applicable those findings are to assessing the risk from the considerably larger scale developments planned in UK offshore waters.

The SEA calls for specific research to improve our understanding of the ecology of beaked whales and location of important areas. Given the potential increase in exploration in the

deeper waters west of Shetland, an increased understanding is needed also of the distribution patterns and sensitivities of the other cetacean species frequently occurring in the area such as sperm whales and baleen whales.

The SEA report rightly considers it likely there will be cumulative effects on marine mammals resulting from potential licensing or leasing. It is reasonable to assume that most, if not all, individual projects will not have a significant effect on the large and wide-ranging populations of marine mammals. It is the potential impact resulting from the combined effect of several pressures on a population that could cause declines. Whilst we agree that planning and operational controls can reasonably cover the risk of auditory injury that could result from noise exposure, the risk of disturbance, particularly of the cumulative effects of several disturbances is considerably more difficult to assess and mitigate. The lack of adequate cumulative effects assessments (CEAs) is a major shortcoming of current processes and there is an urgent need to establish ways in which this can be undertake and to develop the means to manage cumulative effects if needed.

The report helpfully refers to cumulative effects of projects with those of other human activities (past, present and future). The temporal context of cumulative effects assessments is particularly important when considering long lived species such as marine mammals. CEAs are usually undertaken within a narrow temporal window that assumes that there was no impact before and there will be no impact after. If precise and frequent population abundance and vital rate estimates were available, changes would be detected and new baselines established at the start of every new impact assessment. However cetaceans in particular are notoriously difficult to survey and hence for most populations it is virtually impossible to obtain regular abundance and vital rate trends with any degree of confidence. Impact assessments have therefore to be based on modelling and predictions, which can be informative if undertaken within appropriate temporal windows and with adequate pressure quantification.

We strongly suggest the SEA report should recommend that a cumulative effects framework is developed by UK Regulators so that pressures are recorded and effects modelled and new projects and plans assessed against a background of existing and past pressures. Such a framework would contribute to impact assessments that more appropriately reflect the relevant biological scales. The CEA framework would include the following key elements:

- reference populations (UK Management Units for cetaceans (IAMMWG, 2015) which present the spatial units and abundances against which impacts of plans and projects should be assessed in EIA and HRA processes)
- a common currency of species abundance (using the outputs of the Joint Cetacean Protocol for example)
- population modelling approaches (e.g. Interim Population Consequences of Disturbance(iPCOD)
- records of past, existing and reasonably foreseeable future pressures, (e.g. UK Marine Noise Registry).

There are at least two legislative drivers for establishing such a framework, the Habitats Directive and the Marine Strategy Framework Directive (MSFD). The strict protection measures in Article 12 of the Habitats Directive (which apply to all cetaceans) prohibits deliberate disturbance, however derogations are allowed in Article 16 under certain

conditions. EC Guidance recommends that regulators should monitor the impact of those derogations to ensure that any risk for a species arising unintentionally through the derogations (possibly in combination with other negative factors) is detected. The MSFD outlines 11 high level descriptors of Good Environmental Status. Descriptor 11 relates to underwater noise: “Introduction of energy, including underwater noise, is at levels that do not adversely affect the marine environment”. The UK approach to implementing the MSFD indicator for impulsive noise aims to address the wider ranging behavioural effects, in particular the cumulative effects of noise on sensitive populations such as marine mammals and fish etc, through consideration of noise levels (where available), and their distribution in space and time.

Despite the uncertainty surrounding analyses of the consequences of disturbance to cetacean populations, population trajectory modelling (such as iPCOD and Disturbance Effects on the Harbour Porpoise Population on the North (DEPONS)) and/or habitat loss/carrying capacity approaches (Tougaard et al. 2016) have the potential to be useful in exploring different scenarios of pressures and population status and trends and provide an indication of the relative magnitude of impacts.

We would like to add comment on the conclusions of the Habitats and Wild Birds Directives Marine Evidence Group (MEG) report (Tougaard et al. 2016). This used a habitat loss approach to look at the effects of disturbance on the North Sea harbour porpoise population and concluded that an assumed worst case scenario of two continuous piling operations over a period of several years in areas of high densities would result in a 6.7% decline in the population. The authors considered this would not compromise the long-term health of the population, particularly relative (but not in addition) to other known pressures such as by-catch. The authors highlighted that their conclusions are not unequivocal and that there are critical information gaps.

We note that offshore wind installation in UK waters was the only pressure considered in this assessment and, although relative to by-catch, it is predicted to have a much lower effect on the population, there remains uncertainty as to whether the addition of noise disturbance could affect the long term health of the population.

It is now likely that there will be more than two nearly continuous piling operations at the same time in the North Sea for the foreseeable future. Whilst each development will aim to have only two installation vessels being used simultaneously, there are plans for the installation of several OWFs in the UK and other countries in the North Sea, well into 2020 and beyond. The MEG report conclusions may therefore be indicative of smaller installation programmes than is likely to occur in reality and need to be considered with great caution.

The SEA, using the same approach as in the MEG report, attempted to include seismic surveys in a CEA for Harbour Porpoise and comes up with a similar conclusion regarding the magnitude of effects. Whilst the attempt to undertake a CEA that takes into account more than one pressure is welcomed, the way in which seismic surveys have been incorporated is highly simplistic and it does not incorporate all the past, present and future pressures on the population. For example, the most recent abundance estimate of harbour porpoises in the North Sea is over 10 years old and within this period there have been a series of unaccounted for pressures. Therefore, we consider that more work is needed before any

conclusions on the cumulative effects of disturbance on the long-term health of harbour porpoise populations can be taken with any confidence.

Given the high uncertainty associated with estimates of cetacean population vital rates and abundances along with uncertainties associated with population effects assessments, and our limited ability to detect even large changes to cetacean population abundance, a precautionary approach to managing disturbance is required. Sections on controls and mitigation are in our view one of the key elements of an SEA and therefore should be much expanded both for marine mammals and other receptors, with evidence presented on the feasibility of alternative technologies for seismic exploration and installation of wind farm turbines as well as the use of noise reduction techniques (e.g. bubble curtains) and their applicability in UK offshore waters. We highlight some important recommendations in the MEG report such as the reduction of the emission of radiated noise through modifications to pile driving.

The consultation on the SEA report coincided with a consultation on proposed Special Areas of Conservation for harbour porpoise in the North Sea, Irish Sea and west coast of Scotland. Future SEAs should contain any guidance to be provided by SNCBs on both the conservation objectives for harbour porpoise protected sites and on what information is likely to be needed to inform the HRA process.

Paragraph 3, p124

We agree that unexploded ordinance (UXO) need to be considered as part of cumulative assessments for harbour porpoise in the North Sea.

5.3.4 Controls and Mitigation

Paragraph 1, p136

We advise that the JNCC seismic guidelines are currently being reviewed and a revised version is expected later in 2016. We suggest this is noted within the report.

5.3.5 Likelihood of Significant Effect

Where key areas of marine mammal sensitivity have been listed we suggest adding the following:

- Thames Estuary (grey and harbour seals)
- North Norfolk Coast (grey seals)

Paragraph 2, p138

We do not agree that if "*sufficient protection (from noise) is offered to the harbour porpoise then this would be sufficient for the marine environment as a whole"*. Whilst the harbour porpoise is one of the most widespread marine species in UK waters, and also one of the most sensitive to noise, specific approaches to risk assessment and mitigation might not be equally suited to other marine species. For example, certain types of acoustic deterrent devices have been shown to deter harbour porpoise from danger areas (e.g. loud noise or

fishing nets) but no evidence has so far emerged that these work for other cetaceans such as minke whale or dolphin species.

The SEA highlights that "while in many instances the range (from the source of noise where there is an injury risk) will be <500m, this may not be necessarily true for all large 2D/3D seismic surveys, especially with respect to *SEL*cum for high-frequency cetaceans". We suggest that more noise modelling and field validation should take place to identify those noise sources and their characteristics, and the environmental circumstances that could carry a risk of injury to marine mammals beyond the standard 500m mitigation zone.

Paragraph 2, p139

We note that the magnitude of effect of displacement from piling varies considerably with distance to the noise source, and that this may not necessarily be as a result of declining sound levels from source. There is some recent evidence that suggests cetaceans may react according to their perception of how distant the sound is and not just how loud it is.

Paragraph 8, p139

Where iPCOD is mentioned as a developing population effects modelling approach, the industry led DEPONS project should also be mentioned[9].

5.4: Physical Damage/Change to Features and Habitats

We suggest that stabilisation material be added to row 2 'Physical damage to biotopes from infrastructure construction, vessel/rig anchoring etc'.

5.4.2: Sources of Potentially Significant Effect

Table 5.8

We advise that the sources of significant effect listed neglect a number of potential pressures. Jack-up rigs are used for offshore wind construction as well as oil and gas. Oil and gas infrastructure is not included within the 'physical presence of structures in the water column' pressure. There is also no mention of maintenance and associated issues of the operational phase of all industries.

5.4.3: Consideration of the Evidence

We advise including more information here about post consent monitoring of OWFs. There are a number of possible effects arising from energy developments which are best monitored at a regional scale, such as impacts at a population level of collision of mobile species with structures/devices. The SEA has an important role to play in prioritising and filling the evidence gaps.

[9] http://depons.au.dk/

5.4.3.1: Physical effects of anchoring and infrastructure construction on seabed sediments and geomorphological features (including scour)

Paragraph 1, p155

We suggest the following lines in paragraph 3 are reworded to *"The seabed preparation works associated with the installation of gravity base foundations result in the potential to affect a much larger area than the direct seabed footprint of the foundation alone, especially through increased suspended sediment concentrations (SSC) in the water column as a result of excavation and dredging activities."*

Paragraph 1, p156

While we recognise that the dispersion modelling for Hornsea One is as described, we advise that drill arisings can persist for a long time, as shown by the chalk arisings at the Lynn and Inner Dowsing windfarm.

5.4.3.2: Physical damage to biotopes from infrastructure construction, vessel/rig anchoring

The cabling assessment assumes that impacts are confined to the footprint of the cable trench. We advise that, in many cases, this would represent an underestimation as seabed preparation using dredgers is increasingly being undertaken prior to cable installation. This means that the seabed impact is larger than simply the footprint of the trench.

Anchor Scarring, Anchor Mounds, Cable Scrape and Trenching

Paragraph 2, p172

We suggest the comments on pennatulid mortality and physical disturbance is revisited considering the evidence provided in Greathead *et al* 2005 and the MarLIN sensitivity table.

Placement of Infrastructure

Paragraph 1, p173

We advise that habitat loss is not just in shelf depths.

Shallow Sandbanks

Paragraph 2, p179

We advise that the following sentence is rewritten: "*it is considered extremely unlikely that OWF development would have a significant influence on the physical habitat in either area.*" We do not agree with the conclusion of extremely unlikely significant impact. We also note that impact on sandbanks will occur much more on a site-by-site basis.

Deep Mud Communities

Paragraph 3, p179

We suggest that the comment on burrow and pennatulid densities on the Fladen Ground sediments showing little cumulative effect of fishing disturbance needs referencing, and could be misleading. Greathead et al (2011[10]) identify spatially variable distributions of the seapens *Virgularia mirabilis* and *Pennatula phosphorea* and an absence of *Funiculina quadrangularis* in the Fladen fishing ground which is "*exacerbated by the effect of anthropogenic pressures such as fishing*".

Biogenic Reefs

Mentions of *Sabellaria* seem confused in the first few paragraphs. We suggest that the use of '*Sabellaria* spp.' and '*Sabellaria spinulosa* and *Sabellaria alveolata*' is standardised.

Paragraph 3, p180

We advise that the suggestion that scour protection would be as likely to support *Sabellaria* aggregations as would the surrounding seabed be referenced fully. We also advise that the conclusions noted from Last *et al* (2011) are revisited for correctness.

Paragraph 4, p180

Sabellaria is only protected as an Annex I feature where it forms reefs. As such we suggest amending the mention of *Sabellaria* aggregations in this paragraph.

5.4.3.4 Changes/loss of habitats from major alteration of hydrography or sedimentation

Offshore Wind

Paragraph 1, p183

The suggestion of lack of coastal changes caused by OWFs should be revisited using more recent data from Round 3 OWFs. *'*

5.4.3.5 Post-decommissioning (legacy) effects – cuttings piles, footings, foundations, in situ cabling etc

Oil and Gas

We suggest that reference is also made to OSPAR Decision 98/3 on the Disposal of Disused Offshore Installations.

[10] Greathead,C, Demain, D, Dobby,H, Allan, L and Weetman, A. (2011) Quantitative Analysis of the distribution and abundance of the burrowing megafauna and large epifauna community in the Fladen Fishing Ground, Northern North Sea. Published by Marine Scotland – Science.

We advise that the comment concerning decommissioning conditions is somewhat misleading, as some offshore windfarms are now required to remove all hard rock protection from the seabed, whereas most oil and gas decommissioning projects to date have left rock protection in place.

5.4.5: Likelihood of Significant Effects

Please see previous comments concerning effects of fishing compared to effects of other industries.

5.4.6: Summary of Findings and Recommendations

Please see key comments on Recommendation 2 and comments on NTS Assessment Summary.

Paragraph 4, p189

We suggest that examples of mitigation methods are provided for physical damage in areas of vulnerable habitats and species.

5.6: Physical Presence – Ecological Implications

5.6.2.1 Introduction and Spread of Non-native Species

We note that there seems to be confusion in the text between non-native species and non-native invasive species. We recommend that this is rectified to prevent confusion.

5.6.2.2 Interactions between Infrastructure and Mobile Species

Paragraph 4, p217

We suggest a further reference (Benjamins et al, 2014[11]) on the potential for entanglement from mooring lines associated with wave and tidal devices would be useful.

5.6.3.1 Non-native Species Introductions

We note that *Caryophyllia smithii* is not an anemone and reference to that should be amended.

We note that Krone et al (2013a) is included within the review of scientific literature but that it could cause confusion by bringing in the subject of shipwrecks in the middle of a discussion on wind farms.

[11] Benjamins, S., Harnois, V., Smith, H.C.M., Johanning, L., Greenhill, L., Carter, C. and Wilson, B. 2014. Understanding the potential for marine megafauna entanglement risk from renewable marine energy developments. *Scottish Natural Heritage Commissioned Report No. 791.*

We also note the potential positives of using obsolete offshore structures, but consider that it should also be mentioned that any benefits have to be considered in light of any nature conservation protection of the area.

We also question the comment that policy leads in the continued lack of artificial reefs in the North Sea. We expect that this continued lack is related more to OSPAR than UK policy. DECC policy (referenced in the SEA) suggests "*we believe it is generally accepted that the 'ideal' decommissioning programme involves removing the whole of all disused installations and structures ... Our guidance, therefore, starts from a general presumption in favour of the whole of all disused installations being removed and subsequently taken back to land for reuse, recycling, incineration with energy recovery or disposal at a licensed site. Exceptions from this general requirement will only be considered where there are very good reasons*."

Fig 5.22

We note that the figure legend suggests that bio-fouling is mainly by the hydroid *Tubularia larynx*. We note firstly that the taxonomic name has changed to *Ectopleura larynx*, and secondly that the figure does not seem to indicate bio-fouling of *E. larynx*.

5.6.3.2: Barriers to movement, displacement and other behavioural effects - marine birds

We consider that it would be useful to have clear definitions of barrier and displacement at the beginning of this section.

Further clarification is needed that there is evidence of displacement, but the effects on productivity or mortality are difficult to assess, and this is reflected by the limited data.

Paragraph 5, p221

We note that the example presented concerning Horns Rev is actually an example of displacement, not a barrier effect. We suggest that further explanation is given what the 'subsequent surveys' were. If this reference is to part of the study by Petersen *et al* (2004), then we consider this to be slightly misleading as it suggests that food availability change was the reason for the distribution shift. Petersen *et al* (2004) suggested a number of factors could have resulted in the distribution change.

Paragraph 1, p222

We suggest making the following sentence more concise to allow easier understanding: "*Whilst overall abundance of this species was similar comparing the pre- and post-construction periods, distributional changes were evident; the most notable of these was a marked decrease in abundance post-construction in an area measuring ~100km^2 around the Horns Rev 2 wind farm and the coastal area west of Skallingen, in contrast to increasing densities seen in areas south of the horns Rev 1 wind farm, east of the Horns Rev 2 wind farm and in the western and north-western parts of the survey area (Figure 5.23).*"

Paragraph 1, p223

We suggest that the following sentence needs rewording as it currently implies trajectories curved around the wind farm before it was constructed: "*Their flight trajectories passing through the Nysted wind farm area pre- and post-construction showed a curvature around the wind farm.*"

Figure 5.24 shows the trajectories from Desholm and Kahlert (2005) which was a study on waterbirds, not just eider. We suggest using the figures from Masden *et al.* (2009)[12] or stating the findings from the Desholm and Kahlert (2005) study.

Paragraph 2, p223

We suggest reference to other sections is made by section numbers to allow ease of reading.

Paragraph 2, p225

Krijgsveld *et al.* (2014) is the more recent study and updated the findings from Krijgsveld *et al.* (2011) that suggest turbine spacings can affect avoidance behaviour. We would suggest removing the second sentence as it has now been made redundant with more recent study.

5.6.3.4: Collision Risk – Birds

5.6.3.4.1 Offshore wind farms (OWFs)

Paragraph 1, p231

Where reference is made to Cook et al (2014) for recommended total avoidance rates for the basic band model, we suggest including the SNCBs position paper on the BTO Review of Avoidance Rates[13]. We note in particular that the recommended rates differ for kittiwake.

In addition to research that has been mentioned (e.g. Cleasby *et al* 2015), a further report published by BTO[14] (Johnston and Cook 2016) should be referred to. This looks at flight heights from digital aerial survey data and supports the conclusion from Cleasby *et al* 2015 that flight heights for some species, including but not only northern gannet, may have been underestimated when based on boat survey data.

Paragraph 1, p233

We note the comments concerning the urgent need for further data not only on gannets, but on other high-priority species (e.g. gulls), most at risk from collision. It is currently not clear

[12] Masden, E. A., Haydon, D. T., Fox, A. D., Furness, R. W., Bullman, R., and Desholm, M. 2009. Barriers to movement: impacts of wind farms on migrating birds. – ICES Journal of Marine Science, 66: 746–753

[13] http://www.snh.gov.uk/docs/A1464185.pdf

[14] http://www.bto.org/research-data-services/publications/research-reports/2016/how-high-do-birds-fly-development-methods

how improvements in collision risk estimates themselves will enable refining of mortality thresholds for long-term population viability. We believe that this is a different question. Refining collision risk estimates will, of course, lead to more accurate estimates of the population level consequences, but the threshold of what is acceptable is not reliant on collision risk estimates.

It is also not clear how improvements in collision risk estimates will benefit strategic monitoring; is it just about having more accurate predicted mortality rates (and hence population level impacts) with which to compare observed mortalities from monitoring? In other words, perhaps this is meant the other the way round; that strategic monitoring will give better collision risk estimates?

Paragraph 2, p233

Estimates of annual bird deaths from collisions with other structures for comparison should be provided here. We suggest there is also a need to make some attempt to compare relative extent/scale of wind farms in the environment in comparison to structures such as power lines, i.e. is the relatively low collision rates from wind farms compared with other structures due to inherent properties of wind farms in comparison to other structures, or is the relatively low collision rate simply because the extent of wind farms in the environment is much lower in comparison.

Paragraph 1, p234

It is not clear what is meant by "*the percentage of total area usage peaked at 14%".* This needs further explanation.

5.6.3.7 EMF

We suggest that this section needs to better distinguish between responses to magnetic fields and electric fields, as currently references within the section are mixed. While electric fields may be shielded by a number of technological options, it is more difficult to shield a magnetic field (created by an AC cable) which, in moving seawater, can induce an electric field. This is challenging to measure *in situ.*

Paragraph 4, p240

We suggest that this paragraph needs to be re-worded as survival rate is not "i*n contrast to*" a behavioural response relating to aggression. The two should be considered as quite different points. We also suggest that the benthic species discussed by Bochert and Zettler (2004) need to be detailed.

Paragraph 1, p241

We would like to draw your attention to Ball et al (2015)[15] which demonstrated behavioural responses of developing thornback ray embryos to EMF. Specifically it showed that EMF

[15] R.E.Ball, M.K.Oliver, A.B.Gill, 2015: Early Life Sensory Ability—Ventilatory Responses of Thornback Ray Embryos (*Raja clavata*) to Predator-Type Electric Fields. *Developmental Neurobiology.* DOI 10.1002/dneu.22355

inhibits an important ventilatory mechanism in embryos as early as one third of the way through development. Although embryos habituated to the presence of low frequency AC fields, this likelihood was reduced if the field was presented intermittently, which may be representative of an operational windfarm.

Paragraph 2, p241

We suggest detail is provided from Gill et al (2009) as to how elasmobranch behaviour was affected.

Paragraph 4, p241

It is stated that the interaction between anthropogenic EMF and marine mammals is not well understood, and that while understanding of how marine mammals experience and use either natural magnetic or electric fields is poor, knowledge relating to anthropogenic sources is even less (Gill et al. 2014).

5.6.4: Controls and Mitigation

Paragraph 3, p244

We suggest making reference to raising turbine height and increasing the height of lower turbine tip to reduce the risk of collision as a means of mitigation.

Paragraph 3, p245

We suggest the following sentence be removed unless it can be appropriately referenced: "*It is likely that larger fish are at greater risk from turbines strikes than smaller fish, with large, slow-moving elasmobranchs perhaps the most likely to incur injury"*.

5.6.5: Likelihood of Significant Effects

We consider that it would be useful to refer to Masden (2015)[16], which provides an update method of the Band Collision Risk Model (CRM) incorporating uncertainty in input parameters. In particular it might be useful to refer to the sensitivity analysis contained within Appendix 2 of Masden (2015). This highlights the parameters which can have the biggest influence on estimated collision risk. Although avoidance rate is important, it suggests that non-avoidance rate is less important in terms of driving collision risk estimates than perhaps avoidance rates are, and that other parameters are also important such as flight height, speed, bird density, and some wind turbine parameters.

Paragraph 6, p247

We advise that the following sentence in is rewritten as: "*Several marine taxa have been identified as sensitive to electromagnetism but further research is required to explore the potential* adverse *effects of EMF associated with offshore energy developments."*

[16] http://www.gov.scot/Resource/0048/00486433.pdf

Paragraph 3, p248

We suggest this paragraph needs to clarify that there is evidence that some species are known to be displaced by OWFs, but that the lack of evidence is around the consequences on the effects of displacement.

Paragraph 2, p251

We suggest inclusion of pursuit divers such as guillemot, razorbill, diver species and gannet to this sentence: "*Bird species at most risk from tidal range schemes are likely to be waterbirds which rely on intertidal habitats for feeding which may be significantly impacted by such schemes"*.

Paragraph 3, p251

While we agree with the overall impact level suggested, we advise it is pertinent to mention that for some species, the consequences of an oil spill could be very large, resulting in high impact but low likelihood.

Paragraph 5, p251

We advise that the following sentence is rewritten as: "*Although there is a lack of empirical data, there is a general consensus from various studies that those species at highest risk of collision with wind turbines are gulls (e.g. herring, lesser black-backed, greater black-backed, kittiwake) and gannets– with this risk potentially leading to measurable effects on breeding populations*, if *colonies for these species lie close to offshore wind farms (e.g. Furness & Wanless 2015)."* We suggest the sentence be extended to include "*or if an OWF is sited in an important foraging area or migration corridor*".

Paragraph 6, p251

There appears to be confusion here between sensitivity and vulnerability. Sensitivity is a score for how sensitive a species would be to a pressure, were they to encounter each other (i.e. overlap in space or time). Vulnerability is then sensitivity with respect to exposure. We suggest the use of vulnerability in each of the Regional Seas bullet points instead of sensitivity.

We question why in Regional SEA 1 kittiwake is not considered moderate sensitivity. They are of reasonable distribution off the east coast, and have been raised as species of possible concern for Scottish OWF and English OWF on the east coast. Given the scope of this report with regards to renewable energy development, it could still be a concern in the southern part of Regional Sea 1 within the context of this SEA and in particular a concern when looking at CIA.

We note that Dogger Bank is within Regional SEA 2 and as such suggest the large aggregations of auks should be considered.

Paragraph 2, p252

We question if the correct reference has been made here. The Danish Agency Report (2013) describes the studies by a number of authors on common scoter and red-throated diver. We suggest the correct reference is by Topping and Petersen (2011)[17] and titled "Report on a red-throated diver agent-based model to assess the cumulative impact from offshore wind farms". This is the original study and should not be referenced through the Danish Energy Agency report.

Paragraph 1, p253

We suggest a justification is provided as to why the relevant Round 2 strategic area, Round 3 zone or equivalent is the default boundary of the CIA study. From a biological point of view, MSFD defined biographical regions might be more appropriate, or even use of the Biologically Defined Meaningful Population Scale if only looking at a UK scale. A true CIA should take account of wider population at risk and impacts that that population is exposed to, and these impacts should not be restricted to one specific type of development e.g. windfarms. We feel that discussions of CIA in the SEA seem to be focused within limited range of activities and that ecologically meaningful CIAs would instead look across industries and activities.

In addition, the appropriate scale of the assessment might vary depending on species, season and legislation (HRA or EIA related). For example, to undertake a colony HRA it should only be done on that population within foraging range during the breeding season and include impacts during the non-breeding season at the relevant scale.

Paragraph 2, p254

We advise that Step 5 is incorrect; the use of PBR is not the preferred standard for assessing cumulative mortality of birds. The preferred approach would be to use Population Viability Analysis.

5.6.6: Summary of Findings and Recommendations

Paragraph 2, p256

We agree with the importance of site identification as a mitigation measure and agree that monitoring and targeted studies are key to successful management, providing the best opportunities to improve the knowledge base. We believe that this is a crucial statement and we suggest it should be highlighted more.

Paragraph 3, p256

It is not clear how the conclusion has been reached "*that it is highly unlikely that the implementation of the draft plan will result in a significant ecological effect from the introduction and spread of non-native species or from interactions with mobile species*

[17] http://www.ens.dk/sites/ens.dk/files/undergrund-forsyning/vedvarende-energi/vindkraft-vindmoeller/havvindmoeller/miljoepaavirkninger-3/Roedstrubet%20lom,%20agent_based%20model.pdf

(collision, barrier effect and displacement) as presented in the evidence." We feel that the evidence presented does not necessarily support this. We question if this conclusion is based on the assumption that detailed impact assessments for each proposal will be undertaken, and that appropriate decisions made on development siting (including potential refusal of individual consents if siting is not appropriate and mitigation cannot sufficiently reduce the potential impacts), and mitigation put in place. If so, this assumption needs to be made clear. Although the limited evidence is acknowledged, the fact that recent evidence suggests that impacts may be larger than previously thought needs to be highlighted. We refer to our previous comment that the SEA process has an important role to play in gathering evidence at population or strategic levels which individual developers are unable to do in isolation.

5.7.2.2: Fisheries

Table 5.22

Row 7: Southeast Coast of England. It is stated that high densities of non-UK fishing vessel operate throughout the area although decreasingly so closer to the UK coast. We suggest making an additional statement here that no non-UK vessels operate within 6nm.

Paragraph 1, p272

Following restructuring, Inshore Fisheries Groups (IFGs) are now referred to as Regional Inshore Fisheries Groups (RIFGs) and as such the text needs updating.

The final sentence in the paragraph is incorrect and should be replaced with the following: "*The distribution of non-UK vessels is mainly in offshore waters (beyond 12nm), although several foreign fleets (in particular French, Belgian, Irish, German and Dutch) hold historical rights to fish between 6nm and 12nmin in specific areas around the coast of England and Wales. Typically, fishing grounds beyond 12nm and in areas with historic access rights are managed as a common resource.*"

Paragraph 2, p272

We advise that the following sentence is rewritten as: "*The 6-12nm zone, however, is an area of typically high fishing effort but is less well understood and depending on access rights many include many foreign vessels (English and Welsh waters only)*."

5.13: Accidental Events

We would like to highlight that in the event of an actual spill, real-time modelling would be carried out using live data (and sensitivity of seabirds would initially be assessed on a monthly and species basis using the Offshore Vulnerability Index (OVI). We advise that the OVI will soon be updated with the Oil Sensitivity Index (OSI) as part of a contract awarded to HiDef by Oil & Gas UK, the results of which are anticipated to be available in spring 2016. Operators will be expected to update their OPEPs and contingency plans to incorporate the results of the update.

5.13.1: Introduction

Paragraph 1, p370

We question whether the increase in shipping activity as a direct result of oil and gas activities should have been assessed, i.e. increase in supply ships, construction vessels, oil tankers and guard vessel transits and activities. It seems as though only accidental events related to exploration and production have been taken into account in the SEA.

5.13.3.2: Effects of Accidental Releases

This section considers effects of releases on seabirds, marine mammals, fish and benthic habitats; however there is no mention of Marine Protected Areas (MPAs). Even though an MPA will be protecting one (or more) of these features, we believe that the SEA should make reference to the fact that if an unexpected pollution event occurs within, or in close proximity to, an MPA, the response plan should take the protected features of the site into account along with the appropriate legislation in place.

Environmental Effects

Paragraph 7, p381

We suggest it should be considered that the UK holds significant numbers of waders and waterfowl, and that ultimately a spill in an important area could have significant population consequences whether major breeding areas are outside the UK or not.

5.15.3: Considerations of the Evidence

We feel there is a need for better consideration of coastal constraints and coastal designated sites including SSSIs for tidal range. Coastal SSSIs and MCZs should be considered for all industries in the consideration of coastal buffers etc. alongside Natura 2000 sites.

We do not agree that it is necessarily appropriate to screen in areas (e.g. Bristol Channel) that are currently not suitable for development but which may become so and to screen out areas (e.g. offshore from a World Heritage Site) which are currently not socially acceptable for visual impact reasons, when it is possible that either social acceptability or national need may change.

Table 5.35

The table does not appear to include coastal/terrestrial constraints alongside marine constraints. This could be a particular issue for tidal range. Similarly Natura 2000 sites and MCZs are considered in the table, but not SSSIs which are found in the marine and coastal environment in particular estuaries.

Consideration of a Coastal Buffer for Offshore Wind

Further clarification is needed to explain how a coastal buffer, if not an exclusion zone, is considered a form of mitigation.

The inclusion of SSSIs alongside MCZs and Natura 2000 sites, would change the outputs and should also be incorporated in the discussion on p424. It would also change the outputs in the various figures in the section particularly for tidal range (Figure 5.72).

We disagree that it is unlikely that any aspect of the plan will interact with capital dredging operations. Consideration should also be given to maintenance navigation dredging alongside capital dredging; this could be an issue in estuaries with tidal range schemes. Similarly recreation and marine aggregate operations could be affected by tidal range schemes, particularly in estuaries, and have not been included.

5.13.4: Controls and Mitigation

As above, we advise that the Offshore Vulnerability Index (OVI) will soon be updated with the Oil Sensitivity Index (OSI). As such this section will require updating.

5.16: Consideration of Potential for Cumulative Impacts

We question why impacts to water quality are not considered in this section, alongside energy removal (S5.16.5) and marine discharges (S5.16.8). Tidal lagoons, in particular, have the potential to result in impacts to water quality. We advise that water quality should also be considered here, if not, then better cross referenced.

This section and the summary (S5.16.12) are very focused on offshore wind and underwater noise.

We note that the cumulative assessment for OWFs has only considered the Southern North Sea. A cumulative assessment for the Irish Sea area would have been beneficial or could have been highlighted as a gap in knowledge in this area.

5.16.2: Definitions

***"Cumulative effects** are considered in a broader context, to be potential effects of activities resulting from implementation of the plan which act additively or in combination with those of other human activities (past, present and future); in an offshore SEA context notably fishing, shipping (including crude oil transport) and military activities, including exercises (principally in relation to noise) – i.e. what could be described as the other major "industrial" uses of the sea."*

While we do not disagree with the definition of cumulative effects, we note that it is not applied consistently across the SEA. We suggest the need to look across industries should be made clearer in other sections of the SEA.

5.16.3: Underwater Noise

We consider that reference should be made to the possible impacts of cumulative noise on birds i.e. possible displacement from important foraging areas. We acknowledge there is a lack of evidence concerning this, but the potential for impact still exists and should be considered.

5.16.4: Physical Damage/Change to Features and Habitats

While the SEA does consider scale of impact to the total area considered by the SEA, it does not consider the incremental loss off soft sediment habitats to hard substrate on a regional sea scale. Of specific concern is that the constraints mapping (fig 5.64) shows suitable areas for offshore wind development to be concentrated into several clusters or 'sub regions' e.g. Dogger Bank region, Greater Wash, offshore Yorkshire, central Irish Sea etc.

Referenced at the scale of the whole SEA area, the change in seabed type likely to occur through hard substrate deployment will always appear very small. However there is the potential for the small scale changes associated with turbine construction to accumulate and change the character or ecological functioning of a large area if a number of developments take place in close proximity. The change in seabed character of these 'sub regions' could have a larger impact at an SEA level if the area in question is of specific importance, e.g. as a key location in a species' life cycle or as a significant morphological feature such a large sandbank.

We question the validity of the assertion that "*in a UKCS context, the contribution of all other sources of disturbance are minor in comparison to the direct physical effects of fishing, and it can be argued that the positive effect of fisheries exclusion offsets any negative effects of exploration and production and OWF, wave and tidal stream development ... however, the spatial extents of both positive and negative effects are probably negligible for most seabed habitats."*

5.16.6: Physical Presence

Paragraph 2, p441

We do not consider that the statement that displacement, barrier effects and collisions are all unlikely to be significant to birds at a population level is justified, at least not based on the evidence presented in the SEA and in particular when considering cumulative effects.

5.16.13: Potential for Transboundary Effects

For tidal range, particularly on the west coast and in the Irish Sea, we advise that the reduction in tidal energy and changes to hydrodynamics/physical processes could be a trans-boundary effect with Ireland and the Isle of Man.

In addition to transboundary effects impacting migrating birds, they could impact wintering birds, and indeed breeding birds which are part of a wider biogeographic population. This

ties in with CIA and the appropriate scale at which to make such assessments. This discussion is inadequate throughout the SEA, and needs further thought and attention.

5.17: Consideration of Alternatives

5.17.2: Biodiversity, habitats, flora and fauna

The section and tables do not adequately consider infrastructure and other human uses on the coastal and inshore environment, such as transport infrastructure, ports, marine aggregates, harbour navigation, navigation dredging and disposal, which could be effected by tidal range schemes.

With remits including cultural impact, DOENI and NRW are encouraged that the OESEA has recognised the potential for impact on marine archaeology arising from all proposed activities covered by the plan and the fact that cultural heritage is now fully considered as part of the planning and installation process. We strongly agree that site-specific surveys should be undertaken before decisions can be taken on potential licensing/leasing of individual projects to prevent any loss to the marine archaeological resource.

Please note that previous comments on section 5 of the SEA will also be applicable for consideration in 5.17.2.

Appendix A1a.6 Birds

Recent site proposals

We note that the SEA Environmental Report has not included two recent proposed amendments to the SPA network along the Northern Ireland coast (detailed below). Consultations for these were opened in January 2016, and we consider that any oil and gas exploration will need to be made aware of these designations. We note that the Department of Energy and Climate Change has indicated that a designated SPA will not provide a constraint to release of seabed for energy purposes.

The new sites are:

East Coast Marine SPA[18]: The principal interests are:

- Non-breeding population of Great Crested Grebe
- Non-breeding population of Red-throated Diver
- Non-breeding population of Eider
- Rafting Manx Shearwater in the breeding season originating from an adjoining colony
- Foraging Sandwich, Common and Arctic Tern in the breeding season originating from adjoining tern colonies

Carlingford Lough SPA marine extension (re-notification[19]): This includes an extension of the SPA. The marine area included in the renotified site has been shown to provide foraging habitat for both Sandwich and Common Tern originating from the breeding colony at this site.

A1a.6.2.2 Publications

We suggest adding Ireland to the list of collaborators for ESAS, and also making it clearer that not all of the ESAS data is available on OBIS. We note that JNCC aerial data was also inputted to SeaMaST and should be credited in the SEA. We also note that there is some aerial data in ESAS so calling it 'ESAS boat' data is slightly misleading.

A1a.6.14 Evolution of the Baseline

Table A1a.6.34

We question how a purple sandpiper can be impacted by displacement at an OWF. This is true for a number of species that are present in the table (dunlin, snipe etc). We also

[18] https://www.doeni.gov.uk/consultations/east-coast-northern-ireland-marine-special-protection-area-consultation

[19] https://www.doeni.gov.uk/consultations/carlingford-lough-spa-renotification

consider that a number of species are also missing from the table. Our recommendation would be to use the information from Bradbury *et al.* (2014) and Furness *et al.* (2013) to create an up-to-date and accurate table of the bird species that are vulnerable to wind farms.

With reference to Barrier Effect, there is very little known about which species are vulnerable to this, and it is unknown for many species. We suggest adding a '?' score into the table to accommodate this.

A1a.6.15: Environmental Issues

In comparison with the discussion for seabirds there is a considerable lack of discussion of the possible environmental issues for waterbirds.

Appendix A1h.1: Other Users

Regional Advisory Councils (RACs) are now just referred to as Advisory Councils (ACs). This requires updating where it appears within the document.

A1h.16.3: Fisheries Management

Paragraph 1, p653

Where reference is made to Fisheries and Conservation Authorities (IFCAs), we suggest adding that they were established in 2011 under the Marine and Coastal Access Act.

Scottish inshore fisheries groups are now referred to as Regional Inshore Fisheries Groups and we suggest the number is clarified as we are only aware of five.

A1h.16.4 Distribution of Fishing Effort

Figure A1h.37

Total fishing effort is presented for static gear activity but given that it is not possible to distinguish fishing from non-fishing events, this should just be classed as general vessel effort (i.e. steaming and fishing events). We question whether for mobile gears it might be worth querying whether some proxy is used to distinguish fishing from non-fishing (e.g. speed).

Figure A1h.38

The figure only shows static vessels and 2005-2007 excludes all vessels in the 12-15m range, so evidence of activity of smaller vessels (e.g. Eastern channel etc) is likely to be underestimated.

A1h.16.5.1: Demersal Fisheries

Paragraph 1, p661

We suggest adding demersal seine netting to this list of methods by which demersal fish are caught.

A1h.16.6.2: Ports and Vessels

Paragraph 3, p671

We note only three ports are listed and not four.

A1h.16.13.1: Summary of Fisheries

Paragraph 1, p683

We query whether the French fleet information is up to date, as the deepwater French trawl now predominantly target grenadiers, scabbards, monks etc.

A1h.16.15.1: Summary of Fisheries

Paragraph 2, p690

We advise that saying that beam trawling is particularly destructive, using tickler chains that penetrate up to 8cm into the sediment is a very general statement and it depends on the type of sediment being fished and the energy conditions. Over high energy sandy sediment areas, beam trawling probably has a negligible effect compared to the effects of natural forces and biota inhabiting these areas are typically resilient to impacts. We suggest changing "is" to "can be". This comment applies to all such instances in this text.

Paragraph 2, p690

We suggest replacing "will" with "may" as changed in the following sentence: “*New technologies and fishing methods such as pulse trawling (where an electric pulse replaces the dragged tickler chain (van Marlen et al. 2014) or the hydraulic jet elevator, which uses a system of water jets to dislodge shellfish from the seabed, in place of dredges,* may *reduce the damage caused by these fisheries as they become more widespread*.”.

Cyfoeth Naturiol Cymru
Natural Resources Wales

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27 April 2016

Dear Sir or Madam

Consultation on UK Offshore Energy Strategic Environmental Assessment 3 Environmental Report

Thank you for consulting the Natural Resources Body for Wales (Natural Resources Wales) on the above document. The purpose of Natural Resources Wales (NRW) is to ensure that the environment and natural resources of Wales are sustainably maintained, sustainably enhanced and sustainably used now and in the future. Our comments are therefore provided in the context of this remit and our role as a consultation body under the Environmental Assessment of Plans and Programmes (Wales) Regulations 2004, as further amended by paragraph 189 of the Natural Resources Body for Wales (Functions) Order 2013, and as advisers to Welsh Government on the natural heritage and resources of Wales and its coastal waters.

As you are aware NRW has contributed to the Strategic Environmental Assessment (SEA) process as members of the steering group and contributors to stakeholder workshops. We also provided comments on the third Offshore Energy Strategic Environmental Assessment (OESEA3) at the SEA scoping stage. NRW places great importance on engaging with the SEA process and welcomes the structured and open way in which participation has been managed and commends the Department for Energy and Climate Change (DECC) on the comprehensive and rigorous approach it has adopted in carrying out this assessment.

NRW considers that the report has demonstrated that a robust and comprehensive strategic assessment of environmental issues has been undertaken and that this will help to reduce environmental and consenting risks associated with plan implementation.

NRW supports the overall conclusion of the SEA that alternative 3 to the draft plan or programme is the preferred option, with the area offered restricted spatially through the exclusion of certain areas together with a number of mitigation measures to reduce and offset significant effects on the environment.

We have made a number of comments on the plan and in particular on the recommendations for further work in an annex to this letter.

If you have any questions regarding this response please contact our Marine Industries Advice Manager, [redacted] in the first instance at ([redacted] or [redacted]

Yours faithfully,

[redacted]

Head of Sustainable Communities

Annex 1.

General Comments

1. Importantly, the report recognises that there are a range of uncertainties associated with potential effects on receptors that cannot be evaluated in detail in relation to a plan at such a high level, but that nevertheless will need to be addressed by more detailed planning and project level assessment. We are pleased, therefore, to see these captured in the form of recommendations for further work.
2. Only occasionally do other offshore energy planners and developers refer to the information gathered by the SEA. We would encourage measures to facilitate better access to information collated within the SEA (for example on receptors, monitoring impact pathways and mitigation measures) to ensure it is readily available to those producing lower tier assessments of plans and projects that sit underneath this Offshore Energy Plan. Not all information is relevant or prepared at a scale that can be readily used at project level, and NRW acknowledges that there is a wealth of useful information on the SEA website, however much of the information captured by the SEA might usefully be presented in a form that can be used more readily and to improve access and aid navigation (e.g. by subdividing regionally, by activity or by receptor, by including a more detailed contents list and better use of hyperlinks, section descriptions in headers). This is particularly important in the case of mitigation measures relied on by the SEA to allow a conclusion of no significant adverse effect. Although related to Habitats Regulations Assessment (HRA), the Summary of Information documents prepared by The Crown Estate following plan level assessments of their wave and tidal stream leasing rounds might be a useful model to follow[1].
3. Unless we have specifically commented on a recommendation it should be assumed that NRW is either in agreement or has no comment to make.

Comments on the Recommendations

Spatial Considerations

4. **Recommendation 1.**

   Welsh Government are developing a Welsh National Marine Plan (WNMP). Many of the policies in the plan are aimed at managing interactions between marine industries and should help guide decision makers and users of the marine environment in avoiding conflicts between activities. It is our understanding that Welsh Government intend to finalise the WNMP in 2017 which is well within the currency of the Offshore Energy Plan. We recommend that DECC liaise with Welsh Government over the potential interactions between the Offshore Energy Plan and the WNMP and utilise the WNMP once available.

5. **Recommendation 2.**

   The decision to proceed with designating the proposed new Special Areas of Conservation and Special Protection Areas in Wales has not yet been taken by Welsh Ministers. NRW has launched a consultation on the proposed new sites, with a closing date of 3rd May 2016, and this will inform the decision whether or not to designate. The consultation documents nevertheless provide information which describe the new sites and the reasons for designation.

6. **Recommendation 3**.

   NRW welcomes the recommendation that the particular sensitivity of the coastal zone must be taken into account when proposing developments in territorial waters. The tidal range component of the plan in particular means that large scale development at the coast is much

[1] The Crown Estate Wave and Tidal Leasing. Summary of Information for Habitats Regulations Assessments. The Crown Estate 2016.

more likely than has been the case within the timeframe of previous offshore energy plans. This will necessitate careful consideration of a range of receptors that may be impacted by the plan, subsequent lower tier plans and any resulting projects that may have not been considered in detail previously. In particular, shoreline and flood risk management, water quality management and hydrology, bathing waters, fish and shellfishery management are issues that have not typically been considered in detail by previous assessments of offshore energy plans and projects but are a particular concern in relation to tidal range. Impacts on flood risk management and bathing waters, for instance, have not been considered a potential source of effect in the Environmental Report. Whilst this does not affect the overall conclusions of the SEA it does perhaps reflect the fact that greater attention will need to be paid to such issues as the plan is implemented.

7. Projects resulting from the plan will also need to undertake assessments that are novel to those operating further offshore to address the potential consequences of their proposals for flood risk and shoreline management plans (via Flood Consequence Assessments) and demonstrate compatibility with the requirements of the Water Framework Directive (WFD) and River Basin Management Plans (via WFD Compliance Assessments). As a consequence, SEA Research and Development (R&D) may well need to be re-focused to allow consideration of some of the uncertainties associated with these assessments (see also our comments from paragraph 20 onwards).
8. The evidence provided at a project level to evaluate alternative options and locations is often only based on a very high level analysis. To improve the level of confidence as and when it is concluded that there isn't a less environmentally damaging option, guidance could be developed, particularly for tidal range, on the assessment of alternatives required by the EIA and potentially the HRA and WFD assessments.

Managing Environmental Risk

Recommendations 7 and 8.

9. NRW welcomes the recognition that a precautionary approach will need to be taken where European Marine sites may be affected by plan activities although this recommendation seems only to be applied to birds and mammals. Precaution may well need to be applied when there are uncertainties about other potential receptors and not necessarily confined to European site features but other receptors such as habitats and species protected under the Biodiversity Action Plan (BAP) and Natural Environment and Rural Communities (NERC) Act Section 74. We agree, however, that precaution is particularly relevant when considering birds and mammals. Diadromous fish should also be carefully considered particularly in the case of tidal range.
10. Information gaps remain an issue for consenting both offshore wind and wave and tidal stream technologies which leads to a more precautionary approach (although we would argue that marine renewable technologies are at a much earlier stage of development, and about which there is much more uncertainty than offshore wind). Reliance on precaution can nevertheless be minimized by improving our understanding of potential effects to receptors and NRW welcomes DECC's continued support for research to help understand the effects of these activities.
11. Furthermore, it may be possible to apply the principles of adaptive management in deploying technologies when uncertainties about impacts remain so that we can learn about their effects. This is particularly relevant to new technologies like wave, tidal stream and tidal range. However, before adopting such an approach it would be necessary to exhaust all possible conventional assessment as part of the Environmental Impact Assessment (EIA) process. It should also be recognized that with larger scale developments like tidal range which are deployed once and which will, in effect be permanent, adaptive measures will need to be demonstrably achievable, to avoid incurring adverse effects that cannot be mitigated at a later

date. It may be helpful to develop guidance on adaptive management to ensure that it is applied to newer technologies appropriately.

Recommendation 9.

12. Tools for assessing cumulative effects of noise on the mortality of marine mammals are not well developed. Whether or not Potential Biological Removal complies with the Habitats Directive is a matter of debate and the role of other tools based on other approaches such as ASCOBANS and International Whaling Commission population decline limits for marine mammals is uncertain. NRW therefore welcomes the recommendation that work to develop criteria to determine and regulate the cumulative effects of noise should be prioritised. This is an issue that affects many technologies and as a UK wide issue it might be something that the SEA R&D programme could address.

13. We agree that the Marine Noise Register is an important precursor to effective management of noise and are fully supportive of it, also that further work is needed to establish criteria of acceptable impact. However, the limitations to the data that are recorded in the registry should also be recognised. It does not require any reporting of source level or frequency range, will not record other noisy activities e.g. operational turbine noise, high frequency Acoustic Harassment Devices (AHDs) and does not require any kind of forward look to enable planning, all of which would be precursors to effective noise management.

Recommendation 12.

14. The plan for offshore energy development is at a very high level which does not allow for very detailed analysis of the issues associated with each of the technologies at specific locations. Tidal range developments, in particular, have the potential to have environmental impacts over large areas and, whilst some risks may be avoided or mitigated by careful siting of individual deployments (or through operation controls), it may not be possible to mitigate or compensate for others. Planning the deployment of these technologies, to ensure that they are deployed in locations that are 'appropriate' and take count of environmental risk, is therefore critical. We agree therefore that more detailed analysis/assessment of tidal range locations (which are mostly now known) is desirable before sites are leased and at an appropriate geographical scale.

15. Furthermore, large scale tidal range developments will raise a number of issues that, in some cases, would be better addressed strategically rather than at the project level. For example, the cumulative and/or in-combination effects of multiple developments in the Severn estuary (and possibly at other locations) and the possible need for measures to compensate for potential adverse effects on European Marine sites have already been identified by the Severn Tidal Power Feasibility Study as significant challenges. Furthermore, the identification of compensation for tidal range development may conflict with existing arrangements for delivering compensation for other schemes such as that required for shoreline management plans. The combined effects of tidal range development and shoreline management planning may also result in increased coastal squeeze that will have implications for important habitats and species including those that are features of European Marine sites. It would be difficult for an individual developer to address these issues effectively. We note the announcement by UK Government of a review into the feasibility of tidal lagoons and we are hopeful that this process will carefully consider the benefits of a coordinated and planned approach to development that is more efficient and effective for industry, regulators and advisors.

Recommendation 13.

16. NRW welcomes the recognition that further clarity on cumulative effects assessment is needed as this is likely to be a major challenge for future consenting of a number of offshore energy technologies, especially tidal stream and tidal range**.**

17. The SEA makes reference to the roles of risk-based approaches to consenting and adaptive management in minimising and managing environmental risk. These terms are increasingly used within the marine energy sector with little shared understanding or agreement for what they mean in practice. NRW believes that the SEA recommendations could usefully recognise this and consider how they might be developed in a consistent, transparent and proportionate manner for each of the sectors.

18. The amount of site characterisation data necessary to interpret the potential risk of development of the different technologies should be explored, particularly to support assessment of mobile species but also other receptors such as physical processes. It is sometimes the case that conventional approaches to gathering data (e.g. two years mammal and bird data) is insufficiently robust to be of value in the consenting process. A cross-sector review is something the SEA R&D programme might usefully undertake to inform development of good practice recommendations.

Improving the marine management information base

Recommendation 18.

19. We agree that there is a need to enhance our strategic level understanding of biodiversity and its patterns in UK waters to inform considerations of site integrity. The integrity of our MPA network as a whole, as well as on a site by site basis, should also be considered.

Recommendation 20.

20. Recognition of the need to fill evidence gaps associated with seabed topography is welcomed. It is also necessary to consider other key strategic baseline evidence gaps in relation to physical processes that would assist with strategic planning for newer technologies such as tidal range. These would include, for example, better wave data and longer term records of intertidal morphology.

21. The research undertaken by the OESEA has been of considerable value in helping to reduce uncertainty, though with limited focus to date on wave and tidal technologies. As the range of marine renewable technologies diversifies NRW would encourage DECC to continue to evolve the research programme as far as stretched budgets allow. Understanding the evidence gaps for tidal range is not well developed although work to identify these is now underway through the Offshore Renewables Joint Industries Programme for Ocean Energy (ORJIP OE). It is our view that the marine energy element of the OESEA research programme should be guided by the evidence prioritisation work that ORJIP OE has undertaken for wave and tidal stream developments and will soon undertake for tidal range.

22. The emergence of tidal range in particular has highlighted a number of key gaps in our knowledge of the implications of these developments. We welcome the extension of the scope of ORJIP OE to include tidal range and have provided support to the programme secretariat to facilitate this. We recognize it will take some time for the current 'Call for Evidence' to result in a prioritisation of research requirements for tidal range, but this should be described in a Forward Look, similar to that provided for the wave and tidal stream sectors[2]. NRW is preparing our response to the ORJIP Ocean Energy Call for Evidence and we will forward this to you when it has been finalised. In the meantime, in Annex 2 we have summarised some of the main areas of research that NRW considers necessary to fill the evidence gaps associated with planning, consenting and assessment of tidal range technologies. NRW would be happy to discuss any of the above areas with you in formulating the OESEA research programme.

[2] The Forward Look; an Ocean Energy Environmental Research Strategy for the UK. ORJIP Ocean Energy. 2016.

Annex 2.

Summary of evidence gaps likely to impact on planning, consenting and assessment of tidal range. Note these are not listed in any order of priority. More detailed information will be included in NRW's submission to the Call for Evidence about tidal range issued by ORJIP Ocean Energy. This submission will be forwarded separately when complete.

Impact assessment

- Physical processes (e.g. baseline data: wave data, intertidal morphology; effects on sediment budgets/transport within and between sediment cells, assessment and modelling methodology for establishing long-term morphological change and future prediction and modelled scenarios for sediments and habitats, procedures for establishing extent of far field effects).
- Fish (behavior: movement patterns, habitat usage, life history, migration routes, model predictions and confidence, use of hydraulic cues; fish passage through/collision with turbines, entrainment, climate change resilience, hearing ranges, noise effects, barrier effects, economic value, stock assessment, impacts on fish elements of hydrologically connected WFD waterbodies).
- Birds (survey data requirements, consequences of disturbance, mortality thresholds, collision risk, effects of habitat loss/alteration, modelling acceptable losses to populations, apportioning impacts of non-breeding seabirds to protected sites).
- Coastal flood risk/climate change effects (balancing benefits against impacts; sea level rise and coastal squeeze implications; ecosystem resilience).
- Non-natives (stepping stone effects, impacts of artificial structures, rates and modes of introduction and spread).
- Plankton (impacts of turbine passage, lagoon retention).
- Mammals (survey data requirements, consequences of disturbance, mortality thresholds, collision risk, effects of habitat loss/alteration, entrapment, effects of underwater noise).
- Mobile species (establishing the applicability of Collision Risk Modelling developed for tidal stream projects to tidal range, assessing displacement).
- Habitats and Species (direct, indirect and in-combination impacts: for example habitat impoundment, changes to tidal range; contribution to wider ecosystem health).
- WFD compliance assessment and derogation processes (thresholds of acceptable change, relationship between impacts on migratory fish and WFD status; derogation: identification of best environmental options, quantification of ecosystem service value of waterbodies)
- Water Quality (effects of water retention and flushing rates)
- Decommissioning (information requirements for plans and projects at application, predicting future status of the environment and effects over the very long term)

Mitigation

- Good design practice and construction methods (e.g. to minimise impacts of artificial structures, maximise colonisation by desirable species, design to maximize flood benefits etc.).
- Effectiveness of fish passage and fish introduction.
- Development of compensatory habitat offset mechanisms for effects on European Marine sites.
- Mitigation, enhancement and costs-benefit for hydromorphological alterations
- Evaluation of compensation / mitigation / enhancement effectiveness.

Compensation

- Identification of habitat or other resource of appropriate type, value and scale.
- Effectiveness of habitat creation and restoration and other more innovative measures (for example reduction mammal bycatch to offset effects on mammals from other sources).
- Prediction of environmental responses to compensatory measures over varying timescales.
- Interactions with other compensation schemes (e.g. for Shoreline Management Plans).

Scottish Natural Heritage
Dualchas Nàdair na h-Alba
All of nature for all of Scotland
Nàdar air fad airson Alba air fad

Offshore Energy SEA 3 Consultation
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27 April 2016

By e-mail:
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Dear Sir / Madam,

DECC Offshore Energy SEA 3 Environmental Report – Consultation Response

Thank you for consulting SNH on the above report. General comments on the structure, findings and recommendations of the report are set out below. Additional comments, relating to points of detail, or to information contained in the appendices that accompany the Environmental Report, are set out in Annex A.

General Comments & Response to Proposals

1. Overall, and notwithstanding the points which follow, both here and in Annex A, we consider the Environmental Report to be comprehensive, detailed and thorough, as well as being based as far as is possible on the latest information and guidance. Unfortunately, the structure of the report does not allow for easy discrimination of sections applicable to Scotland or to the oil and gas sectors alone which, given its length, makes its review somewhat challenging.

2. We endorse the conclusion of OESEA3 that, "alternative 3 to the draft plan/programme is the preferred option, with the area restricted spatially through the exclusion of certain areas together with a number of mitigation measures to prevent, reduce and offset significant adverse impacts on the environment and other users of the sea."

3. Generally, and again notwithstanding the points which follow, we endorse the conclusions drawn in the Assessment section 5, regarding the most significant potential impacts (in so far as they relate to Scotland), and what might constitute appropriate mitigation. The only exceptions to this, or additional recommendations we would make, are as follows:
    a. **Sn 5.3.6. Noise. Summary of findings and recommendations**. The focus of this section is, rightly, on the impacts of underwater noise on marine mammals. However, we believe there is a need to consider and, if possible,

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evaluate the potential effects of underwater noise on diving seabirds. This issue arose last year when relatively near-shore seismic exploration surveys were planned for the east coast of the UK during the seabird breeding season, with potential to impact upon the qualifying species of seabird SPAs..

b. **Sn 5.6.6. Physical Presence – Ecological Implications. Summary of findings and recommendations**. It is stated, in relation to interactions of offshore windfarms and marine birds (specifically collision, barrier effects and displacement) that, "given the controls and mitigation proposed …..it is extremely unlikely that a population level effect will take place over the life of this SEA". We believe that this statement significantly underplays the potential significance of the cumulative collision risk and displacement likely to be sustained by some species (including qualifying species from SPAs in Scotland), as a result of offshore windfarm development linked to this Plan, and in combination with similar development elsewhere, including that in Scotland. Accordingly, we believe that research to understand potential impacts and to assess cumulative effects over wide areas, and mitigation to minimise impacts forecasted, remain a priority for the OESEA programme.

c. **Sn 5.8. Landscape / Seascape**.
   i. You should be aware that there is a fundamental difference of approach between assessment of seascape in England and assessment of coastal character in Scotland which will affect the consideration of in-shore and offshore energy development both at the strategic UK level and in subsequent more detailed tiers of assessment. This appears not to be reflected in the Assessment. In Scotland the approach to assessment of coastal character is detailed in the SNH Consultation Draft Guidance on Coastal Character Assessment, issued since scoping for this SEA was undertaken.
   ii. While we agree that mitigation opportunities for offshore development are largely limited to siting and structure design of the development (Sn 5.8.4), we encourage the consideration of design at all levels of assessment. For example, we have recently developed guidance for the offshore wind energy sector in Scotland setting out our *Advice On Offshore Wind Design Statements*. Though not, formally, published we are happy to share this with DECC on request.
   iii. In **Sn 5.8.2.3** Haze and Meteorological conditions are included within the SEA as conditions which might limit visual range and visibility to offshore development. Under EIA, and the associated method of landscape and visual impact assessment (LVIA), consideration of local meteorological conditions is not taken into account in the assessment of effect. LVIA assumes the 'worst case scenario', which is clear bright weather with excellent visibility. The worst case scenario approach is also applicable to SEA and, as such, to ensure consistency with other tiers of assessment, we feel this section should be reworded to take account of this issue.
   iv. Further, more specific comments and information sources relating to Landscape / Seascape are set out in Annex A..

4. We endorse, in particular, the following recommendations, from Section 6. **However, for transparency, and in order to help ensure delivery of these, we**

believe it is important, on implementation of the Plan, that all the recommendations are assigned to owners, with timescales for completion. Without such assignment there is a strong risk that some may not, in practice, be secured. Progress might usefully be tracked by the OESEA Steering Group.

a. Rec 2 (re treatment of, and awareness raising in connection to, emerging or existing Natura 2000 and MCZ/MPA sites)
b. Rec 3 (re requirement for site specific information to inform consenting decisions)
c. Rec 6 (re exclusion, at present, of blocks west of 14^{o}W, from oil and gas licensing)
d. Rec 8 (re potential sensitivity to development of areas with Natura interests or designated as MPAs (nb, note that in Scotland MPAs are not restricted solely to biodiversity interests but may also be designated for historic interests or for research and demonstration purposes)
e. Rec 9 (re prioritisation of efforts to allow effective consideration of the cumulative effects of underwater noise; we agree, strongly, that this needs to go beyond simple establishment of the Marine Noise Registry database, but requires development of forward looking tools that can model or predict cumulative effects)
f. Rec 10 (re enhancement of existing marine mammal mitigation measures, in relation to deep water seismic surveys and beaked whales)
g. Rec 11 (re standardising control and reporting of chemicals used in the renewables industry, with existing arrangements applicable to oil and gas sectors)
h. Rec 12 (re aspects to be considered during the planning and assessment of tidal range proposals; while tidal range development within Scotland falls outwith the scope of this Plan and SEA, such developments off Cumbria, and the southern Solway coastline in particular, could affect sites and features in Scotland)
i. Rec 13 (re need for development of guidance on Cumulative Effects Assessment)
j. Rec 14 (re cross-validation of models of seabird distribution derived from tracking studies and from at-sea observations)
k. Rec 15 (re need to secure improved understanding of ecology and location of beaked whales to the west of the Hebrides as a pre-requisite to further investigations of the hydrocarbon potential of this region)
l. Rec 16 (re need to secure additional information on harbour porpoise ecology, prey and inter-specific interactions)
m. Rec 17 (re need to better characterise marine mammal (and prey) responses to underwater noise)
n. Rec 18 (re need for enhanced understanding of the biodiversity of species and habitats that form the bases for MCZ/MPA identification and designation; we would expect this work to be informed by existing resources such as FEAST (Feature Activity Sensitivity Tool))
o. Rec 19 (re conduct and dissemination of focussed surveys of animal activity and behaviour around deployed marine renewables energy devices; while licensing and monitoring of such devices in Scotland lie outwith the scope of this Plan and SEA, such studies elsewhere in the UK are likely to be of direct interest and relevance to consenting activity in Scotland. **As raised at recent OESEA SG meetings, we would emphasise to DECC the value**

of ORJIP Ocean Energy in indicating relative priorities for research relevant to the wave and tidal renewables sectors)

p. Rec 21 (re ensuring prompt archiving and dissemination of site survey data gathered by the renewables and oil and gas sectors)
q. Rec 22 (re need to minimise volumes of rock used for cable and pipeline protection)
r. Rec 23 (re need to base consenting decisions and mitigation advice, for development in areas of vulnerable habitats and species such as biogenic reefs, on provision of detailed site-specific benthic information)
s. Rec 24 (re need for marine developers to operate to an agreed international standard for Environmental Management Systems)
t. Rec 25 (re need to consider effects of percussive noise on marine mammals, in decisions on disposal of unexploded ordnance discovered during site survey).

5. As set out in Sn 6, '*The SEA Regulations require the responsible authority for the draft plan/programme to: "….monitor the significant environmental effects of the implementation of each plan or programme with the purpose of identifying unforeseen adverse effects at an early stage and being able to undertake appropriate remedial action*".'
   While aware that the Regulations allow for the inclusion of other monitoring programmes in full or partial delivery of this requirement, we do not believe that any of these, in themselves, will be sufficiently relevant to enable the environmental effects of this Plan to be identified and discriminated. As set out in our scoping response, **we believe a bespoke programme of monitoring is required to deliver this, in particular for gauging effects of offshore renewables development, and also those linked to cumulative effects from all relevant industries of underwater noise on marine mammals.** The benthic monitoring programme linked to earlier oil and gas licensing rounds, described at the recent DECC OESEA Seminar in London (April 2016), demonstrated clearly the merits of such a programme. Analogous studies, focused on birds and mammals, those species which, intuitively, seem most at risk from offshore renewables and underwater noise (in the case of mammals), should be considered in connection with this Plan.

6. While generally comprehensive in scope one area we felt that received relatively attention in the Environmental Report was that of the cumulative effects arising from overlaps that may occur between the various industry interests. For example it was unclear how much consideration has been given to the Scottish draft Sectoral Plans and the areas being considered in this Plan for other interests, nor how the marine grid commitments will be considered. Whilst a summary of other users is provided, this is primarily just an overview of current activities and what information has been used to inform the spatial considerations.

7. While nature conservation MPAs are referred to throughout the Report, you should note that these are based on a suite of Priority Marine Features that have been identified in recent years by SNH, JNCC and Marine Scotland in recent years, to help deliver Scottish Government's marine conservation commitments. These appear not to have been recognised in the Environmental Report or Benthic annex.

8. Since initiation of this consultation, you should be aware that Marine Scotland has initiated a consultation, via SNH, on a possible SAC for Harbour Porpoise in the Inner Hebrides and Minches. This, naturally, will need to be factored into any final recommendations made regarding oil and gas / CCS development proposals made in this and adjacent areas.

Should you wish any clarification on the points raised, please do not hesitate to contact me by email ([redacted]) or by phone ([redacted]).

Yours faithfully,

[redacted]

[redacted]
Policy & Advice Manager (Marine Renewables)
Scottish Natural Heritage.

cc sea.gateway@gov.scot
sea.gateway@hes.scot
sea.gateway@sepa.org.uk
SEA_Gateway@snh.gov.uk

Annex A.

Additional Comments re Report Structure

1. OESEA 3 has resulted in a large amount of information being provided both in the Environmental Report and the supporting appendices. As mentioned above, the length of these documents and the way in they are structured has made their review challenging. It may be more useful in future iterations to rely on references and/or web links to reduce the amount of information that needs to be provided in the Report. (thus, for example, SPA selection guidelines, description of ESAS methods, seabird surveys and dates etc. are not really necessary), making the overall document smaller and more focused on the areas of interest / concern.

2. One option might be that the sections covering each of the receptor interests are limited to the text contained in the environmental issues element found at the end of each chapter and that this in turn focusses on the key issues and recommendations that developers would need to consider going into project specific applications. This could also include reference to those areas of research the SEA programme is delivering that may inform the leasing and future development of individual applications.

3. The criteria set out in table 3.1 to determine the likely significance of effects were agreed earlier in the SEA process but it is not immediately apparent how they were then applied to help inform the plan and the future potential lease areas.

Additional Comments re Landscape / Seascape (Report sn 5.8 and Appendix 1c)

Outline assessment

The *Tidal Range Technical and Theoretical Resource* indicated in the Environmental Report (ER) Figure 5.42 has implications for Scotland with the shared landscape and visual resource of the Solway Firth and potential impacts on the 3 coastal National Scenic Areas (NSAs). There is no discussion on how cross-border impacts will be managed at subsequent scales of assessment.

Regional sea1

In the ER (pg.305 para 4) the statement of visibility is misleading and simplistic as there are not always open and expansive seascapes visible from Shetland's coast. The complex and intricate coastline formed of many firths and voes provides a variety of viewing characters, from open and expansive on exposed headlands, to narrow and framed along the voes, and should be recognised at a more detailed level of assessment.

We agree that the increasing pressure for aquaculture development around Shetland may conflict or generate in-combination cumulative effects with offshore energy developments, particularly in the NSA. This should be taken forward into future assessments at a more detailed level.

On ER page 306 (para 5) – it is stated that oil and gas activity in Grampian and the Highlands is not likely to generate cumulative effects. However, no reference is made to ER Figure 5.43 (licensed and awarded blocks for exploration/production) and in

particular block 11/24 immediately off the Caithness coast, or Block 18/9 off the north coast of Aberdeenshire. Further details are requested, regarding the licensing conditions for blocks 11/24 and 18/9; where potential development within the areas will be assessed, what the focus of assessment will be and the timing for this assessment.

Regional sea 7

We agree that there are likely to be impacts on the perception of wildness and the special qualities of any NSAs and sensitive visual receptors and, in particular, from any onshore development of large scale industrial development. Furthermore we agree that cumulative impacts with the ongoing increased pressure for aquaculture are a key consideration requiring further assessment.

Controls and mitigation

We agree that mitigation opportunities for offshore development are *largely* limited to siting and structure design of the development (ER section 5.8.4), although we encourage the consideration of design at all levels of assessment.

However, care should be taken to avoid siting to minimise visibility (ER pg. 321 bullet point 4) without due consideration of overall coastal character, as visual impacts could just be most from one location to another rather than more holistically considered. SNH guidance: *The siting and design of Aquaculture in the landscape – visual and landscape considerations* (Nov 2011), whilst specific to aquaculture development, is a useful source of information informing both the siting and design of development at a number of levels.

Appendix 1c

This appendix covers the whole of the UK but, naturally, only some sections are directly relevant to us. Unfortunately there is not a single neat divide between 'Scottish' and 'non-Scottish' text.

In our view, the UK Context is overly Anglo-centric in the approaches and methodologies outlined and level of detail for each country provided. From this there is the concern that there could be limitations or inconsistencies in approaches required from the next tiers of assessment which are raised in this SEA.

There is no mention of the SNH guidance on coastal character assessment (see above).

Introductory descriptions of Scottish coastal character in the Features sections A1c5 to A1c11 are limited in content and scope of description, and inconsistent to relation to level of information provided across these sections. For example on Page 449 there is no reference to the largely mountainous terrain with a highly indented and scenic coastline, nor the number of small coastal settlements along this area; nor (on p453) of Scapa Flow which is a large natural harbour contained by the Orkney Islands. This is a UK wide SEA, which should be highlighting the wide variety and diversity of all its

coastlines. It is important that the SEA refers to all coastlines, consistently, so as to feed into future and more detailed tiers of assessment and plans.

Landscape designations

Two additional sources of information are relevant:

- *Inventory of Historic Gardens and Designed Landscapes* – managed by Historic Environment Scotland (HES);

- *Historic Landuse Assessment* RCAHMS (now HES) – revised in 2015.

marinescotland

The Scottish Government

[redacted]

[redacted]
DECC Environment Team Leader
Atholl House
86-88 Guild Street
Aberdeen
AB11 6AR

email: oesea3@decc.gsi.gov.uk

6th May 2016

Dear [redacted],

Marine Scotland Consultation Reponse – DECC SEA 3 Environmental Report

Marine Scotland welcomes the opportunity to respond to the above consultation and has welcomed the opportunity to be involved in the Steering Group which has contributed to the development of this process to date.

Overall, the SEA provides a comprehensive analysis of the UK marine environment, the key pressures, resources and predicted impacts on key receptors associated with energy development in the marine environment.

In relation to the policy context, Marine Scotland welcome the acknowledgement of the role of the National Marine Plan for Scotland and would be keen to have any discussions in the future on any issues which arise in relation to decision-making as regards this Plan and activities outlined in the SEA 3.

Furthermore, in light of new legislation devolving further powers to the Scottish Parliamant, we would wish to note the following:

- DECC oil and gas and CCS consents should respect the Scottish National Marine Plan and any Sectoral Plans / Leasing Rounds undertaken in fulfilment of the role as future Scottish manager of the Crown Estate
- DECC consents for these activities should ensure environmental sustainability and minimisation of potential Scottish Government liabilities (eg under Environmental Liability Directive)

In relation to the technologies included in the SEA, we would wish to note the following:

- While recognising that a large proportion of the bird sensitivities identified are concentrated in coastal waters, it is recommended that at present, the bulk of new offshore wind generation capacity should be sited away from the coast, generally outside 12 nautical miles, based on current available and applicable science. This

should be reviewed in light of any related science which comes forward demonstrating otherwise.

- For wave and tidal, due to limited data the SEA recommends that for the deployment of single devices and small arrays (likely in the lifetime of OESEA3), appropriate surveys of animal activity and behaviour should be undertaken to inform commercial scale projects. We agree with this.

In relation to the environmental contents and consideration of effects, we would wish to note the following:

- More detail could be provided on protected sites in marine and coastal areas. There is no direct mention of SPAs or SACs, nor of the extensive network of SSSIs in coastal locations.
- There could at times be greater linkange between the effects on receptors section and how this relates with the preceding list of effect mechanisms.
- There is little evidence about effects of lagoons on biodiversity, but there is quite a lot in the seascape section about lagoons. This seems imbalanced.
- Individiual applications require clarity on effects on individual protected areas - species and habitats - not regional scale impacts. The Report could provide further detail on the applicability of this data in the consenting process and what futher information would be required when taking applications forward.

As noted above, we have welcomed the opportunity to be involved in the development of this process and are keen to maintain engagement moving forward.

Please do not hesitate to get in touch if you have any queries about any of the points above.

Kind Regards

[redacted]

[redacted]

Marine Planning & Assessment Specialist
Marine Scotland
Level 4 – Atlantic Quay
Glasgow
G2 8LB

From: [redacted]
To: [redacted]
Cc: [redacted]
Subject: RE: DECC SEA Steering Group meeting 17th June 2016
Date: 01 July 2016 11:23:37

[redacted]

Thank you for giving the MMO marine planning team the opportunity to comment on the DECC SEA.

The planning team have reviewed our original scoping response against the SEA. From our review all of our scoping comments have been taken on board within the SEA and I can therefore confirm that we have no further comments to make at this stage.

Kind Regards

[redacted]

[redacted] | Marine Planner | Marine Planning Team | Marine Management Organisation
Direct line: [redacted] | Email: [redacted]
Address: Lancaster House, Hampshire Court, Newcastle upon Tyne. NE4 7YH
Website | Twitter | Facebook | Blog | YouTube

Our ref: PCS/145553
SG ref: SEAUK00051/ER

If telephoning ask for: [redacted]

27 April 2016

[redacted]
Offshore Environment Policy Unit
Department of Energy and Climate Change
86-88 Guild Street
Aberdeen AB11 6AR

By email only to: sea.gateway@scotland.gsi.gov.uk

Dear [redacted]

Environmental Assessment of Plans and Programmes Regulations 2004
UK Offshore Energy SEA3 - Environmental Report

Thank you for your Environmental Report (ER) consultation submitted under the above Regulations in respect of UK Offshore Energy SEA3 (OESEA3). This was received by SEPA via the Scottish Government SEA Gateway on 3 March 2016.

We have used our scoping consultation response to consider the ER and in general we are content with the adequacy and accuracy of the ER. We are however disappointed to note that the observation we made with regard to Underground Coal Gasification does not appear to have been addressed. This may become a more pressing issue in future rounds as planned activity in this area increases around the UK coast. It will therefore be important to ensure that due consideration is given to understanding the potential environmental effects and the controls and mitigation measures which will be needed for this activity. It will also be important to understand any interrelated or cumulative effects which may occur from this activity as a consequence of its interaction with the activity assessed by the current OESEA3 and / or any future rounds. Therefore referencing this issue in OESEA3 would have, as a minimum, helped to flag it as an issue for consideration in future plans or programmes and their SEAs.

We note that when the plan / programme is finalised DECC will produce a SEA Statement detailing how environmental considerations and consultee opinions have been taken into account in the finalised plan / programme. We would request that a copy of this statement be sent to us via the Scottish Government SEA Gateway on publication.

Please note, this response is in regard only to the adequacy and accuracy of the ER and any comments we may have on the plan / programme itself will be provided separately.

Should you wish to discuss this environmental report consultation, please do not hesitate to contact me on [redacted] or via our SEA Gateway at sea.gateway@sepa.org.uk

Yours sincerely

[redacted]
Principal Policy Officer (SEA)

Ecopy: sea.gateway@hes.scot; sea_gateway@snh.gov.uk

16 New Burlington Place

London, W1S 2HX

UK Offshore Energy Strategic Environmental Assessment 3 (UK OESEA3); Publication of Environmental Report

Consultation Response from The Crown Estate

April, 2016

1. Introduction

The Crown Estate welcomes the publication of the UK Offshore Energy Strategic Environmental Assessment 3 (OESEA3) Environmental Report and the opportunity to respond to the consultation. We recognise the importance of ensuring that the OESEA3 leads to the sustainable development of energy resources as well as Natural Gas Storage (NGS) and Carbon Capture and Storage (CCS) and maximises the associated climate change benefits relating to these activities. The Crown Estate is part of the OESEA3 Steering Group and we would like to reiterate our willingness and enthusiasm to continue to engage in the Strategic Environmental Assessment (SEA) process following this consultation.

This consultation response is informed by The Crown Estate's experience of managing activities within the marine and coastal environment and of balancing economic activity with stewardship of natural resources for future generations to use and enjoy, both of which lie within our core remit. The Crown Estate's responsibilities comprise the management of virtually the entire UK seabed out to the 12 nautical mile territorial limit, in addition to the sovereign rights to explore and make use of the natural resources of the UK continental shelf, with the exception of oil, coal and gas. We manage around half of the foreshore and beds of estuaries and tidal rivers in the United Kingdom. Our expertise includes marine resource management (e.g. marine aggregate extraction), marine renewable energy installations (offshore wind, wave and tidal), seabed infrastructure, aquaculture, gas storage and CCS, and their interplay with other marine activities such as defence, oil and gas production, navigation and marine safety.

Owing to our role and responsibilities, this consultation response focuses on the elements of the Environmental Report (ER) which relate to renewable energy, CCS, and NGS. We support the text that describes the contribution that offshore renewables and CCS will continue to make towards climate change mitigation and UK decarbonisation targets. We welcome the ER as an important part of a robust strategic planning framework underpinning further development of offshore renewable energy, CCS and NGS across the geographical and temporal remit of the plan. We recommend that Government's decision on the plan for UK Offshore Energy should seek to maximise the potential for the sustainable development of these strategically important energy resources and the comments set out in this response are intended to help inform that decision.

Our response to the consultation is organised into high-level comments on the OESEA3 and draft plan/programme as a whole, and then specific comments relating to different elements of the plan and the SEA recommendations.

2. General comments

We support the conclusion of the OESEA3 that 'alternative 3' to the draft plan/programme is the preferred option, with the area offered for leasing/licensing restricted spatially through the exclusion of certain areas together with a number of mitigation measures to prevent, reduce and offset significant adverse impacts. However, it is unclear what and how such spatial restrictions will be defined and applied, and we would welcome clarification on this point following the consultation. In particular, it would be helpful to clarify the relationship between the OESEA3 (and the plan adopted in light of its findings), Marine Planning and other processes in place to guide development to the most appropriate locations.

The overall spatial considerations section of the assessment is helpful in understanding at a strategic level where constraints to development may lie. However, given the high-level nature of the assessment and broad-scale approach to mapping sensitivities, we would caution against this exercise taking the place of marine planning and site-specific assessment. We therefore welcome and support the overarching recommendations arising from the OESEA3 process that place emphasis on the need for site-specific assessment and consultation with stakeholders to guide and inform development.

Specific comments on the OESEA3 recommendations are made below. Overall, it would be helpful to have clarity on the link between these recommendations and the ongoing SEA research programme, as well as how these align with other research initiatives. For example, given that a number of the recommendations relate to improving the marine management information base, we would welcome further clarity on whether these recommendations will be taken forward as defined SEA research projects. In addition, we recommend that clarification is provided regarding how the ongoing SEA research programme will be aligned with existing strategic research programmes such as the Offshore Renewables Joint Industry Programmes (ORJIPs) established for offshore wind and ocean energy, or the DEPONS[1] research programme, to ensure consistency and to avoid duplication of effort.

In relation to the research programmes, we would like to take this opportunity to note that discussions have taken place recently between offshore wind developers, regulators and statutory nature conservation bodies on developing a more joined-up, strategic approach to post-consent monitoring at offshore wind farms. Findings from post-consent monitoring have fed into the OESEA3 assessment; however, there is a wider need to ensure ongoing review and learning from post-consent monitoring, focusing on priority issues to drive collaborative and strategic monitoring and research to address remaining uncertainties. We believe that the SEA research programme should assist with coordinating this, given the overarching role of the SEA process in facilitating strategic plans for offshore energy development.

[1] http://depons.au.dk/currently/

3. Comments on elements of the draft plan/programme

Offshore Wind

We welcome the offshore wind element of the plan, and support the inclusion of tethered turbines and allowance for advancement in technology within the lifetime of this SEA. We also welcome the inclusion of activity associated with existing lease areas to enable further offshore wind deployment.

Context and prospectivity

We note that a number of the maps contained in the ER require updating in light of recent changes to the offshore wind portfolio. In March 2016 we announced that we reached a series of agreements with DONG Energy, Scottish Power Renewables and Vattenfall reflecting their work to reconfigure or identify potential future projects within their Round 3 offshore wind development zones[2]. The conclusion of this process has resulted in a set of streamlined terms for project specific 'Agreements for Lease' (AfLs), alongside the hand-back of seabed rights for the remaining parts of the zone which are no longer required. Updated maps and shapefiles of the offshore wind portfolio are available to download from our website[3].

Linked to this, some of the maps of existing offshore wind activity depict the former Round 3 Zones 8 & 9, although they are shown as 'application withdrawn'. These areas of seabed have been surrendered to The Crown Estate and the zones have ceased to exist, and so to illustrate the zones on maps of existing offshore wind activity is misleading. Similarly, we do not think it is appropriate to depict the Docking Shoal site on such maps unless specifically illustrating historic offshore wind interest. This site no longer exists as an interest and so may be considered misleading to have it shown on the same map as part of the existing offshore wind portfolio.

We note that the Navitus Bay site is included on maps of offshore wind activity, albeit as one for which consent was refused. For information purposes, The Crown Estate is currently working with the developer to terminate the Navitus Bay agreement, after which the seabed will be formally handed back. Our maps will subsequently be updated to reflect this change and no longer show any rights in this location.

Given the changes to the offshore wind portfolio outlined above, we recommend that in adopting the plan post-consultation and the ongoing SEA process, the emphasis of discussion is on the offshore wind portfolio as a whole rather than focusing on specific rounds of development. Similarly, we suggest that reference to potential extensions to existing lease areas is made in the context of the entire portfolio, rather than focusing on Round 2 sites.

Spatial considerations

We note that in the overall spatial considerations chapter Figures 5.62 to 5.65, maps of the seabed theoretically available for offshore wind development, show existing offshore wind developments/agreement areas (as well as former Zones 8 and 9 and the Docking Shoal site),

[2] http://www.thecrownestate.co.uk/news-and-media/news/2016/uks-offshore-wind-project-pipeline-further-strengthened/

[3] http://www.thecrownestate.co.uk/energy-and-infrastructure/downloads/maps-and-gis-data/

whereas analogous maps produced for wave and tidal current and tidal range do not show existing developments/agreement areas. We suggest that it would be more appropriate to exclude relevant areas of the seabed due to the existence of agreements/developments from the mapping, thus treating them as 'hard constraints', rather than having them overlaid on the remaining resource.

We note that in the application of constraints to the defined offshore wind resource area, although former Round 3 zones that have not proved technically or economically viable in the past have been included in the area theoretically available for development, the Navitus Bay zone site has been excluded as a hard constraint. As noted above, the seabed occupied by this site will in due course be surrendered to The Crown Estate, so will not represent a hard constraint as an existing agreement area. We do not consider it appropriate to treat this area as a hard constraint due to the recent consent refusal for the Navitus Bay project, as this would appear to pre-judge any future possible mitigation of potential impacts. We suggest that it would be more appropriate to include this site in the consideration of "other" constraints, noting the high sensitivity of seascape and visual receptors and hence increased consent risk.

Tidal Range

Context and prospectivity

Given the lack of spatial/capacity restrictions within the draft plan/programme for tidal range, we agree with the approach taken to limit the spatial focus of the assessment to resource potential, using criteria of a mean tidal range of greater than 5m and water depths of less than 25m. We note, however, that Figure 2.12 of tidal range resource areas appears to exclude some areas close to the coast that would be expected to fall within these criteria; we would welcome clarification on whether this 'cut off' is based on data availability underpinning the mapping rather than where the resource is and where projects could theoretically be developed.

Wave and Tidal Current

We welcome and support the lack of restriction on device types for both wave and tidal current technologies, as this provides flexibility for the sectors to evolve and deploy new technology solutions within the currency of this SEA. Similarly, we support the lack of a capacity target for both the wave and tidal current elements of the draft plan/programme.

Context and propectivity

We note that the description of leasing activity undertaken by The Crown Estate for wave and tidal current sites contains some inaccuracies. For clarification, the situation regarding leasing activity to date can be summarised as:

> *In 2009, The Crown Estate launched a wave and tidal leasing round in the Pentland Firth and Orkney waters strategic area and eleven Agreements for Lease were entered into in 2010, with an associated potential capacity of 1.6GW. Since then, The Crown Estate has run five application windows between 2010 and 2014, offering sites across Scotland, England, Wales and Northern Ireland. A number of the projects established via these opportunities have now received consent.*

Whilst we agree with the resource areas outlined in the 'Prospectivity' and 'Overall spatial considerations' chapters of the ER, we would recommend that these are not used to place restrictions on the location of wave and tidal current development that may take place during the lifetime of this SEA. Whilst the resource areas depicted provide a useful indication of areas likely to be attractive to the wave and tidal current industries, we believe that there may be interest in progressing ocean energy sites outside these specific resource areas. For example, during early phase deployment of wave technologies, some projects may wish to deploy somewhat inshore of the main resource area depicted to reduce cabling costs; rigid interpretation of the resource areas depicted in the OESEA3 ER could prohibit this. We further note that the marine planning process is helping to identify likely future opportunities for development based on resource availability and other constraints on development.

We note that section 2.7.6, in the context of prospectivity of the wave and tidal current resource, makes reference to a number of sites in Scottish and Northern Ireland waters despite these areas being excluded from the scope of the OESEA3. Although useful for context, we would like to highlight that other areas within the relevant waters covered by the OESEA3 (e.g. the south-west and Wales) also have the potential to deliver array-scale projects within the currency of this SEA, should the revenue support framework, cost reduction and technology development allow this.

Assessment

The OESEA3 assessment provides a helpful review of research and assessment of potential impacts of wave and tidal current devices undertaken to date and highlights remaining data gaps and uncertainties. As noted above, we recommend opportunities are identified to align SEA research with other initiatives; we understand that discussions are underway between the ORJIP Ocean Energy secretariat and the SEA team at DECC with regards to aligning future SEA research with the prioritised list of strategic research and monitoring projects within the ORJIP Ocean Energy Forward Look[4].

Carbon Transport & Storage and Natural Gas Storage

We welcome the carbon transport & storage and the natural gas storage elements of the draft plan/programme assessed and consider that these encompass all the activities which are likely to emerge during the currency of the SEA. We welcome the specific inclusion of the transport element of CCS and discussion of the positive contribution CCS can make in particular to emissions from the energy sector. However, we believe that the OESEA3 could have described more thoroughly the potential benefits of CCS, such as decarbonising industrial processes and supporting a flexible and baseload capacity for the power sector.

[4] Available at: http://www.orjip.org.uk/documents

Context and prospectivity

We note that since the Scoping Report was consulted on in July 2015, reference to current proposed commercialisation CCS projects has been removed. The Crown Estate holds two agreements for such projects, Peterhead ('Goldeneye') and Yorkshire & Humber ('Endurance'); both CCS projects also hold licences with the Oil and Gas Authority. It would be helpful to reference these projects when describing existing activity.

Reference should also be made to the Teesside Collective project and the Caledonia project from Grangemouth in order to more comprehensively reflect the likely activity within the lifetime of the SEA.

We note that existing leased natural gas storage sites have not been included in figures in the ER or discussed in the description of existing activity. In framing the prospectivity of the sector, as has been done for other elements of the draft plan/programme, it would be helpful to show what activity has taken place to date. Up to date shapefiles for gas storage sites can be downloaded from our website (link provided above).

4. Comments on the OESEA3 recommendations

We note that a number of the OESEA3 recommendations imply a level of 'regulation creep' and additional burdens on bodies and developers involved in offshore energy, we have provided indicative examples below. We believe that the recommendations arising from the OESEA3 should sit firmly within the scope of what can be assessed (and to what extent) under existing legislation and regulatory frameworks.

Recommendation 1

We note that many of the objectives listed in this recommendation have been or are in the process of being reflected through statutory Marine Plans and therefore there is potential for duplication in spatial planning policy. As such, and building upon our general comments above, we would welcome clarification post-consultation on hierarchy of the OESEA3 and other plans/policies. For example, further clarity would be welcome on whether it is intended that these recommendations will only apply in areas where a marine planning process is yet to be undertaken and an adopted (or draft plan) is not yet in place.

Recommendation 3

We welcome the emphasis on site-specific assessment and engagement with stakeholders to inform consenting decisions; however, this recommendation could be interpreted as implying that siting developments within territorial waters is not considered appropriate.

We also note the reference to marine spatial plan requirements, and suggest that rather than being "*In addition to*" the recommendation should be "*In line with*", as seascape character and sensitivity are key considerations for the planning process as well as in policies contained within the plans. The "uniqueness" of a particular area does not always equate to "sensitivity" from a potential impact, and this places emphasis on the need for a case by case assessment; decisions on such assessments should be informed by the relevant Marine Plans and national policies.

We therefore suggest that this part of the recommendation could be re-phrased as *"Given the lack of uniformity in coastal area sensitivity around the country, all activities and developments covered by the draft plan/ programme require site specific-information gathering and stakeholder consultation to inform consenting decisions. In line with marine spatial plan requirements and national policy statements, the particular uniqueness or sensitivity of the coastal zone must be taken account of as part of the project-level assessment for a development proposed within territorial waters".*

Recommendation 4

It would be helpful to clarify whether the *"significant new information"* referred to means post-consent monitoring data from the existing wind farm and any other research/data that may have become available since the existing wind farm was consented. It would be helpful to note that this expectation to use the latest available information would apply to any new development as part of a standard EIA approach, regardless of whether it is a proposed extension to an existing site.

Recommendation 5

We would welcome clarification on what is meant be the term "Clearways", and how it is envisaged these will be identified and designated. Subject to this clarification, we suggest that such instruments are reserved for where particular vessel routes have been identified as being strategically important following consultation and negotiation between the shipping / navigation sectors and the offshore renewables sector. Vessel movement should be largely unconstrained in sea areas (other than by physical constraints such as water depth), unless as a result of fixed infrastructure where the siting of such, could result in the need for Clearways being protected.

Recommendation 7

We note that this recommendation links to our comments above regarding the need to ensure join-up between the SEA programme and research initiatives aimed at addressing remaining uncertainties. As an improved evidence base becomes available this can be shared within and between sectors and used to reduce risk/precaution in the siting and consenting of developments. We would also like to note that whilst appropriate for the emerging wave and tidal energy sector, this recommendation does not recognise the progress made to date in improving the evidence base related to offshore wind development.

Recommendation 8

We assume that this recommendation relates to the consenting and approval of proposed development. As the seabed leasing body, The Crown Estate is not a regulator and therefore we suggest removal of the term "leasing" from the recommendation. It is the statutory planning/ consenting/ licencing process that determines appropriateness of development which may affect certain habitats or species. It would also be helpful to clarify whether "adequate information" refers to the information and assessment that would arise from a developer's project-specific assessment.

Recommendation 12

We recognise that this recommendation is intended to ensure that significant issues are bottomed out as development proposals are brought forward, in particular in relation to potential cumulative

effects. However, we do not agree with the recommendation that *"site specific assessments are undertaken before decisions can be taken on potential leasing and the desirability and acceptability of individual projects"* and ask that the statement is rephrased.

Site-specific assessments are not conducted by The Crown Estate as seabed manager. We expect developers to undertake site specific assessments as required by the existing statutory planning regime in order to obtain consents, and require developers to obtain all necessary project consents before a lease becomes effective.

The SEA process and marine planning should help guide development at a strategic/regional level, and at the project level assessments required under the Habitats Regulations, EIA legislation and the Water Framework Directive are sufficient to ensure that potential impacts are assessed so as to inform consent decisions on whether a proposed development is appropriate.

We note that the suggested subject matter of the recommended assessment is not an exhaustive list of the impact/receptor topics that developers will be required to assess for their project proposals as part of the consenting process. As such, the subjects to be assessed should be dictated by the relevant legislation. We also note that the lack of clarity in the recommendation on at what stage of the legislative 'hierarchy' such assessments should be undertaken, and by whom, could potentially lead to challenge of land owners' decisions with regard to their role in leasing and awarding rights, whether or not there is a legal basis for such a challenge.

Recommendation 20

The Crown Estate has recently been involved in steering work to scope a UK-wide seabed mapping programme which seeks to identify opportunities for greater public and private sector collaboration to increase seabed mapping coverage around the UK. We understand that this scoping study is due to be published via gov.uk in the near future, and so would be a useful consideration in relation to this recommendation and the ongoing SEA research programme.

Recommendation 21

We welcome this reference to existing data resources, and note that the Wave and Tidal Knowledge Network (WTKN) is another source of information that could be promoted. We note that this recommendation complements Recommendation 20 and highlights the need for improved coordination between public/ private sectors on survey effort to ensure maximum value is derived from survey efforts and a reduction in duplication.

Recommendation 22

We agree with the principle of this recommendation, but note that it should be recognised that for new, early stage projects, rock armouring may be the most appropriate/cost effective/safest method. The regulatory process will ensure that methods and any volumes of armouring proposed are justified.

Recommendation 24

Whilst we recognise that this recommendation aspires to achieve more consistency between sectors and developers, we note that depending on the international standard intended (e.g. compliance with ISO14001) it may not be possible for all developments to meet this recommendation. For example, small-scale sectors, although operating some form of Environmental Management System, may not have the resources to comply with the same

standards and systems that larger and better resourced sectors are able to. In such cases, this recommendation could be seen as adding a regulatory burden to developers.

Recommendation 25

We note that this recommendation relates to efforts underway to implement the UK's approach to management of underwater noise via the Marine Strategic Framework Directive; it would be helpful to highlight this link post-consultation for alignment purposes.

5. Conclusion

We hope that our comments are constructive and will be useful in informing DECC's decision on the adoption of the plan/programme under consideration. We look forward to continued engagement with the SEA process through our role as member of the SEA Steering Group and we are very willing to provide additional information on any of the points we have raised above. All of this response may be made available in the public domain and there is no part of it that should be treated as confidential.

Contact:

[redacted] Consents Manager

The Crown Estate
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London, W1S 2HX
[redacted]
[redacted]

Historic England

RE: Offshore Energy SEA 3 Consultation - Historic England Response

Thank you for consulting Historic England on the OFFSHORE ENERGY STRATEGIC ENVIRONMENTAL ASSESSMENT (OESEA3) ENVIRONMENTAL REPORT: Future Leasing/Licensing for Offshore Renewable Energy, Offshore Oil & Gas, Hydrocarbon Gas and Carbon Dioxide Storage and Associated Infrastructure (March 2016)

Historic England is the Government's statutory adviser on all matters relating to the historic environment in England. We are a non-departmental public body established under the National Heritage Act 1983 and sponsored by the Department for Culture, Media and Sport (DCMS). We champion and protect England's historic places, providing expert advice to local planning authorities, developers, owners and communities to help ensure our historic environment is properly understood, enjoyed and cared for.

An important matter to identify in this SEA Environmental Report, in reference to previous SEA exercises, is how this report now directs attention to Development Consent Orders (DCO), as granted for nationally significant offshore wind farm developments. In particular, the provision made within DCOs for conditions to deliver archaeological mitigation (e.g. paragraph 4.4.9, 4.5.12 and footnote on page 476). It is therefore helpful to see reference in the SEA to National Policy Statements (e.g. EN-3) that captures the concept that subject to satisfactory conclusion of archaeological mitigation it is possible to identify a positive impact (i.e. knowledge gain) from seabed energy infrastructure developments. However, effective delivery post-consent and realisation of DCO conditions directed at cultural heritage is essential.

As an overall comment, Historic England found the report to be well written and clearly structured and set out.

Historic England also has some specific comments to make on particular sections of the environmental report, and these are set out below.

PDF page counter	Section/Paragraph/bullet point	Comments
23	**Overview of main sources…/third bullet point**	Amend to: "Physical damage to submerged heritage/archaeological contexts from infrastructure construction, vessel/rig anchoring etc. and how the setting of any coastal historic environmental assets might be affected and loss of access."
95	Table 3.1/Landscape-Seascape	While reference is made to "character of the landscape/seascape", particular attention is given to the visual resource. It is important to add that the approach adopted through the Historic Seascape Characterisation programme is to identify a perception of historic character and therefore it is through any subsequent SEA exercise to determine objectively how the identified character, spatially defined, might change independently of whether it is "visible" or not
220	4.5.3.3/fourth paragraph	Amend to historic perception of character rather than "local perceptions"
220	4.5.33/fifth paragraph	Reference to add to bibliography: Firth, A. (2013) *Historic Environment Guidance for Wave and Tidal Energy*. Published by Fjordr Ltd on behalf of English Heritage, Historic Scotland and Cadw.
334	**5.8.2.5**	The text mentions "Value is also locally variable, with stakeholders having differing views on what may be valued", however, inclusion of how historic seascape might be perceived should also be mentioned.
354	**Regional Sea 6**	Mention is made of Hadrian's Wall World Heritage Site and associated sensitivity in reference to energy infrastructure developments as could occur in the adjacent marine area - the inclusion of such detail is welcomed

[redacted]
Senior National Infrastructure Adviser
Planning Advice and Reform
Government Advice Team
Historic England
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138-142 Holborn
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[redacted]

28 Apr 2016

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Offshore Energy SEA 3 Consultation Department of Energy and Climate Change 4th Floor, Atholl House 86-88 Guild Street Aberdeen AB11 6AR	Eich cyfeirnod Your reference	
	Ein cyfeirnod Our reference	
	Dyddiad Date	6 May 2016
	Llinell uniongyrchol Direct line	[redacted]
	Ebost Email:	[redacted]

Dear Sirs,

Offshore Energy SEA3 (OESEA3) Environmental Report

I am writing further to my email of 29 April regarding your request for our comments on the above report. Having reviewed the Environmental Report and its Cultural Heritage appendix, we have the following comments;

Environmental Report

Landscapes and Seascapes

In Wales, there is a Register of Landscapes of Outstanding Historic Interest.

Further to the report's comment on page 14 that the wider recognition of landscape in the UK is now being brought about through national and regional planning policy, including marine planning, we would note that seascapes are also recognised in marine planning.

Cultural Heritage Appendix:

A1i.2.2 Wrecks

The enhancement of the Welsh maritime database should be mentioned alongside other enhancement projects in the UK.

A1i.2.3 Coastal archaeology

In addition to the initiatives discussed in this section of the Cultural Heritage Appendix, we would bring attention to the 'Arfordir' project, which was a volunteer-led recording project around the coast of Wales, concerned with sea-level change.

More generally, in addition to the national datasets mentioned in the appendix, the regional Historic Environment Records (HER) held and maintained by the Welsh

Archaeological Trusts should be mentioned as a source of data. The HER now have a statutory footing under the Historic Environment (Wales) Act 2016, and are publicly accessible via www.archwilio.org.uk. It must be noted that this resource should not be used for commercial works.

A1i.2.4 Site designations

In Wales, underwater assets – including wrecks - may be scheduled or designated, according to the nature of the site and any associated management issues and vulnerabilities.

As discussed in my email of 29 April, The Historic Environment (Wales) Bill gained Royal Assent in March, therefore site designations will need to be amended to refer to the Historic Environment (Wales) Act 2016.

Regional Sea 4

In our opinion, the report's consideration of Regional Sea 4 requires more emphasis on the River Severn and Gwent Levels, including significant finds such as the Newport Ship, Barlands Farm Boat and Magor Pill. Further consideration should also be given to later prehistoric coastal routes and the importance of the Iron Age in south Wales.

In addition, the report should consider major ports in the region , including Chepstow, which dated from the Norman period and flourished in the 15th-16th century and the Roman port of Caerleon. In light of the global importance of the ports of Cardiff and Swansea in the 19th and 20th century, there is the potential for offshore associated finds in these areas.

Yours sincerely

[redacted]
Diogelu a Pholisi/ Protection and Policy

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Our ref: AMN/23/480
Our Case ID: 201507625
Your ref: UK00051 ENVIRONMENTAL REPORT
26 April 2016

Dear [redacted]

Environmental Assessment of Plans and Programmes Regulations 2004
Department of Energy and Climate Change (DECC) - UK Offshore Energy

Thank you for consulting Historic Environment Scotland on the DECC's UK Offshore Energy Strategic Environmental Assessment 3 (OESEA3), received via the Scottish Government's SEA Gateway on 3 March 2016. I have reviewed the report on behalf of Historic Environment Scotland and should make clear that this response is in the context of the SEA Regulations and our role as a Consultation Authority. Please note that our view is based on our main area of interest for the historic environment.

We welcome that our comments on the proposed scope of the assessment (dated 3 September 2015) have been taken into account in the preparation of the assessment.

The assessment clearly sets out the relevant areas to which the various components of the offshore energy programme relate in terms of the Scottish Renewable Energy Zone and territorial waters. We welcome the assessment provided for the potential effects of Oil and gas, gas storage, carbon dioxide storage and tidal range and the high level conclusions presented. As the assessment notes, in order to meet the environmental objectives much weight is on preparatory survey which should aid both in the protection of cultural heritage resources and the identification of previously unrecorded sites. We are therefore content to agree with the findings of the assessment.

None of the comments in this letter should be taken as constituting legal interpretation of the requirements of the above Regulations. They are intended rather as helpful advice, as part of Historic Scotland's commitment to capacity building in SEA.

Please feel welcome to contact me should you wish to discuss this response.

Yours sincerely

[redacted]
Senior Heritage Management Officer (SEA)

UK Offshore Energy Strategic Environmental Assessment 3 (OESEA3)

A response to consultation from Whale and Dolphin Conservation

Whale and Dolphin Conservation (WDC) welcomes the chance to respond to OESEA3. We believe that robust and transparent SEAs are a vital part of marine spatial planning and can play an important role in the conservation of whales and dolphins.

This response comments on the overall conclusions of the SEA, and the process of developing the assessment.

WDC welcomes the overall conclusion to adopt alternative 3 to the draft plan/programme, with the area offered restricted spatially through the exclusion of certain areas together with a number of mitigation measures to prevent, reduce and offset significant adverse impacts on the environment and other users of the sea. However, we are concerned that only the area to the west of the Hebrides is recommended to be withheld from oil and gas licensing for the present. In previous SEAs other areas, including Cardigan Bay, were withheld due to lack of information on key species such a bottlenose dolphin. We are not aware of any new research that fills this data gap. WDC believes that under alternative 3 a detailed assessment of spatial exclusions and key mitigation measures should be presented. We would still recommend, as proposed in our response to the scoping report, an approach based on the recommendations of the former Joint Links Oil and Gas Environmental Consortium (JLOGEC[1]) where, instead of a presumption for development across all waters the SEA would designate certain categories of regions, namely that the SEA should identify Sacrosanct, Moratoria and Potential Areas. These are: Sacrosanct Areas – those that are so important to conservation or are highly sensitive and should not be developed for energy developments or other activities. Moratoria areas – those that should not currently be developed on the grounds of inadequate technology to exploit the area sensitively or on the basis of inadequate information to assess environmental sensitivity. Potential areas – those where development may occur under a strict regulatory regime. Such an approach will identify areas where further baseline survey or other research is required. WDC, as part of a consortium of all the major UK environmental NGOs, first put forward this proposal 20 years ago along with a recommendation that there should be an SEA process. Whilst we are pleased that our suggestion for SEA was taken up we are concerned that, despite many years of the SEA process, most of the UK's seas are

[1] Green, M (Ed). 1996 Polluting the Offshore Environment – the practices and environmental effects of Britain's offshore oil and gas industry. JLOGEC.

still seen as open house for any developments with little sign of the SEA process changing anything in the licensing processes.

WDC welcomes the detailed information collated by the SEA, however we remain very concerned that the conclusions of the SEA do not match the analysis presented. For example, regarding noise the SEA states that "the main focus is to ensure compliance with the Habitats directive" but continues saying that the JNCC seismic guidelines are "primarily relevant to the prevention of injury" with no further mitigation proposed. The Habitats Directive is clear in that all cetaceans are subject to **strict protection**[2] – this includes not only injury but disturbance. Other areas of concern where the SEA conclusions do not meet the information provided in the assessment include a reference to the German approach to limiting noise levels, which has encouraged the development of effective mitigation but this approach is not referred to again and does not appear in the mitigation or recommendation sections – we would ask why the UK is not considering applying this approach. With regard to porpoise the assessment states that offshore piling will result in a level of acute disturbance but that the "magnitude is small when compared to eg bycatch" – this is not a valid comparison as we would remind you of the requirement for strict protection, whatever the impact, and that there needs to be detailed cumulative assessment of impacts across sectors. The SEA states that with regard to impacts on porpoise the "degree of uncertainty remains uncomfortably high" but then goes on to conclude overall, regarding noise generally, that "current mitigation measures are deemed sufficient in reducing risk of injury to negligible levels". This simply cannot be justified from the evidence given. No real mitigation is proposed and once again no proper conclusion is given to disturbance, strict protection and potential cumulative impacts across sectors. The SEA recognises the importance of minimising underwater noise and emphasises the value of further voluntary measures. The SEA does not explain what the 'voluntary' measures may be, nor how a voluntary approach could lead to compliance with legal requirements. The SEA needs to be much more robust in proposing mitigation and avoidance measures to be embedded into any licensing process.

Other areas of concern include the fact that there is no overall conclusion on the potential impacts of oil spills. We have raised our concerns on the rather generic nature of many oil spill response plans that are submitted, and the reliance on dispersants rather than containment in previous responses. Given recent evidence on serious impacts on bottlenose dolphins from the US Gulf of Mexico spill we consider much more work is required on this section.

Regarding cumulative impacts we agree on the need for "improved and targeted guidance". We remain concerned that "previous SEAs have recommended consideration of the establishment of criteria for determining limits of acceptable cumulative impact" but that these "have not yet been defined". Cumulative impact needs to be looked at in a wide cross sectoral approach. This highlights our concern at the SEA process, whereby many recommendations

[2] Green M. Cadell R, Eisfield S, Dolman S and Simmonds M. 2012. Looking forward to 'Strict Protection' : A critical review of the current legal regime for cetaceans in UK waters. WDCS Chippenham.

are made in a rather general away but are not followed up on. Meanwhile the licensing process continues as normal. This is not acceptable and the SEA process needs to identify detailed measures that should be implemented before further licensing.

The UK needs to develop a surveillance monitoring strategy to comply with Article 11 of the Habitats Directive. Whilst SCANS surveys are an important component of this, local and regional surveys and surveys undertaken throughout the year are required. Funding for such a strategy will need to come from all marine users, including the oil and gas industry. As key data providers and users, the development of a strategy should include NGOs.

Finally, we remain concerned at the process of developing the SEA and the degree of stakeholder involvement. We are unsure of the exact status and outputs of the SEA steering group – it appears to have no significant input to the overall conclusions. Likewise, the stakeholder events that have been held are organised with insufficient notice to allow attendance in most cases. With the steering group, stakeholder events, responses to scoping and to final reports it is very unclear how, or even if, our concerns are being considered. We have been raising many of the issues outlined above, and others including that lack of action in filling identified data gaps, for the life of the SEA process, but have had no real feedback nor seen these concerns addressed. Many of these concerns, such as data gaps, have been identified in the series of SEAs but with little or no attempt to address them.

WDC remains committed to the SEA process but are very concerned that, despite the effort and expense involved, it contributes little to increased environmental protection. We would be happy to meet with DECC to discuss these concerns.

WDC April 2016

[redacted]

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To whom it may concern,

RenewableUK Response

UK Offshore Energy Strategic Environmental Assessment (UK OESEA3) – Environmental Report

Thank you for the opportunity to comment on the Environmental Report for the third UK Offshore Energy Strategic Environmental Assessment (OESEA). RenewableUK is the UK's leading renewable energy trade association, with over 500 members active in the wind, wave and tidal energy sector. We work alongside our members to lead the debate and present a united voice to decision makers in order to develop a renewables industry which will deliver on climate change, energy security, jobs and investment.

The remainder of this response provides general comments on the Non-Technical Summary of the Environmental Report and specific comments in response to the Environmental Assessment provided in Appendix 1 of the Report. Furthermore, our comments are restricted to the offshore renewable technologies described in the draft plan/programme, namely, wind, wave and tidal technologies.

Objectives

We welcome the objectives set out in the plan to help contribute to Government energy targets by enabling future rounds of renewable energy leasing for offshore wind, wave and tidal devices. As well as contributing to the UK's renewable energy targets, future leasing for offshore renewables will help deliver government ambitions for security of supply and decarbonisation targets. We also recognise that it is important that these objectives are taken with due regard to the potential environmental and social impacts as assessed within the Environmental Report accompanying the draft plan/programme.

In terms of offshore renewables, we support the objective to enable further offshore windfarm leasing with the UK Exclusive Economic Zone (EEZ) and within territorial waters of England and Wales as set out in the draft plan/programme. With specific reference to offshore wind, we support the inclusion of a wide range of technology options, including turbines of up to 15MW capacity and floating turbines in water depths of up to 200m, in addition to the scales of deployment and technology types currently envisaged under the Round 3 leasing programme. However, we would add a note of caution that the scale and rate of deployment proposed within the draft plan/programme is ambitious and the UK offshore industry will require regulatory certainty alongside rapid technology development if we are to meet these ambitions within the timeframe of the draft plan/programme.

The Report is therefore useful in informing future decisions, but the entire offshore renewables development process would benefit if it was applied to a more specifically defined plan/programme.

Conclusions

In considering the alternatives to the draft plan/programme and the Report's conclusions, we would support the option to proceed with a leasing and licensing programme (Option 2) for future energy development as this is the only alternative being considered which meets the objectives of the plan/programme in terms of delivering secure energy supplies in line with carbon emission reduction targets. The UK offshore wind industry is at a critical point, balancing the need for rapid deployment and innovation with UK Government cost reduction targets. Therefore it is imperative that the industry has a clear line of sight with regard to future leasing opportunities, and financial support, from government to ensure that the industry and supply chain can continue to plan for the future in terms of project development and investment.

For these reasons, we do not support the option not to offer any areas for leasing or licensing (Option 1) or the Report's conclusion to restrict areas offered for leasing or licencing, temporally or spatially (Option 3), as this will not contribute to the UK targets and could place the expansion of the UK's offshore wind industry and associated supply chain in jeopardy.

We accept the Report's recommendation that the potential impacts of single/small arrays of wave and tidal devices on the activity and behaviour of birds, fish and marine

mammals should be monitored to inform future commercial scale projects, but also request that such monitoring is appropriate and proportionate to the scale of deployment. We also support the recommendation for the need to undertake site specific assessments of tidal lagoon proposals to inform the decision-making process on the desirability, acceptability and leasing of individual projects, and that successive tidal range proposals should consider the potential for local, regional and wider far-field effects to be generated cumulatively. However, we caution that there should be differentiation between lagoons and barrages in the category of tidal range as the potential effects between these two technologies can differ significantly.

Prospectivity

We support the identification of key resource areas for offshore wind based on the assessment of technical constraints such as wind speed and water depth. As set out in the OESEA3 document, grid availability is also a significant factor in the preferred location of offshore wind developments.

The OESEA3 makes a number of assumptions with regard to the potential deployment of offshore wind turbine foundations types. Whilst the assumptions seem reasonable at this point in time, given the pace of technology development and the industry push to develop innovative solutions to technical challenges, we would urge against the limitation of development outwith proposed key resource areas based on technical constraints and current or expected technology availability.

We thank you for the opportunity to comment on this document. Should you wish to discuss our response, please do not hesitate to contact me.

Best regards,

[redacted]
Policy Manager – Development and Consents
RenewableUK

Comments on the Environmental Assessment

Biodiversity, habitats, flora and fauna

Overall, we are in agreement with the conclusion within the SEA that with regards to underwater noise "current mitigation measures are sufficient in reducing the risk of injury to negligible levels..." However we do recognise there is a lack of detailed empirical evidence of the impacts of underwater noise on the marine environment and that this is an area of ongoing research.

We welcome recognition that several modelling frameworks are being developed to assess population level impacts of acoustic disturbance on marine mammals. These models are based on the best available science and will enable population level assessments to be undertaken in order to understand the impacts of planned activities. However it is important that these models are run using realistic build-out scenarios which take into account other constraints such as supply chain availability, available financing, in order to ensure that model outputs are realistic.

We welcome reference to the Marine Evidence Group report and whilst we are in broad agreement with the recommendations of the report, we would also welcome recognition within the SEA that any modifications to offshore wind installation methods or techniques can be prohibitively expensive to install, bespoke to each site conditions and these measures would only be required where significant impacts to regional populations of marine species are predicted as a result of cumulative installations.

We welcome the development of the Noise Registry as part of the UK Government's implications of the MSFD. We hope this will make a positive contribution to our understanding of baseline anthropogenic noise in the marine environment.

We support the recognition within the OESEA that more detailed consideration of mitigation measures should be undertaken on a project-specific basis. This is welcome as mitigation is highly site specific and dependent on site conditions and other technical constraints so it would be inappropriate to set out prescriptive mitigation requirements in a strategic document such as the OESEA.

The OESEA concludes that scour effects are generally small in scale and local in extent and unlikely to be of concern, which concurs with our experience to date.

We support the conclusion that overall, the displacement, barrier effects and collision are unlikely to have a significant impact on bird populations at a strategic level. However, we recognise that that are some remaining uncertainties with regard to assessment of the potential impacts of offshore windfarm development on avian populations. Many of our members actively contribute to Industry initiatives to help address these uncertainties through further research, for example through participation in the Offshore Renewables Joint Industry Programme (ORJIP) and the Disturbance Effects on the Harbour Porpoise Population in the North Sea (DEPONS) project.

Furthermore, the Renewable UK Consent and Licensing Group, has been actively engaged in discussions with Nature England regarding strategic monitoring to address outstanding data gaps. The monitoring activities of this and future SEA's, could make a meaningful contribution to addressing outstanding data gaps and reduce any remaining uncertainties that exist. We are therefore supportive of coordinating ongoing research through the SEA steering group but would ask that this is done in consultation with industry.

We welcome recognition within the OESEA that the baseline for many of species of birds and marine mammals has the potential to change due to other external factors such as climate change. It is therefore important that these changes are considered carefully within strategic and project based assessments, and that activities such as the development of offshore windfarms are not subject to onerous management due to changes in the baseline, particularly where the development may help mitigate this change to the baseline (for example energy generated from offshore renewables can help mitigate the impacts of climate change).

The OESEA proposed that "the bulk of new OWF generation capacity should be sited away from the coast, generally outside 12 nautical miles (some 22km)" as areas of significant densities of birds are mainly within coastal waters. While, in many cases, offshore wind development in waters further offshore may be technically and environmentally preferable, we would have concerns if this excluded development within areas within 12nm. Given the UK Government cost reduction targets and wider policy objectives intended to promote the development of the offshore wind industry, any measures which force development to more technically challenging or costly locations could jeopardise the industry's ability to meet cost reduction and deployment targets.

Geology and Sediments

The OESEA states that the potential impacts of tidal range schemes may be significant, with the potential loss of large areas of intertidal habitats and salt marshes as a result of a change in water levels and sediment transport within an estuary or river basin. We recommend that the OESEA assessments distinguish between energy generated from tidal lagoons and tidal barrages as their potential effects may differ. For example, the two-way generation of tidal lagoons means there's a considerable reduction in the changes to exposure of the intertidal areas.

We welcome recognition within the OESEA that physical disturbance to geology and sediments from offshore renewables leasing in scale relative to natural disturbance is considered to be low.

Water environment

We recognise that potential impacts of tidal barrages may be significant, and agree that detailed site specific data gathering and assessment is required. However, we also note that the OESEA often refers to tidal range energy without distinguishing between tidal lagoons and barrages, despite the potential impacts associated with

the two forms of energy extraction differing, often significantly, with lower impacts associated with tidal lagoons.

We recognise the need for a better understanding of the potential impacts associated with the deployment of wave and tidal stream devices ahead of their commercial deployment, which could be considered under the OESEA research programme.

Climatic factors

Although the contribution of atmospheric emissions from hydrocarbon related activities that may result from the implementation of draft plan/programme Option 2 or 3 could represent a small fraction of existing UK, European and global emissions, we do not agree with the message conveyed by the report. The OESEA will represent one of the key instruments in shaping the potential future of the UK's energy mix, and should more adequately reflect the benefits associated with the transition towards a low carbon economy.

Population and human health

We welcome recognition in the draft plan that "the adoption of the draft plan/programme will bring positive benefits in terms of an increased proportion of low carbon energy in the UK energy mix, greater security of energy supply and increased employment and tax revenues".

Interrelationships – Cumulative effects

Our views relating to cumulative effects on biodiversity, habitats, flora and fauna are stated above.

The OESEA states that the potential for significant adverse effects on other users of the sea and on landscape/seascape can be mitigated to acceptable levels by appropriate site selection, in particular avoidance of areas of prime importance to other industries/users and preferential selection of sites away from the coast. Whilst we broadly agree with some of these mitigations, there is a potential conflict where some areas may be of prime importance for the offshore renewables sector as well. There is no reason why other industries/users should take precedence over offshore renewables, whose role is key in meeting carbon emission reduction commitments.

Interrelationships – Wider policy objectives

We are supportive of alignment of the OESEA and Marine Planning system and ask that reference is also made to the National Policy Statements which set out the policy need for the deployment of offshore wind energy in English and Welsh waters.

In addition to the UK's renewable energy and decarbonisation targets, we would ask that recognition is given to cost reduction targets for the offshore wind industry and the downward trajectory of the Levelised Cost of Energy (LCoE) expected to take place, and required by Government.

The OESEA recognises the possibility of new designations under the Birds and Habitats Directive coming forward within potential areas for offshore windfarm development or within areas already leased for offshore wind energy development. Designations which come into effect during planning or indeed after consents have been granted, have the potential to impact construction activities, practices and timescales. In some cases, new designations may require a review of existing consents and this could have significant impacts on project timescales, project viability and ultimately the wider industry and supply chain, particularly within the context of cost reduction targets and competitive allocation rounds. It is therefore critical that the OESEA considers new designations in light of current development portfolios and leases. We would suggest that consideration is given as to how the risk of new designations to developers could be better managed, for example through strategic approaches to assessment which consider the carrying capacity of existing sites. We would also recommend the preparation of guidance for developers on the review of consent process. This guidance should describe the approach to the review of consents, process and timing for such a process when new designations are proposed. Furthermore, Statutory Nature Conservation Bodies (SNCBs) should also be encouraged to provide standing advice on pending designations to assist developers of projects within the planning system.

Transboundary effects

As an industry, the offshore renewable sector has experience of consulting widely on transboundary effects in line with national policy and legislation. We therefore welcome the conclusion within the OESEA that that potential transboundary effects of underwater noise, marine discharges, atmospheric emissions, impact mortality on migrating birds and bats, and accidental events are unlikely to be significant.

Energy UK

The voice of the energy industry

Offshore Energy SEA 3 Consultation
The Department of Energy and Climate Change
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86-88 Guild Street
Aberdeen
AB11 6AR

By e-mail: oesea3@decc.gsi.gov.uk

3 May 2016

Dear Sir or Madam

Offshore Energy Strategic Environmental Assessment 2 (OESEA3)

Energy UK is the main trade association for the energy industry, with over 80 members, representing energy generators and suppliers of all sizes. Our members supply gas and electricity and provide network services to both the domestic and non-domestic market. Energy UK members own over 90% of energy generation capacity in the UK market and supply 26 million homes and 5 million businesses, contributing over £25 billion to the UK economy each year. The industry employs 619,000 people across the length and breadth of the UK, not just in the South East, contributing £83bn to the economy and paying over £6bn annually in tax.

We welcome the opportunity to respond to the consultation on the development of the third Offshore Energy SEA (OESEA3) for further rounds of licensing / leasing for offshore energy, and have the following comments on the OESEA3 Non - Technical Summary.

Objectives

Energy UK welcomes the objectives set out in the plan to help contribute to the UK Government's energy targets, by enabling future rounds of renewable energy leasing for offshore wind, wave and tidal devices. We also support the general principles behind the development of the OESEA3. Future offshore leasing for renewable energy technologies will help deliver security of the UK's energy supplies and Government's decarbonisation targets. Energy UK also acknowledges the importance of these objectives being taken with due regard to environmental and social impacts as assessed within the Environmental Report accompanying the draft Plan.

In terms of offshore wind, we support:

- The objective to enable further offshore windfarm leasing within the UK Exclusive Economic Zone (EEZ) and within territorial waters of England and Wales, as set out in the draft plan.
- The inclusion of a wide range of technology options, including turbines of up to 15MW capacity and floating turbines in waters of up to 200 metres depth, in addition to the scales of deployment and technology types currently envisaged under the Round 3 leasing programme.

The proposed level of deployment within the draft Plan is ambitious, both in terms of the rate and scale. In order to meet these ambitions in the timescales outlined in the Plan the UK offshore industry will require regulatory certainty alongside rapid technology development.

OESEA and Development

We welcome the inclusion of spatial scale maps identifying the most appropriate zones for development for particular technologies. These maps, combined with the useful regional environmental information, may be used to appropriately inform a developer's siting decisions and their application to develop in an area.

In the wider marine policy context we believe that the OESEA could act as a useful tool to help developers assess and identify potential opportunities in areas where sources of renewable energy are most harnessable. However, the OESEA must also be used in combination with the Marine Management Organisations (MMO) Marine Plans, and where applicable the site identification process for the respective licensing round for offshore wind / technology.

Developers perceive that sites identified as suitable for development following application of the Government's own principles and documents outlined in the development process have a high likelihood of receiving planning permission. However, we have found this to not always be the case. Energy UK believes that the SEA process must learn from recent practical experiences in offshore energy consenting where sites are identified in the OESEA as suitable, yet result in planning refusal e.g. in respect of Navitus Bay.

In order to maintain investor confidence the OESEA can play an important role in minimising the risk of ultimate planning refusal. This can best be achieved by ensuring that the background references and data are scientifically sound and peer reviewed, so that the decision makers in the planning process can be confident in the tools provided.

Energy UK also understands the reasons behind the coastal buffer for offshore wind development (introduced in Round 2), but is concerned to ensure it does not become a 'de facto' exclusion zone. Developers acknowledge that development within a buffer zone may require a greater burden of proof, and the potential application of more stringent mitigation measures. However, development in shallower water is a more practical and economical option, as it offers

cheaper deployment and connection options. This supports Government's energy cost reduction objectives and allows more renewable generation capacity to be deployed at lower cost to the consumer, as well as helping to meet Government's decarbonisation targets at lower cost.

Alternatives to the draft Plan

In considering the alternatives to the draft Plan, we support the option to proceed with a leasing and licensing programme for future energy development, as this is the only alternative being considered which meets the objectives of the Plan in terms of delivering secure energy supplies in line with carbon emission reduction targets.

The UK offshore wind industry is at a critical point, whilst it seeks to balance the need for rapid deployment and innovation, with the UK government requirement to reduce costs. It is imperative that the industry has a clear understanding of future leasing opportunities, and financial support from Government, to enable the industry and its supply chain to continue to plan for future project development and investment.

For these reasons, we do not support the options to not offer any areas for leasing or licensing, or to restrict areas offered for leasing or licencing, temporally or spatially. This will not contribute to the UK targets, and could jeopardise the expansion of the UK's offshore wind industry and associated supply chain, with the consequent loss of jobs and contribution to economic growth.

Baseline for Assessment

We welcome the statement within the Environmental Report that *"the Southern North Sea contains the bulk of the current UK offshore wind capacity, both in operation and planning. The area remains highly prospective for offshore wind due to its shallow depths and the potential for suitable grid connections. It is possible that further areas may be leased (including by extension) for commercial offshore wind."* However, further clarity is required on the baseline for the Plan in terms of the number and capacity of offshore energy projects that are in planning; are consented; or are operational, and how these have been taken into account within the Environmental Assessment.

Prospectivity

We support the identification of key resource areas for offshore wind based on the assessment of technical constraints such as wind speed and water depth. As highlighted within the OESEA3 document, grid availability is also a very significant factor in the preferred location of offshore wind developments.

The OESEA3 makes a number of assumptions with regard to the potential deployment of offshore wind turbine foundations types. Whilst the assumptions seem reasonable at this point in

time, given the pace of technology development and the continued industry development of innovative solutions to technical challenges, we would urge against the limitation of development outwith proposed key resource areas, based on technical constraints and current or expected technology availability.

We attach some additional comments on the Environmental Assessment in Appendix A.

I hope that Energy UK's response is helpful in finalising the proposals, and we would like to extend an invitation to [redacted] or a DECC colleague to attend a meeting of our Marine Working Group being held on 9th June 2016 at 2pm at the Energy UK offices, which will provide an opportunity to engage with key energy representatives engaged in offshore energy development.

In the meantime, if you require any clarification or have any questions regarding our response please do not hesitate to contact Energy UK's Planning Adviser [redacted] at [redacted]

Yours sincerely

[redacted]

[redacted]
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Appendix A

Energy UK Comments on the Environmental Assessment

1. Biodiversity, habitats, flora and fauna

1.1. Overall, Energy UK agrees with the conclusion within the SEA that with regards to underwater noise *"current mitigation measures are sufficient in reducing the risk of injury to negligible levels..."* Yet we recognise that there is a lack of detailed empirical evidence of the impacts of underwater noise on the marine environment, and that ongoing research continues.

1.2. Energy UK welcomes recognition that several modelling frameworks are being developed to assess population level impacts of acoustic disturbance on marine mammals. These models are based on the best available science and will enable population level assessments to be undertaken in order to understand the impacts of planned activities. However it is important that these models are run using realistic build-out scenarios which take into account other constraints such as supply chain availability, available financing etc., in order to ensure that model outputs are realistic.

1.3. Energy UK welcomes reference to the Marine Evidence Group Report. Whilst we are in broad agreement with the recommendations of the Report, we would also welcome recognition within the SEA that any modifications to offshore wind installation methods or techniques can be prohibitively expensive to install; bespoke to the conditions of each site; and that these measures would only be required where significant impacts to regional populations of marine species are predicted as a result of cumulative installations.

1.4. We welcome the development of the Noise Registry as part of the UK Government's implementation of the Marine Strategy Framework Directive (MSFD), which we hope will make a positive contribution to the collective understanding of baseline anthropogenic noise in the marine environment

1.5. Energy UK supports the recognition within the OESEA3 that more detailed consideration of mitigation measures should be undertaken on a project-specific basis. This is welcome, as mitigation is highly site-specific and dependent on site conditions and other technical constraints, so it would not be appropriate to set out prescriptive mitigation requirements in a strategic document such as the OESEA3.

1.6. Energy UK concurs with the conclusion within OESEA3 that scour effects are generally small in scale and local in extent and unlikely to be of concern, which aligns with our members' experience to date.

1.7. Energy UK supports the conclusion that overall, displacement, barrier effects and collision are unlikely to have a significant impact on bird populations at a strategic level. However, we recognise that that are some remaining uncertainties with regards to assessment of the potential impacts of offshore windfarm development on avian populations.

1.8. We are supportive of co-ordinating ongoing research through the SEA Steering Group but request that this is done in consultation with the energy industry, which Energy UK would be happy to facilitate.

1.9. We welcome recognition within the OESEA3 that the baseline for many species of birds and marine mammals has the potential to change due to other external factors such as climate change. It is important that these changes are considered carefully within strategic and project based assessments, and that activities such as the development of offshore windfarms are not subject to unnecessarily onerous management / measures due to changes in the baseline. This is particularly true where the development may help mitigate this change to the baseline (for example energy generated from offshore renewables can help mitigate the impacts of climate change).

1.10. The OESEA3 proposes that "the bulk of new OWF generation capacity should be sited away from the coast, generally outside 12 nautical miles (some 22km)", as areas of significant densities of birds are mainly within coastal waters. Whilst, in many cases, offshore wind development in waters further of offshore may be environmentally preferable, we would have concerns if this excluded development within areas within 12nm. Given the UK Government cost reduction targets and wider energy policy objectives intended to promote the development of the offshore wind industry, any measures which force development to be located in more technically challenging or costly locations could jeopardise the industry's ability to meet cost reduction and deployment targets.

2. Population and human health

2.1. Energy UK welcomes recognition in the draft Plan that "the adoption of the draft plan / programme will bring positive benefits in terms of an increased proportion of low carbon energy in the UK energy mix, greater security of energy supply and increased employment and tax revenues".

3. Interrelationships – Wider policy objectives

3.1. Energy UK is supportive of alignment of the OESEA3 and Marine Planning system, and we also recommend that reference is also made to the relevant Energy National Policy

Statements which set out the policy need for the deployment of offshore wind energy in English and Welsh waters.

3.2. In addition to the UK's renewable energy and decarbonisation targets, we ask that recognition is given to the UK Government's cost reduction targets for the offshore wind industry and the downward trajectory of the Levelised Cost of Energy (LCoE) expected to take place.

3.3. The OESEA3 recognises the possibility of new designations under the Birds and Habitats Directive coming forward within potential areas for offshore windfarm development, or within areas already leased for offshore wind energy development. Designations which come into effect during planning or indeed after consents have been granted, have the potential to impact construction methodologies and timescales. In some cases, new designations may require a review of existing consents and this could have significant impacts on project timescales, project viability and ultimately the wider industry and supply chain, particularly within the context of cost reduction targets and competitive allocation rounds.

3.4. It is therefore critical that the OESEA3 considers new designations in light of current development portfolios and leases. Energy UK suggests that consideration is given as to how the risk of new designations to developers could be better managed, for example through strategic approaches to assessment which consider the carrying capacity of existing sites. We also recommend that guidance for developers on the review of the consent process is produced, in order to provide industry with a clearer understanding of the approach, process and timing for such a process when new designations are proposed. Statutory Nature Conservation Bodies (SNCBs) should also be encouraged to provide standing advice on pending designations to assist developers of projects already within the planning system.

3.5. Section 3.7.1 of the Environmental Report notes that the responsibility for Habitats Regulations Assessment for any future renewable leasing activity rests with the Crown Estate. We support this statement and ask that consideration is given to updating the current Habitats Regulations Assessment for Round 3 in light of OESEA3.

4. Transboundary effects

4.1. As an industry, the offshore renewable sector has experience of consulting widely on transboundary effects in line with national policy and legislation. We therefore welcome the conclusion within the OESEA3 that that potential transboundary effects of underwater noise, marine discharges, atmospheric emissions, impact mortality on migrating birds and bats, and accidental events are unlikely to be significant.

TIDAL LAGOON POWER

Offshore Energy SEA 3 Scoping
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28 April 2016

UK Offshore Energy Strategic Environmental Assessment (UK OESEA3)

Tidal Lagoon Power is driving a critical change in the UK's energy mix with the development of low cost, low carbon baseload electricity sources that are sustainable, UK based and deliver long-term energy security for 120 years. Swansea Bay Tidal Lagoon, the pathfinder project, gives the UK a new generation option, a proof-of-concept for a series of lagoons, marking the beginning of a new industry.

We welcome the opportunity to comment on the third UK Offshore Energy Strategic Environmental Assessment (OESEA3) report. This letter sets out:

- Our programme for tidal lagoons;
- Support for recommendation 12 on tidal lagoons - *site specific assessments are undertaken before decisions can be taken on potential leasing and the desirability and acceptability of individual projects, and that successive tidal range proposals should consider the potential for local, regional and wider far-field effects to be generated cumulatively;*
- That the co-location potential of tidal lagoons has not been considered;
- That the spatial constraints identified in the OESEA3 report, such as navigation routes, aggregates areas and Natura 2000 sites, are misleading as they relate to tidal lagoons, adding further weight for the need to ensure recommendation 12 is implemented;
- The lack of distinction between tidal lagoons and tidal barrages despite the potentially considerable difference in significance of effects;
- Misleading or incorrect statements relating to tidal lagoons that appear to be unsubstantiated by evidence and should be addressed to avoid misinterpretation of information;
- The need to support initiatives focused on developing the evidence base for tidal lagoons;
- We welcome further engagement.

Tidal Lagoon Power development programme

Our first project, Tidal Lagoon Swansea Bay is consented. The Development Consent Order and the decision letter by the Secretary of State should have been a consideration for OESEA3.

On 5th March 2015, we entered the pre-application stage for Tidal Lagoon Cardiff when we submitted the EIA scoping report, a scoping opinion was adopted by the Secretary of State on 10th April

2015. Further updates on progress are reflected on the PINS website, such as updates on the Evidence Plan process.

Although PINS have been notified of the prospect of bringing forward a Tidal Lagoon Newport project, we are not yet at the pre-application stage, though our current plan is to submit a scoping report and enter the pre-application stage within OESEA3 timescales. We are progressing feasibility of other projects in north Wales and the north west of England, therefore we cannot confirm timescales for bringing them forward formally into the pre-application stage.

We will be providing more detailed information on our intended programme to the independent UK Government review into tidal lagoons, which will soon commence and is expected to conclude before the end of the year. We note reference in the OESEA3 report to deployment potential for tidal range in the OESEA3 report, we anticipate that the deployment potential for tidal lagoons will be a matter for the Review.

OESEA3 recommendations

We support recommendation 12, the main recommendation for tidal lagoons:

> "site specific assessments are undertaken before decisions can be taken on potential leasing and the desirability and acceptability of individual projects, and that successive tidal range proposals should consider the potential for local, regional and wider far-field effects to be generated cumulatively" (page 475).

On this basis, there should be no restriction of areas offered to tidal lagoons for leasing and licensing (temporally or spatially).

The OESEA3 report acknowledges that the UK Government is presently reviewing its energy policy. In this context, and given the announcement of an independent UK Government review into tidal lagoons, the OESEA3 recommendations must remain open minded in relation to tidal lagoons (particularly in terms of proposed temporal and spatial restrictions). OESEA3 refers to the fact that there is presently no planning policy for tidal lagoons; it should also acknowledge that this is likely to change very soon (and it would itself be subject to a SEA process).

The OESEA3 report states that because of the UK's long maritime history and the growing use of offshore areas by other users, not all areas of technical resource may be available at any given time. This may well be the general case, but for tidal lagoons in particular, detailed site specific examination is required in order to determine this and to determine the extent that tidal lagoons can co-locate with other users, and facilitate other uses of marine areas to positive effect.

Co-location of uses with tidal lagoons is a benefit we have demonstrated in relation to Tidal Lagoon Swansea Bay, as the prototype lagoon, with uses such as mariculture, fishing and recreation forming part of the project. We are actively investigating such options for future lagoons. Whilst the potential for co-location and facilitation of other uses are illustrated by the Tidal Lagoon Swansea Bay project,

the potential will vary by location and size of a tidal lagoon. This further supports the need for site specific assessments to be undertaken to inform decisions on leasing and licensing of tidal lagoons. The multi-functional nature of tidal lagoons has particular relevance for the 'population and human health' objective, and should have been considered. Also, tidal lagoons have considerable potential for providing strategic flood and coastal protection, which is directly relevant to the objective on resilience to climate change, yet this has not and should have been considered.

We note (page 410) that mapped outputs provide illustrative guides to areas of most and least constraint. The approach of identifying constraints is helpful to identify challenges that must be overcome to deliver lagoons, but certainly do not identify issues that would preclude the development of tidal lagoons. The recommendation that site specific assessment are undertaken before decisions can be taken on potential leasing and the acceptability of individual tidal lagoon developments should not be undermined by incorrectly applied assumptions relating to constraints. Our concern is that these constraints (especially the so-called 'hard constraints' identified in the OESEA3 report) could be taken out of context and misrepresented, particularly given recommendation 12 which states that site specific assessments are undertaken before decisions are made. This is important from a tidal lagoon perspective because there are some areas that we are investigating as part of feasibility assessment, including the Tidal Lagoon Cardiff, that overlap with some of the so-called 'hard constraint' areas.

'Hard constraints' areas are defined in the OESEA3 report to be constraints that *'which are likely to definitively and consistently exclude development*'. In the OESEA3 report these include navigation routes and aggregate dredging areas. However, it should be noted that the Secretary of State for Energy and Climate Change, in her decision letter[1] on the Development Consent Order for the Tidal Lagoon Swansea Bay project reflects that the development would not significantly impact upon commercial or recreational navigation. The National Policy Statements, such as EN1 and EN3, provide a framework for decision makers on these matters; for example, EN3 provides a framework of considerations for decision makers on how an application should not be consented if it poses an unacceptable risk after all possible mitigation measures have been considered (EN-3 2.6.165).

The EIA Scoping Opinion[2] on the Tidal Lagoon Cardiff project, adopted by Secretary of State on 10th April 2015, sets out clearly how these matters are to be addressed by site specific assessment. We are actively engaging and working with a Statutory Harbour Authorities group, to inform design of Tidal Lagoon Cardiff. Certainly to date, no issues have been raised that would indicate navigation being a 'hard constraint'. Therefore we know from our engagement to date with the relevant stakeholders, and ongoing assessments that potential issues with navigation routes and aggregates areas can be addressed.

Also, our understanding is that the Welsh Government is updating the Interim Marine Aggregates Dredging Policy for the Bristol Channel and the Severn Estuary in order to inform the Welsh National

[1] http://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010049/3.%20Post%20Decision%20Information/Other/Tidal%20Lagoon%20(Swansea%20Bay)%20decision%20letter.pdf

[2] http://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010073/1.%20Pre-Submission/EIA/Scoping/Scoping%20Opinion/Scoping%20Opinion.pdf

Marine Plan. Co-location of lagoons with aggregates uses is a matter we are investigating through project development.

The 'other constraints' identified in the OESEA3 report are defined as constraints *'which would presume against, but not definitively exclude development, e.g. subject to further assessment, developer dialogue and mitigation'.* The OESEA3 report includes Natura 2000 sites as 'other constraints'. However we consider the phrasing used in the report to the misleading. Appended to this letter is a technical note on Natura 2000 sites as a constraint to development of tidal lagoons.

It is crucial that there is no confusion introduced by the articulation of the spatial constraints in the OESEA3 report, and that is clear (in line with recommendation 12) that for tidal lagoons, site specific assessments are required before decisions can be taken on potential leasing and the desirability and acceptability of individual projects are determined. We request that this matter is clarified in order to avoid misinterpretation of the constraints information in the OESEA3 report.

Environmental assessment

In general, there is a lack of distinction between tidal barrages and tidal lagoons despite the potentially considerable difference in significance of effects. As a result, many of the statements in relation to tidal range are too generic to be useful, and some are misleading. With reference to the bibliography, the Severn Tidal Study by DECC (various references from 2008 to 2010) seems to be the dominant source of information that informed the assessment. The Severn Tidal Study compared a number of options in specific locations, indicating varying environmental effects according to location (and scale). The analysis of the environmental effects of lagoons and barrages in this study apply only to the options considered, which are not representative of other lagoon proposals of varying sizes and locations. We note that the diversity in type and location of tidal lagoons is reflected in recommendation 12.

The magnitude of negative / significant adverse environmental effects is much more likely and greater for large-scale barrages than tidal lagoons. This is especially the case at a system-wide scale, regarding both geomorphological effects and ecosystem / ecological effects. Any comparison between the two types of projects should have clear disclaimers referencing scale of effect.

Where specifics in relation to tidal lagoons have been considered, it is not clear why those elements have been considered whilst other matters have not. There are a number of unsubstantiated comments on tidal lagoons, which should be noted, and consideration needs to be given to how to avoid such comments misleading those that will consider this assessment to inform leasing and consenting decisions.

Although the OESEA3 report provides a list of potential effects, it does not sufficiently consider the significant positive impacts, such as flood and coastal protection, jobs, economic regeneration, and environmental enhancement opportunities.

Under 'recommendations' we have provided comments on the constraints used in the spatial constraints mapping exercise in the OESEA3 report which are also relevant in relation to the

environmental assessment. The following comments highlight misleading or incorrect statements relating to tidal lagoons or those that appear to be unsubstantiated by evidence. These comments should be addressed to avoid misinterpretation of information.

- Page 167 (5.4.3.1) and page 226 (5.6.3.2.2) – there is reference to two way operation being *proposed* to reduce the environmental impacts of tidal range scheme; it should be noted that this is inherent with tidal lagoons, this is simply how tidal lagoons operate most effectively, generating on both the ebb and flow tides.
- Page 168 (5.4.3.1) – here it says "*tidal lagoons are similar to barrages in construction impact although they do not span the whole channel width."* In this case the impacts may be similar but the effects are certainly not. There we request that this sentence is clarified in line with CIEEM guidelines on Ecological Impact Assessment (2016).
- Page 168 (5.4.3.1) – this section provides a summary of coastal processes and sediment transport issues from the Tidal Lagoon Swansea Bay Environmental Statement. It is not clear why this level of detail is included in relation to this aspect yet not for other ecological aspects.
- Page 174 (5.4.3.1) – this states that "*tidal lagoons would require considerably more construction materials than a barrage and damage to habitats during construction is likely to be greater and more prolonged",* which we strongly disagree with and note this statement is not substantiated by evidence. Although it is not stated, we believe this statement may be a misrepresentation of conclusions in the Severn Tidal Study, which were specific to the options considered and are not sufficiently representative of other lagoons of diverse size and location (as reflected in recommendation 12).
- Page 174 (5.4.3.1) – Tidal Lagoon Swansea Bay will not be constructed from concrete, but from rock armour which will be similar to existing breakwaters, and therefore will likely replicate natural rocky habitats.
- Page 178 (5.4.3.1) – there is reference to the post construction impact of a tidal lagoon being similar to that of a barrage, but no reference to the fact that the effects are likely to be less than those predicted for a barrage.
- Page 188 (5.4.5) – Significant effects are unlikely to be caused by tidal lagoon projects at a Regional Sea level to sediments, features and habitats given the zone of influence for these projects. This is evidenced in the Tidal Lagoon Swansea Bay Environmental Statement and in relation to a larger lagoon, please refer to the Tidal Lagoon Cardiff Scoping Report for predicted zone of influence[3].
- Pages 199 to 200 refer to Tidal Lagoon Swansea Bay numerical modelling as referred to in the Environmental Statement. It states that "*although these changes in flow speeds are relatively short in duration and spatial extent they are significant in magnitude and can be expected to have an impact on the sediment patterns of the area."* We disagree with this statement as it contradicts the Environmental Statement. Paragraph 6.5.2.17 of the Environmental Statement assesses the impact of the jetting flows with respect to hydrodynamic impact as neutral. Paragraph 6.5.2.68 of the Environmental Statement assesses the impact of these

[3] http://www.tidallagooncardiff.com/storage/documents/Cardiff,%20South%20Wales_EIA%20Scoping%20Report_March%202015_Chapter%208%20Coastal%20Processes.pdf

jetting flows during operation on the sediment transport of the bay. The modelling indicates that any erosion is likely to extend no further than 400m from the turbine/sluice gate structures and be temporary in nature. The overall significance of this impact is assessed as being neutral.

- Page 201 – here it states that *"the effects of water impoundment are largely the same but on a more localised scale than those of barrages"*. This is not correct, the effects are not the same as lesser effects are predicted for lagoons than barrages.
- Page 201 – Page 201 – states that "*the presence of a tidal lagoon within Swansea Bay is seen to significantly alter the residual tidal flows within the Bay […] with resulting impact on sediment dynamics"*. This sentence implies that the presence of a lagoon has a significant impact on the sediment dynamics, when in fact the Environmental Statement concluded that the impacts on the sediment regime would be localised and largely be of neutral or minor adverse significance.
- Page 226 (5.6.3.2.2) – with regard to the effects of tidal range developments on waterbirds, it is not acknowledged in OESEA3 that the predicted impacts associated with tidal lagoons are less than those predicted for a barrage. The studies quoted (Frid et.al 2012) only looked at tidal barrage schemes.
- Page 239 (5.6.3.5) – with regard to collisions risk, we note that there is no mention of the Striker approach to turbine collision risk or the Individual Based Modelling work done by Turnpenny Horsfield Associates for the Tidal Lagoon Swansea Bay project.
- Page 251 – makes reference to SPAs that potentially would be vulnerable to tidal range schemes in England and Wales. Please note that the Carmarthen Bay SPA is a marine SPA that does not comprise any intertidal habitat. It is notified for its population of common scoter and not any birds that use intertidal habitats and, therefore, would not be significantly affected as a result of a tidal range scheme.
- Page 348 – It is unlikely that the construction of lagoons would significantly alter the nature of emissions from shipping, the reference to emissions in the referenced DECC study is relevant to barrages.

<u>Other comments</u>

The data collection requirements for tidal range projects tend to extend to the regional, and well beyond the site specific level as noted in the OESEA3 report. It is important that research initiatives that focus on tidal lagoons, such as ORJIP, are adequately funded to develop the evidence base. We would urge consideration of support for research initiatives as a recommendation alongside the OESEA3 report. Given that there is a need to evolve the evidence base, a proportionate approach to data requests from statutory consultees for tidal range projects should also be considered as a recommendation.

We welcome further discussion with you in relation to the matters we raise in this letter. Although we support recommendation 12 in relation to tidal lagoons, please note our comments in response to the assessment on tidal lagoons, in particular the incorrect and unsubstantiated statements we have identified. We would be grateful if you could advise us in writing how these matters will be

addressed in order to avoid misinterpretation of some of the information contained in OESEA3 when informing relevant leasing and consenting decisions.

Please contact me on [redacted] if you have any queries or wish to discuss further.

Yours sincerely

[redacted]

[redacted]

Tidal Lagoon Power

Encl.

Does *Natura 2000* represent a constraint to development?

The purpose of Europe's Habitats and Birds Directives (Council Directives 92/43/EEC on the conservation of natural habitats and of wild fauna and flora and 2007/147/EC on the conservation of wild birds) is to restore and maintain Europe's biodiversity by protecting its most important habitats and species (*Natura 2000*). This is achieved, in part, through the designation of protected sites.

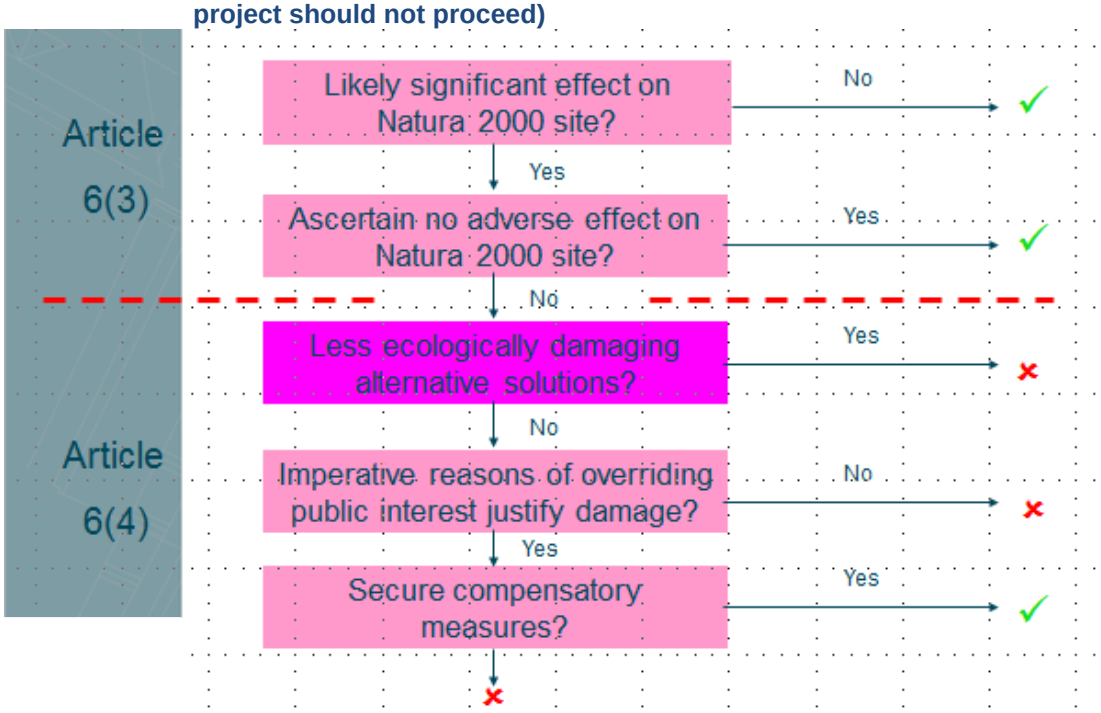
Article 6(3) of the Habitats Directive states that any plan or project that is not directly connected with or necessary to the management of a European protected site, but would be likely to have a significant effect on such a site (either on its own or in-combination with other plans or projects), should be subject to an 'appropriate assessment' of its implications in view of the site's conservation objectives. In light of the conclusions of that assessment and subject to the provisions of Article 6(4) of the Habitats Directive, the 'competent authority' can agree to the plan or project if it has ascertained that it will not adversely affect the integrity of the site(s) concerned.

That is, a definitive presumption against development in European designated sites does not exist. Rather an assessment process is in place and development can proceed if no likely significant effect or no adverse effect on integrity can be determined.

Article 6(4) provides that if, in spite of a negative assessment of the implications for the site, and in the absence of alternative solutions, the plan or project must nevertheless be undertaken for imperative reasons of overriding public interest (IROPI), the Member State will take all compensatory measures necessary to ensure that the *Natura 2000* network is protected (this process is illustrated in the flow chart below).

Hence even in those circumstances where an adverse effect on site integrity is determined, if no alternative solutions and IROPI can be demonstrated and compensation provided, then the development could proceed within a European designated site.

Chart 1 **Steps through the Habitats Directive (✓ plan or project can proceed; ✗ plan or project should not proceed)**



Given this, while the implications of development within European designated sites should be assessed in detail, such sites should not be considered to represent a constraint to development unless an adverse effect on the integrity of a designated site is predicted and the conditions of Article 6(4) cannot be met.

Habitats Regulations Assessment (HRA) is used to assess the implications of a plan or project alone and in-combination with other plans and projects on European and internationally protected sites. The HRA process follows a five staged approach:

1. **Screening**: The process of identifying potentially relevant European and Ramsar sites, and whether the likely impacts of a plan or project upon the qualifying features of the site(s), either alone or in-combination with other plans and projects, are likely to be significant; i.e. will a 'likely significant effect' (LSE) arise.

2. **Appropriate Assessment (AA)**: The consideration of the potential effects of a plan or project on the integrity of relevant site(s), either alone or in-combination with other plans and projects, with regard to the sites structure and function, conservation objectives and designated features[1]. Where adverse effects are identified, an assessment of mitigation options is carried out to determine whether an adverse effect on the integrity of the site(s) would arise with mitigation in place. If adverse effects cannot be avoided, then development consent can only be given if the tests set out in stages 3 and 4 can be passed.

3. **Assessment of Alternative Solutions (AAS)**: This should examine (all viable) alternative ways of (alternative solutions for) achieving the objectives of the project to establish whether there are solutions that would avoid or have a lesser effect on the site(s). Unless this test is met, the project cannot proceed.

4. **Imperative reasons of over-riding public interest (IROPI)**: Where no alternative solution exists and where an adverse effect on site integrity remains, the next stage of the process is to assess whether the development is necessary for IROPI. Again, unless this test is met, the project cannot proceed.

5. If an IROPI is demonstrated, the identification of **compensatory measures** is required to maintain site integrity and/or the overall coherence of the designated site network. If sufficient compensation cannot be provided, the project cannot proceed.

[1] For tidal range power in the Severn Estuary this will need to include consideration of site sub-features (e.g. areas of eelgrass), freshwater features within SAC rivers joining the estuary (e.g. otter and migratory fish), possible effects on sites at a distance from the Severn due to water level changes and possible effects on other sites used by SPA migratory bird populations that visit the Severn Estuary; as well as direct/indirect effects on the Severn Estuary SAC, SPA and Ramsar site features.

VATTENFALL

Offshore Energy SEA 3 Consultation
The Department of Energy and Climate Change
4th Floor Atholl House
86-88 Guild Street
Aberdeen AB11 6AR

Our reference:

Your reference:

Date: 29th April 2016

Dear Sir/Madam,

Re: Offshore Energy SEA 3: Consultation Response

Please find Vattenfall's response to the Offshore Energy SEA 3 Environmental Report; we welcome this opportunity to provide our comments.

Vattenfall is the Swedish state-owned utility and one of Europe's largest generators of electricity and heat and the second largest player in the global offshore sector. It is our ambition to be at the forefront of the low carbon transition and we are strongly committed to significant growth in wind, onshore and offshore. Vattenfall has invested nearly £3bn in the UK in onshore and offshore wind since 2008 and will have nearly 1GW in operation onshore and offshore by 2017. Vattenfall plans to invest £5bn in renewables, mainly offshore wind, in Northern Europe by 2020 and it is our ambition that the UK will continue to be a growth market for Vattenfall. Our development portfolio includes the recently announced Norfolk Vanguard and Norfolk Boreas offshore wind farms, both situated in the southern North Sea with a target capacity of 3.6GW of renewables electricity for the UK.

The following comments are provided:

1. *SEA Approach.* Unlike OESEA2, the implications of a draft plan or programme for further leasing rounds for offshore energy have not been considered. The Government is strategically committed to offshore wind, supporting up to three CfD auctions by 2020 and outlining a cost reduction trajectory to 2025.[1] The Committee on Climate Change sets out a clear and significant role for offshore wind in achieving least cost decarbonisation in its advice to Government on setting the Fifth Carbon Budget.[2] Although there is significant uncertainty regarding future rounds of offshore wind development, the SEA process should clearly consider the broader UK energy landscape, particularly for renewables, and support these strategic objectives.

[1] https://www.gov.uk/government/publications/budget-2016-documents
[2] https://documents.theccc.org.uk/wp-content/uploads/2015/11/Committee-on-Climate-Change-Fifth-Carbon-Budget-Report.pdf

2. *Policy.* The aspirational target of holding an increase in global average temperatures well below 2°C above pre-industrial levels, and to pursue efforts to limit this to 1.5°C, is already under threat (see data published by NASA on March 12th 2016). The UK Government played a leading role in reaching the historic Paris Agreement in 2015 and has subsequently committed to enshrining the Paris goal of net zero emissions into UK law. This should be recognized within the Report as this commitment will play a significant role in driving development in UK waters in the next 5 years. Vattenfall is strongly committed to the low carbon transition and growth in wind. Following the completion of the recently announced divestment of Vattenfall's lignite assets, over 75% of Vattenfall's production will be renewable. Vattenfall understands the need to move to a low carbon economy. Vattenfall's ambition is to transform itself into a more sustainable company with a clear focus on its renewable energy portfolio, wind energy will play a crucial role in a growing portfolio of low or zero carbon assets.
3. *Existing Activity.* Figures within the text currently include the former East Anglia zone (Zone 5) (see Figure 2.7). From February 2016, Zone 5 was effectively dissolved with project specific Agreements for Lease granted by The Crown Estate (TCE), including those for Norfolk Vanguard and Norfolk Boreas. Shape files for these project areas can be provided on request.
4. Norfolk Vanguard and Norfolk Boreas are likely to be constructed from 2020 onwards and this should be included within the text and relevant figure (Figure 2.10).
5. Both Norfolk Vanguard and Norfolk Boreas are within areas which have significant oil and gas infrastructure and which are subject to ongoing licensing rounds. Vattenfall has initiated discussions with owners regarding decommissioning timescales for existing assets, however improved clarity from DECC on future rounds and related compensation arrangements is urgently required.
6. *Biodiversity, habitats, flora and fauna*. Within the section on noise, there should be differentiation between the type of seismic survey undertaken by the renewables sector and more penetrative techniques utilized by the oil and gas industry when considering impacts.
7. There is a need for further strengthening the evidence base in relation to impacts of all activities on marine mammals. In terms of offshore renewables, and the expected prominent role of offshore wind, there is a particular need to better understand noise impacts on the harbour porpoise. The industry has already invested in this, in the form of the DEPONS project, but there is a need for further work to validate and improve the DEPONS model which should be a focus area of the OESEA strategic programme. It is noted that impacts on harbour porpoise have so far not been specifically covered included within the OESEA strategic programme.
8. Any mitigation and management measures should be effective and proportionate (based on available information). Greater clarity on what activities are being undertaken and when, will enable developers to

undertake more comprehensive cumulative and in-combination assessments.

9. Vattenfall participates in the Offshore Renewable Joint Industry Programme (ORJIP) and hosts the study at Thanet Offshore Wind Farm. The project aims to better understand bird avoidance behaviour within and around wind farms and tests the efficacy of deterrence devices. The OESEA should take steps to understand the ORJIP findings.
10. In general, the OESEA should ensure/support adequate monitoring of the effects of the plan on populations of those birds and marine mammals of most concern for specific developments (for example, seabirds and harbour porpoise). If this work is not being directly conducted under OESEA, then other relevant institutions should be resourced accordingly.
11. Any text which implies a potential restriction on development within 12nm due to ornithological impacts should be removed from the document. New projects should be assessed on a site-specific basis; projects close to the coast generally provide a lower cost of energy and so should not be deterred at this strategic level.
12. Industry research into avoidance / repulsion effects of electromagnetic fields from wind farm cables has been extensive and largely inconclusive. It is suggested that although a potential impact cannot be ruled out, any effects are expected to be minor and occur within close proximity of the cables therefore resources would be better used on other issues.
13. *Geology and sediments*. We agree that the potential for significant effects of offshore wind projects on physical disturbance of sediments and sediment contamination is low.
14. *Landscape / seascape*. The landscape/seascape section of the NTS recommends siting the bulk of OWF generation capacity away from the coast and generally outside 12 nautical miles. This recommendation should be removed from the document with new projects assessed on a site-specific basis (see comment 11).
15. *Water environment*. We agree that water column contamination and the associated biological effects of offshore wind projects are not significant issues.
16. *Air quality*. We agree that offshore wind projects will not give rise to significant effects on regional and local air quality.
17. *Climatic factors*. The benefits to the climate and to the environment of offshore wind as a form of energy production are not adequately emphasized. The tone of the text fails to highlight the significant contribution of offshore renewables to climate change targets and does not adequately differentiate them from carbon-based sources. This apparent bias needs to be addressed.
18. *Population and Human Health*. Offshore wind presents a significant opportunity for the UK – for major factories such as Siemens £160m investment in turbine production and installation facilities in Hull, for Tier 1

and sub-contractors like JDR Cables on Teeside and for more local businesses and employees across the whole lifetime of each asset. As the European and global offshore wind markets grow, there is also a major export opportunity for UK business. Under a strong growth scenario, the UK offshore wind sector could deliver £7-18bn in estimated net exports by 2030. We agree that offshore wind will provide an increased proportion of low carbon energy, greater security of energy supply and increased employment and tax revenues.

19. *Other users, material assets*. The offshore wind industry now has long established relationships with other users of the sea and offshore asset owners. We welcome the evolution of guidance notes, such as the series of Marine Guidance Notes produced by the Maritime and Coastguard Agency, as a basis for discussion. We also welcome the use of VMS on smaller craft; improved information on vessel movements provides benefit to both marine users and wind developers, informing early site selection and required levels of mitigation.

20. Offshore wind projects potentially have a key role in securing wider social, economic and environmental benefits for other users of the sea. These issues and the wider circular economy discussion should be considered within the SEA.

21. *Cultural heritage*. We agree that current controls for offshore wind developments provide sufficient protection for cultural heritage features.

22. *Transboundary effects*. The wind industry has established good relationships with advisory organisations in relevant Member States. In general, environmental effects on adjacent territories are considered unlikely to be significant but will continue to be considered on a site specific basis.

23. *Conclusions.* A leasing and licensing programme is required which recognizes the importance of offshore wind. This could be achieved through Options 2 and 3, assuming restrictions described under Option 3 allow the required expansion of the UK offshore wind industry and its supply chain. Any mitigation measures should be proportionate and their effectiveness understood. Where there are gaps in industry knowledge in relation to these impacts and appropriate mitigation, strategic studies should be enabled both through Government and industry initiatives and through a more strategic approach to monitoring within the licensing process.

24. The Committee on Climate Change clearly outlines a central role for renewables, in particular offshore wind, in delivering least cost decarbonisation for the UK to 2030 and beyond. Future leasing and licensing rounds must provide a supportive framework for offshore wind and other renewables to achieve these objectives.

Yours faithfully,

[redacted]
Offshore Environment Manager
Vattenfall
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29 April 2016

Our ref. OESEA3 DE Consultation response

[redacted]

UK Offshore Energy Strategic Environmental Assessment (UK OESEA3) – Environmental Report

DONG Energy Response

DONG Energy is one of the leading energy groups in Northern Europe. Headquartered in Denmark, we have an interest in several European markets and cover a wide range of energy sector activities.

In the UK, we are the market leading developer and operator of offshore wind farms. By 2020, our target is to have installed 6.5GW of offshore wind. That is enough green power for 16 million Europeans. The UK is DONG Energy's primary market for developing offshore wind and we have secured a strong pipeline of projects, which will enable us to meet our 2020 target.

DONG Energy welcome the publication of Environmental Report for the third UK Offshore Energy Strategic Environmental Assessment (OESEA). We support the conclusion that there are future licensing or leasing rounds however, we are concerned about the limited consultation period given the volume of material to review. On that basis, whilst DONG Energy support the conclusion that there are future licensing and leasing rounds, we do not agree that the OESEA can be a robust evidence base on which to restrict future rounds spatially or temporarily without further review and discussion of the recommendations made.

DONG Energy's main concerns are:

- There is insufficient weight given to the contribution that offshore wind will make to decarbonising the UK energy supply sector in the report;
- The plan/programme is very broad in nature and the basis for selecting one energy source over another is often unsupported by a full consideration of the information presented;

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- The recommendation to spatially restrict future leasing and licensing has not taken into account the technical restrictions that may impact the feasibility of developing the energy options considered in the report.

DONG Energy are keen to ensure that future opportunities for offshore wind development in the UK are not missed – particularly given the contribution that this source of energy is making to decarbonising the energy sector in the UK. Whilst the Non-Technical Summary clearly identifies that, the report needs to be considered in the context of UK energy supply policy and greenhouse gas emission reduction efforts, the main body of the report does not always present a balanced consideration of the effects, particularly for offshore wind.

The remainder of this response is set out to summarise the background to DONG Energy's concerns in the three areas mentioned above. More detailed consideration of the environmental report is included in Annex A.

Decarbonising the UK energy supply sector

The premise for the plan/programme is very much set in the context of decarbonisation and the UK's legally binding renewable energy targets. The Non-Technical Summary expressly states the need to place the draft plan/programme in the context of overall energy supply policy and greenhouse gas emission reduction efforts.

Whilst the report clearly considers renewable energy technologies, DONG Energy are concerned that there appears to be a number of areas in the main body of the environmental report where the contribution that offshore wind energy will make towards the objectives of the plan/programme is not as strongly highlighted as it could be. In parts, the OESEA report appears to suggest that the impacts from offshore wind may preclude it from wide areas of the sea, often with very limited information to support statements made in the report.

As identified in DECC's UK Renewable Energy Roadmap, the offshore wind sector has the potential to become of significant strategic economic importance to the UK, supporting a competitive and quality UK supply chain and exporting expertise and technology all over the world. With some of the best wind resource in Europe, with relatively shallow waters and strong winds, the Roadmap further highlights offshore wind as a key technology that will help the UK meet the 2020 Renewable Energy Directive (RED) target, with a central range of up to 18 GW for deployment by 2020, subject to cost reduction. This would correspond to around 17 per cent of the UK's net electricity production.

DONG energy would urge commitment from DECC to provide the certainty needed to underpin long term investment in this strategically important sector is not undermined by a lack of recognition of the contribution that offshore wind sector will make to meeting UK energy policy goals.

Definition of plan/programme and presentation of a balanced argument for energy sources considered in the report.

DONG Energy believe that the very broad nature of the plan/programme considered in the SEA report will make it very difficult to justify how it meets the main objectives, "*to enhance the UK economy, contribute to the achievement of carbon emission reductions and security of energy supply but without compromising biodiversity and ecosystem function, the interests of nature and heritage conservation, human health, or material assets and other users*"

There are a number of instances in the report where DONG Energy believe that information discussing the impacts of offshore wind farm development need further consideration or discussion with relevant regulatory and industry stakeholders before the OESEA is taken into account in any future leasing or licensing rounds. Further detail is provided in Annex A to this letter.

Recommending a spatially restricted leasing and licensing round in the absence of detailed understanding of technical constraints

To support the further development of offshore wind energy in the UK, the industry will need access to attractive sites, not least to support the current momentum in reducing the cost of energy. Taking into account engineering requirements, attractive sites for the offshore wind industry will have the majority of the following characteristics:

- **Good ground conditions**. Ideally sufficient deep layers of firm sediment and early understanding of these conditions.
- **Strong wind resource.** The wind climate of course drives the economics of the prospective wind farm.
- **Water depth suitable for the optimal wind turbine and foundation type combination.** Typically this will be the largest wind turbine model available placed on monopiles; hence maximum economic water depth is shallower than the maximum technically viable depth and should be the criterion used; as monopile technology evolves, this depth increases; however conversely larger wind turbine models will reduce this depth
- **Grid connection.** Access to a strong grid connection point with limited need for reinforcements and a good offshore and onshore cable route.

Some valuable lessons from Round 3 could be incorporated into this process. Development specific assessment comes at a considerable cost to individual developers and if an area offered up for lease turns out to be technically challenging, it can deem a project financially unviable at least in the short term. There are references in the document describing monopile and jacket installation as a "hole being drilled into the bedrock into which the monopile is placed and secured using cement". This is incorrect and if this assumption is adopted for the purposes of deciding future offshore wind leasing rounds, it could potentially result in sites being selected that are not suitable for either monopiles or jackets. Drilling is a very expensive installation technique both in terms of direct costs and also because it increases foundation installation time.

In general, most pile installation takes place without the need for drilling so sites where this can be facilitated should be considered for future leasing rounds.

The report does identify tethered turbines as an option for deeper water locations however, it is not clear where the basis for this comes from. Some future proofing with the offshore wind energy industry would be a useful next step to understanding whether this option is likely to be a commercially viable option in the next five years at least. Fixed foundations are a proven technology; DONG Energy would like to be sure that this option is considered fully, subject to a full assessment of hard constraints, before there is a default movement to the use of tethered turbines in depths of 60-200m. It should also be noted that shallower water sites remain more economical and therefore provide the opportunity to reduce Cost of Electricity as well as offering a much more certain contribution to the move to decarbonisation

DONG Energy are grateful for the opportunity to respond to the OESEA and would be very happy to contribute further to any follow up discussions. In particular, we would be keen to help input into any further work to build a detailed understanding of the outcomes of the consultation including incorporating engineering and technological lessons learnt from previous offshore wind farm leasing rounds.

Yours sincerely

Sent via email

[redacted]

Annex A - Comments on the Environmental Assessment Chapters

Physical presence - ecological implications

DONG Energy believe that, in parts, this chapter of the OESEA only makes limited challenges to previously held misconceptions about the effects of the offshore wind development and does little to move the discussion on. In particular:

- Despite noting that operational noise from wind farms is negligible, highlighting that there is no evidence to suggest noise from operational wind farms leads to injury or disturbance, it is still listed in the table summarising sources of potential significant effect as a potential minor negative impact. Post construction monitoring data, collected at operational offshore wind farm sites to date, has illustrated that there is no evidence of significant impacts to fish and shellfish species[1]. Marine mammals have been recorded foraging in areas of wind farms and this is directly referenced in this section noting evidence that suggests that harbour porpoises and harbour seals routinely enter wind farms and in some cases show attraction and behaviours consistent with foraging.

- The report is very unclear about the distinction between the types of geophysical surveys deployed in the offshore wind industry and the potential for effects. This needs to be given greater consideration in the report to ensure that this information is not misinterpreted in the consideration of future offshore wind development.

- The report states that "*if sufficient protection is offered to the harbour porpoise, it is assumed this would be sufficient for the marine environment as a whole*". This is a highly precautionary approach (as clearly noted in the report) and could restrict future deployment of offshore wind unless a more proportional, risk based approach is taken that allows for constant re-appraisal.

- The report acknowledges that MMOs and PAM are not always effective (e.g. at night, during low visibility, higher sea state or for species that do not vocalise regularly or cannot be easily recognised)" however only appears to consider technical noise emission reductions and careful planning in the recommendations in this section. More could be made of ADDs as an acceptable sole mitigation source in some circumstances particularly given that it will assist in enabling piling activities to continue during times of low visibility and in sea states where an MMO vessel would have to return to port. Projects looking at the efficacy of ADDs as a potential sole source of mitigation will report in the next few years and the OESEA report could recognise this.

[1] MMO (2014). Review of environmental data associated with post-consent monitoring of licence conditions of offshore wind farms. MMO Project No: 1031

- The report states that to reduce noise generation from pile-driving, several technical mitigation measures can be successfully applied during piling and alternatively, low-noise foundations can be chosen instead of those based on impact-piling. Greater consideration of the technical constraints limiting foundation options is needed. Foundation selection is specific to the physical conditions within a site (i.e. water depth, ground conditions). Furthermore, the report should highlight that there are technological and cost constraints on options such as vibration piling and drilling to ensure that unfeasible obligations are not placed on offshore wind farm developers in the leasing of future sites.

Physical presence and other users

Navigation

The OESEA report identifies safety of navigation as an objective for the SEA in Table 3.1. The report mentions "areas important for navigation" but priority areas are not clearly defined in the report. It is not clear whether these have been discussed with navigation stakeholders prior to publication of the OESEA or how industry stakeholders can contribute to this discussion if it is to follow publication of the OESEA. The MCA have not been included in the list of consultation bodies for this report.

This section of the OESEA requires further review to ensure that it provides an accurate basis on which to inform a robust and fair consideration of future offshore wind leasing areas. Examples of where further review would benefit the report include:

- Recognition of the collaboration between the offshore wind industry and MCA to update MGN 371[2](now MGN543). The industry, MCA and other navigational stakeholders continue to work together to better understand and define transparent assessment processes for determining the actual risks associated with layout. MGN543 clearly states that projects can be considered on a project-by-project basis and this will reduce the likelihood of an offshore wind farm having a negative impact on SAR operations. DONG Energy welcome references to the use of ALARP principles in the assessment and these principles are the focus of ongoing discussions with the MCA.

- Ensuring that the potential impacts of all energy sources are considered proportionately. For example, Table 5.8 summarises sources of effect, pathways and receptors for all energy sources considered by the OESEA however, although offshore wind is specified as a relevant

[2] There are several references to MGN 371 in the SEA report. MGN 543 has replaced MGN371. By way of example, Appendix A1h refers to the minimum distance of 5nm presented in MGN 371 as the minimum distance at which risks to shipping are very low. The MCA chose not to carry this approach to defining risk through into MGN 543, which instead states that separation distances of between 0.5nm and 3.5nm may be 'Tolerable if ALARP', and that separation distances of >3.5nm are 'Broadly Acceptable'.

aspect for physical presence of structures in the water column, it does not list oil and gas.

- Taking into account why offshore wind developers have not made use of the potential to incorporate operational 50m safety zones around devices. Advice from DECC and others indicates that highly particular circumstances (that relate to an increased navigational risk) would be required in order to justify operational 50m Safety Zones. As such, it is not simply a case of offshore wind farm developers' "making use of the potential to incorporate operational 50m safety zones".

- Checking Chapter 5 to ensure that is factually consistent with MGN543. Section 5.7.2.1 includes a recommendation that offshore wind farm leases include a general prohibition on turbine location within a 1nm buffer of a primary navigation route. MGN 543 states that that separation distances, between turbine boundaries and shipping routes, of between 0.5nm and 3.5nm may be 'Tolerable if ALARP'. In addition, references and recommendations relating to the creation of 'clearways' should be reviewed to ensure they are consistent with current MCA policy.

- Providing some clarification to define primary navigation routes. For example, what frequency / density of shipping traffic / type constitutes a 'primary navigation route'. The report references *"*Primary Navigation Routes 1 (PNR1) with 1nm buffer (derived from MCA 'siting not recommended' areas (draft and unpublished "OREI 1" primary navigation routes) and checked against 2012 MMO AIS annual average data*."* but further clarity is required.

Fisheries

Where impacts on the fishing industry are considered, the report recommends avoiding occupying recognised important fishing grounds in coastal or offshore areas (where this would prevent or significantly impede sustainable fisheries). Although table 5.22 identifies important UK fishing grounds for consideration in the report, these (or important fishing grounds generally) are not listed as a "hard or "other" constraints. This is confusing in terms of how important fishing grounds will be incorporated into the consideration of future offshore wind leasing areas.

Similar to observations made about navigation risks, there are a number of statements in the fisheries section that do not accurately reflect the basis on which certain actions have been followed or observed related to offshore wind development. More detailed consideration is needed to ensure that conclusions in the report do reflect reality. These are:

- Recognising that, whilst standard practice for Oil and Gas installations, it is not standard practice for DECC to approve operational phase safety zones around offshore wind farm infrastructure. This is mainly due to objections from the navigational and fishing communities.

- Balancing references to the Crown Estate report[3] with the reality of how impacts during construction are mitigated by the offshore wind industry. Fishermen consulted to inform the report claimed to have reduced effort or stopped fishing altogether within the OWFs during the construction period. The report however, did not make it clear that it is standard practice for commercial compensation agreements to be put in place to cover lost earnings caused by displacement during the offshore wind farm construction, i.e. that in all likelihood these same fishermen received financial compensation in return for not fishing within the OWF-sites during the construction periods.

- Taking into account the sensitivities surrounding compensation (particularly during the operational phase of an offshore wind farm's life cycle) for both the fishing industry and the offshore wind industry. Section 5.7.2.2 of the report states that "responsibilities of developers where co-location with MCZs is proposed needs to be defined and additional compensation related costs to the fishing industry." It is often not practical, or necessary, for offshore wind farms operators' to seek to enter into commercial agreements with commercial fishermen that extend into the operational-phase However, this text appears to suggest that compensation payments might be due during the operational phase. Any references to compensation in the report should cite the FLOWW best practice guidance.

Landscape/Seascape

This section of the OESEA appears to suggest that there are very limited opportunities for offshore wind farm development closer to the coast. Statements in section 5.8 include recommending that development is placed as far offshore as possible and height of structures above sea-level is minimised (with fully submerged structures being preferable. The specific recommendations in this section go on to state that potential for development to be refused on the basis of landscape/seascape issues should be considered.

Whilst DONG Energy appreciate that there are areas of the coastline where sensitivity to visual impacts will be high, this section of the report should be balanced with greater consideration of how far from the coast visual effects are likely to occur. As this section does include some discussion of how visual impact is assessed, greater emphasis could be placed on the actual distance over which wind turbines are likely to be visible and how this correlates to water depths.

Fixed foundations are technically feasible to a depth of 60m and DONG Energy would recommend that this is considered further in the report. Specifically, tables summarising sensitivity of the Welsh coastline to renewable technologies should be balanced with some assessment of location in terms of distance from

[3] Gray M, Stromberg P-L & Rodmell D (2016). Changes to fishing practices around the UK as a result of the development of offshore windfarms - Phase I. Report to The Crown Estate, 121pp.

that coastline to indicate whether there are areas beyond highly sensitive areas considered to be visible but still within the 0-60m limit for fixed foundations (taking into consideration other constraints). In addition there are other areas discussed as potentially sensitive in the text in this section however they are not further clarified in the same way as the Welsh coastline. Developing this further, and taking into consideration previous comments about distance from the coast and water depths, would be helpful.

Marine discharges

DONG Energy agree with the finding that no significant discharges to the marine environment are predicted to result from future leasing for offshore wind. However, this section of the OESEA could go further to recognise that any risks from chemicals used during the operational phase are minor. Any chemicals used by the offshore wind industry are selected from the List of Notified Chemicals and the maintenance activities that they are used for are licenced by the Marine Management Organisation. Furthermore, these chemicals are used on a very limited basis. For example, current expectations are that only minor paint works are required every three years (and only to the transition piece) with full painting of the transition piece (above water level) taking place once every ten years. Removal of marine growth is generally carried out using seawater only.

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29 April 2016

UK Offshore Energy Strategic Environmental Assessment 3 (OESEA3)

EDF Energy is one of the UK's largest energy companies with activities throughout the energy chain. Our interests include nuclear, coal and gas-fired electricity generation, renewables, and energy supply to end users. We have over five million electricity and gas customer accounts in the UK, including residential and business users.

EDF Energy supports the general principles behind the development of the third Offshore Energy Strategic Environmental Assessment. We welcome the inclusion of spatial scale maps identifying the most appropriate zones for development for particular technologies. These maps, combined with the useful regional environmental information, may be used to appropriately inform a developer's siting decisions and their application to develop in an area.

EDF Energy believes that the coastal buffer for offshore wind development, introduced in Round 2, is conceptually reasonable but this must not become a de facto exclusion zone. We accept that development within a buffer zone could require a greater burden of proof and the application of more stringent mitigation measures. However, development in shallower water is a more practical and economical option for developers, as it offers cheaper deployment and connection options. This would mean, for example, that more renewable generation capacity can be deployed and at lower cost to the consumer. It will also mean that the Government's decarbonisation targets could be met at lower cost.

In the wider marine policy context we believe that the OESEA could act as a useful tool to help developers assess and identify potential opportunities in areas where sources of renewable energy are most harnessable. However, the OESEA must also be used in combination with the Marine Management Organisations (MMO) marine plans and where applicable the site identification process for the respective licensing round for offshore wind / technology.

The perception of developers is that sites identified as suitable for development following application of the Government's own principles and documents outlined in the development process have a high likelihood of receiving planning permission. However,

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this is not necessarily the case and we believe the ESA process must learn from recent practical experiences in offshore energy consenting.

We have particular experience with the Navitus Bay offshore wind project where a site was identified using the Offshore Wind Licensing Round 3 process and previous OESEA 2 as a suitable development site. At significant cost, it was taken through the planning process for it to then be rejected on an issue that was considered as manageable in both the Offshore Wind Licensing Round 3 process and previous OESEA 2.

There are lessons to be learned from such rejections of apparently suitable development sites. Through the SEA process it is important to minimise the risk of ultimate planning refusal to maintain investor confidence in UK energy infrastructure.

To ensure that developers can rely on the OESEA we believe that the background references and data needs to be scientifically sound and peer reviewed. The decision makers in the planning process need to be confident in the tools provided.

Should you wish to discuss any of the issues raised in our response or have any queries, please contact [redacted] on [redacted], or myself.

I confirm that this letter may be published on DECC's website.

Yours sincerely,

[redacted]

[redacted]
Corporate Policy and Regulation Director

SCOTTISHPOWER RENEWABLES

Offshore Energy SEA 3 Consultation
The Department of Energy and Climate Change
4th Floor Atholl House
86-88 Guild Street
Aberdeen
AB11 6AR

By e-mail: oesea3@decc.gsi.gov.uk

29 April 2016

Dear Sir or Madam,

Offshore Energy Strategic Environmental Assessment 2 (OESEA3)

ScottishPower is a major UK energy company with network, retail and conventional and renewable generation interests. It is part of the Iberdrola group, an international utility and the world's leading renewable energy developer. In the UK, our renewable business, ScottishPower Renewables (SPR), has 30 operational windfarm sites with over 1.6GW installed capacity, including West of Duddon Sands, our first operational offshore windfarm. In addition, we have a substantial development portfolio including our East Anglia ONE Windfarm, which has full planning consent and a contract that will allow us to develop up to 714 MW of offshore wind, and a pipeline of future projects in planning and scoping in the Southern North Sea.

We welcome the opportunity to engage in the development of the third Offshore Energy SEA (OESEA3) for further rounds of licensing/leasing for offshore energy. We have the following comments on the OESEA3 Non-Technical Summary:

Objectives

We welcome the objectives set out in the plan to help contribute to Government energy targets by enabling future rounds of renewable energy leasing for offshore wind, wave and tidal devices. As well as contributing to the UK's renewable energy targets, future leasing for renewable energy technologies will help deliver government ambitions around security of supply and decarbonisation targets. We also recognise that it is important that these objectives are taken with due regard to environmental and social impacts as assessed within the Environmental Report accompanying the draft plan.

In terms of offshore wind, we support the objective to enable further offshore windfarm leasing with the UK Exclusive Economic Zone (EEZ) and within territorial waters of England and Wales as set out in the draft plan. We support the inclusion of a wide range of technology options, including turbines of up to 15MW capacity and floating turbines in water depths of up to 200m, in addition to the scales of deployment and technology types currently envisaged under the Round 3 leasing programme. However, we would add a

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note of caution that the scale and rate of deployment proposed within the draft plan is ambitious and the UK offshore industry will require regulatory certainty alongside rapid technology development if we are to meet these ambitions within the timeframe of the plan.

Alternatives

In considering the alternatives to the draft plan, we would support the option to proceed with a leasing and licensing programme for future energy development as this is the only alternative being considered which meets the objectives of the plan in terms of delivering secure energy supplies in line with carbon emission reduction targets. The UK offshore wind industry is at a critical point, balancing the need for rapid deployment and innovation with UK government cost reduction targets. Therefore it is imperative that the industry has a clear line of sight with regard to future leasing opportunities, and financial support, from government to ensure that the industry and supply chain can continue to plan for the future in terms of project development and investment.

For these reasons, we do not support the option not to offer any areas for leasing or licensing or to restrict areas offered for leasing or licencing, temporally or spatially, as this will not contribute to the UK targets and could place the expansion of the UK's offshore wind industry and associated supply chain in jeopardy.

Baseline for Assessment

We welcome the statement within the Environmental Report that *"the Southern North Sea contains the bulk of the current UK offshore wind capacity, both in operation and planning. The area remains highly prospective for offshore wind due to its shallow depths and the potential for suitable grid connections. It is possible that further areas may be leased (including by extension) for commercial offshore wind."* However, further clarity is required on the baseline for the plan in terms of offshore energy projects in planning, consented and operational and how these have been taken into account within the environmental assessment.

Prospectivity

We support the identification of key resource areas for offshore wind based on the assessment of technical constraints such as wind speed and water depth. As set out in the OESEA document, grid availability is also a significant factor in the preferred location of offshore wind developments.

The OESEA makes a number of assumptions with regard to the potential deployment of offshore wind turbine foundations types. Whilst the assumptions seem reasonable at this point in time, given the pace of technology development and the industry push to develop innovative solutions to technical challenges, we would urge against the limitation of development outwith proposed key resource areas based on technical constraints and current or expected technology availability.

We have provided more detailed comments on the OESEA3 Environment Report in the Appendix 1.

I hope our response is of assistance in finalising the proposals. If you require any clarification or would like to discuss any of the points raised in our response further, then please do not hesitate to get in touch.

Yours sincerely,

[redacted]
Offshore & Marine Policy Manager

SCOTTISHPOWER RENEWABLES

Appendix 1: **Comments on the Environmental Assessment**

1. Biodiversity, habitats, flora and fauna

1.1. Overall, we are in agreement with the conclusion within the SEA that with regards to underwater noise *"current mitigation measures are sufficient in reducing the risk of injury to negligible levels..."* However we do recognise that is a lack of detailed empirical evidence of the impacts of underwater noise on the marine environment and that this is an area of ongoing research.

1.2. We welcome recognition that several modelling frameworks are being developed to assess population level impacts of acoustic disturbance on marine mammals. These models are based on the best available science and will enable population level assessments to be undertaken in order to understand the impacts of planned activities. However it is important that these models are run using realistic build-out scenarios which take into account other constraints such as supply chain availability, available financing etc, in order to ensure that model outputs are realistic.

1.3. We welcome reference to the Marine Evidence Group report and whilst we are in broad agreement with the recommendations of the report, we would also welcome recognition within the SEA that any modifications to offshore wind installation methods or techniques can be prohibitively expensive to install, bespoke to each site conditions and these measures would only be required where significant impacts to regional populations of marine species are predicted as a result of cumulative installations.

1.4. We welcome the development of the Noise Registry as part of the UK Government's implications of the MSFD. We hope this will make a as this is a positive contribution to our understanding of baseline anthropogenic noise in the marine environment

1.5. We support the recognition within the OESEA3 that more detailed consideration of mitigation measures should be undertaken on a project-specific basis. This is welcome as mitigation is highly site specific and dependent on site conditions and other technical constraints so it would be inappropriate to set out prescriptive mitigation requirements in a strategic document such as the OESEA.

1.6. The OESEA concludes that scour effects are generally small in scale and local in extent and unlikely to be of concern, which concurs with our experience to date.

1.7. We support the conclusion that overall, the displacement, barrier effects and collision are unlikely to have a significant impact on bird populations at a strategic level. However, we recognise that that are some remaining uncertainties with regard to assessment the potential impacts of offshore windfarm development on avian populations. SPR along with Statkraft and Vattenfall have commissioned a study to identify knowledge gaps and research priorities for seabird species and populations of particular relevance to Southern North Sea wind farm developments. The knowledge review and gap analysis[1] is publically available and the research priorities report is available upon request. As responsible developers, we are also actively contributing to industry initiatives to help address these uncertainties through further research, for example through participation in the Offshore Renewables Joint Industry Programme (ORJIP) and the Disturbance Effects on the Harbour Porpoise Population in the North Sea (DEPONS) project.

[1] http://www.macarthurgreen.com/news/254-seabirds-and-offshore-windfarms-evidence-review

1.8. As part of the Renewable UK Consent and Licensing Group, SPR have been in actively engaged in discussions with Nature England regarding strategic monitoring to address outstanding data gaps. The monitoring activities of this and future SEA's, could make a meaningful contribution to addressing outstanding data gaps and reducing the uncertainty that exists within the marine environment. We are therefore supportive of coordinating ongoing research through the SEA steering group but would ask that this is done in consultation with industry.

1.9. We welcome recognition within the OESEA that the baseline for many of species of birds and marine mammals has the potential to change due to other external factors such as climate change. It is therefore important that these changes are considered carefully within strategic and project based assessments, and that activities such as the development of offshore windfarms are not subject to onerous management due to changes in the baseline, particularly where the development may help mitigate this change to the baseline (for example energy generated from offshore renewables can help mitigate the impacts of climate change).

1.10. The OESEA proposed that *"the bulk of new OWF generation capacity should be sited away from the coast, generally outside 12 nautical miles (some 22km)"* as areas of significant densities of birds are mainly within coastal waters. While, in many cases, offshore wind development in waters further of offshore may be technically and environmentally preferable, we would have concerns if this excluded development within areas within 12nm. Given the UK Government cost reduction targets and wider policy objectives intended to promote the development of the offshore wind industry, any measures which force development to more technically challenging or costly locations, could jeopardise the industry's ability to meet cost reduction and deployment targets.

2. Population and human health

2.1. We welcome recognition in the draft plan that "*the adoption of the draft plan/programme will bring positive benefits in terms of an increased proportion of low carbon energy in the UK energy mix, greater security of energy supply and increased employment and tax revenues".*

3. Interrelationships – Wider policy objectives

3.1. We are supportive of alignment of the OESEA and Marine Planning system and ask that reference is also made to the National Policy Statements which set out the policy need for the deployment of offshore wind energy in English and Welsh waters.

3.2. In addition to the UK's renewable energy and decarbonisation targets, we would ask that recognition is given to cost reduction targets for the offshore wind industry and the downward trajectory of the Levelised Cost of Energy (LCoE) expected to take place, and required by Government.

3.3. The OESEA recognises the possibility of new designations under the Birds and Habitats Directive coming forward within potential areas for offshore windfarm development or within areas already leased for offshore wind energy development. Designations which come into effect during planning or indeed after consents have been granted, have the potential to impact construction methodologies and timescales. In some cases, new designations may require a review of existing consents and this could have significant impacts on project timescales, project viability and ultimately the wider industry and supply chain, particularly within the context of cost reduction targets and competitive allocation rounds. It is therefore critical that the OESEA considers new designations in light of current development

portfolios and leases. We would suggest that consideration is given as to how the risk of new designations to developers could be better managed, for example through strategic approaches to assessment which consider the carrying capacity of existing sites. We would also recommend that guidance for developers on the review of consent process is produced in order to provide industry with a clearer upstanding of the approach, process and timing for such a process when new designations are proposed. Statutory Nature Conservation Bodies (SNCBs) should also be encouraged to provide standing advice on pending designations to assist developers of projects within the planning system.

3.4. Section 3.7.1 of the Environmental Report notes that the responsibility for Habitats Regulations Assessment for any future renewable leasing activity rest with the Crown Estate. We support this statement and ask that consideration is given to updating the current HRA for Round 3 in light of OESEA3.

4. Transboundary effects

4.1. As an industry, the offshore renewable sector has experience of consulting widely on transboundary effects in line with national policy and legislation. We therefore welcome the conclusion within the OESEA that that potential transboundary effects of underwater noise, marine discharges, atmospheric emissions, impact mortality on migrating birds and bats, and accidental events are unlikely to be significant.

OFFSHORE ENERGY STRATEGIC ENVIRONMENTAL ASSESSMENT 3

Consultation response by Alan Neale

1. Before retiring, I was Senior Research Fellow in Environmental Policy at the University of East London. This consultation response reflects my experience as an Interested Party submitting representations to the 2014/5 Planning Examination into the Navitus Bay offshore wind farm. It relates to the treatment in OESEA 3 of offshore wind energy, which I feel is unduly restrictive.

The background - previous OESEAs

2. The first OESEA, in 2009, adopted an earlier suggestion of a 12 nautical mile buffer zone for offshore wind farms. The arbitrary nature of the reference to 12 nm was criticised by a number of consultees in 2009 as being unduly proscriptive, but DECC's response emphasised that the buffer zone was not an exclusion zone. It confirmed that the SEA process was about guiding decisions at the plan/programme level (ie in relation to licensing), and that site-specific impacts should be assessed at the project level (1, pp 93-97).

3. OESEA2 was concerned that in the East Irish Sea, Thames and Wash, where there is already a high concentration of offshore wind farms, further developments close to the coastline could lead to damaging cumulative seascape impacts (2, p254). It re-iterated that seascape impacts might best be mitigated if most (but not all) new development was located in the Renewable Energy Zone beyond 12nm. This was clearly intended as a general guide, not a hard and fast rule - it was recognised that "with careful monitoring, design and siting, wind turbines can be located in environmentally sensitive areas and may also have positive benefits to ecology and biodiversity", so that "the proposed coastal buffer zone was not intended as an exclusion zone, since there may be scope for further offshore wind development within this area" (2, pp 340-341).

4. DECC rejected a suggestion by one consultee, the Marine Conservation Society, that no licenses should be granted within the 12 nm buffer zone. Its response acknowledged that "There is wide variation in the environmental sensitivity of coastal areas and many

areas within 12 nm are likely to be acceptable for development. The requirements of the project consenting process will ensure that potential significant impacts on sensitive receptors are identified and mitigated prior to consent. " (3, p46).

5. The buffer zone was an issue at the 2014/5 Planning Examination of the Navitus Bay offshore wind farm proposal, which would have been within sight of the Dorset and Isle of Wight Areas of Outstanding Natural Beauty and the Dorset and East Devon Coast World Heritage Site. Some objectors used OESEA2 to argue that the scheme should be rejected, as part of it was less than 12nm from the shore. This argument was rejected by the inspectors. Instead, they recommended that the scheme be turned down because of the special qualities of the sea views from these designated sites.

OESEA 3

6. OESEA3 retains the 12nm buffer zone, but uses the Navitus Bay case to intensify the constraint. “The recent refusal of Navitus Bay in the area to the west of the Isle of Wight, “ it suggests, “has provided a basis for not including this former zone and treating it as a hard constraint. The reasons for this refusal (primarily related to multiple landscape/seascape issues and its effect on the Dorset and East Devon Heritage Coast World Heritage Site) could also be reasonably be used to suggest that a wider area landward of this former zone is unlikely to result in approvals for offshore wind.” (4, p 410). The non-technical summary amplifies the point. Renewable energy development, it argues, “should not be refused solely on the grounds of an adverse effect on seascape, including visibility from within designated sites, unless adverse effects are considered to outweigh the benefits. For example, secondary impacts on tourism and recreation, or on internationally recognised areas such as World Heritage Sites.” (4, p xxiv).

7. This is deeply concerning. Since the Government cut support for onshore wind and solar, its decarbonisation plans are hugely dependent on further offshore wind development and its potential for further cost reduction. Yet now this proposed Strategic Environmental Assessment implies that impact on sea views from World Heritage Sites is more important than decarbonising power supply.

8. The 95-mile long Dorset and East Devon Coast was designated as a World Heritage Site not for its sea views, but for its geology. There are

many other World Heritage Sites along the English and Welsh coasts. Sites already designated include the mining landscape of Cornwall and West Devon, the castles of Gwynedd, Liverpool Waterfront, and Hadrian's Wall. In addition, the Government recently nominated the Lake District for possible World Heritage status. None of these Sites have been designated, or nominated, because of their sea views. But if OESEA3 goes ahead in its present form, huge areas of the seabed may be ruled out of bounds for offshore wind development, because on a clear day visitors to World Heritage Sites would be able to see turbines on the horizon.

9. The previous OESEAs made it clear that the 12 nm buffer zone was not a hard constraint, and that project proposals falling within the buffer zone should be judged on their merits. The suggestion in OESEA3 that proximity to a World Heritage Site should be a hard constraint breaches this principle. It also fails to take into consideration some of the wider environmental consequences of imposing such extensive limits on the scope for offshore wind development.

Implications of the new hard constraint

10. Introduction of the proposed hard constraint would arbitrarily cap the amount of new offshore wind capacity that could be installed, and the consequent potential for cost reduction. It would also lead to a further concentration of offshore wind farms in the North Sea (where possible impacts on World Heritage Sites would not be an issue). This would limit the decarbonisation benefits of dispersed wind farm capacity, by affecting both balancing requirements and output potential. An environmental assessment, to be properly strategic, would need to address the positive implications for climate change mitigation of a wider geographical spread of offshore wind, alongside seascape and other impacts.

11, Wind farm output varies with wind speed, and this variability must be balanced elsewhere in the system, typically at present by Combined Cycle Gas Turbines, in order for demand to be met. Most days the wind blows at different speeds in different regions of the country, so that as wind energy sources become more widely dispersed, variability in the system as a whole is reduced. It follows that the wider the geographical spread, the less the balancing challenge and consequent need for fossil fuel backup. Extending the spread also lowers slew rates (the rates at which delivered power changes as wind speeds increase or decrease)

for the grid system as a whole - as weather systems track across the country, wind speeds typically rise in one location at the same time as they fall in another. Lower slew rates, coupled with improved short-term weather forecasts, allow more cost effective balancing in the grid, as they improve predictability and reduce the need for rapid injections of power from costly and carbon-intensive Open Cycle Gas Turbines or diesel generators.

12. Wind shadow effects (the slowing of local wind downwind from turbines) are also location specific. A major study of saturation wind power potential concludes that "spreading wind farms out...will increase wind farm efficiency and reduce the number of farms needed compared with packing wind farms side-by-side" (5). The implication is that in many areas off the East Coast, where many existing and proposed offshore wind farms are situated close to each other, the introduction of additional new capacity could reduce the power that can be generated, from both the new and the existing turbines. In contrast, new capacity is likely to be more effective in the English Channel and the southern half of the Irish Sea, where existing or proposed offshore wind farms are few and far between.

April 2016

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Isle of Man Government
Reiltys Ellan Vannin

infrastructure
bun-troggalys

Office of the Minister
and Chief Executive

[redacted]

Date: 29th April 2016

[redacted]
Offshore Environmental Policy Unit
Offshore Energy SEA 3 Consultation
Department of Energy and Climate Change
4th Floor, Atholl House
86-88 Guild Street
Aberdeen
AB11 6AR

By email [redacted]

Dear [redacted]

UK Public Consultation On the Overeas Environmental Report: Offshore Energy Strategic Environmental Assessment (OESEA3)

Thank you for providing the Isle of Man Government with the opportunity to review and comment on DECC's Strategic Environmental Assessment (SEA) Report, as referenced above, outlining future potential plans regarding renewable leasing for offshore wind, wave and tidal devices. Also for the future potential of seaward oil and gas licensing rounds and for possible hydrocarbon and carbon dioxide gas storage – within UK offshore waters.

This letter is a formal response provided by the Territorial Seas Committee on behalf of the Departments and Statutory Boards that collectively make up the Isle of Man Government. We found it a useful consultation document and await the associated outcomes with great interest.

1) Our Comments are as follows:

As you are aware, the Isle of Man's territorial seas extend to 12 nautical miles around the Island's coastline apart from to the north where the UK/Scottish coastline is less than 24 nautical miles. The Isle of Man Government is supportive of ensuring the continued energy security of the British Isles for future generations as well as the European Union strategy to increase production of indigenous fuel supplies and reduce reliance on imports.

Whilst the Island is currently not a member of the EU and is therefore not directly covered by most European directives, we still follow relevant European environmental safeguards and expect best practice to be followed.

With reference to the OESEA3 Environmental Report, it is disappointing to note that no reference has been made to the Isle of Man within section (5.16.13) entitled "Potential for trans boundary effects" (see page 447). It is evident however, that some limited reference to the Island has been provided in the preceding text, which mentions the special circumstances of the Isle of Man in relation to the EU (pages 323 & 348).

Nevertheless, we feel it is important to acknowledge that the proximity of the Island and its territorial waters to those of the UK, mean that risk of various trans boundary impacts do feasibly exist.

In addition to those issues mentioned previously in the report, we would also highlight the potential for trans boundary impact on Manx landscape and seascape and would particularly like to ensure that impact on wildlife conservation and fisheries in Manx waters are fully considered in future developments. It will also be important to consider the impact on human interests, that may include, but not be limited to, Manx navigation and aviation interests. Please note that any significant risk of interference with navigation is of particular concern for the Island, both from a safety and a commercial perspective, given the high level of dependence the Island has on these lifeline services.

2.) We would draw your attention to current Isle of Man offshore energy strategy within our territorial seas:

The Isle of Man Government has recently (April 2016) announced the appointment of The British Geological Survey (BGS) as technical advisers for the exploration of hydrocarbon deposits within The Isle of Man Territorial Seas.

The Isle of Man Government is also pursuing its own offshore wind programme with potential development of a site providing capacity of up to 800MW currently under way. This is within an area of Manx seabed in proximity to the territorial water boundary between the Isle of Man and the UK. It is envisaged that the cumulative impact and trans boundary assessments of this site will not only formulate key areas of assessment for the developer, but will also constitute important considerations as part of the consenting process itself.

Whilst supporting the potential development of offshore wind energy & hydrocarbons projects, the Isle of Man Government also maintains particular concerns regarding potential impacts in the following areas:

a) Marine navigation
b) Migratory marine species found within the Isle of Man waters.
   Particularly those species protected under Manx law or identified as threatened or declining by the OSPAR Convention, which also use Irish waters
c) Manx Fisheries
d) The Manx Bird Population
e) Aviation

a) Marine Navigation

Any significant risk of interference with navigation is of concern to the Isle of Man Government as we require a good safety record with regard to transport to and from the Island. The Isle of Man depends heavily upon our marine transportation systems for economic development including import and export of goods as well as tourism.

We would therefore appreciate if acknowledgement is given regarding the importance of our shipping navigation routes and established infrastructure within the Irish Sea Zone. We would welcome any further information relating to the redistribution of shipping lanes and navigation routes which might affect shipping traffic to and from the Isle of Man including ferry and freight operations.

b) Migratory marine species found within Manx waters

The Isle of Man is a hotspot for basking sharks and the Manx Basking Shark Watch provides an active research and tagging programme which has highlighted the international importance of the Irish Sea for basking sharks. This is now an area of international conservation concern especially as they are listed by OSPAR as a threatened/declining species. They may be impacted by physical barriers created by offshore development and by electromagnetic fields from cables and other energy infrastructure.

We would draw your attention to Figure 2.8 "Offshore Wind Resource Area" (see page 34) which covers sea areas you have identified for potential deployment with tethered turbines. This includes an area to the south of the Isle of Man that we have identified as being frequented by basking sharks that have been tagged in Manx waters.

Other important Migratory fish of concern include salmon, sea trout and other diadromous fish – which are all present in Manx waters.

Migratory mammal species using Manx waters that may be affected include Risso's dolphins, bottle nose dolphins, harbour porpoise, the short-beaked common dolphin and minke whales. Grey and harbour seals are regularly present in Manx waters and there is a large pupping colony on the Calf of Man as well as other smaller coastal sites around the Island.

c) Manx Fisheries

Seismic activity and other marine development activity in UK waters surrounding the Isle of Man may well have an impact on economically important fisheries within Manx waters. The location of herring spawning areas in Manx waters is identified in the report, along with other fish spawning areas too. In addition to our important king scallop dredge fishery and queen scallop trawl fishery, whelk potting is carried out to the full extent of the 12 nautical mile territorial sea to the east of the Isle of Man.

d) The Manx Bird Population

The Isle of Man holds seabird populations exceeding 1% of the British populations, for cormorant, shag, herring gull, great black-backed gull, little tern and black guillemot, and of particular note is the seabird recovery project on the Calf of Man and the recovering Manx shearwater colony. Other important resident birds include Divers; red-throated, black-throated, great northern and an increasing population of breeding Peregrine falcons on the Island.

e) Aviation

The Isle of Man Airport is the main (civilian) airport on the Isle of Man. It is one of two main gateways to the Island. The Airport has scheduled services to the United Kingdom, Ireland and the Channel Islands on which there is a high level of dependence. The safe operation of these services, as well as the wide variety of recreational and private aviation using both the Airport as well as other parts of the Island, is paramount.

Any significant risk of interference with aviation navigation would be of concern to the Isle of Man Government. The Isle of Man Civil Aviation Administration has published policy and guidance on a range of issues associated with wind turbines and their effect on aviation that will need to be considered by aviation stakeholders, wind energy developers and decision makers in respect of planning applications and applications for Marine Infrastructure consents when assessing the viability of wind turbine developments on the Isle of Man and within Isle of Man territorial waters (https://www.gov.im/media/1351307/cp1-wind-turbines.pdf).

3.) Manx Marine Accreditation
The Isle of Man is signed up via the UK to the OSPAR Convention, the Convention on Migratory Species, ASCOBANS and other international conventions.

We have published "The Manx Marine Environmental Assessment" which provides a comprehensive source of information on the Manx marine environment with reference to baseline data that you may wish to take account of in future work.
(http://www.gov.im/categories/planning-and-building-control/marine-planning/manx-marine-environmental-assessment/)

We note that currently only UK designated sites have been mapped and listed in the SEA3 Environmental Report. Taking account of the potential for trans boundary effects, we would suggest that with regard to future considerations of environmental impacts and constraints, it would be useful to display protected sites in the Isle of Man and its waters, including the Ramsey Marine Nature Reserve. Full details of which are provided within the Manx Marine Environmental Assessment.

It may also be of particular interest to note that the whole of the Isle of Man and its territorial waters has just been designated as a biosphere reserve; UNESCO Biosphere Isle of Man (https://www.biosphere.im/index.php). We would therefore request your support in seeking to ensure the future environmental sustainability of this unique area.

The Isle of Man Government would welcome further involvement opportunities within the SEA3 stakeholders group and as a corresponding member, we would appreciate being included in any future consultations regarding developments within adjacent waters to the Isle of Man.

Should you require any further information or clarification on any of the above, please do not hesitate to contact myself.

Yours sincerely

[redacted]

Chief Executive and
Chair, Isle of Man Territorial Seas Committee

(P323 Trans boundary effects are limited by inter visibility with continental Europe – primarily the Channel, and the Isle of Man.
P348 Where activities could take place in close to a boundary with adjacent states or administrations and where they have land masses which are also close proximity (e.g. France, the Isle of Man), there is greater potential for trans boundary issues)

From: [redacted] CGDD/SEEI/IDDDPP1"
[redacted]
Sent: 29 April 2016 10:36
To: Offshore Energy Strategic Environmental Assessment 3
Cc: "[redacted]Chef de bureau) - CGDD/SEEI/IDDDPP1"; [redacted]
- CGDD/SEEI/IDDDPP1; [redacted]
Subject: OESEA3 Consultation

Dear Sir or Madam,

Regarding the transboundary consultation concerning the offshore energy strategic environmental assessment (OESEA 3), the French authorities, more precisely the Maritime Prefecture of the Channel and North Sea, have several remarks to make :

- the environmental impact assessment of neighboring countries such as France, is described as "potentially significant", with the consideration of a very low probability as to the materialization of these impacts. It would be pertinent to examine precisely what the real impacts on the environment and the French maritime activities adjacent to the areas that will be subject to planning

- the environmental impact assessment found in insignificant proportions the probabilities of occurrence of transboundary effects, such as underwater noise, air emissions, increased mortality of birds and marine accidental events. It would be appropriate to know precisely the intensity of cross-border effects on the French maritime space.

In conclusion, we would like to be informed of the outcome of this project and the consultation related, in particular in order for France to consider this project in the planning of its maritime space.

Kind regards,

--
[redacted]
Chargée de mission évaluation environnementale Ministère de l'environnement, de l'énergie et de la mer Commissariat général au développement durable Bureau de l'intégration environnementale
[redacted]

From: [redacted]
Sent: 28 April 2016 13:32
To: Offshore Energy Strategic Environmental Assessment 3
Subject: SV: DECC OESEA3 Environmental Report - Public Consultation

To whom it may concern,

Reference is made to the notification from the Department of Energy and Climate Change regarding OESEA3.

After considering the information, Norway does not wish to participate in the SEA procedure.

Sincerely,

[redacted]
Higher Executive Officer

Norwegian Ministry of Climate and Environment
The Policy Unit

Post address: Postboks 8013 Dep., 0030 OSLO, NORWAY
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