KINCARDINE OFFSHORE WIND FARM SOUTH EAST OF ABERDEEN

Scoping Opinion

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THE ELECTRICITY WORKS (ENVIRONMENTAL IMPACT ASSESSMENT) (SCOTLAND) REGULATIONS 2000

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SCOPING OPINION FOR THE PROPOSED SECTION 36 CONSENT AND ASSOCIATED MARINE LICENSE(S) APPLICATION FOR Kincardine Offshore Wind Farm, south east of Aberdeen

1. Introduction

I refer to your letter of 16th April 2014 requesting a scoping opinion under The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000 enclosing a scoping report.

Any proposal to construct or operate an offshore power generation scheme with a capacity in **excess of 1 megawatt**, within Scottish Territorial Waters, requires Scottish Ministers' consent under section 36 of The Electricity Act 1989.

Schedule 9 of the Act places on the developer a duty to "have regard to the desirability of preserving natural beauty, of conserving flora, fauna and geological or physiographical features of special interest and of protecting sites, buildings and objects of architectural, historic or archaeological interest". In addition, the developer is required to give consideration to the Scottish Planning Policy on Renewable Energy other relevant Policy and National Policy Planning Guidance, Planning Advice Notes, the relevant planning authority's Development Plans and any relevant supplementary guidance.

Under The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000, Scottish Ministers are required to consider whether any proposal for an offshore device is likely to have a significant effect on the environment. Scottish Ministers have considered your request for an opinion on the proposed content of the Environmental Statement (ES) in accordance with regulations and in formulating this opinion Scottish Ministers have consulted with the relevant organisations.

Please note that the Environmental Impact Assessment (EIA) process is vital in generating an understanding of the biological and physical processes that operate in the area and those that may be impacted by the proposed offshore wind farm. We would however state that references made within the scoping document with regard to the significance of impacts should not prejudice the outcome of the EIA process.

It is important that any devices to exploit renewable energy sources should be accompanied by a robust assessment of its environmental impacts. The assessment should also consider how any negative environmental impacts could be avoided or minimised, through the use of mitigating technologies or regulatory safeguards, so that the quality and diversity of Scotland's wildlife and natural features are maintained or enhanced. Scottish Ministers welcome the commitment given in the report that the EIA process will identify mitigation measures in order to avoid, minimise or reduce any adverse impacts. Marine Scotland

Licensing Operations Team (MS-LOT) would suggest that the range of options considered should be informed by the EIA process in order that these objectives can be achieved. Consultation with the relevant nature conservation agencies is essential and it is advised that this is undertaken as appropriate.

2. Aim of this Scoping Opinion

Scottish Ministers are obliged under the EIA regulations to respond to requests from developers for a scoping opinion on outline design proposals.

The purpose of this document is to provide advice and guidance to developers collated from expert consultees selected by the Scottish Government. It provides clear advice enabling developers to address issues identified with the proposed project. The advice steers the developer as to the content required in the EIA and the ES associated with the application for section 36 consent.

3. Description of development

Kincardine Offshore Windfarm Limited (KOWL) is a proposed demonstrator floating offshore wind farm (OWF) development that is located to the south east of Aberdeen, approximately 15 km (8 nm) from the Kincardineshire coast at its closest point. The development is considered a commercial demonstrator site, which will utilise floating semi-submersible technology to install approximately eight wind turbine generators (WTG) of 6MW (or larger) each, in approximately 45 to 143 m of water. KOWL are currently working with Pilot Offshore Renewables Ltd. (PORL) and Atkins Ltd to develop this offshore wind farm which will produce an installed capacity of up to 50 MW, with grid connection to Redmoss substation located to the south of Aberdeen.

4. Land Use Planning

The Scottish Government's planning policies are set out in the National Planning Framework, Scottish Planning Policy, Designing Places and Circulars.

The National Planning Framework is the Scottish Government's Strategy for Scotland's long term spatial development.

Scottish Planning Policy (SPP) is a statement of Scottish Government policy on land use planning and contains:

- The Scottish Government's view of the purpose of planning,
- the core principles for the operation of the system and the objectives for key parts of the system,
- statutory guidance on sustainable development and planning under Section 3E of the Planning etc. (Scotland) Act 2006,
- concise subject planning policies, including the implications for development planning and development management, and
- The Scottish Government's expectations of the intended outcomes of the planning system.

Other documents which may be relevant to this proposal include, but are not limited to, the following:

- PAN 50: Controlling the Environmental Effects of Surface Mineral Workings

- PAN 51: Planning, Environmental Protection and Regulation
- PAN 60: Planning for Natural Heritage
- PAN 62: Radio Telecommunications
- PAN 68: Design Statements
- PAN 69: Planning and Building Standards Advice on Flooding
- PAN 75: Planning for Transport
- PAN 79: Water and Drainage
- PAN 1/2011: Planning and Noise
- PAN 2/2011: Planning and Archaeology
- PAN 1/2013: Environmental Impact Assessment
- Marine Guidance Note 371 (M)
- Aberdeen City and Shire Strategic Development Plan 2014
- Aberdeenshire Local Development Plan

5. Natural Heritage

Scottish Natural Heritage (SNH) has produced a Service Level Statement (SLS) for renewable energy consultation. This statement provides information regarding the level of input that can be expected from SNH at various stages of the EIA process. Annex A of the SLS details a list of references, which should be fully considered as part of the EIA process. A copy of the SLS and other vital information can be found on the renewable energy section of their website – www.snh.org.uk

6. General Issues

Economic Benefit

The concept of economic benefit as a material consideration is explicitly confirmed in the consolidated SPP. This fits with the priority of The Scottish Government to grow the Scottish economy and, more particularly, with our published policy statement "Securing a Renewable Future: Scotland's Renewable Energy", and the subsequent reports from the Forum for Renewables Development Scotland (FREDS), all of which highlight the manufacturing potential of the renewables sector. The application should include relevant economic information connected with the project, including the potential number of jobs, and economic activity associated with the procurement, construction operation and decommissioning of the development.

7. Contents of the Environmental Statement

Guidance can be found in The Marine Works (Environmental Impact Assessment) Regulations 2007, Schedule 3

Format

Developers should be aware that the ES should also be submitted in a user-friendly PDF format which can be placed on The Scottish Government website. A description of the methodology used in assessing all impacts should be included.

It is considered good practice to set out within the ES the qualifications and experience of all those involved in collating, assessing or presenting technical information.

Non-Technical Summary

This should be written in simple non-technical terms to describe the various options for the proposed development and the mitigation measures against the potential adverse impacts which could result. Within an ES it is important that all mitigating measures should be:

- clearly stated;
- fully described with accuracy;
- assessed for their environmental effects;
- assessed for their effectiveness;
- their implementation should be fully described;
- how commitments will be monitored; and
- if necessary, how they relate to any consents or conditions

Given that the layout and design are still developing and evolving, the exact nature of the work that is needed to inform the EIA may vary depending on the design choices. The EIA must address this uncertainty so that there is a clear explanation of the potential impact of each of the different scenarios. It should be noted that any changes produced after the ES is submitted may result in the requirement of further environmental assessment and public consultation if deemed to be significant by the licensing authority.

Baseline Assessment and Mitigation

Refer to Annex 1 for consultee comments on specific baseline assessment and mitigation.

8. Archaeology and Cultural Heritage

General Principles

The ES should address the predicted impacts on both the marine historic environment and the potential for the onshore impacts of terrestrial elements of the development. It should also describe the mitigation proposed to avoid or reduce impacts to a level where they are not significant. Historic environment issues should be taken into consideration from the start of the site selection process and as part of the alternatives considered.

Codes of practice relating to heritage and seabed development;

- JNAPC Code of Practice for seabed development http://www.jnapc.org.uk/jnapc_brochure_may_2006.pdf
- COWRIE guidelines for offshore renewables and the historic environment enquiries@thecrownestate.co.uk
- COWRIE guidelines on cumulative assessment of offshore renewables and the historic environment enquiries@thecrownestate.co.uk
- Offshore Geotechnical Investigations and Historic Environment Analysis: Guidance for the Renewable Energy Sector, January 2011 http://www.thecrownestate.co.uk/media/5901/2011-01%20Offshore%20Geotechnical%20Investigations%20and%20Historic%20Environment%20Analysis%20-%20Guidance%20for%20the%20Renewable%20Energy%20Sector.pdf
- Model Clauses for Archaeological Written Schemes of Investigation: Offshore Renewables Projects http://www.wessexarch.co.uk/system/files/WSI%20Renewables_low%20res.pdf

- British Marine Aggregates Producers Association protocols for archaeological discoveries http://www.wessexarch.co.uk/files/projects/BMAPA-Protocol/BMAPA-EH-Guidance-Note-April-2003.pdf
- Protocol for Archaeological Discoveries: Offshore Renewables Projects http://www.wessexarch.co.uk/files/The%20Crown%20Estate_Offshore%20Renewables-PAD.pdf

National policy and advice for the historic environment is set out in:

- Scottish Planning Policy (SPP) http://www.scotland.gov.uk/Topics/Built-Environment/planning/Policy
- The Scottish Historic Environment Policy (SHEP) http://www.historic-scotland.gov.uk/shep-dec2011.pdf
- Planning Advice Note 02/2011 Planning and Archaeology (PAN 02/2011) http://www.scotland.gov.uk/Resource/Doc/355385/0120020.pdf

The Scottish Minister's policies for the historic environment are set out in paragraphs 135 – 151 of SPP. Amongst other things, SPP stresses that scheduled monuments should be preserved in situ and within an appropriate setting and states that developments must be managed carefully to preserve listed buildings and their settings to retain and enhance any special architectural or historic features of interest. Further information on setting can be found in the following document: Managing Change in the Historic Environment http://www.historic-scotland.gov.uk/setting-2.pdf. Impacts on undesignated aspects of the historic environment should also be taken into account as part of any EIA.

Historic Scotland recommend that you engage a suitably qualified archaeological/historic environment consultants to advise on, and undertake, the detailed assessment of impacts on the historic environment and advise on appropriate mitigation strategies.

Baseline Information

Information on the location of all archaeological/historic sites held in the National Monuments Record of Scotland, including the locations and, where appropriate, the extent of scheduled monuments, listed buildings and gardens and designed landscapes can be obtained from www.PASTMAP.org.uk

Data on scheduled monuments, listed buildings, Inventory gardens and designed landscapes, historic battlefields and properties in the care of Scottish Ministers can also be downloaded from Historic Scotland's Data Services website http://data.historic-scotland.gov.uk/pls/htmldb/f?p=2000:10:3234826639166657.

9. Navigation

The ES should include the following details on the possible impact on navigation for both commercial and recreational craft.

- Collision Risk
- Navigational Safety
- Visual intrusion and noise
- Risk Management and Emergency response
- Marking and lighting of Tidal Site and information to mariners
- Effect on small craft navigational and communication equipment

- Weather and risk to recreational craft which lose power and are drifting in adverse conditions
- Evaluation of likely squeeze of small craft into routes of larger commercial vessels.

10. Ecology, Biodiversity and Nature Conservation

Refer to Annex 1 for comments from advisors on ecology, biodiversity and nature conservation.

Species

The ES should show that the applicants have taken account of the relevant wildlife legislation and guidance, namely

- Marine (Scotland) Act 2010
- Council Directives 92/43/EES on The Conservation of Natural Habitats and of Wild Flora and Fauna
- Conservation of Wild Birds (commonly known as the Habitats and Birds Directives)
- Wildlife & Countryside Act 1981
- Nature Conservation (Scotland) Act 2004
- Wildlife and Natural Environment (Scotland) Act 2011
- Protection of Badgers Act 1992
- Conservation (Natural Habitats, &c.) Regulations 1994
- Conservation of Habitats and Species Regulations 2010
- Offshore Marine Conservation (Natural Habitats, &c) Regulations 2007
- Scottish Government Interim Guidance on European Protected Species
- Development Sites and the Planning System and the Scottish Biodiversity Strategy and associated Implementation Plans

In terms of The Scottish Government Interim Guidance, applicants must give serious consideration to/recognition of meeting the three fundamental tests set out in this Guidance. **It may be worthwhile for applicants to give consideration to this immediately after the completion of the scoping exercise.**

It needs to be categorically established which species are present on and near the site, and where, before the application is considered for consent. The presence of protected species such as Schedule 1 Birds or European Protected Species must be included and considered as part of the application process, not as an issue which can be considered at a later stage. Any consent given without due consideration to these species may breach European Directives with the possibility of consequential delays or the project being halted by the European Commission. Likewise the presence of species on Schedules 5 (animals) and 8 (plants) of the Wildlife & Countryside Act 1981 should be considered where there is a potential need for a licence under Section 16 of that Act.

11. Water Environment

The Scottish Environment Protection Agency (SEPA) encourages pre-application engagement to help the development process and to minimise risk of modifications later in the application process and avoidable delays or objections.

All applications (including those made prior to 1 April 2006) made to Scottish Ministers for consent under section 36 of the Electricity Act 1989 to construct and operate a electricity

generating station are required to comply with new legislation. In this regard MS-LOT will be advised by SEPA and will have regard to this advice in considering any consent under section 36 of the Electricity Act 1989.

Information on energy proposals and issues that should be addressed in the ES can be found on the energy section of SEPA's website at www.sepa.org.uk/planning/energy.aspx. The webpage also contains a link to the marine environment section of SEPA's website which provides more specific guidance.

If the proposal includes both onshore and offshore components the applicant should be aware that the development may be subject to a range of different consenting regimes. SEPA is the regulatory body responsible for the implementation of The Controlled Activities Regulations (CAR). Further information specifically in relation to the water environment and SEPA's water related regulations can be found at;

www.sepa.org.uk/water/water_publications.aspx

and

www.sepa.org.uk/water/water_regulation.aspx.

Developers are strongly advised at an early stage to consult with SEPA to identify 1) if a CAR licence is necessary and 2) clarify the extent of the information required by SEPA to assess fully any licence application.
Construction contractors may be unaware of the potential for impacts such as those listed below but, when proper consultation with the local fishery board is encouraged at an early stage, many of these issues can be averted or overcome.

- increases in silt and sediment loads resulting from construction works.
- point source pollution incidents during construction.
- obstruction to upstream and downstream migration both during and after construction.
- disturbance of spawning beds during construction - timing of works is critical.
- drainage issues.
- sea bed and land contamination

The ES should identify location of, and protective/mitigation measures in relation to, all private water supplies within the catchments impacted by the scheme, including modifications to site design and layout.

Developers should also be aware of available Construction Industry Research and Information (CIRIA) guidance on the control of water pollution from construction sites and environmental good practice (www.ciria.org). Design guidance is also available on river crossings and migratory fish at http://www.scotland.gov.uk/Topics/marine/science/Publications/publicationslatest/rivercrossings. SEPA have also produced a good practice guide on the same subject.

12. Other Material Issues

Traffic Management

The ES should provide information relating to the preferred route options for delivering equipment etc. via the trunk road network. The EIA should also address access issues,

particularly those impacting upon the trunk road network; in particular, potential stress points at junctions, approach roads, borrow pits, bridges, site compound and batching areas etc.

Where potential environmental impacts have been fully investigated but found to be of little or no significance, it is sufficient to validate that part of the assessment by stating in the report:

- the work has been undertaken, e.g. transport assessment;
- what this has shown i.e. what impact if any has been identified, and
- why it is not significant?

13. General ES Issues

In the application for consent the applicant should confirm whether any proposals made within the ES, e.g. for construction methods, mitigation, or decommissioning, form part of the application for consent.

Consultation

Developers should be aware that the ES should also be submitted in a user-friendly PDF format which can be placed on The Scottish Government website. Developers are asked to issue ES directly to consultees. Consultee address lists can be obtained from Marine Scotland. Marine Scotland Licensing Operations Team also requires to be supplied with 3 hardcopies of the application documentation.

Where the developer has provided Scottish Ministers with an ES, the developer must publish their proposals in accordance with part IV of The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000 and The Marine Works (Environmental Impact Assessment) Regulations 2007 as amended The Marine Works (Environmental Impact Assessment) (Amendment) Regulations 2011. Licensing information and guidance, including the specific details of the adverts to be placed in the press, can be obtained from Marine Scotland.

New requirement for Public Pre-Application Consultation

From 6th April 2014, applications received for certain activities will be subject to a public pre-application consultation requirement. Activities affected will be large projects with the potential for significant impacts on the environment, local communities and other legitimate uses of the sea. The new requirement will allow those local communities, environmental groups and other interested parties to comment on a proposed development in its early stages – before an application for a marine licence is submitted.

Guidance on public pre-application consultation can be found at the following: http://www.scotland.gov.uk/Resource/0043/00439649.pdf

Gaelic Language

Where Section 36 applications are located in areas where Gaelic is spoken, developers are encouraged to adopt best practice by publicising the project details in both English and Gaelic.

Ordinance Survey ("OS") Mapping Records

Developers are requested at application stage to submit a detailed OS plan showing the site boundary and all turbines, access tracks and onshore supporting infrastructure in a format compatible with The Scottish Governments Spatial Data Management Environment ("SDME"), along with appropriate metadata. The SDME is based around Oracle RDBMS and ESRI ArcSDE and all incoming data should be supplied in ESRI shape file format. The SDME also contains a metadata recording system based on the ISO template within ESRI ArcCatalog (agreed standard used by The Scottish Government); all metadata should be provided in this format.

Difficulties in Compiling Additional Information

Developers are encouraged to outline their experiences or practical difficulties encountered when collating/recording additional information supporting the application. An explanation of any necessary information not included in the ES should be provided, complete with an indication of when an addendum will be submitted.

Application and ES

A developer checklist is enclosed with this opinion to assist developers in consideration and collation of the relevant ES information to support their application. In advance of publicising the application, developers should be aware this checklist will be used by the licensing authority in consideration of formal applications.

Consent Timescale and Application Quality

In December 2007, Scottish Ministers announced an aspirational target to process new section 36 applications within a 9 month period, provided a Public Local Inquiry ("PLI") is not held. This scoping opinion is specifically designed to improve the quality of advice provided to developers and thus reduce the risk of additional information being requested and subject to further publicity and consultation cycles.

Developers are advised to consider all aspects of this scoping opinion when preparing a formal application to reduce the need to submit further information in support of your application. The consultee comments presented in this opinion are designed to offer an opportunity to consider all material issues relating to the development proposals.

In assessing the quality and suitability of applications, the licensing authority will use the enclosed checklist and scoping opinion in assessment of the application. Developers are encouraged to seek advice on the contents of ES prior to applications being submitted, although this process does not involve a full analysis of the proposals. In the event of an application being void of essential information, the licensing authority reserve the right not to accept the application. Developers are advised not to publicise applications in the local or national press, until their application has been accepted by the licensing authority.

Judicial review

All cases may be subject to judicial review. A judicial review statement should be made available to the public.

Signed

Roger May

11/08/2014

Authorised by the Scottish Ministers to sign in that behalf

Enclosed - Developer Application Checklist

Annex 1

Consultee Comments Relating to Kincardine Offshore Wind Farm, south east of Aberdeen

The following organisations provided a scoping opinion in relation to the Kincardine Offshore Wind Farm:

Marine Scotland (MS)
Marine Scotland Science (MSS)

Statutory Consultees

Local Authorities:
- Aberdeen City Council (ACC)
- Aberdeenshire Council (AC)

Scottish Environment Protection Agency (SEPA)
Scottish Natural Heritage (SNH)

Non Statutory Consultees

Aberdeen Harbour Board (AH)
Aberdeen International Airport (AIA)
Association of Salmon Fishery Boards (ASFB)
Civil Aviation Authority (CAA)
Historic Scotland (HS)
Health and Safety Executive (HSE)
The Joint Radio Company Limited
Maritime and Coastguard Agency (MCA)
Ministry of Defence (MoD)
NATS
Northern Lighthouse Board (NLB)
Royal Society for the Protection of Birds (RSPB)
Royal Yachting Association (RYA) Scotland
Scottish Fisherman's Federation (SFF)
Sports Scotland
Transport Scotland (TS)
Whale and Dolphin Conservation (WDC)

Marine Scotland

Marine Scotland – Licensing Operation Team

Marine Scotland Licensing Operations Team (MS-LOT) notes that the developer, Kincardine Offshore Windfarm Limited (hereafter referred to as KOWL), intends to develop a pilot-scale offshore wind farm utilising floating semi-submersible technology, installing up to eight wind turbine generators (WTG) of a minimum 6MW capacity each that will produce an installed capacity of up to 50 MW. The project site is located to the south-east of Aberdeen, and is approximately 15 km (8 nm) from the Kincardineshire coast at its closest point. The water depths at the site range from 45 to 143 m.

KOWL requested a Scoping Opinion under The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000 (as amended) in their Scoping Report, received on the 16th April 2014. MS-LOT is issuing this Scoping Opinion under The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000 (as amended) and The Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended).

Prior to the analysis of the Scoping Report (SR), it should be noted that the version sent for consultation was the third version produced by the applicant. The first version was initially submitted in January 2014. Therefore, it is normal and understandable that some information on things such as legislation, is outdated. Nevertheless, the applicant should have taken the care to update the different versions on this and other aspects.

However, it is noted that the applicant took on board almost every recommendation and request from MS-LOT. This version of the Scoping Report was thus the first to be considered by MS-LOT as fit for purpose for the scoping exercise, and complying with the minimum requirements to be taken to public consultation.

Taking all this into consideration, it would be expected that the version we are currently reviewing had some inaccuracies and / or needed some corrections. With the present document MS-LOT intends to clarify such inaccuracies and provide advice to KOWL on the information to be included in the Environmental Statement (ES). We will try not to repeat the observations made by our consultees, whose responses can be found in the further ahead in this annex Annex. KOWL are free to contact MS-LOT at any time to discuss or clarify any of the recommendations expressed herein.

MS- LOT acknowledges the unique situation that the developer faces with The Crown Estate (TCE). However, KOWL must provide an update and clarification of the ongoing leasing process with TCE before, and in, the ES.

MS-LOT recognises that the developer has considered the Scottish Government's Survey, Deploy and Monitor Policy (SDM Policy) and has produced a report on aerial surveys of birds and marine mammals, from April 2013 to April 2014. Once in possession of this document, MS-LOT consulted MSS, SNH and RSPB and their responses may be found in the consultees' responses section of the present Annex (see pages ahead). MSS advised to proceed with the survey between July and September due to potential sensitivity during post fledging / moult. MS-LOT informed KOWL of this advice and the developer is continuing the surveys.

MS-LOT reviewed the Scoping Report and the first year's survey data report in the context of Annex 2 of the SDM Policy for Floating Offshore Wind Devices. The Environmental Sensitivity for the area is judged to be Medium (scored 2); the Scale of development is judged to be Small (scored 1); Environmental Hazards relating to the device or technology

judged to be Low (scored 1) or Medium (scored 2) when taking the most precautionary view. Whilst all environmental hazards were given due consideration, the two most important were "*Potential of harmful collision between avian birds and with moving turbine blades*" and "*Potential displacement of essential activities of marine birds due to the presence of floating offshore wind devices and associated moorings/support structures*". Due to the small footprint of the array, this was given a Low (1) or, taking a very precautionary approach, Medium (2) score.

Geometric Mean of Sensitivity, Scale and Hazard is therefore either 1.2599 or 1.587. Our policy is that for a score of 1 to 1.6 this is regarded as a low overall risk and therefore MS-LOT recommends the collection of 1 year of baseline data. As we have already requested additional 3 months of surveys, as per MSS advice, we consider we have already taken a sufficiently precautionary approach. A further year will be required if anything unexpected shows up in the first year of characterisation monitoring.

MS-LOT would comment on the use of a Design Envelope (or Rochdale Envelope) for flexibility both in the EIA process and in the final ES. It is the developer's responsibility to give due consideration to what changes might be necessary, and to provide details as to what might be required. Where flexibility is required the developer should define either the alternatives or ranges within which parameters might fall. The ES should clearly state the reasoning for requiring such flexibility, the criteria for selecting the worst case scenario and the impacts which would arise from such a scenario.

Failure to give such consideration or a major change to a parameter outside those considered may invalidate the ES provided at consent, requiring the consent process to be repeated. It is expected that the EIA will reduce the degree of design flexibility required and that the ES provided for consent will be further refined in a Construction Method Statement (CMS) to be provided at least 3 months before works commences. Information regarding the impacts from construction of the infrastructure and the types of vessels to be used will be required in the CMS. The CMS provided will freeze the design of the project and will be reassessed by MS-LOT to ensure that its parameters fall within the range granted at consent.

Furthermore, with a more accurate description of the project's elements and features, any cumulative impacts assessment will be easier to undertake and will produce more accurate results.

The description of the development's components and equipment in the ES must be accompanied by figures that allow their correct visualization, with a scale for visual aid comparison. This will allow members of the public, as well as consultees, put the development into context. When figures are not possible to produce, a comprehensive description should be presented. This would apply for, amongst other components, the turbines and the floating sub-structures which, in the scoping report, only have descriptive tables (table 3-1 and 3-2 respectively).

The SR presents three options for the anchor type (Drag embedment anchors, Torpedo anchors and Gravity based anchors). KOWL must consider not only the likely scenario, but also the worst case scenario. The more complete the ES is in assessing the different options considered within a design envelope, the faster the consenting process will go. Nevertheless, the developer should seek to narrow the options, as much as possible. For example, on page 52, the SR states that it is anticipated *"that the final configuration will include drag embedment anchors, with associated chain, clump weights and wire rope in arrangement"*. The components, quantities, methods and equipment of installation must be described in detail in the ES.

The EIA Directive includes the requirement for an assessment of alternatives and so it is necessary to clearly document the project's decision-making process. As set out in Scottish Planning Policy 6: Renewable Energy "*Applicants should use the assessment process to demonstrate the appropriateness of the chosen location for accommodating development. This will be particularly important where development is proposed outwith broad areas of search identified in development plans*." Additionally, it is stated in the EIA (Scotland) Regulations 1999 Regulation 2(1) & Schedule 4, Part II, that "*an outline of the main alternatives studied by the applicant or appellant and an indication of the main reasons for his choice, taking into account the environmental effects*" must be present in the Environmental Statement. References to alternatives can also be found in article 3 (1) of Schedule 3 in The Marine Works (Environmental Impact Assessment) Regulations 2007.

The Environmental Statement should clearly identify the reasons for the options chosen, as well as the reasons why other options were discarded or considered unfeasible. Further advice can be found in PAN 58 – Environmental Impact Assessment and in SNH's Environmental Assessment Handbook.

MS-LOT expects the developer to update the list of projects in operation as the ones described in section 1.5, page 13.

Section 1.6 of the SR states that *"that the scope of the EIA may change as the project progresses and more information is accumulated and analysed".* The Scope of the EIA is defined in this scoping opinion through the opinions and comments provided by MS-LOT and all consultees that responded with advice/recommendations to the scoping opinion request.

With regard to the sections concerning legislation/policy, on the whole, the document covers most of what MS-LOT would expect to be included. However, there are some errors which need to be addressed if they are to be used as justification for the proposal in the ES, or simply to better understand the legislation governing the process by which an application will be made. A few comments on the following sections:

- 1.8 Policy and Regulatory Background

  Reference is made to an out of date policy document ("SG Sectoral Marine Plan 2011") and the NE3 site. This information has been updated in 2013 in the draft RLG for offshore renewables http://www.scotland.gov.uk/Resource/0042/00428241.pdf

  References to NPF2 and SPP should be updated in any final ES (e.g., the Scottish Government has published the finalised NPF3 on 23rd June 2014). Nevertheless, MS-LOT recognizes that NPF3 will have been a draft at the time of submitting this scoping report. MS- LOT requires clarification concerning the reference to the *Energetica* project, as we are not sure that this project (Kincardine) can be considered within the scope of *Energetica*, so any reference to it may be misguided.

- 1.9.1 S36 EA 1989

  Consent is required 'from Scottish Ministers', not 'by Scottish Ministers'.
  The site won't require S36 consent, the development will.

- 1.9.2 M(S)A 2010

  No mention of requiring marine licences under this paragraph. It is anticipated Marine Licence(s) and one S36 consent will be required for this proposal. MS-LOT seeks

clarification of the number and duration of licences being sought and requests that this should be made clear in the ES.

- 1.9.3 TaCP(S)A 1997

  The request made to the LA under section 57 of this act is incorrect.

  The opportunity to apply for deemed planning permission as part of the application process for Section 36 (S36) consent is now available to applicants seeking to construct and operate marine renewable energy developments. The Growth and Infrastructure Act 2013, through sections 4, 5 and 6, amend section 57 of The Town and Country Planning (Scotland) Act 1997 and permit Scottish Ministers, on granting or varying a consent under Section 36 of The Electricity Act 1989 to give a discretion for planning permission to be deemed to be granted, subject to such conditions as may be specified in the direction, for any development ancillary to the operation or change of use to which the consent relates. Should applicants wish to seek deemed planning permission when they apply for S36 consent they must ensure that, amongst other considerations, the ES submitted in support of any application has considered both the impacts on the marine and the terrestrial environment. KOWL should provide confirmation if there is an intention to apply for deemed planning or if separate planning application to the LA will be submitted.

- 1.9.5 HAA (Stage 1) [sic]

  The process is Habitats Regulations Appraisal and the Appropriate Assessment (AA) is stage three of that process which MS-LOT, as the competent authority, undertakes using information provided by KOWL. Although the Crown Estate may undertake an AA for lease purposes, the HRA undertaken by MS-LOT is a different process. Advice regarding the requirements of Regulation 61 of the Conservation of Habitats and Species Regulations 2010 (as amended) and Regulation 48 of the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended), now commonly referred to as Habitats Regulations Appraisal (HRA) is given in Appendix B of SNH response (see some pages ahead). KOWL will have to provide MS-LOT an HRA Screening report for review by SNH and MSS comment at the earliest opportunity and in advance of the ES, i.e., prior to applying.

- 1.10 SEA of STW for OW

  Similar comments as per 1.8.

Regarding Pre–application section 1.15, no delegates have been established for the relevant marine region as of yet. Public notices templates to be advertised in the press and general guidance will be provided by MS-LOT.

Cumulative effects can occur on a local, regional or global basis and can be additive, combined or synergistic impacts. They are described as impacts that result, or are likely to result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project. More specifically they are defined as pressures of the same type acting on the same receptors. In-combination effects can be defined as pressures of a different type but acting on the same receptors. The EIA needs to examine the totality of influences on the system and therefore both cumulative and in-combination effects need to be investigated as part of the Cumulative Effects assessment.

It is essential that this proposal is assessed alone and in combination with other plans and projects (renewable developments and other types of industry and activities). This applies not only to marine wildlife and birds but also marine navigation, shipping and location for

maintenance and operations. The complete list of sites and developments to be considered cumulatively in the EIA process will be decided upon in conjunction with MS-LOT and SNH.

Further discussion on cumulative effects should take place throughout the EIA process.

The KOWL project timeframes may coincide with the timeframes for the proposed expansion of the Aberdeen harbour and the construction of the new facilities in Nigg Bay. Particular attention to cumulative and in-combination impacts must be considered.

When considering Cumulative Impacts (Section 1.17), offshore windfarms proposed for the Forth and Tay region, specifically Seagreen, Neart na Gaoithe and Inch Cape, should be included in the list of regional projects to consider. SNH, ASFB and MSS (amongst other) in their responses provide further advice in relation to cumulative and in-combination impacts. Furthermore, with regard to the observations made in the second paragraph of page 24 of the SR, MS-LOT strongly advise KOWL to carefully observe the Aberdeen Harbour Board response (see some pages below) and to seek an early engagement with this important stakeholder.

MS-LOT requires the developer to be aware of the recently announced Marine Protected Areas (MPA) located nearby the proposed development area and take account of possible impacts on these within the EIA process and ES itself. More information can be found at http://www.scotland.gov.uk/Topics/marine/marine-environment/mpanetwork

Regarding onshore EIA topics (section 2.11), considering that these were not scoped in this Scoping Report, the topics should be defined in consultation with the local authority, SNH and MS-LOT. However, it is recognized that the onshore impact of the project is expected to be very small. Nonetheless, a section regarding Waste and Water quality must be included in the onshore section of the ES.

A section regarding waste is mandatory as set out in Article 1(c) and article 4(c) of Annex IV of the Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment; Article 3(1) of Schedule 3 of The Marine Works (Environmental Impact Assessment) Regulations 2007 regarding information to be included in an environmental statement; Article 1(c) of the Schedule 4 of The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000 regarding Content of an Environmental Statement; and according to the EIA (Scotland) Regulations 1999.

The “Good Practice Guidance” issued by the Scottish Government Energy Consents and Deployment Unit in January 2013, provides a good summary: “*In structuring the ES, proper consideration should be given to the usefulness of the document to the reader. For example, instead of separate sections detailing waste arisings, it is more useful to the reader for the ES to include a specific section relating to waste, providing details of different types of waste generated at both construction and operation, and including a Site Waste Management Plan or waste section of a Construction Environmental Management Document setting out how that waste material will be managed.”*

MS-LOT advises and recommends that KOWL submit a single Environmental Statement (ES) to cover both the marine and terrestrial aspects of the Kincardine Offshore Wind Farm. The ES should state all licenses and consents being sought. MS-LOT recommends the ES should contain, amongst other details maps giving detailed information on the site layout, including details of all onshore and offshore components. This will allow consultees and stakeholders to be aware of the full extent of the development proposed.

The decommissioning operation will be regulated by The Department of Energy and Climate Change (DECC). The decommissioning plan is to be presented to and agreed with DECC. Also it is important to remember that a marine licence will be required for the removal of the devices and infrastructure as part of the decommissioning operation. This should be applied for at least six months prior to the removal of the devices.

The list of consultees presented in section 5.1 does not represent the Section 36 statutory consultees. These are: SEPA, the Local Authority and SNH. Within this section, the pre-application consultation is related to the Marine Licence required for the Kincardine OWF and not with the S36 Consent.

The creation of “exclusion zones” is not a standard practice for offshore wind farms. Therefore KOWL should undertake further discussions with United Kingdom Hydrographic Office and MCA with regard to charted marking anchors and ground tackle.

Under Section 36A of the Electricity Act, Scottish Ministers have the power to make a declaration, on an application, which extinguishes public rights of navigation which pass through the place where a generating station will be established; or suspend rights of navigation for a specified period of time. The power to extinguish public rights of navigation extends only to generating stations in territorial waters. A declaration made under section 36A is one declaring that the rights of navigation specified, or described in it, i) are extinguished, ii) are suspended for a period that is specified in the declaration, iii) are suspended until such time as may be determined in accordance with a provision contained within the declaration, or iv) are to be exercisable subject to such restrictions or conditions, or both, as are set out in the declaration. If KOWL intends to apply for a declaration under section 36A of the Electricity Act, MS-LOT advises to do that at the same time as the S36 application. This way consultees and stakeholders may comment on both application***s*** at the same time.

In several instances in the SR, Trinity House is referred as the General Lighthouse Authority. However, the correct Authority is the Northern Lighthouse Board. MS-LOT highlights the lighting and marking requirements as recommended by the Northern Lighthouse Board.

As recommended by the MCA, a Navigational Risk Assessment (NRA) will need to be submitted in accordance with Marine Guidance Notices 371 (and 372) and the DTI/DfT/MCA Methodology for Assessing the Marine Navigational Safety & Emergency Response Risks of Offshore Renewable Energy Installations (OREI), which was revised in 2013 and is available at http://webarchive.nationalarchives.gov.uk/20121107103953/http://www.dft.gov.uk/mca/nra_methodology_2013.pdf. KOWL must be aware that for floating turbines, third party verification of the mooring arrangements will be required by MCA.

Further information on what the works and infrastructure comprise, including the on and offshore elements, must be detailed in the ES. It should also detail the exact type of anchors and moorings to be used; information about and including timings for operating, maintenance and decommissioning, as these may have environmental impacts; along with information about the number and type of vessels to be used.

Throughout the SR there is an erroneous assumption that the option for anchors is good because there will be no pilling, as in traditional offshore wind farms, i.e., non-floating. However, the fact that a method of construction that has a negative impact will not be used does not mean that the method chosen to replace it will immediately be considered "good". The impacts arising from the preferred option ofanchors, are the ones that should be assessed in the ES. MS-LOT agrees that other methods of construction may be used as a

comparison, including the traditional pilling, but this does not exclude the previously referred and essential analysis of the impacts of the chosen option. It should be noted that KOWL was informed of this in the pre-scoping meetings and in comments to previous versions of the SR. The ES should focus on analysing the impacts of the activities that the developer anticipates will happen, and not the impacts that do not exist because there are no activities causing negative impacts such as pilling. Similarly, it is incorrect to quantitatively compare the degree of impact between two activities without conducting a proper analysis..

MS-LOT recommends an assessment of the extent and degree of damage likely to be expected on the seabed during the installation of the anchor structures and laying of the cables. The developer should provide evidence of the presence or absence of listed habitats or species in the vicinity of the anchor structures and cables. Existing surveys or data may be acceptable if they can provide sufficient detail of the species and habitats present. A proper evaluation of the anchoring system is necessary as it relates directly with the possible existence of Annex 1 reefs as per Habitats Directive (Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora).

The cable route should be discussed with, amongst others, the Aberdeen Harbour Board as it has a direct impact in the construction and operation of the new Harbour facilities in Nigg Bay.

The ES should provide details on exactly how the Environmental Management System (EMS) compliant with ISO 14001 is going to be implemented and on how this will be integrated with the monitoring aspect of the EIA. The same level of detail is expected when referring to the fact that KOWL will require the contractors responsible for operation of the OWF to operate an EMS (Section 7.9. Operation management – environmental).

Monitoring is a major component of the EIA, and the Scoping Report is not always clear on the procedures to be undertaken on this matter. A comprehensive draft Environmental Management Plan (EMP) and Project Environmental Monitoring Programme (PEMP) would be sent prior to, or with the submission of, the S36 and Marine Licence application for comment by MS-LOT and SNH. The EMP and PEMP will be working documents that allow adaptive management of the site and proposed mitigation and environmental monitoring that will take place.

The procedures described in Section 10.2.2.1 of the SR regarding geotechnical survey for the cable route, are not standard MS-LOT requirements. However, if the developer chooses to obtain surface and “at-depth” sediment samples to inform the cable route assessment, further guidance can be found at http://www.scotland.gov.uk/Resource/0044/00443832.pdf or requested from MS-LOT.

In addition to the comments made by the statutory consultees, which are available in the pages further ahead in this Annex, the following impacts must be scoped in and assessed in the EIA:

i) *“Increases in suspended sediment”* and *“changes to seabed morphology”* (table 10-3)

ii) “*Production of electricity”* (table 10-8) – This is a activity, not an impact. Nevertheless, the impacts associated with the production of electricity must be included in the ES and properly quantified and assessed, as this is the main purpose for constructing an offshore wind farm. Furthermore, considerations regarding the environmental and economic benefits must be included and assessed in the ES.

iii) "*Accidental release of contaminants*" (in table 10-11, table 10-12 and table 10-18). Whilst MS-LOT does not consider the impact of great significance, in view of the existence of a nearby dredge disposal site, this impact should be considered in the ES.

iv) "*Pollution due to leaks and spills at site from vessels/WTGs*" (Table 10-24). The Scoping Report does not recognise the shipping traffic operating in the area nor the risk associated with the movements of machineries and vessels during the installation and the decommissioning phases as a factor of risk for leaks and spillages. An Environmental Risk Assessment covering all aspects of the design and operation of the array should be undertaken as part of the EIA process for this project. This assessment could be used to assist in the design of measures to reduce or mitigate the potential effects of accidental events. An emergency pollution control and management plan should be considered to ensure that management and workforce are aware of the standards expected and procedures to be followed.

v) "*Pollution of water and sediments from unplanned leaks and spills (WTG systems or vessels)*" (table 10-6); see explanation for previous item.

vi) "*Introduction of new species to local ecosystem*" (table 10-12)

Ships should carry and implement a ballast water management plan and further guidance can be found at the Maritime and Coastguard Agency or the International Maritime Organization's Website.

Any antifoulants used on the devices or cables will impact encrusting communities at a highly localised (i.e. device-only) level. However, antifouling paint can be dispersed at distances greater than predicted (along tidal / main current directions). Effects on invertebrates may be detectable at these distances depending on the antifouling type and strength. The ES should specify a list of all antifouling paints to be used, their type, quantities and toxicity levels.

In towing equipment from a service base to installation site, MS-LOT highlights the risk of vessels introducing marine non-native species into the environment. Vessel protocols must be provided to ensure best practice guidance is followed to reduce the risk of introducing marine non-natives into the environment. This applies to the developmental, operational and decommissioning phases of this proposal. A variety of sources can be consulted including guidelines produced by The International Maritime Organisation (IMO), guidance produced for the prevention and management of invasive species in the oil and gas industry in the IPIECA website and guidance in the Scottish Natural Heritage Website.

vii) "*Noise disturbance*" (table 10-24);

viii) "*Floating offshore devices*" (Table 10-24) – This has been erroneously identified as a positive impact and should be scoped into EIA .

ix) "*Potential loss of unknown cultural and historic features*" (table 11-19) – if, according to the SR, only after the review of geophysical data the risk might be reduced, that is exactly the reason why it must be scoped into the ES. KWOL should not scope out impacts if their significance is not known.

x) "*Construction methods*" (table 10-8) – These are not positive impacts (in truth an activity, not an impact). Just because the impact does not occur in the area of the

project it does not mean that it is a positive impact. Nonetheless, MS-LOT agrees that it can be scoped out of the EIA (unless otherwise stated by one of the consultees).

xi) "*UXO potential*" (Table 11-29 impact) – if the potential significance is "unknown" then it has to be scoped into the ES. The ES must include which measures are proposed to be in place to do a pre-sweep for Unexploded Ordnance (UXO). If discovered, the time it takes to remove such an object may have detrimental effects on the project timelines.

When evaluating impacts, their effects may be predictable or unpredictable; direct or indirect; positive (beneficial) or negative (harmful); temporary or permanent: short, medium or long-term; immediate or delayed; one-off, intermittent or continuous; certain or uncertain; avoidable or unavoidable; reversible or irreversible; localised or widespread; small or large; individual or cumulative; and therefore may be significant or of no consequence. In the ES these types of criteria must be unambiguous to avoid misevaluations. Concepts like magnitude, significance, extension, nature or duration, or others, should be clearly defined. The Scoping Report did not have an indication of these aspects.

A Seascape, Landscape and Visual Impact Assessment (SLVIA) will be required as part of the EIA and will need to include the cumulative visual impacts of current and proposed developments in the area. Recommendations and guidelines from SNH must be carefully observed. The visual impact assessment of the proposal must be carried out in close co-operation with MS-LOT, Local Authorities and SNH, in particular when deciding photo-montage viewpoints. A list of viewpoints agreed with Local Authorities and SNH should be submitted to MS-LOT when identified. MS-LOT encourages KOWL to carry out SLVIA in accordance with the Institute of Environmental Management and Assessment guidelines, SNH guidelines, as well as the guidance provided in the Aberdeenshire Council and Historic Scotland response to the consultation.

The applicant should be made aware of the definition of disturbance and the legal provisions on European Protected Species (EPS) and that an EPS Licence may be required. Therefore MS-LOT recommends that an EPS risk assessment is submitted well in advance of any planned surveys or construction activities.

KOWL must include in the ES a Reporting Protocol which sets out what the developer must do on discovering any marine archaeology during the construction, operation, maintenance and monitoring of the proposed transmission infrastructure.

MS-LOT advises KOWL to discuss the document's structure and content with Marine Scotland at an early stage. The following are a number of points to aid early consideration of content and it is important they are included for each topic.

- Methodology – some information to be provided on assessment methodologies.
- Baseline – description of baseline environmental position.
- Impacts/effects – assessment of effects at each stage of development.
- Cumulative and in combination impacts/effects – assessment of these effects.
- Mitigation – measures proposed.
- Residual impacts/effects – description of impacts/effects after mitigation.
- Monitoring – an indication of the proposed monitoring.

The ES will have to go through the Gate Check process, as it has to be considered in proportion to other projects of a similar type. MS-LOT undertakes a Gate Check prior to formal submission of applications and advises KOWL to take full advantage of this service. The Gate Check is not designed as an in depth evaluation of the content of an ES. However,

it will allow MS-LOT the confidence that minimum legislative requirements have been met prior to formal submission of the ES. To assist the Gate Check process, a thorough gap analysis of the issues listed here by MS-LOT and the consultee comments that follow, should be drawn up by KOWL for submission with the ES. It should be noted that Gate Check will only take place if the final version of the ES is submitted. This process can take a minimum of three weeks to complete.

Additional stakeholders, like the ones recommended by Sports Scotland and by MSS, should be included in a comprehensive list of ES consultation stakeholders, to be defined in discussion with MS-LOT and prior to submission of the Application. It is critical that KOWL set up post scoping meetings to engage with stakeholders that responded to the scoping request, such as SNH, SFF, MOD, WDC or RSPB.

As it was noticeable at this stage of consultation on the SR, the MOD has objected to the proposal despite this not being the appropriate stage to do so. It would have been helpful if the MOD had provided information on how to make a proper assessment on the ES of the impacts of the project on the MOD's activities. Although they have not done so, the MOD still demonstrated that an engagement from an early stage is needed between the developer and the MOD, in order to discuss the reasons that led to this premature objection.

As per our letter of 27th January 2014, it is our responsibility to inform KOWL that, considering the recent history of offshore wind energy development applications, it is unlikely that the consent period will take less than nine months. Using our current knowledge, we suggest that a thirteen month period for deliberation is more likely. The difference in these timelines is mostly due to external factors which will impact on the process. In particular, MOD and NATS may take a long time to respond to the consultation .

KOWL's future application for S36 consent and marine licenses will be advertised in the press. MS-LOT will send a template for advertisement to the developer nearer the time of submission. Prior to public release these draft press notices should be sent back to MS-LOT for review. MS-LOT will provide specific advice regarding these procedural matters in due course.

We have provided you with our initial impressions on the Scoping Report and we trust this information is useful. However, should you wish to discuss any aspect of this response please do not hesitate to contact MS-LOT.

Marine Scotland Science

- *Aquaculture*

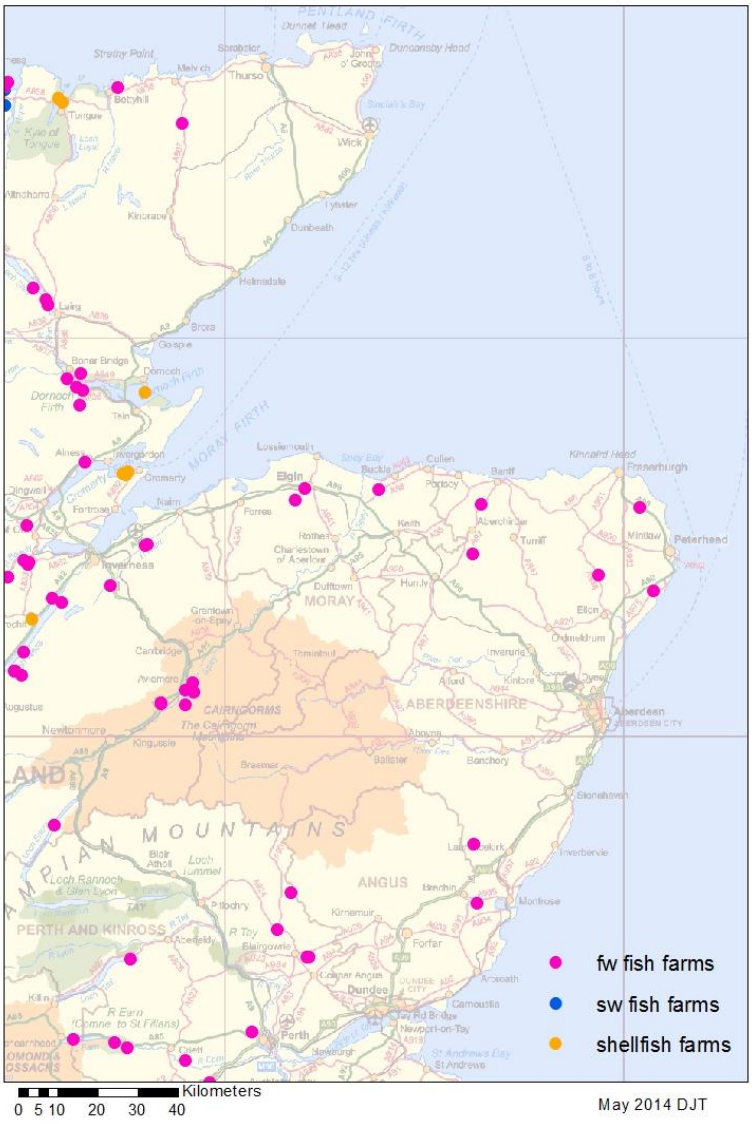
Does the Scoping Report contain sufficient information to allow you to make comment?
Yes – see general advice below.

There are currently no aquaculture sites registered with Marine Scotland Science located in the vicinity of the Kincardine Offshore Windfarm development proposed by Kincardine Offshore Windfarm Limited (see map on page 2).

The nearest aquaculture site is situated ~44km south west of the proposed development. It is a freshwater tank and pond site operated by Crystal Dairy and is currently inactive.

The nearest active aquaculture site is situated ~52km south west of the proposed development. It is a freshwater pond and raceway site operated by Dawnfresh Farming Ltd.

Map of Fish Farms in the North East of Scotland



- *Benthic Ecology*

Generally, throughout the document, the authors need to consider benthos, fish and shellfish as separate topics not as one subject.

Page 64, Table 10-3 “increases in suspended sediment”.
We need to see diagrams of mooring systems that are to be used before we can assess potential seabed impacts in O&M phase. Will chains or cables directly interact with the seabed for example? Will there be any movement on the seabed, scraping?

Page 15, Table 10-3
What is the “positive effect”? What is meant by “allow stable seabed morphology to establish”?

Page 68, 10.4. The Biological Environment
I don’t understand the statement “ potential effects on both marine species including marine ecology” Please explain. The extent of Marine Scotland Science surveys should be illustrated here in a figure of some kind.

10.5. Site Description
MSS need to be consulted here.

Page 70, 10.6.1
Video footage and digital stills will need to be collected along the cable routes with, perhaps, sediment and benthic samples as required.

Page 70, 10.6.1.1 Elasmobranch Species. Para. 3
Large numbers of basking shark have been recorded from single sites (off Islay for example) not just single animals. Admittedly on the west coast.

Page 71, 10.6.1.3 Shellfish, Crustaceans and Spawning Grounds.
The authors are discussing both infaunal and epifaunal organisms in extremely vague terms. They also state that cold water reefs are absent from the area without providing any supportive data. Are the reefs referred to cold water corals or Sabellaria? Data are required here.

Page 71, 10.6.1.3 Para. 2
I don’t know what this means

Page 74, 10.6.3 Impact Assessment Para. 2
We need to be shown how much of the development site has been covered by the MSS survey. We also need to see the designs for the floating structures to be able to assess potential impact on the seabed.
Page 74, 10.6.3 Impact Assessment Para. 3
How will the MSS data be analysed and how will the results be used to compare to the wider environment? A survey of the cable route will be required.

10.6.3.2 Consultation
Why consult CEFAS for benthic data on this site?

10.6.3.3
Please provide information to support this statement. No data are available from the cable corridors as yet.

Page 75, 76 and 77 Table 10-11
Reduction in fishing activity is a positive impact - this may result in some species benefiting but others may not. This is a low impact at best.

Colonisation – this cannot be regarded as a positive effect. This introduces species which were not previously present, for example species associated with hard substrate introduced into area of soft sediment. Changes in biodiversity which may not be beneficial.

Protection of seabed – any effects will be minor. These are relatively mobile sediments therefore so effects will be difficult to detect I suspect.

Introduction of new species – there may be transport of alien species from construction/maintenance/decommissioning vessels. This potential impact needs to be scoped in the EIA.

Smothering – cable trenching will create sediment plumes we therefore need data not only on the trenching methodology but also on sediment particle size distributions along the cable corridors. Needs to be scoped in to EIA. Will any parts of the transmission cable be rock armoured or mattressed?

Seabed scour – scour may impact benthic habitats and fish in particular sandeels, cod and herring (spawning). This needs to be considered further and scoped in to EIA.

Page 136, 12.2.1 Ecology
what subjects are covered by this topic? Benthic ecology and marine mammal ecology need to be considered separately given their importance to the development.

- *Diadromous fish*

Here are some specific comments.

1.17 Cumulative and in combination impacts.
- No problem with what is said, but I would note that in the case of diadromous fish, cumulative impacts may operate over substantial distances. For example, adult salmon passing this development may have done so via the Pentland Firth and there could potentially be cumulative impacts arising between Pentland Firth and east coast developments. The ES will need to identify the extent to which such possibilities might be significant.

5.1 Consultation process
- The intention to have continual consultation during all phases of the development is good. It states elsewhere in the report that the local salmon fishery boards and fisheries trusts would be approached for data. Fully including them in any consultations would be desirable.

10.6. Fish, shellfish and benthic ecology.
- General comment - no wildlife survey work is planned other than for birds and mammals. Information on fish and potential impacts on these is intended to therefore come from a desk study.
- 10.6.1.2 Diadromous species. This section of the scoping assessment mentions the commercial value of diadromous fish species listed. It should be noted that they are not only of commercial value, they are also of conservation importance. It is indicated in the section that the HRA need only look at three salmon SACs, the Dee, South Esk

and the Spey. I would be OK with running with this choice, at least initially. If the significant effect test on these three SACs indicates likely significant effects, consideration should be given to expanding the net to considering others, further afield.

- 10.6.1.3. Shellfish, Crustaceans and Spawning Grounds. This section heading is a little misleading as the section contains other material on fish, including material which will also be relevant to diadromous fish. The developer should include in the ES any available information on likely use by diadromous fish of areas which may be affected by the work - which species use the areas? for feeding or migration? swimming depths? tendency to swim on or offshore? times of year? and in the case of salmon and sea trout, comments on the likely origin / destination of fish using the area. A review by Marine Scotland Science of migratory routes and behaviour for Atlantic salmon, sea trout and eels which is available on http://www.scotland.gov.uk/Resource/Doc/295194/0111162.pdf may provide some useful information. It should also be noted that because of the uncertainly over the routes through which salmon migrate at sea, it is not known with certainly which rivers salmon and sea trout in the development area will be most associated with.
- 10.6.2 EMF during operation. In contrast with 10.6.1.2 this section describes salmon sea trout and eels as being key conservation species. This is true, but salmon and sea trout are also of recreational and commercial fishery importance.
- 10.6.2 EMF during operation. As noted in this section, cabling and cable burial options will need consideration in relation to diadromous fish. The reviews of Gill and Bartlett (2010) and Gill et al (2012) may be helpful. (Gill, A.B. & Bartlett, M. (2010). Literature review on the potential effects of electromagnetic fields and subsea noise from marine renewable energy developments on salmon, sea trout and European eel. Scottish Natural Heritage Commissioned Report No.401 (available at www.snh.org.uk/pdfs/publications/commissioned_reports/401.pdf) and Gill A. B., Bartlett M. and Thomsen F. (2012) Potential interactions between diadromous fishes of U.K. conservation importance and the electromagnetic fields and subsea noise from marine renewable energy. Journal of Fish Biology 81, 664–695, with Corrigendum in Journal of Fish Biology (2012) 81, 1791 (Journal of Fish Biology papers are available online through www.wileyonlinelibrary.com)).
- 10.6.2 EMF during operation. I had a problem with the last sentence of the first paragraph of this section, i.e. the sentence starting “Both reviews indicated…” as the conclusion reached might not apply to shallow waters close to the cable landfall.
- 10.6.3.4 Some consideration of noise will also be needed – see my comments on 10.9
- As I have already noted there will need to be cumulative and in combination impact consideration with respect to diadromous fish.

10.9 Marine Mammals (including noise)

Although this section is particularly with reference to mammals, much of the material in it is also relevant to assessing any impact of noise on diadromous fish and consideration of potential effects of underwater noise on diadromous fish should be included in the ES.

- Although, because the intention (as in 3.7. Anchors and moorings) is to develop the project without the use of piled anchors, it is not intended to have a separate noise study, there should still be some consideration of possible effects of noise, for example because of possible effects of wave noise stemming from the structures and operational noise on diadromous fish migration. In addition, if piled anchors do have to be used, there will have be more detailed consideration of the potential effects of noise generation from this.

- The reviews of Gill and Bartlett (2010) and Gill et al (2012) mentioned in my comments on 10.6.2 may also be useful in the context of potential effects of noise on diadromous fish.

11.4 Commercial Fisheries

- This section includes some detail of sources of information for diadromous fish and mentions the Association of Salmon Fishery Boards for population data (presumably for salmon and sea trout) for the "(Forth, Tweed and Tay – Scotland)" and the Scottish Eel Management Plan. Elsewhere in the assessment contacting the local salmon fishery boards and fisheries trusts is also mentioned. I would also note that Marine Scotland publishes key information on diadromous fish. As much use as possible should be made of published reports, rather than carry out unnecessary independent assessment of the state of diadromous fish stocks, for example.
- There will also be a need to check that that there is no possibility of interference with any salmon net fisheries close to the coast during installation of the cables.

Additional comment.

- The ES should also consider what monitoring during construction and operation would be appropriate and whether this development should have a role in the various collaborative initiatives for site characterisation, or impact monitoring in relation to diadromous fish, which are currently under development on the Scottish east coast.

- *Fish Ecology, Commercial Fisheries and Marine Planning*

Overall comments

Site location

Please provide list of coordinates for the proposed lease development and indicative export cable corridor.

Comments related to export and inter-array cables:

Section 3.8, p.39, §1 states that inter-array cabling currently is proposed to be surface laid. It also suggests that anchoring systems associated with floating offshore structures may require a safety zone extending to *an appropriate distance* from anchor points resulting to a fishing exclusion zone for the entire project development site. Please provide details of the area to be covered by the development, including anchors and safety zone. Please note that the Energy Act 2004 sets out the basic requirements for applying for a safety zone to be placed around or adjacent to an Offshore Renewable Energy Installations. In case of the Oil & Gas sector, a blanket 500m exclusion zone around above-surface oil and gas installations is applied; these zones are permanent for the lifetime of the installation and are monitored by guard vessels and any unauthorised vessel operator encroaching is liable to be prosecuted. In contrast, safety zones as prescribed under the Energy Act 2004 are temporary in nature (except in exceptional circumstances) and as a consequence are of short duration and usually cover construction, major maintenance and decommissioning. Developers will only be granted a safety zone where a demonstrable safety-based case for doing so exists, i.e. the developer must provide evidence to suggest that the risk to human safety may be increased if a safety zone is not implemented (e.g. it is essential for inter-array cables to be dynamic hence proposed not to be buried). Intra-array and export cabling cannot generally be covered by a safety zone application; however, the such cables may be indirectly covered where they lie within a safety zone around relevant installations, and safety zones may exist around vessels engaged in cable laying/ remediation activities.

Comments related to marine planning and RLGs

A review of the 'Medium Term Areas of Search' contained within SG's publication 'Blue Seas Green Energy' was undertaken by MSS. In 2011, MSS published 'A Scoping Report for Offshore Wind Farm Developments in Scottish Waters' which contained 15 'Scoping Areas of Search'. The proposed development is found within one of the areas of search (NE3). Draft Regional Location Guidance (RLG) provided detailed information in relation to the areas of search. Next, the views and opinions gathered during the pre-statutory consultation, in addition to the information contained within the Draft RLG were used to inform the revision of "Scoping Areas of Search" into "Draft Plan Options". In summer 2013, Draft Plan Options were published in the Consultation Paper of the "Draft Sectoral Marine Plans for Offshore Renewable Energy in Scottish Waters". The Draft Plan Option located in the East coast of Aberdeenshire has now been refined and renamed to OWNE1. It is advised to update references and plots using the old NE3 scoping area of search. More information can be found here:
http://www.scotland.gov.uk/Publications/2013/07/8702/0 .
Moreover, developers might find useful to review Marine Scotland's Draft Regional Locational Guidance on "Potential Scottish Test Sites for Deep Water Floating Wind Technologies" which can be accessed here:
http://scotland.gov.uk/Topics/marine/marineenergy/Planning/DRLG .

Fish spawning and nursery grounds

Initial overlaps of fish spawning and nursery grounds (Figures 10-3 and 10-4 respectively) with Kincardine Offshore Windfarm Site have been noted. However, a detailed literature review (primary and grey literature) will be expected with all overlapping layers (spawning grounds overlap: cod, herring, plaice, lemon sole, sandeel, and whiting; nursery grounds: saith, sandeel, lemon sole, sprat, and whiting) to be undertaken as part of the EIA. Similar level of details as provided for Herring in another section of the document (p.73) for the rest of the species would have been preferable. Note that spawning and nursery grounds are not spatially or temporally fixed, potentially moving according to the conditions of the substrate, seabed habitats, climate and hydrodynamic regimes. MSS can advise on the most appropriate data sources relating to spawning and nursery grounds, and whether any additional surveys are required. LOT should also be contacted to discuss mitigation measures if there is potential for impacts upon spawning activity or nursery ground within or near the development site.

Fishing activity for vessels <15m

Scottish fishing vessels <15m do not carry VMS, and their activity was recently mapped using an interview based approach with fishery stakeholders (the ScotMap project). Data were collected during face-to-face interviews with over 1000 fishermen across Scotland covering a 72% vessel coverage overall. This source of information should be used as primary source of information on the potential overlap of the spatial distribution of smaller vessels with the proposed site. Please visit for more information and access to spatial layers:
http://www.scotland.gov.uk/Topics/marine/science/MSInteractive/Themes/ScotMap

Liaising with the fishing industry

It is very positive that the developers have already initiated consultation with the SFF, However, consultation with other local fishermen's associations and fish producers' organisations is advised. Contacts could be sought through the Fishery Office in Aberdeen and East Coast Inshore Fisheries Group. You might find it useful to prepare and maintain a

project specific register of local fishermen's groups and associations. Providing information on the offshore surface and subsea structures and activities to Kingfisher Division of Seafish will be also useful. Please consider appointing a Company Fishing Liaison Officer to act as the primary point of contact for the fishing industry. In addition, it is advised to establish Fishing Industry representative(s) to act as a single onshore trusted contact point within the fishing community. You may consider a dedicated International Maritime Mobile VHF working channel for the exchange of relevant information between contractors afloat and other vessels in the area during construction and maintenance. All the above recommendation will facilitate efficient dissemination of information from the developer to the fishing community and vice versa, in a timely and all-inclusive manner. You may consider developing a Fisheries Liaison Plan which will include mitigation and coexistence plan. Please see more at the guidance produced by COWRIE on options for the mitigation of impacts of offshore wind farms on fishing activities. MSS would expect to see a specific chapter in the stakeholder section where potential concerns of the fishing community raised during consultation have been addressed.

Section specific comments

Section 1

Section 1.5, p.13, §2: Reference to the five STW sites that have been granted exclusivity for offshore wind projects (including Beatrice). Please update to consented status as of March 2014.

Section 1.5, p.13, §3: Reference to Methil in fife. Please update to construction completed.

Section 1.5, p.13, §3: Provided list of current offshore test facilities (Gunfleet Sands, Blyth, Methil and the EOWDC - water depths <20 m; Beatrice demo – wated depth 45 m; proposed NaREC – water depths 35-58 m; Hywind Project in Buchan Deep). Water depths for Hywind project have been omitted.

Section 1.7, p.15, §3: It is stated that indicative dates provided by TCE are for the award of rights during April 2014. Out of data at the moment, please update.

Section 1.8, p.16, §2: (and various other locations: Section 1.8, p.19, §1; Section 2.1, p.28, §1, Section 2.2, p.28, §1 etc.): Project developers refer to SG' Marine Renewables Sectoral Marine Plan which has identified 25 areas of search for further expansion in STW quoting overlap with NE3 areas of search. Please note that "Scoping Areas of Search" have been refined to "Draft Plan Options" within the draft Sectoral Marine Plan. The new name of the area of plan option of interest is OWNE1.

Section 1.8, p.16, §5: Reference to draft SPP currently in consultation is out of date. Please update.

Section 1.8, p.17, §5: Reference to draft NMP currently in consultation is out of date. Please update.

Section 1.18, p.25, §3: Please provide additional information on the MS benthic survey of the site that is planned to be used.

Section 2

Section 2.2, p.29, §3: Document states that "constraints generated by other users of the sea within RLG areas have been deemed of an acceptable level *for developments to go ahead within this area*". This is incorrect. RLGs highlight areas of least constraint in relation to the rest of the area. No assumption that offshore energy development within the plan options will directly be given consent should be made. Please edit.

Section 3

Section 3.4, p.34, §4: Clearly stated there will be no Offshore Substation Platform. This contradicts with statement in Section 4.1, p.44, §2 where comments on the final layout of the wind farm components includes offshore substation. Please clarify.

Section 3.8, p.39, §1: Reference to “exclusion zone” should be replace with “safety zone”. The legislation and supporting guidance refer to “safety zones” in relation to Offshore Renewable Energy developments rather than “exclusion zones”; this latter term is often misused by stakeholders in relation to the offshore renewable energy industry due to past experience with the oil and gas industry.

Section 3.8, p.39, §4: In the case sections of the marine cable require additional protection following combined lay/burial operation, proposed options include postlay jet burial, engineered, localised rock dumping or mattressing. SFF has identified localised rock dumping (diameter of 3-5 inch) as the preferred methodology to minimise the potential for gear snagging in the past.

Section 6

Section 6.2, p.51, §1: “… a temporary exclusion zone would be established around the area where construction activities are underway…” – please provide additional information on the safety zone (e.g. size and duration).

Section 6.2, p.51, §1: It is recommended that an offshore Health and Safety Officer will be responsible for informing, in advance, fishing vessel operators and other marine users, of construction works associated with construction. The H&S officer could act as the Fishing Liaison Officer (comments provided above).

Section 6.2, p.51, §2: You may consider co-existence options with the fishing sector e.g. fishing vessels could provide guard vessel services, or service boats for periodic overhauls (visual inspection and surveillance purposes) as briefly mentioned in Section 7.7, p. 57.

Section 6.4, p.52, §6: It is mentioned that installation and partial commissioning of the WTG may take place inshore. Have you identified any potential locations for an inshore fabrication facility?

Section 7

Section 7.10, p.57, §2: The location of the wind farm will also be registered with the UK Hydrographical Office to allow the site to be clearly marked for all seafarers. You may consider registering this information with Kingfisher's KIS-ORCA website.

Section 10

Table 10-10, p.69: Source column identifies “Marine Scotland; CEFAS, literature; SFF, *local fishing federations*”. Please replace with “Local Fishing Associations” or more explicitly with the names of the local fishing associations.

Section 10.6.2, p.74, §1: SNH and COWRIE reviews suggest that EMFs may interact with migrating eels and potentially salmonoids if migration routes take them over cables particularly in shallow waters (<20m), hence there will be no impact on their movements. It is unclear how no interaction with their movements has been derived.

Section 11

Table 11-14, p. 115: Layers shown include vessels above 15m only (fitted with VMS equipment). MS has undertaken an interview based project to map the activity from smaller vessels (<15m) called ScotMap (additional comments above). Please scope overlap with these layers as well.

Section 11.4.3, p.115, §1: It has been mentioned that additional high level, commercially sensitive fishing data have been provided by the SFF. Please provide additional information on the type of data, period covered, vessels represented etc. It might be possible to agree on a protocol for the use and presentation of activity data, acknowledging the need to maintain commercial confidentiality.

Section 11.4.4.2, p.116, §4: MSS welcomes the proposal for a radar study to establish use of the site by smaller vessels. ScotMap data will be useful for this exercise. Please

provide additional information on radar type (e.g. terrestrial radar, SAR), detection range, similar case studies etc.

Section 11.4.4.2, p.116, §8: Overview of *current* commercial fishing activity was based on preliminary assessment of fisheries landings data for 2000-2008. It is advised to use the last 5 years of available data instead. MSS can provide guidance with this.

Section 11.4.4.2, p.118, §4: The vessels engaging with the fishing activity within rectangle 42E7 have identified to be mainly less than 15m in length (59.4% under 15m), hence it is expected that the satellite densities given underestimate the actual levels of fishing. MSS has recently prepared landings value distribution layers where VMS and ScotMap data have been combined together. It is advised to use these layers which will be uploaded on Marine Scotland Interactive website or by directly engaging with MSS.

Section 11.4.4.2, p.118, §5: It is stated that identification of the levels and locations of fishing activities *within this rectangle* will be will be undertaken as part of assessing potential cumulative impacts during the EIA process. However, it is advised that the potential cumulative impacts assessment should take account of interactions out with this rectangle for cumulative loss of grounds should activity of individual fishers is found to be overlapping with other major offshore projects in the vicinity. Ideally, this assessment will be undertaken on an individual vessel level which can be assisted by MSS.

Section 11.4.4.4, p.119, §1: It is stated that "*No data gaps* have been currently identified, with the onsite survey fulfilling the remaining data requirements for the site". This is statement is contradicting with sentence in page 118 for underestimation of inshore fishing activity in rectangle 42E7. Please also note that SFF will not necessarily represent all smaller vessels in the area. Identification of overlapping vessels with ScotMap layers and consultation with North East IFG is advised.

Table 11-15, p.119: Please scope in barrier effects in accessing fishing grounds (especially important for smaller vessels) in the table of potential impacts on commercial fishing.

Table 11-15, p.119: Comments on loss of fishing grounds. Please replace "moveable fishing gears" with the term "mobile fishing gears".

Table 11-15, p.119: Comments on fishing gear and anchoring system. You may find useful information in FLOWW guidance for fishing gear entanglement.

Table 11-16, p. 120: Please note that apart from SFF, IFGs, and other fisheries organisations, non-affiliated individuals should be consulted

Appendices

Appendix E, p.155: You maybe want to include the following stakeholders (note this is only a recommendation and not an explicit list): Scottish Creel Fishermen's Federation (Email: info@scottishcreelfishermensfederation.com), Scallop Association (Email: johnhermse@fishinfo.org.uk), Aberdeen Fish Producers' Organisation (Email: Af-po@btconnect.com), North-East of Scotland Fishermen' Organisation (Email: robert.stevenson@nesfo.co.uk), East Coast IFG (Email: G_White@seafish.co.uk).

Minor comments

Figure 0-1, p.10: Please add the location of the proposed onshore substation (Redmoss) on the map; please add correct label for the Aberdeen Bay windfarm (EOWDC test site).

Figure 1-1, p15: Two colours (yellow & pink) have been used in the indicative timelines for progression. Please add labels explaining the colouring.

Section 1.15, p.22, §1: Formatting of bullet points is incorrect. Please edit.

Section 2.2, p.29, §2: For amalgamated fishing activity layers 2007-2011 please cite MSS.

Section 3.12.2, p.43, §1: "…between the marine cable landing point and the *rid* connection point." Please edit typo to grid.

Section 4.3, p.45, §1: Information on cable crossing derived from Marine Scotland and UKHO charts. Consultation with Subsea Cables UK is also advised

Figure 4-2, p. 46: Considering comments on safety zones found above, please note that you have applied a 500m zone around turbines in this figure. This may only applies during construction and generally would be 50m during operation.

Table 9-1, p. 60: Typo found in row "Potential significant effect requiring *detained* investigation in the EIA". Please edit

Section 10.6.1.3, p.73, §1: The study area for scientific impact assessment is proposed to be based upon ICES rectangles. Please provide the code names of the rectangles in question.

Table 10-11, p. 75: O&M potential significance of impacts for smothering of the seabed has been incorrectly colour coded to green.

Additional guidance references and data sources

Section 10.1.1., p.62, Table 10-2: BGS seabed sediment data are now available in greater resolution (1:50,000). The resolution shown in Figure 10-1 is of 1:250,000.

Section 10.6.1.3, p. 71, §3: UK fish sensitivity layers by Coull *et al*. have been used. You may want to overlap the AfL with layers by Ellis et al. 2010 (More information here - http://www.cefas.defra.gov.uk/publications/techrep/TechRep147.pdf).

Check The Fishing Liaison with Offshore Wind and Wet Renewables Group (FLOWW) website for a copy of "FLOWW Best Practice Guidance for Offshore Renewables Developments: Recommendations for Fisheries Liaison" - http://www.thecrownestate.co.uk/energy-infrastructure/offshore-wind-energy/working-with-us/floww/ .

Subsea Cables UK guidance on overlaps with fishing - http://www.subseacablesuk.org.uk/guidelines/

Subsea Cables UK Emergency procedures for fouling gear: http://www.subseacablesuk.org.uk/emergency-procedures/

Additional guidance Seafish's Best Practice Guidance for Fishing Industry Financial and Economic Impact Assessments provides methods for calculating financial impacts as a result of areas closed or restricted for fishing: http://www.seafish.org/media/634910/ukfen%20ia%20best%20practice%20guidance.pdf

The KIS-ORCA interactive map of OREIs and subsea cables: http://www.kis-orca.eu/map

Visit Marine Scotland Interactive website to get access to spatial data held by Marine Scotland – http://www.scotland.gov.uk/Topics/marine/science/MSInteractive

- *Marine Mammals*

Marine Scotland Science welcomes the development of construction methods that are less likely to produce noise levels sufficient to injure or disturb marine mammals. However, we would like to point out that should it be necessary to using techniques such as impact pile driving to install the moorings for the turbines, we would expect to see a full noise propagation assessment, including ranges at which marine mammal species may be received noise levels sufficient to injure, cause PTS or disturb.

SNH have commissioned a report into the potential for entanglement of marine mammals in mooring lines. Although this is not yet available, MSS advise that taut, rigid moorings are likely to present less of a risk to marine mammals. The applicant should also consider the frequency with which they may check their mooring lines for debris, as this may contribute to the risk of entanglement.

HRA
MSS consider that the project site is sufficiently distant from any seal SAC that it is unlikely there would be any effect to them. MSS also consider that the development is unlikely to impact upon the Moray Firth SAC, as long as no noisy construction activities are undertaken.

Information
Given the small number of seals sighted during the aerial surveys, MSS advise the applicant to use and make reference to the seal usage maps available on our website (http://www.scotland.gov.uk/Topics/marine/science/MSInteractive/Themes/usage). Their assessment should refer to the PBR for harbour seals on the east coast of Scotland and take account of this, should it be likely that injuries to seals may occur.

The applicant should be aware that legislation regarding disturbance (through any means) to cetaceans, is different within 12NM of the Scottish coast than that from 12NM to 200NM. A recently published guidance document is available from the Scottish Government (http://www.scotland.gov.uk/Resource/0044/00446679.pdf). Sub bottom profilers are likely to be considered to pose a risk of disturbance, so MSS would advise discussion with MS-LOT regarding the requirement for an EPS licence.

The applicant should be aware of the issues surrounding spiral lacerations to seals which appear to be caused as a result of interaction with boat propellers (http://www.smru.st-and.ac.uk/documents/1282.pdf). The applicant should carefully consider whether they can offer any mitigation with respect to this issue.

The applicant may wish to contact MSS in relation to data held on dolphin and porpoise use of sites along the east coast of Scotland. The sites with monitoring data are noted in this topic sheet (http://www.scotland.gov.uk/Resource/0042/00426891.pdf).

- *Ornithology*

A few points on the Kincardine Scoping Report dated April 2014:

1. Figure 1-1: The timescales for submission of the ES are very ambitious.
2. Table 10-15: RSPB FAME/ STAR tracking data also likely to be of relevance.
3. Table 10-16: What is the total survey effort for each area illustrated in Fig 10-7- this achieved effort for each month and area must be presented in the ES.
4. Fig 10-7: the rationale behind this survey design is not clear- why such large buffers, why so little effort within the development footprint, why are the N and S transects so far removed from the area of interest? Involvement in discussions on survey design would have been helpful rather than being asked to comment after 8 months of data collection.
5. Table 10-18: Collision risk may be small magnitude but in combination with other projects may be critical for the project.
6. Loss of potential foraging habitat- the large number of guillemots present post breeding/ moult suggests that this potential impact needs to be discussed further and not dismissed so easily.

Further to my email of 26 June 2014 [above], based on the large numbers of guillemot present in the survey area (56,000 during July) it may be appropriate to undertake a second year of aerial surveys during July-September due to potential sensitivity during post fledging/ moult. Whilst the development footprint is considerably smaller than the area surveyed, and the number of birds potentially effected will therefore be significantly lower than this value,

the surveys would provide additional information on the potential importance of the area. Is it possible to identify juvenile (recently fledged and still flightless) guillemots during the surveys? The developer should consider how an assessment of potential impacts on guillemot during July-September will be carried out, and whether this assessment would be qualitative or quantitative in approach. MSS do not advise that repeat surveys are required in months other than July-September.

Whilst the estimated number of collisions at Kincardine are likely to be relatively small due to the small scale of the proposed project, for some species and SPAs these still have the potential to be of significance due to in-combination effects with other projects e.g. offshore wind farms in the Forth and Tay. The clearest example of this may be kittiwake at Fowlsheugh SPA. The Appropriate Assessment currently being produced for the Forth and Tay windfarms will provide clarity on this point as it presents the estimated magnitude of effects and thresholds of acceptable change for each species and SPA of interest. The review of avoidance rates that has been commissioned by Marine Scotland and is due to be published shortly, may be of relevance both in the estimation of collision rates at Kincardine and the in-combination collision effects as advised avoidance rates may change to reflect the conclusions of this review.

- *Socio- Economics*

1. The socio-economic aspects of this scoping report are largely satisfactory. In summary, we would expect the ES to include the gross and net employment impacts, and the gross and net GVA impacts. Both of these should be presented separately for the construction, O&M and decommissioning phases. They should also be reported at a range of appropriate geographic scales. To assist with that, it would be helpful to see a clear definition of the labour market catchment area. Background info on the industry structure and employment structure would be useful. Clear consideration and use of the concepts of additionality, displacement and leakage should also be demonstrated. Ditto regarding economic multipliers.

2. While there is some attempt to gauge the net impact within this scoping report, there remains a degree of subjectivity - e.g. for tourism, there is a (medium) negative impact in terms of visual amenity but also a positive impact in terms of local tourism opportunities.

3. Linked to the above, there could perhaps be better justification of potential impacts across the board - e.g. it is not clear why the impact of lost fishing grounds is only ‘low’ at the decommissioning stage. Could be that it is envisaged that the decommissioning process will happen relatively quickly? Not clear.

Aberdeen City Council

I refer to the email below and your letter dated 25/4/14 which has now been passed to me for comment on behalf of this planning authority using delegated powers .

I note that it is intended that the scope of the ES addresses the potential environmental impacts associated with the proposed onshore infrastructure elements of the proposal which are required to facilitate the development. This is welcomed given that they are an integral part of the project. It is noted that such works are likely to be located within this authority's administrative area and are likely to require separate planning permission. It is noted that the precise location , extent and nature of such onshore work is not known at this stage but it is important that these potential impacts are addressed at this stage in order to obviate the potential need for a separate future screening opinion and ensure a holistic consideration of the project impacts.

In terms of issues of high impact significance, it is considered important that the potential visual impacts of the turbine from locations within the city are fully considered by the ES, including consideration of cumulative impact, and I would appreciate submission of further details of the landscape and visual impact assessment in due course, including consideration of the impact on the setting of existing historic / heritage assets. It is presumed that potential impact on ecology and wildlife and designated sites, including the SSSI at Nigg Bay shall be scoped in as these are considered to be of high significance. Potential adverse impacts on shipping / navigation links / routes associated with Aberdeen harbour and Aberdeen Airport are also of high significance.

Aberdeenshire Council

I refer to your request for a scoping opinion for the above proposal received on 25 April 2014. I am now in receipt of all the necessary consultation responses and I can now offer a scoping opinion under Regulation 7 of The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000 (as amended) and Regulation 13 of The Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended).

Schedule 4 of The Electricity Works states the information which should be included in an Environmental Statement (ES). These guidelines offer the backbone to the structure of an ES and should be used as the basis for your submission.

In order to make an assessment of the above information there are specific criteria and guidance set out in Schedule 4 of The Electricity Works. In particular these include characteristics of the whole development, characteristics of the production processes and an estimate of expected residues and emissions resulting from the operation of the development. Environmental issues are of obvious key importance such as those aspects of the environment that would be likely to be significantly affected. Detailed survey work would be required to inform the ES. Following analysis of the aspects of the environment which would be likely to be significantly affected, a detailed assessment of the effects themselves would be required along with mitigation measures proposed.

Examples of the types of issues that should be addressed include:

- Climate change

- Local Economic Effect
- Landscape Resource
- Soils and geology
- Visual Amenity
- Ornithology
- Visual Amenity
- Ecology
- Nature Conservation
- European Protected Species
- Hydrology and Water Supplies
- Noise
- Cultural Heritage and archaeology
- Tourism and Recreation
- Proposed mitigation measures

Please note that the above list is by no means exhaustive and that other issues might become obvious following public consultations and consultations with statutory consultees.

It is considered that landscape/seascape and visual effects is the issue which is of a high significance for Aberdeenshire Council. Please find below comments received from the Environment Planner.

___

From: Peter Fraser, Environment Planner (Landscape).

1.0 Introduction:

These comments are written primarily in relation to landscape/seascape and visual issues and the above pre application enquiry for a proposed offshore wind energy development.

A seascape and landscape and visual impact assessment should be carried out, to accompany a full planning application for this proposed development.

The issue of cumulative effects of wind energy development needs to be fully addressed. There are other wind energy proposals and implemented schemes that have the potential to be seen in combination with the proposed development, and this aspect of the potential visual affects of the project needs to be fully assessed.

It is recognised that the project effectively breaks down into the offshore and onshore parts of the proposed development. Particularly for the onshore element of the proposed development, the proposals at Altens and Nigg Bay, Aberdeen City Council will need to be consulted.

2.0 Landscape sensitivity:

For the elements of the landscape and visual impact assessment to be carried out from shore, the area of coastline nearest the proposed development is identified in the Local Plan as Coastal Zone with accompanying policy that indicates that: Aberdeenshire Council will protect the special value of the coastal zone and there would be a presumption against development that would erode the special nature of these different areas. For a proposed development's landscape and visual impact assessment this indicates that generally as a receptor the coastal zone has a fundamental visual sensitivity to development that may visually affect its character.

For the landscape area beyond the coastal zone that may also be visually affected by the proposed development, the local plan identifies among other things that Aberdeenshire Council will plan for and promote the improvement and protection of all landscapes in Aberdeenshire. Basically the Aberdeenshire landscape is identified as a sensitive resource, the character of which is vulnerable to change and on that basis can be identified as a generally sensitive receptor to visual affects from development.

For onshore visual receptors other designations such as conservation areas in coastal towns should also be taken into consideration in terms of identifying receptor sensitivity. Settlements such as Catterline, Gourdon, Johnshaven, Muchalls and Stonehaven all have identified conservation areas, and this too provides an indication of receptor sensitivity to visual affects of development.

For higher ground in the Aberdeenshire heartland designations such as the Cairngorms National Park NSA also have the potential to be visually affected.

SNH have produced landscape character assessments for Aberdeenshire and Aberdeen and these should be taken into account in the applicant's Environmental Statement. Aberdeenshire Council intends to develop future landscape policy based on these LCAs.

3.0 Landscape/Seascape and Visual Impact Assessment:

The seascape, landscape and visual impact assessment should be produced in accordance with the Guidelines for Landscape and Visual Impact Assessment (third edition), Aberdeenshire Council's supplementary planning guidance, and the most up to date guidance on seascape landscape and visual impact assessment of wind farms from SNH and any other relevant organisation.

In the seascape, landscape and visual impact assessment for the site, information should be primarily graphic based on ZTV information for hub height and tip height. Panoramas, photomontages and wireline models should be produced of the proposal with accompanying assessment of seascape, landscape and visual effects. Any proposed wind monitoring masts, maintenance platforms etc. should also be included in the landscape and visual impact assessment.

A detailed ZTV should be produced as a basis for the viewpoint selection. Key receptors will include places of recreation interest including the coastal path, places of heritage interest such as the war memorial at Stonehaven, main transportation corridors such as the A90 trunk road, the railway, settlements and especially the coastal settlements, popular viewpoints such as the coast of St Cyrus and inland receptors such as Cookney. Regular ferry routes in the area would also be a consideration as receptors for the visual assessment process. This list is provided as a guide and is not comprehensive and the viewpoint selection process should be based primarily on the detailed ZTV information and knowledge/analysis of receptor sensitivity.

In terms of agreeing a list of viewpoints/receptors, SNH should be consulted as well Aberdeen City and Aberdeenshire Councils.

Regarding viewpoint selection, it is important that a degree of flexibility remains with identifying particular viewpoints. Certain views/receptors only become apparent as being important, as the review of the application proceeds. Because of the location of this proposal, in relation to a number of sensitive receptors and other existing and planned wind energy developments in the area, it is important that all parties to the application take a

flexible approach to further visual assessment information production, should that be required.

In terms of potential viewpoints, there is probably good reason to include the Menie House area as a viewpoint. Menie house is a sensitive receptor in terms of its listing and its location etc.

In relation to communication from the Scottish Government it may be appropriate to also produce single frame photomontage information from key sensitive receptors.

In terms of general visual design best practice, it is not recommended that advertising appear on any part of the turbines or associated equipment etc.

4.0 Cumulative visual impact assessment:

The applicant needs to fully address the issue of cumulative impact as part of the seascape, landscape and visual impact assessment. This proposed development will be seen in combination with other wind energy developments in Kincardine & Mearns, other parts of Aberdeenshire, the North Sea as well as potentially in Aberdeen City, and this issue needs to be fully assessed. Records of up to date wind energy planning applications and scoping requests for this area of the North Sea, Kincardine & Mearns as well as other appropriate Aberdeenshire Development Management areas and Aberdeen city should be checked by the applicant to ensure that all potential publicly known wind energy developments are taken into consideration in accordance with guidance. For the cumulative impact assessment, appropriate common viewpoints and sensitive receptors that may have been used for other wind energy applications should also be identified and assessed for the cumulative assessment of this project.

The cumulative landscape and visual impact appraisal should be primarily graphic based, with ZTV information, panoramas, photomontages and wireline models. An assessment of cumulative visual affects should be supplied in accordance with up to date SNH guidance etc. The appropriate extent of the base map and related ZTVs of all publicly known wind energy development should be confirmed with SNH.

5.0 Closing comments

It is in the developer's interest that they produce an in depth, accurate and comprehensive Seascape/Landscape Visual Impact Assessment for the EIA to accompany a planning application for this proposed development. Experience from other wind energy applications indicates that Environmental Statements and planning application information with outstanding issues can delay the planning process.

It's noted that the proposed height for the turbines could be around 195 metres to tip height. These would effectively be among the tallest wind turbines ever proposed for the north east of Scotland area and on that basis a thorough and comprehensive package of development visual assessment information will be essential to fully informing the planning application determining process.

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[Second email received from Aberdeenshire Council]

As you noted there are a large number of designations along the stretch of coastline between Aberdeen and Stonehaven.

Most of these designations relate to the breeding seabird colonies, coastal vegetation, invertebrates and geological outcrops.

National/International designations
Findon Moor SSSI is notifiied for its coastal heathland.
Garron Point SSSI and SAC is important for geology (outcrop of the Highland Boundary Fault), the presence of a rare snail - the narrow - mouthed whorl snail, and for the Northern Brown Argus Butterfly.

The cliffs to the south of Stonehaven the SSSI/SPA at Fowlsheugh are internationally important for breeding birds - this is the largest colony of breeding seabirds in NE Scotland and one of the largest in mainland Britain with large numbers of kittiwake, razorbill and guillemot and smaller numbers of fulmar and puffin. These birds all feed offshore.

Locally Important Sites
As well as these designations, much of the coastline has been identified as being regionally important and there are a number of Local Nature Conservation Sites. These include - Portlethen Village to Newtonhill Coast LNCS which is noted for coastal grassland and more locally important colonies of breeding seabirds;
- Muchalls to Stonehaven Bay LNCS which has a rich coastal flora with a base rich substrate, is important locally for marine algae and for the outcrop of the Highland Boundary Fault.
- Downie Point to Catterline Coast LNCS To the south of Stonehaven Is important for wading birds and offshore sea ducks which tend to gather in winter.
- St Cyrus SSSI/ LNCS further south has colonies of breeding terns.

We can provide boundaries and details of of Local Nature Conservation Sites if required.

This coastline is important for a number of cetaceans including a resident population of bottlenose dolphins.

Scottish Environment Protection Agency (SEPA)

We consider that the following key issues should be addressed in the EIA process:

- River Basin Planning
- Pollution Prevention and Environmental Management
- Coastal Processes

Please note that all of the issues below should be addressed in the Environmental Statement (ES) for the whole project, but there may be opportunities for several of these to be scoped out of detailed consideration for specific aspects or phases. The justification for this approach in relation to specific issues should be set out within the ES.

SEPA are only required to consider development up to 3 nautical, therefore we have not provided specific scoping comments on the moored windfarm itself.

1. Site layout and nature of construction for marine developments

1.1 The ES should contain plans giving detailed information on the site layout, including details of all onshore and offshore components such as access tracks, buildings, cabling and marine devices. These plans should be supported by a statement detailing the development, as well as reasons for the choice of site and design of the development. Depending on the types and scale of construction the information below may be required.

1.2 Plans should be included in the ES showing the layout of the devices, cabling routes and associated onshore infrastructure.

1.3 Background information that will help inform the ES process is available from European Marine Energy Centre (EMEC). The EMEC has produced guidelines to assist developers in considering the range and scale of impacts that may result from the testing of devices. These guidelines are available at www.emec.org.uk/index.asp. Generally, if this standard industry guidance is followed for scoping, preparing and undertaking EIA for marine renewables, then we are likely to be satisfied with the standard of assessment.

1.4 There may be a need to address the cumulative effects of devices on coastal processes depending upon density and location with respect to existing renewable and coastal developments.

1.5 The submission should include information on likely timing and duration of the project, possible long-term locational and/or operational impacts and short-term construction impacts.

2. River Basin Management Planning

2.1 Development out to 3 nautical miles will require to be considered under the Water Framework Directive which seeks to protect and improve the water environment in terms of water quality, quantity and morphology (physical form). In discharging their duties as "responsible authorities" under the Water Environment and Water Services (Designation of Responsible Authorities and Functions) Order 2006. planning authorities are required to work to promote the requirements of the Directive in carrying out their statutory duties. This will require water quality, quantity and morphology (physical form) to be considered.

2.2 A system of river basin management planning has been set up to support the successful implementation of the Directive. www.sepa.org.uk/water/river_basin_planning.aspx The final River Basin Management Plans for the Scotland and the Solway Tweed river basin districts along with supporting Area Management Plans are available on our website. Measures to ensure the successful delivery of these plans have been developed in partnership with the responsible authorities. The GIS interactive map (complete with user guide) available on the River Basin Management Planning section of our website should be used in assessing any development proposal. The map enables a search by individual water bodies and provides water body data sheets http://213.120.228.231/rbmp/) setting out each individual water body's current ecological status, any pressures upon it, measures set up to resolve any issues and targets for any improvement needed. In their role as responsible authorities, planning authorities should promote measures already agreed as well as considering how else the proposal in questions might

contribute to Directive objectives. SEPA's planning and river basin planning staff will be happy to discuss any suggestions further.

2.3 The ES should contain maps giving detailed information on the site layout, including details of all onshore and offshore components such as access tracks, buildings, cabling and marine devices. These maps should be supported by a statement detailing the development, as well reasons for the choice of site and design of the development. Depending on the types and scale of construction the information below maybe required amend as appropriate:

2.4 In terms of land reclamation and construction, a site plan and cross sections showing the location of all the engineering activities, including temporary works, in the marine environment will be required. Depending upon the scale and nature of the works, there may be a need to carry out hydrodynamic modelling to predict the impacts of construction activities on water quality, as well as coastal processes in the longer term. Any potential impacts from suspended sediment should be compared to natural background levels and water quality standards (eg Shellfish Waters Directive). Any proposed mitigation should also be detailed in the ES.

2.5 For capital dredging for coastal development and maintenance dredging for navigation (including aggregate extraction and novel techniques e.g. agitation dredging), the ES should include information on the quantities of material to be dredged, a description of the substrate type/habitats and species, as well as the dredging method. Although by its nature dredging is a destructive activity, adverse effects can be minimised (eg timing, dredging technique). Any potential impacts from suspended sediment should be compared to natural background levels and water quality standards (eg Shellfish Waters Directive).

2.6 Information describing measures to minimise impacts (eg from suspended solids) should also be provided. Depending upon the scale of the works and neighbouring sensitivities, there may be a need to carry out hydrodynamic modelling to predict the impacts on water quality during construction and coastal processes in the longer term. Options for the subsequent disposal and beneficial reuse of the material should be submitted.

2.7 For coastal protection/flood defence, the ES should include site plans and cross sections showing the precise location, design, type (revetment, sea wall, gabion baskets) and size of material to be used in the project. Access routes and working areas for vehicles should be specified during construction. The application will also have to demonstrate that the works will not increase the risk of flooding in other locations. Depending upon the scale of the works and neighbouring sensitivities, there may be a need to carry out hydrodynamic modelling to predict the impacts on water quality during construction and coastal processes in the longer term.

2.8 The ES should include a section on the appraisal process and justification for the preferred defence option. The feasibility of soft engineering techniques should always be considered in the appraisal process. Any coastal defence scheme should be appropriate in scale and type for the area.

2.9 With all coastal defence initiatives there is an element of uncertainty with regard to how the shoreline will respond after implementation of the scheme. Depending upon the scale of the scheme and neighbouring sensitivities, there may be a need to carry out hydrodynamic modelling to investigate potential impacts upon the local hydrodynamics and sediment transport patterns both in the vicinity of the proposed structure and along the neighbouring stretches of coastline in the longer term. Any proposed mitigation should be detailed in the ES.

2.10 For marine renewables, maps should be included in the ES showing the array of the devices, cabling routes and associated onshore infrastructure. Background information that will help inform the ES process is available from European Marine Energy Centre (EMEC). The EMEC has produced guidelines to assist developers in considering the range and scale of impacts that may result from the testing of devices. These guidelines are available at www.emec.org.uk/index.asp. Generally, if this standard industry guidance is followed for scoping, preparing and undertaking an EA for marine renewables, then we are likely to be satisfied with the assessment.

2.11 There may be a need to address the cumulative effects of devices/arrays on coastal processes depending upon array density and location with respect to existing renewable and coastal developments.

2.12 Impoundments and tidal barrages are considered to have the potential to have the biggest impact upon coastal processes and hydromorphology and the habitats and species that these support. As such, there may be a need to carry out hydrodynamic modelling to predict the impacts of the structure/s on water quality during construction and coastal processes in the longer term.

3 Construction Environmental Management Document (CEMD) and pollution prevention

3.1 One of our key interests in relation to major developments is pollution prevention measures during the periods of construction, operation, maintenance, demolition and restoration. The construction phase includes construction of access roads and any other site infrastructure.

3.2 We advise that the applicant, through the EIA process or planning submission, should systematically identify all aspects of site work that might impact upon the environment, potential pollution risks associated with the proposals and identify the principles of preventative measures and mitigation. This will establish a robust Project Environmental Management Process (PEMP) for large scale (eg Major and Environmental Impact Assessment Projects (EIA). A draft Schedule of Mitigation should be produced as part of this process. This should cover all the mitigation measures identified to avoid or minimise environmental effects. Details of the specific issues that we expect to be addressed are available on the Pollution Prevention and Environmental Management section of our website.(http://www.sepa.org.uk/planning/construction_and_pollution.aspx)

3.3 A key issue for us is the timing of works. Therefore, the Schedule of Mitigation should include a timetable of works that takes into account all environmental sensitivities, such as fish spawning, which have been raised by SEPA, SNH or other stakeholders. Timing should also be planned to avoid construction of roads, dewatering of pits and other potentially polluting activities during periods of high rainfall. We can provide useful information such as rainfall and hydrological data through our Access to Information Team.

3.4 A Construction Environmental Management Document (CEMD) is a key management tool to implement the Schedule of Mitigation. We recommend that the principles of the CEMD are set out in the ES drawing together and outlining all the environmental constraints and commitments, proposed pollution prevention measures and mitigation as identified in the ES.

3.5 The CEMD should form the basis of more detailed site specific Construction Environmental Management Plans (CEMPs) which along with detailed method statements may be required by planning condition or, in certain cases, through environmental regulation. This approach provides a useful link between the principles of development which need to be outlined at the early stages of the project and the method statements which are usually produced following award of contract (just before development commences).

3.6 We recommend that the detailed CEMD is submitted for approval to the determining authority at least two months prior to the proposed commencement (or relevant phase) of development to order to provide consultees with sufficient time to assess the information. This document should incorporate detailed pollution prevention and mitigation measures for all construction elements potentially capable of giving rise to pollution during all phases of construction, reinstatement after construction and final site decommissioning. This document should also include any site specific CEMPs and Construction Method Statements provided by the contractor as required by the planning authority and statutory consultees. The CEMD and CEMP do not negate the need for various licences and consents, e.g. CAR, if required. The requirements from the obtained licences and consents should be included within the final CEMPs.

4. Waste management

4.1 Details of how waste will be minimised at the construction stage should be included in the ES, demonstrating that:

- Construction practices minimise the use of raw materials and maximise the use of secondary aggregates and recycled or renewable materials;
- Waste material generated by the proposal is reduced and re-used or recycled where appropriate on site

4.2 To do this effectively all waste streams and proposals for their management should be identified. Accordingly, we recommend that a site specific site waste management plan is developed to address these points. This is in accordance with the objectives of

Scottish Planning Policy and the National Waste Plan which aim to minimise waste production and reduce reliance on landfill for environmental and economic reasons.

4.3. Advice on how to prepare a site waste management plan is available on the NetRegs website and from Envirowise who also provide free advice on resource efficiency. Further advice on the reuse of demolition and excavation materials is available from the Waste and Resources Action Programme. Further guidance can also be found on our website. Information on waste prevention and waste minimisation is available on SEPA's waste minimisation webpage at www.sepa.org.uk/waste/resource_efficiency.aspx.

5. Flood risk

5.1 The onshore components of the development such as the substation may be at risk from coastal flooding. The location of the substation should therefore be assessed for flood risk from all sources in line with Scottish Planning Policy (Paragraphs 196-211). Further information and advice can be sought from the Local Authority technical or engineering services department, Scottish Water and from our website. Our Indicative River & Coastal Flood Map (Scotland) is also available to view online. If a flood risk is identified then a flood risk assessment (FRA) should be carried out following the guidance set out in the Annex to the SEPA Planning Authority flood risk protocol. Our *Technical flood risk guidance for stakeholders* outlines the information we require to be submitted as part of a FRA, and methodologies that may be appropriate for hydrological and hydraulic modelling. Further guidance on assessing flood risk and planning advice can be found at our website.

6. Onshore drainage strategy

6.1 Proposed temporary and long-term foul drainage facilities for workers associated with the onshore component of the development must be described in the ES. Guidance and best practice advice can be found in PPG4 *Disposal of sewage where no mains drainage is available*. We also request the submission of a site drainage strategy, detailing methods for the collection and treatment of all surface water runoff from hard standing areas and roads using sustainable drainage principles, which should be shown on a site plan.

6.2 Surface water drainage arrangements associated with the new substation such as any new access roads and buildings should incorporate the attenuation (where appropriate) and treatment principles of sustainable drainage systems (SUDS). The SUDS treatment train should be followed which uses a logical sequence of SUDS facilities in series allowing run-off to pass through several different SUDS before reaching the receiving waterbody. Further guidance on the design of SUDS systems and appropriate levels of treatment can be found in CIRIA's C697 manual entitled *The SUDS Manual*. Advice can also be found in the SEPA Guidance Note *Planning advice on sustainable drainage systems (SUDS)*. Please refer to the SUDS section of our website for details of regulatory requirements for surface water and SUDS.

7. Marine ecological interests

7.1 A baseline assessment of existing intertidal and subtidal habitats and species should be submitted. This should include any UK Biodiversity Action Plan habitats and species (eg maerl, sea pens, eel grass, horse mussels). Additional information on the UK Biodiversity Action Plan is available at: www.ukbap.org.uk/UKPlans.aspx?ID=35. Developers will then be able to ascertain if they are required to supplement or quantify the available data with in-field surveys.

7.2 We also recommend information be submitted detailing how the development will contribute to sustainable development. Opportunities to enhance marine habitats in line with Water Framework Directive and The Nature Conservation (Scotland) Act 2004 objectives and Scottish Planning Policy guidance should be explored. Examples may include coastal realignment, the incorporation of naturalistic features in the design of shoreline works, or planting with salt tolerant species. These could be used as examples of best practice and demonstration sites under SEPA's Habitat Enhancement Initiative (HEI).

7.3 During the construction phase, it is important that good working practice is adopted and that habitat damage is kept to a minimum and within defined acceptable parameters. These should be controlled through an environmental management plan.

7.4 Advice on designated sites and European Protected Species should be sought from SNH. For marine and transitional Special Areas of Conservation (SAC) and Special Protected Areas (SPA), these are WFD Protected Areas. Therefore, their objectives are also RBMP objectives. In this case, SNH may contact us for input on the consultation.

8. Coastal Processes

8.1 Coastal processes should be assessed as part of the ES. This should include a baseline assessment to identify the coastal and sedimentary processes operating in the area. The baseline assessment should identify the following features and processes in the environment:

- Sediments (e.g. composition, contaminants and particle size);
- Hydrodynamics (waves and tidal flows);
- Sedimentary environment (e.g. sediment re-suspension, sediment transport pathways, patterns and rates and sediment deposition);
- Sedimentary structures (e.g. protected banks);
- Typical suspended sediment concentrations.

8.2 Developers will then be able to ascertain if they are required to supplement or quantify the available data with in-field surveys and what mitigation measures are required.

8.3 The magnitude and significance of any changes to the natural processes identified in the baseline assessment should be demonstrated in the ES. It would be helpful to see a series of contour plots showing the magnitude and spatial extent of +(ve) and –(ve) changes in current velocities between the 'pre development' and 'post development' scenarios. The assessment should also identify and quantify the relative importance of high energy low frequency events e.g. storm events, versus low energy high frequency

processes. Any changes to the existing processes can then be used to infer the extent of any changes to sediment transport processes and potential impacts on the marine ecology.

9. Regulatory advice

9.1 Details of regulatory requirements and good practice advice for the applicant can be found on our website at www.sepa.org.uk/planning.aspx. If you are unable to find the advice you need for a specific regulatory matter, please contact a member of the regulatory team in your local SEPA office at Inverdee House, Baxter Street, Torry, Aberdeen, AB11 9QA

Scottish Natural Heritage

Natural Heritage issues to be considered

In principle, we support the development of marine renewable energy devices where sensitively designed and sited – as set out in SNH Policy Statement 04/01[1]. This advice identifies the key natural heritage interests which we consider should be scoped into the Environmental Impact Assessment (EIA) and reported in the Environmental Statement (ES), and provides initial advice in respect of Habitats Regulations Appraisal (HRA). In Appendix A, we consider aspects that apply to the development in general and advice relevant to its offshore elements.

General comments

The scoping report provides details about the offshore and onshore components for a proposed commercial demonstrator floating OSWF of up to 75 MW capacity The offshore component consisting of between 5 -10 turbines up to a total of 75 MW capacity will be installed in 60-80m water depth using novel floating foundations that will be attached to the seabed using mooring lines, as well as inter-array cabling and an export cable to shore. The onshore component consists of an onshore landing and a cable route to the existing Redmoss substation south of Aberdeen.

The scoping report describes a number of options for the onshore and offshore infrastructure and construction methods. As a result, our advice in this letter is generic and covers a broad range of potential impacts. We can provide further advice as more details of the proposal become available including:

Results from both field and desk-top studies;

- Locations for the floating turbines, cable routes, maintenance facilities, landing points and onshore works;
- Further information on what the works and infrastructure comprise, including both on and offshore elements;
- Confirmation of turbines, mooring designs and any other offshore infrastructure;
- Confirmation of cable numbers, distance, types and installation/stabilisation methods;
- Information about the number and type of vessels to be used;
- Information on the likely regularity and timing of routine maintenance works and potential for associated impacts (e.g. disturbance of bird/seal breeding colonies);
- Identification of key issues for assessment at cumulative and in-combination levels and how these will be addressed;
- An Environmental Mitigation and Monitoring Plan (EMMP).

Indicative Project Timeline for Project Progression

KOWL intend to obtain support through the second of the Scottish Governments renewable obligation targets and will utilise 3.5 renewable offshore credits (ROCs). To meet this target, the project must secure preliminary accreditation before April 1st 2017 for the initial installed capacity and subsequent full accreditation and registration of all turbines with Ofgem by the end of September 2018.

[1] Marine Renewable Energy and the Natural Heritage: An Overview and Policy Statement. No.04/01. Available from: http://www.snh.gov.uk/docs/A327477.pdf (Please note this is currently being reviewed)

While we recognise the aspirations of KOWL to design, engineer, consent, procure and install an offshore floating wind project in less than five years, and seek to enable these aspirations, the ambitious timeframe, notably the projected date for submission of consent applications for both offshore and onshore elements of October 2014, presents significant challenges to all involved in the process.

Marine bird and mammal site characterisation surveys
We are disappointed that we were not given the opportunity to provide detailed comments on survey design and methodology at an earlier stage, as we would normally expect for this type and scale of development.

Following an initial meeting with MacAskill Associates, Atkins Limited and HiDef on 31 July 2013, we were made aware that aerial wildlife baseline characterisation surveys had commenced for this project in April 2013 and they provided us with a general overview of the survey protocols. At this time, we encouraged submission of the baseline survey methodology for our comments at the earliest opportunity with a view to establishing that the methods will deliver the information required for both EIA and HRA.

We note from the scoping report that methods for seabird and sea mammal aerial surveys have been discussed with Marine Scotland on several occasions and the survey transect plan was amended after the first survey to incorporate two additional short transects in the "high interest area", following comments from Marine Scotland in May 2013.

We welcome the project developers" approach to focus upon data collection at critical times in consultation with key experts to optimise data gathering and analyses. We also note and welcome that the developers are committed to an extended monitoring programme beyond consent application in order to maximising learning from this demonstration project.

We provide comments on the baseline characterisation methodology and interim survey report in Appendix A.

Habitats Regulations Appraisal
We provide advice in relation to the requirements of Regulation 61 of the Conservation of Habitats and Species Regulations 2010 (as amended) and Regulation 48 of the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended), now commonly referred to as Habitats Regulations Appraisal (HRA). Appendix B provides more detail on the legislative requirements for European sites and we provide tailored advice in relation to the potential impacts of the proposed OSWF in Appendix D for Special Protection Areas (SPA) and Appendix E for Special Areas of Conservation (SAC).

We strongly recommend the production of an HRA screening report for this proposal. We advise this should be submitted for comment at the earliest opportunity and in advance of the ES in order to fully inform our HRA advice for this project. We would be happy to provide ongoing advice as the HRA progresses and further information such as further site characterisation survey results become available.

Rochdale design envelope
KOWL proposes to undertake a „Rochdale design envelope" approach during the EIA to retain scope for adaptation within the project description. Although this approach is currently being used to manage change within the project, it requires impact assessment of the complete range of options including the worst case scenario. We recommend that the project envelope is refined as much as possible prior to submission and welcome KOWL"s commitment to this.

Mitigation and monitoring
We recommend that, within the ES, a schedule of commitments is provided with regard to proposed mitigation. Furthermore, we recommend that the applicant provides a draft Environmental Mitigation and Monitoring Plan (EMMP) as part of the ES. The proposed EMMP should provide details on mitigation measures and monitoring studies to be undertaken.

Onshore infrastructure
Due to the lack of detail about onshore elements at this stage, we advise that these may have further implications with regard to Natura sites, European Protected Species and wider natural heritage interests including landscape and visual impacts. We strongly recommend that the applicant discusses these aspects further with Marine Scotland, Aberdeen City Council and ourselves. We also recommend that the applicant includes all aspects of the assessment of the onshore and offshore works in one ES, particularly as we note the recent decision to refuse the substation for the European Offshore Wind Deployment Centre, where this project was separated into two separate components and now could face substantial delays.

Cumulative and in-combination effects
Our advice with regard to cumulative and in-combination assessment is that other projects and plans which should be included are agreed in consultation with the Regulators (Marine Scotland and Aberdeen City Council).

At this stage, we advise that the following projects may require further consideration:
- European Offshore Wind Deployment centre
- Moray Firth Offshore Wind farm applications
- Forth and Tay Offshore Wind farm applications
- NRIP harbour and port projects including those in the Moray Firth and on the Forth and Tay
- Aberdeen harbour expansion into Nigg Bay.
- Cable works in the vicinity of Peterhead, including the proposed HVDC cable to NE England
- The Hywind proposed floating wind demonstrator project.

Further information and advice

We look forward to providing further advice on natural heritage interests, at appropriate stages, as work is undertaken by the applicant in developing their proposal in advance of any formal application.

APPENDIX A
ADVICE ON NATURAL HERITAGE INTERESTS TO BE SCOPED INTO ENVIRONMENTAL IMPACT ASSESSMENT

Our scoping advice is organised into those aspects we consider apply to the development in general and those relevant to offshore elements.

GENERAL ADVICE

ai. Project Planning & Phases of Development
aii. Seascape, Landscape & Visual Impact Assessment
aiii. Designated Sites & Species Protection

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ai. Project Planning & Phases of Development

Project planning

We recommend that the applicant"s ES contains an outline of the main alternatives they studied with an explanation of the reasons for their final choice of site, taking into account environmental effects. Further advice is provided in PAN 58 – Environmental Impact Assessment[2] and in SNH"s Environmental Assessment Handbook[3].

Project details

Section 3 of the scoping report describes the elements that make up the proposed floating OSWF development. Many aspects of the project are still open to a range of design or installation options (e.g. turbine specifications and locations, floating foundation design, cable routes and landfall).

Due to the early stage of the proposal and absence of detail on some aspects, our advice is largely generic at this stage. We would welcome ongoing dialogue with the applicant, Marine Scotland and Aberdeen City Council as this project progresses in order to discuss location options for turbines, landfall locations and onshore infrastructure and routes, to assist in identifying environmental sensitivities / mitigation and to provide more focused advice in relation to the finalised project details.

Grid connection

We strongly recommend that the applicant includes all aspects of the assessment of the onshore and offshore works in one ES, particularly as we note the recent decision to refuse the substation for the European Offshore Wind Deployment Centre, where this project was separated into two components and now could face substantial delays. We welcome further liaison regarding the details of the proposed grid connection.

Phases of development

In the ES, the applicant should address the following phases of project development:

Installation & construction

The ES should include details of the likely proposed installation and construction methods including information on project management, procurement timescales and an indication of contractor arrangements, „chain of command", roles and responsibilities of key staff and timetabling. Any phasing / sequencing of proposed works should also be included, especially if this has been identified as a mitigation measure for environmental, navigational or other effects. Information should also be included on the proposed installation equipment, vessels to be used and intended shipping routes and port facilities wherever possible.

[2] http://www.scotland.gov.uk/Publications/1999/10/pan58-root/pan58
[3] http://www.snh.org.uk/pdfs/publications/heritagemanagement/EIA.pdf

Operation & maintenance (O&M)
The ES should include details of operation and maintenance activities and an assessment of any impacts that could arise considering any potential environmental, navigational and/or other effects. This should include information on indicative numbers and types of vessels wherever possible.

Repowering
The EIA should consider potential and options for repowering within the design life of the turbines. The applicant will need to consider all aspects of repowering and address this issue in their ES.

It is important to be clear what repowering entails and whether there is to be any relocation of subsea infrastructure or alteration of turbine layout. Any alterations to the locations of offshore elements for repowering may require further baseline characterisation and assessment to that previously carried out at application submission stage and may also necessitate a further application consent process.

Decommissioning
We recommend that any potential impacts during decommissioning are assessed in the ES.

Presentation of information and assessment
The assessment of potential impacts within the ES should be transparent and contain sufficient information to assist in the determination of the ecological changes that may arise against any underlying background trends.

For the assessment of potential impacts we recommend using the approach outlined by the IEEM in Guidelines for Ecological Impact Assessment in Britain and Ireland: Marine and Coastal (2010)[4].

aii. Seascape, Landscape & Visual
Seascape, landscape and visual impact assessment (SLVIA) should be carried out with reference to current established good practice guidance. The scoping report itemises relevant existing baseline information (Section 11.1.1). Other relevant sources can be found in:

- PAN 45 and Scottish Planning Policy[5];
- The *„Guidelines for Landscape and Visual Impact Assessment"* (3rd edition, 2013)
- SNH guidance *„Offshore Renewables – guidance on assessing the impact on coastal landscape and seascape"* http://www.snh.gov.uk/docs/A702206.pdf
- *SNH Good Practice Guidance: Visual Representation of Windfarms"* (referred to hereafter as VRW, 2007). http://www.snh.org.uk/pdfs/publications/heritagemanagement/Visual%20Representation%20of%20windfarms%20-%20excerpt.pdf

The scoping report (page100) notes that the visual impact from this demonstrator project will be *"minimal due the limited number of wind turbines and the distance from shore and sensitive receivers".* This makes an assumption before SLVIA has taken place.

Experience shows that turbine height and distance offshore are critical to visual impact. It is insufficient to conclude prior to assessment that a distance of 12.8km offshore will result in a minimal impact. Albeit outside the study area for this EIA, assessors should be aware

[4] http://www.ieem.net/marine-ecia/

[5] Scottish Planning Policy A statement of Scottish Government policy on nationally important land use planning matters, revokes some SPP/NPPG/PAN 53. February 2010

two existing Beatrice Demonstrator Turbines (BDT), 151m to blade tip, located on average 25km offshore from Caithness. Both the BDT and five offshore platforms (that rise to a height of 106m) are visible from many points along the east coast. Views out to these give a good 'rule of thumb', some indication of the **vertical scale** of how 150m turbines look from the east coast at 25km distance.
The scoping report notes that much of the coast is covered by a local landscape designation, which infers a measure of landscape sensitivity. SNH"s Offshore Renewables guidance will also assist in identifying sources of information on the „receptors" (landscape and population) relevant to this aspect of the assessment.

We are pleased to see that the methodology refers to SNH Guidance on ***Siting and Designing Windfarms in the Landscape***[6]. Although this guidance has been developed to inform onshore development, some aspects are also relevant to consider in respect of offshore proposals.

SNH"s seascapes work[7] is cited as providing helpful techniques and methods developed for seascape evaluation (section 11.1.3.1 - Visual Impact Methods). We do not recommend this as guidance and best practice. This was an exploratory commissioned report examining issues relevant to offshore development and requires critical assessment. We recommend use of our *Offshore Renewables guidance* which explains the relevance or not of this 2005 SNH commissioned report.

Viewpoint selection
Attention is drawn to *SNH* ***Good Practice Guidance: Visual Representation of Windfarms, 2007***[8] especially paragraphs 57 - 64. Please be aware that the visualisations and other illustrative material should be viewed in hard copy only. In relation to viewpoint selection:

- Both cumulative and individual zones of theoretical visibility (ZTVs) are necessary in viewpoint selection, as well as trends of theoretical visibility;
- The choice of **all** viewpoints should be informed by the cumulative ZTV as well as the individual ZTV. Although it is possible to add supplementary viewpoints as part of a cumulative VIA, it is preferable to use all or some of the same viewpoints for both the individual and cumulative VIA.

After initially exploring a wide area for a large windfarm, the study area can be refined and established to take in more localised landscape character and visibility.
One of the main purposes of the EIA process is its iterative nature in influencing and improving design. The design sequence and key changes through the process should be made clear in the ES.

„Dark skies" at night are a major coastal attribute. This is important where there is a relative lack of landfall/opposing shores. Lighting of the windfarm is a relevant issue to examine.

We would welcome ongoing dialogue with the applicant and Aberdeen City council as this project progresses in order to discuss onshore infrastructure location options and to provide more focused advice in relation to the finalised project details.

6 http://www.snh.org.uk/strategy/renewable/sr-we01.asp

7 Scott, K.E., Anderson, C., Dunsford, H., Benson, J.F. and MacFarlane, R. (2005). An assessment of the s ensitivity and capacity of the Scottish seascape in relation to offshore wind farms. Scottish Natural Heritage Commissioned Report No.103 (ROAME No. F03AA06).

8 http://www.snh.org.uk/pdfs/publications/heritagemanagement/Visual%20Representation%20of%20windfar ms%20-%20excerpt.pdf

aiii. Designated Sites & Species Protection

Natura sites (SPAs and SACs)
Further information about SACs and SPAs and their qualifying features is available from our website, with information on particular sites being available on Sitelink[9]. Appendix B provides advice on the legislative requirements for these sites; please see Appendix D and Appendix E respectively for advice with regard to the HRA process and potential impacts of the proposal on SPAs and SACs.

Decisions as to which SPAs and SACs are to be included in the EIA and HRA process should follow an iterative process. Further advice on relevant SPAs and SACs can be provided once more details are available regarding the proposals, as well as results from baseline characterisation surveys.

European Protected Species (EPS)
Appendix C provides further advice on the legislative requirements for European Protected Species (EPS). Within the proposed development site EPS may be present both in the marine and terrestrial environment, and consideration of these species must be included as part of the application process.

Sites of Special Scientific Interest (SSSIs)
We highlight that many of the Natura sites are also underpinned by SSSIs often with seabird or seal species as the notified features, which will also require consideration. Further information on SSSIs and their notified features is available from our website and on Sitelink.

Wildlife and Natural Environment (Scotland) Act 2011
Under this Act the administration of licences for the protection of species under domestic law has been brought into line with the protection of similar species under European law. All species licensing has been transferred to SNH and MS as of the 1st July 2011. There may be species present within the proposed site that, for certain activities, would require the applicant to apply for a licence under this Act (for example, potential disturbance to basking sharks).

Scottish Marine Protected Areas (SMPA) Project
The Marine (Scotland) Act 2010 and the UK Marine and Coastal Access Act 2009 include powers and duties to designate new Marine Protected Areas (MPAs) as part of a range of measures to manage and protect our seas for current and future generations. The guidance document by Scottish Government[10] includes a list of MPA Search Features. Following consultation, Scottish Government is currently considering the proposed network 33 possible MPAs[11].

Key information can be accessed via the Scottish Government website[12]. The applicant should liaise with MS regarding updates / progress on the selection of MPAs as part of the SMPA Project.

[9] Sitelink available at: http://www.snh.org.uk/snhi/
[10] Marine Protected Areas in the Seas around Scotland: Guidelines on the selection of MPAs and development of the MPA Network, 2011. Available at: http://www.scotland.gov.uk/Topics/marine/marine-environment/mpanetwork/mpaguidelines
[11] http://www.scotland.gov.uk/Publications/2013/07/2072
[12] http://www.scotland.gov.uk/Topics/marine/marine-environment/mpanetwork

Priority Marine Features (PMFs)
Consideration should also be given to the present or absence of PMFs within the development site. These should be specifically referenced and an account of the presence, extent and quality (e.g. abundance, patchiness, density, % live/dead, and species richness) of the PMF in that location should be provided. The assessment of potential impacts and any consideration of mitigation options should also give particular consideration to PMFs, if identified. A list of PMFs can be found at: www.snh.gov.uk/protecting-scotlands-nature/safeguarding-biodiversity/priority-marine-features/.

ADVICE IN RESPECT OF OFFSHORE ELEMENTS

We provide our advice below relating to the potential impacts from the offshore elements of OSWF infrastructure on various natural heritage interests:

bi. Benthic Ecology
bii. Fish and Shellfish including Fisheries
biii. Marine Mammals & Basking Shark
biv. Marine Non-Natives
bv. Ornithology
bvi. Hydrodynamic Processes & Coastal Geomorphology

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bi. Benthic ecology

The scoping report indicates that Marine Scotland has already undertaken a benthic video, still photo and grab sample survey of the site and that this data will be reviewed as part of the site assessment. The scoping report states that it is assumed that this data is of sufficient quality and quantity to remove the requirement to undertake additional further benthic baseline surveys as part of the consenting process.

We recommend that the applicant confirms the availability, quality and coverage of any benthic baseline data collected by Marine Scotland is appropriate for this development. This will establish if survey methods need to be revised and / or if further detailed surveys are required.

The scoping report does not discuss any intention to conduct a benthic survey of the cable route. We strongly advise that cable route to shore should also be subject to benthic baseline characterisation surveys.

Volume 5 (Benthic Habitats) of SNH's recently published „draft Guidance on Survey and Monitoring in Relation to Marine Renewables Developments in Scotland" (Saunders *et al*., 2011)[13], provides further information on survey, monitoring and analytical techniques for benthic surveys.

Pre-construction baseline surveys should seek to answer the following:

- Are there any benthic habitats or species of note present (i.e. Priority Marine Features[14], rare, protected or invasive)?
- What is the spatial distribution and abundance of these species?
- How will these habitats or species be affected by the development?
- What would be the significance or implications of any loss incurred?

[13] Saunders, G., Bedford, G.S., Trendall, J.R., and Sotheran, I. (2011). *Guidance on survey and monitoring in relation to marine renewables deployments in Scotland. Volume 5. Benthic Habitats*. Unpublished draft report to Scottish Natural Heritage and Marine Scotland. http://www.snh.gov.uk/docs/B925810.pdf

[14] www.snh.gov.uk/protecting-scotlands-nature/safeguarding-biodiversity/priority-marine-features/

We recommend that the ES presents clear information on, and identification of, the main biotopes found within the proposed development site. The biotopes / habitat map should be used by the applicant to inform their finalised turbine layout, taking account of likely impacts from the turbine moorings and cables on benthic ecology. Consideration should also be given to indirect impacts on birds, fish and marine mammals, where appropriate.

We welcome the opportunity to provide further advice on the detailed survey plans and results.

bii. Fish and shellfish including fisheries

Fish species to consider

Advice here is primarily, but not exclusively, given regarding fish and shellfish species on the recommended PMF list[15]. Marine Scotland Science (MSS) are likely to advise further regarding any non-PMF fish and shellfish that should be given detailed consideration in the EIA. Note that there are species of conservation importance that do not appear on the PMF list, such as most other elasmobranch species, and these should not necessarily be excluded from consideration under EIA. Scottish Government are currently consulting on the recommended PMF list, following which SNH will develop a standard approach to our advice on PMF species within development casework.

The site overlaps with, but occupies very small portions of, potential spawning and nursery habitats for numerous commercial fish species. There are also likely to be numerous marine fish PMFs relevant to the proposed development location and with some sensitivity to selected pressures (e.g. herring, mackerel, cod, sandeels, whiting, saithe). In all cases, however, the scale and nature of any impacts are sufficiently small and/or temporary that we can reasonably consider there to be no significant impacts upon the national, regional or population-level status of these species. Neither is a proposal of this size likely to add markedly to cumulative impacts on marine fish or shellfish.

This advice is given on the assumption that gravity-anchors are not used as, despite being included as an option in Table 3.7, Section 6.4 of the scoping report specifies the intention to use drag anchors. If gravity-anchors are to be used, there should be further assessment of benthic/demersal fish impacts with the benefit of knowledge on the scale of the anchors and any necessary seabed preparation.

However, there is potential for local-level impacts on various species, including some PMFs. We recommend that the EIA explores the following potential impacts and considers any appropriate mitigation/modifications as good practice. Not all of these were identified in the scoping report. Where sensitivities and their ecological importance are uncertain, the potential for monitoring should be considered:

- Loss of or damage to sandeel habitat and herring spawning habitat, particularly during their respective spawning seasons. Existing benthic survey data (biological and physical) should be able to determine the likely suitability of the seabed for these functions, so no additional survey is expected to be needed (except for export cable route). We note and support the statement on page 73: “It is believed that the windfarm installation periods can be designed to take into account important fish species in the area, and in particular herring spawning periods to minimise impacts”.

[15] http://www.snh.gov.uk/docs/B1064114.pdf

- Electro-magnetic fields – impacts from EMF are poorly understood.
- Consideration should not be limited to diadromous fish. We note that the commercial fisheries section of the scoping report identifies EMF as of „medium" potential significance and therefore will be scoped into the EIA. The assessment can therefore be readily extended to other fish and shellfish.
- Fish aggregation under/around sub-structure and other infrastructure – fish aggregation may be perceived as positive if it enhances feeding or reproductive opportunities or if it provides a habitat for species that are otherwise in a degraded state due to being habitat-limited. However, it may also be perceived as negative if fish aggregation results in increased risk of collision or entanglement of subsequently attracted predators (seabirds & mammals, respectively).
- Ghost fishing from trapped nets – the commercial fishing section of the scoping report highlights the potential risk of lost fishing nets becoming tangled amongst the mooring and cable systems. This may result in ghost fishing, an impact that should be considered for a variety of taxonomic groups (including fish).

The application and EIA should provide more detailed information on the following:

- The floating sub-structure – detail should be provided on the design and methodologies of spurs, semi-submersible structures and tension-leg systems.
- The anchor/mooring system – in particular, torpedo and gravity anchors are likely to have greater and differing impacts and the requirements should be understood. For gravity bases this includes understanding any requirement for ground preparation. At present our advice assumes gravity bases will not be used.
- Whether cables (export and intra-array) will require any post-lay protection (i.e. concrete mattresses or rock dumping).
- What the fate of cuttings from directional drilling will be, i.e. will they be disposed of on land, at sea, on site, or at licensed disposal grounds?

Data sources & survey design for fish and shellfish

MSS is the primary source for information on commercial fish and shellfish in Scottish waters. For spawning and nursery ground information, refer to Ellis *et al* (2010)[16] and Coull *et al* (1998)[17]. While this reference provides maps of spawning and nursery grounds for most of the key marine fish species, these are only broad indications of likely potential spawning areas, much of which is based on relatively old data and incorporates temporal and spatial variability. Also note that MSS are in the process of updating this information, which may be available in time for use in this application. Spawning and nursery grounds are not spatially or temporally fixed, potentially moving according to the conditions of the substrate, seabed habitats, climate and hydrodynamic regimes.

Potential impacts on fisheries species

MSS take the lead on many aspects regarding marine fish and shellfish species – in particular, they will advise on which commercial species should be scoped in to the EIA. However, we can provide further advice in relation to impacts on fish and shellfish, particularly in relation to indirect impacts resulting from habitat associations, trophic interactions or other ecological functions.

As part of the EIA, the applicant should consider the environmental effects of displacing (and potentially concentrating) fishing effort to other areas, although we acknowledge that this assessment may be best made at a cumulative or strategic level.

[16] http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=2&ProjectID=1843

[17] www.cefas.co.uk/media/29947/sensi_maps.pdf

For basking sharks it will also be necessary to address the relevant legal requirements of the Wildlife and Countryside Act (1981), including amendments through the Wildlife and Natural Environment (WANE) (Scotland) Act.

Advice specific to diadromous fish

The scoping report includes reference to consideration of potential impacts on diadromous fish species and SACs, including impacts arising from noise, sedimentation and EMF. The scoping report (page 71) identifies three SACs that are designated for Atlantic salmon. It is stated that the potential for the development to impact these three SACs will be assessed in the HRA. The three SACs are the River Dee SAC, River Spey SAC and River South Esk SAC. The rationale for selecting these three SACs is not explained in the scoping report. We assume these have been identified because they are the closest SACs with Atlantic salmon interests to the proposed development. It is also not clear why the three SACs are identified only in relation to Atlantic salmon. The River Spey SAC also has a sea lamprey feature and a freshwater pearl mussel feature. Sea lamprey are a diadromous fish species. Freshwater pearl mussels are dependent on salmonids for part of their lifecycle and may therefore be indirectly vulnerable to impacts on salmonids. The River Dee SAC also has a freshwater pearl mussel feature (as is recognised on page 78 of the scoping report), as does the River South Esk SAC. These features should all be considered within the HRA and EIA.

It is understood (Malcolm et al, 2010) that the dominant direction of travel for Atlantic salmon on the east coast appears to be northerly, although there may also be some southerly movement. It's therefore likely that SACs to the north of the proposed development could be more vulnerable to impacts affecting Atlantic salmon. However, we would agree that the River South Esk SAC should be scoped in due to its proximity to the development area and the possibility of some southerly migratory movement of Atlantic salmon. There is very little information available on the marine behaviour of post-smolt Atlantic salmon in Scottish coastal waters.

The scoping report identifies several diadromous fish species. The following species are identified on page 70: Atlantic salmon, sea trout; European eel. However, there are also records for the following diadromous fish species of conservation interest from the vicinity of the development area:

River lamprey is listed on Annexes II and V of the EU Habitats Directive, Appendix III of the Bern Convention, the draft PMF list and is on the UKBAP Priority List.

Sea lamprey is listed on Annex II of the EU Habitats Directive, Appendix III of the Bern Convention, the draft PMF list and are on the UKBAP Priority List.

Sparling has protection under the Wildlife & Countryside Act 1981 (as amended). It is also included in the UK Biodiversity Action Plan Priority Species list and is on the draft PMF list.

<u>Electromagnetic fields</u>

The scoping report states (page 39) that the export cable will be buried to a target depth of 1.5m. DECC recommends that cables be buried to at least 1.5m, depending on the suitability of the substrates (Department of Energy and Climate Change (DECC), 2011. *National Policy Statement for renewable Energy Infrastructure (EN-3)*. Presented to Parliament pursuant to section 5(9) of the Planning Act 2008).

We welcome the burial of the cable to this depth, particularly in shallow waters (defined as below 20 m by Gill & Bartlett 2010). Whilst cable burial would not be expected to reduce the extent of the emission field, it would increase the distance between the cable and the water column.

Underwater noise

With regard to potential impacts from noise on diadromous fish species, we welcome that piling will not be used. Evaluation of potential noise impacts on fish should include consideration of the migratory behaviour of diadromous fish species (we recognise that there are limited data available on the marine behaviour of these species and their vulnerability to potential impacts from noise, EMF and sedimentation)

biii. Marine mammals & basking shark

General comments

Full consideration of potential impacts to marine mammals should be included within the ES, in terms of both Habitats Directive and European Protected Species legislative requirements, for the marine mammal species found most commonly in the area. Although this development will not involve pile driven foundations, other potential impacts could arise from this development both individually and cumulatively. As such, all potential impacts require detailed consideration within the ES assessment.

Please see Appendix B for further detail of the legislative requirements that apply to SAC interests and Appendix C for those relating to cetaceans (whales, dolphins and porpoises), which are European Protected Species (EPS).

Appendix E provides our advice on HRA, for marine mammals which are SAC qualifying features. We recommend that the assessment of which SACs should be scoped-in at this early stage remains relatively precautionary, allowing them to be discounted at subsequent stages of the HRA as appropriate (see Appendix E).

We consider that one year of survey is not sufficient to adequately characterise marine mammal abundance and use of the development area. However, to achieve characterisation would require a much greater survey effort. Given the scale of the development and the fact that it is a demonstration project, we advise that effort should be directed at post-consent impact monitoring. We note and welcome the intention to develop a post-deployment monitoring plan (scoping report, section 10.1) that will include surveys of birds, marine mammals, fish and benthic communities at the project site.

This development as proposed is unlikely to present a high risk to marine mammals, in comparison to pile driven wind farms. However, more thought should be given to potential entanglement of larger marine mammals. Planned vessel activity should be discussed to assess potential disturbance, particularly if there is potential for the use of ducted propellers. The export cable route should be assessed in more detail, once the route is known.

Potential impacts from marine mammals resulting from this development include noise disturbance from the geophysical survey, disturbance from increased vessel activity, noise and disturbance from cable laying activity, entanglement from the array of moorings and inter- array cables (including any snagged fishing gear) and specifically for seals, potential of corkscrew mortality from vessels using ducted propellers.

Specific comments

Scoping Assessment – Marine mammal section – 10.9
This section sets out the proposed strategy for the assessment of potential impacts to marine mammals. Table 10-21 lists the baseline sources of information used. This seems reasonably comprehensive and includes key sources such as SCANS II. However, more detail is required including detailed and specific references for data sources.

Desk based review of existing data
The key species likely to be in the development area are identified. The relevant SACs are identified, and we would expect that any potential impacts to the protected features are adequately assessed.

SCANS II is identified as a key source for broad-scale abundance and density estimates, however it should be remembered that this also was a snapshot survey. A further source of information would be the JNCC Joint Cetacean Protocol (http://jncc.defra.gov.uk/page-5657).

Potential impacts
Table 10-24 details the potential impacts on marine mammals. We offer the following comments on the identified impacts:

Potential impact	**Comments on developers conclusions**
Floating offshore devices	Whilst the development as proposed is likely to present a relatively low risk to marine mammals, in comparison to pile driven wind farms it is not clear from the comment/justification section why there is a positive significance for construction and decommissioning. This **should not be scoped out of the ES** given the potential for entanglement with the moorings has not been fully explored.
Corkscrew *„mortalities"*	We highlight that due consideration should be given to the most recent knowledge available relating to „corkscrew" injuries to seals[18], consistent with seals being drawn through a ducted propeller such as a Kort nozzle or some types of Azimuth thrusters. Vessels used for the proposed development could use such equipment (all injuries observed to date have been fatal). We agree that this potential impact should be scoped in.

Marine mammal entanglement	We broadly agree with this, but this issue **should be explored further in the ES**. Comparison is made to structures used in the oil and gas installations, but it would be informative to contrast the scale of each type, e.g. will there be a comparable number of moorings in a comparable area? Larger marine mammals (in this case minke whale and basking shark) are at a relatively greater risk of entanglement. Discussion should include the structure of the moorings and the inter-array cabling proposed, including specifics of moorings used, separation distance between moorings, the degree of slack etc., together with the likely occurrence of the larger fauna in the development area, particularly should the development area become a fish aggregation device. As these moorings will aim to keep the turbines in a static location, it is likely that the moorings will be taut and therefore present a lesser risk. But it is suggested that catenary moorings and dynamic inter-array cabling will be used. Also to consider the potential for entanglement via snagged fishing gear. This warrants further discussion in the ES.

Indirect changes to habitat and distribution/ abundance of prey	Agree
Noise disturbance	Agree with this assessment. Noise from the construction and operation of this development is unlikely to be a significant issue. However, we would need information on the geophysical surveys planned for both the survey area and the cable route, as this could result in acoustic disturbance.
Pollution	Agree

Cumulative impacts
Prospective work schedule should be presented in comparison with other development timetables to assess any potential overlap. More detail will be required in terms of proposed mitigation suggested here.

We recommend the following for the assessment of impacts to key species:

- That reference populations are considered in relation to species Management Units (MUs).
- That all activities/ developments both on-going and proposed within these MUs are considered in relation to this proposed project.
- Guidance on the protection of marine European Protected Species from injury and disturbance within Scottish inshore waters has now been published on the Marine Scotland website and can be found via the following link

http://www.scotland.gov.uk/Resource/0044/00446679.pdf

Appendix C: Summary of marine mammal protection legislation
This section includes key detail, but is poorly written; this should be better presented in the ES. Additionally it should be noted that (whilst not a marine mammal) basking shark have full legal protection under the Wildlife & Countryside Act 1981(as amended by the Nature Conservation (Scotland) Act 2004).

HiDef Interim Survey Report
Five marine mammal species were identified grey and harbour seal, minke whale, white beaked dolphin and harbour porpoise (and basking shark). Harbour porpoise were the most prevalent. Whilst we appreciate the positive qualities of a high definition video survey, it remains a method designed for birds.

A density figure is estimated only for harbour porpoise. The un-adjusted density is presented as 0.10 animals/km^2 (in comparison to the SCANS II = 0.18 animals/km ^{2}). This is likely to be an underestimate.

There is an issue with the availability of bias correction factors (as highlighted by HiDef) for harbour porpoise in aerial surveys. There are two methods of calculating the correction factor according to available literature. One is to use all sightings assuming that they were within a maximum depth available for sighting, and the second method is to only use those animals that were observed surfacing. However, the adjustment calculated from the second method results in much higher corrected densities (up to a factor of 10 - in comparison to a factor of 2). This issue is unlikely to be elucidated until a targeted study is conducted to compare this
methodology with established vessel transect surveys. This issue should be made clear in the ES, together with clear identification of the uncertainty in the density presented.

We query the marine mammal categories used in this report: example in table 26 – „dolphin species" and „cetacean species" categories are used since dolphins are cetaceans. This should be made clearer in the next report as it does not necessarily instil great confidence in species identification.

biv. <u>Marine non-natives</u>

Renewable devices in the marine environment provide clean surfaces for settlement of native and non-native species, and potentially could provide 'stepping-stones' for non-natives around our coast. In addition, the movement of vessels, barges, equipment and the devices themselves, both around the UK coast and internationally, could allow the accidental transfer of fouling organisms.

The applicant should give due consideration to these risks in their EIA and present best practice steps to which they can commit in order to manage these risks in the ES. We advise to minimise the transfer of invasive non-native species, biofouling management practices should be implemented, including the use of anti-fouling and / or foul-release systems and other operational management practices to reduce the accumulation of biofouling.

Although guidance specific to the renewables industry is yet to be produced, guidance for other related industries will be useful in identifying ways to minimise risks. For example:

- The Code of Practice published by the Scottish Government on non-native species to provide guidance on the recently amended legislation in Scotland. This CoP comes into effect on 2 July 2012 and applies in Scotland only[19].
- Guidelines produced by The International Maritime Organisation (IMO) provide useful recommendations on general measures to minimise the risks associated with biofouling for all types of ships[20].
- Guidance produced for the prevention and management of invasive species in the oil and gas industry[21].

bv. Ornithology

Appendix D provides our advice on HRA for birds which are SPA qualifying features.

General comments
A digital aerial baseline characterisation survey of the development site and large buffer area conducted by HiDef is underway. A report of the first 8 months survey results accompanies the scoping report. This report indicates that the development area holds significant densities of some SPA qualifying species during the breeding / post breeding season.

The initial analyses presented in the HiDef interim digital aerial baseline characterisation survey report show that densities of birds in the area are high, and there is preferential use by birds of the project area compared to the surrounding areas. There is a notably high density of auks during post breeding dispersal. Additionally, numbers of several species of seabird that are considered vulnerable to collision risk with offshore wind turbines are considerable.

In order to determine the potential significance of the large number of auks recorded during the post breeding dispersal period, we advise that the developer should carry out further digital aerial surveys during 2014. These surveys should cover the breeding/post breeding period and continue up to and including September 2014.

This advice is consistent with that provided by Marine Scotland and ourselves for the Hywind floating wind demonstrator project where similarly high auk abundance has been identified. The information from 2014 digital aerial surveys should help to clarify the potential for auks to be displaced during construction and also quantify potential displacement behaviour during operation of the proposed wind farm.

Some aspects of the scoping assessment require further development prior to submission of the ES. There are useful sources of data that have not been explored which could help with assessment on the context of bird populations in the area. Sites and species with connectivity to the development area have been overlooked.

The approach to determining impacts on bird populations for collision risk is correct. However, it appears that less than 2 years bird survey data will be gathered and we advise that it is premature to discount potential displacement and barrier impacts.

[19] www.scotland.gov.uk/Resource/0039/00393567.pdf
[20] 2011 guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species. Resolution MEPC.207(62). MEPC 62/24/Add.1 Annex 26. Adopted 15 July 2011. Available at: *www.mardep.gov.hk/en/msnote/pdf/msin1136anx1.pdf*
[21] www.ipieca.org/publication/alien-invasive-species-and-oil-and-gas-industry

Consideration of the Scoping report - Ornithology section

The scoping document identifies protected sites in the immediate vicinity of the proposed development, but connectivity does not appear to have been considered on the basis of foraging ranges for birds within the breeding season. Using mean-maximum (+ 1 standard deviation, where appropriate) foraging ranges from Thaxter et al (2012) and/or range information from seabird wikispaces (http://seabird.wikispaces.com/) is a minimum requirement to select protected sites and species that may contribute to birds at the development site. In some cases the maximum range may be used. For example the site is well within the mean-max foraging range of gannet from Forth Islands SPA, and only just outside the mean range.

The restricted scope of the area of search is reflected in that only 4 internationally designated sites are listed (section 10.7.11). We do not consider that a full list of sites and species that require consideration has been included. In Appendix D we provide our detailed HRA advice for birds which are SPA qualifying features. We include an initial long list of qualifying SPA features to assist the applicant at what is the start of the iterative HRA process. We suggest this indicative list is compiled in conjunction with a thorough review of relevant SPAs and features to insure inclusion of all relevant sites and species.

Additionally, there is inconsistent treatment of the few designated sites that are mentioned. The treatment given to Fowlsheugh in the document (site summary and brief appraisal of species status within the site) should be repeated for others. Buchan Ness to Collieston Coast SPA has just one line of text dedicated to it.

The document states that it is expected that an appropriate assessment will be required for this project, and data gathered to address this. The information and data presented here is not adequate for the purposes of appropriate assessment and HRA.

The sources consulted for the desktop study complied for the project include a range of suitable background documents. It is noted that tracking data from the Bass Rock gannet study is being sought but is not included in the scoping report. Telemetry data from other studies (especially the RSPB FAME project) would also be of interest in assessing likely origin of birds found in the development area.

Species Accounts

In section 10.7.5 a few species are given a brief introduction, under the heading „Key species at Fowlsheugh". The selection of such key species appears to not relate to the qualifying interests of the SPA or notified features of the associated SSSI (i.e. includes black guillemot and shag but does not mention herring hull – a named assemblage species).

These accounts appear to be mostly based on Francis and Crook (2011), but even so some of the information presented is out of date. For example, the account relating to common guillemot quotes the 1992 population figure for Fowlsheugh, although later counts appear in Francis and Crook, and even more recent are available in the JNCC Seabird Monitoring Database for 2009 and 2012.

Some statements about the biology of some species are misleading and out of context. For example, „At sea guillemots prefer continental shelf water 51-100m depth" is attributed to Francis and Crook – but this statement does not appear in the species account in this reference. More recent work (involving tagged birds) and other studies

show that guillemots feed over a range of depths between a few metres and more than 200m.

Other statements are confusing as they lack any spatial or temporal context – e.g in the species account for fulmar the report states „Fowlsheugh, with its tall seabird cliffs, support the greatest number of pairs. Numbers of Fulmar in the Kincardine Offshore Windfarm area rose from 1171 to 4273 (up 264 %)."

We recommend this section should be revised and that seabird receptors included should be based on foraging ranges and recent published or web-sourced information. The behavioural and habitat selection details provided should be linked where possible to the potential impacts of the development.

Assessment of impacts
The assessment should cover the construction, operation and maintenance works and decommissioning phases of the project, including consideration of the activities involved in each and their impact on the receptor species and sites. Table 10-18 reviews potential impacts. Table10-19 gives a very brief outline of the procedure and reference documents. Vessel disturbance, collision with rotor blades, barrier / displacement effects and potential loss of habitat are identified as potential significant impacts that all require assessment. Given the large densities of auks found within the project area during their flightless period, further consideration should be given to the accidental release of contaminants.

There are several statements within the document indicating that the impacts to birds are expected to be small. For example *10.7.12 „risk to birds „due to small size not as much as the big wind farms currently consented" (section 10.7.12)* and *„However, as the demonstrator site is very small,….the barrier impact will be very limited and will not result in birds significantly altering their flight paths."* (section 10.7.14) and *„However, this is likely to be of low impact because of the small scale of the project and the seabird densities currently monitored at site."* (table 10-18). The degree of this impact has not yet been assessed. Although the impacts are likely to be much less than large wind farms already consented, it does not necessarily mean that they will be insignificant. Densities currently monitored on site for some species are quite high to very high and the layout of the array in combination with other factors could increase the impact of the displacement effects.

The approach to collision risk to be taken outlined in the scoping document appears correct:

- Bird survey data will be gathered;
- Assessment of collision risk assessment using the Band Model;
- Assessment of significance using SNH guidance documents

The digital aerial surveys currently being undertaken by HiDef, based on the interim report, appear to be of required standard to allow such analyses (see section on HiDef survey below).

Before collision risk work is undertaken for this project it is expected that the Marine Scotland avoidance rate review will have been completed and may provide revised figures of avoidance rate that should be used. It is noted that reference is already made within the document to the latest work on flight height distributions (Johnston et al 2013) which is now the reference work that we recommend.

It is not clear how barrier or displacement impacts will be assessed, but despite the statements regarding the expected low impact of these effects, there is still a requirement

to assess them. If precautionary assumptions as to the impacts on survival and productivity are made and shown to be insignificant then it is unlikely that further sophisticated population modelling will be required.

Only brief reference to any approach to cumulative impacts is given (section 10.8). The intention to collaborate with other developers to develop monitoring programmes is very welcome.

Reference populations against which the impacts may be assessed are not detailed in this document. For breeding species this may be based on the breeding foraging range of the species under consideration, and will usually include the north east Scotland region, but possibly also north Scotland and south east Scotland region. See Parsons et al 2006 (http://www.snh.org.uk/pdfs/publications/commissioned_reports/ReportNo222.pdf)

Currently work is underway to produce estimates for non-breeding period populations of seabirds for the UK. This work is expected to be completed soon.

The scoping document assumes that radar studies for migrating wildfowl are not required and any assessment of this will be based on desk studies only. The survey results obtained so far do not indicate significant wildfowl migration through the site, but it is probable that there would be significant diver passage from southern North Sea towards north Scotland breeding grounds in spring.

Assessment of Cable route

The proposed cable route and landfall are not included in the scoping ornithological section. However consideration of the installation of the cable and associated vessel movement should be given. The precise location of the cable landing point has not yet been identified.

HiDef digital aerial survey

General structure

An interim report for the aerial survey at Kincardine Offshore Wind farm has been submitted along with the scoping documentation. This has been helpful in trying to assess the likely impacts of the project at this early stage. However, it is not a complete report. The interim report covers 8 months of survey data with post survey analysis (12 months survey should complete in April 2014 with the report due to be completed in June).

The report gives detailed information on the methods employed in the survey, which have previously been agreed with Marine Scotland. Following studies by CREEM the survey has adopted the BAG (Before and after Gradient) approach. In summary, the survey design has 7 transects in wider study area (project area plus 8km buffer), with 5 (closer spaced) transects in the NE3 project area. A total survey area of 8 surveys had been completed approximately monthly between 1st May and the end December 2013 (additional surveys now underway not included in this report). 8km buffer, with transects 5km apart in buffer, 2km apart on site. The total survey area is 991 km2, of which 110km2 is the project area. The outer edge of this area just straddles the 12nm limit.

The high resolution imaging and subsequent analysis results in a high rate of specific identification of targets. Overall 92.8% (average rate) of contacts were identified to species level (although individual species percentages vary). Monthly densities and estimated numbers of birds within the project and survey area are provided. The numbers of diving birds has an availability bias correction applied.

Flight height estimation

Flight heights estimated for some species using the parallax technique (movement of bird relative to sea). This is a HiDef copyrighted technique, but is not effective on windless days or when bird moving with aircraft. Parallax flight estimation can lead to overestimation of flight height (by approximately 25%) under certain combinations of bird direction and wind speed. This tends to add a level of precaution into the flight heights measured on site.

Availability bias

Densities of diving birds have been corrected to take account of availability bias. Attention to this shortcoming of surveys (considered particularly important for aerial surveys) is to be welcomed.

The technique applied used a method proposed by Barlow et al 1988 and informed by data from Thaxter et al 2010 to compute availability. There is ongoing work in this field, but this provides a useful interpretation. At present there is no breakdown of birds by age. This would be useful if impacts are to be attributed to breeding birds only.

Results

The results of the aerial surveys suggest that the area holds considerable numbers of birds and that the project area is particularly favoured.

The reported densities of birds within the whole survey area are generally high. One issue is that the densities within the „high interest area", the area where the turbines are expected to be located are regularly higher than those in the surrounding buffer area, strongly indicating that the development area is favoured as a feeding area (or possibly passage route to and from feeding areas) for several species. The indicative layout of the turbines in a two line NE- SW orientation presents a barrier of approximately 4km width parallel to the coastline which runs roughly SSW-NNE at this point.

For several species densities are high or fairly high including gannet which in July was estimated at a density 1.98 km^2 total in high interest area which equates to 145 birds present. To put in context this density exceeds (and total is in the region of) that estimated in some Forth and Tay commercial wind farm development areas. This species also regularly flies at turbine height with over 30% of birds estimated to be over 20m above sea level in this study.

Kittiwake in the high interest area reached a density of 20 birds/km^2 in July (more than twice the whole survey area density) with an estimated 1460 birds present. This total exceeds nearly all estimates in Forth and Tay commercial wind farm sites. As this survey does not give an indication of age class, this could include a significant proportion of juveniles, however the numbers are appreciable and worthy of further investigation.

Large numbers of auks were present on site in all breeding period months, but especially so at the end of the colony attendance period, e.g. over 56000 guillemots and 2435 razorbills in survey area in late July). While these birds are flightless and not at risk of collision, disturbance and displacement impacts must be addressed.

bvi. Hydrodynamic Processes & Coastal Geomorphology

When considering the potential near-field impacts on the marine environment, the fact that this is a floating wind farm (with tethered structures, rather than gravity bases or

piled structures) will greatly reduce the footprint and direct impact.

We agree with section 10.1.1.4, that states: "*The size of the demonstrator site and the use of floating offshore wind turbines negate the impact on tidal flows and wave energy on the sea bed sediments as there is very limited sea bed contact and therefore it is expected that the installation of the demonstrator turbines will have very limited impact on the hydrodynamic processes of the site.*" That said, the impact is not completely removed. Changes will occur at the bases of the tethers and associated with the cabling. These still require consideration and may have impacts on benthic interests. We agree with section 10.1.2.2. that the stated datasets will help inform the impacts of the cabling route and mooring points. We also agree that the onshore impacts on Sands of Forvie and Foveran Links are likely to be immeasurable (10.1.2.2.).

In summary, we agree with the conclusions of table 10-3 (Potential impacts on physical processes and sediment dynamics), however, we note that the table implies that changes to coastal processes at landfall point will be negligible given the use of horizontal directional drilling (HDD), yet HDD is only stated for Cable Route 2. It would be useful to know what is proposed at Cable Route 1 in order to advise what the potential implications for coastal processes may be.

We also agree, from a coastal processes view point, with the items scoped in and out within Table 10-12 (page 76).

Two landfall locations have been identified. The preferred site lies at the southern end of Nigg Bay (Aberdeenshire) which coincides with Nigg Bay SSSI and Geological Conservation Review (GCR) site. The designated interests are for Quaternary geology and geomorphology. The potential impacts of the cabling and associated infrastructure will need to be considered. We note that HDD is only considered for Cable Route 2 (to the south of Nigg Bay). We would encourage taking advice from a coastal geomorphologist to consider the micro-siting of the cables to minimise impact and maximise the benefits of natural protection afforded by the geomoprhology. As the KOWL developers are aware, the potential harbour redevelopment at Nigg Bay will need to be born in mind. The construction of two breakwaters and the construction and maintenance of a navigation channel will need to be considered.

From a natural heritage perspective, the alternative landfall location approximately 3km to the south is a far simpler option. Given the proposed use of HDD, it is unlikely that would be an effect on the adjacent designated site at Cove Bay SSSI. The interests here are Maritime Cliff and Vascular plants.

Irrespective of the eventual landfall chosen, consideration should be given to the climate change implications on the associated infrastructure. Although the erosion risk is expected to be low, all infrastructure should be located in a manner that is future proof.

ADVICE IN RESPECT OF ONSHORE ELEMENTS

We provide our advice below relating to the potential impacts from the onshore elements of the OSWF infrastructure on various natural heritage interests:

ci. Protected sites
cii. Mammals
ciii. Landscape and Visual Impacts

Once further details regarding the location of the landfall, cable routes and associated

nshore infrastructure are known, together with a better understanding of the methods to be employed, we will be able to further refine our advice.

ci. Protected sites

We welcome the proposal to carry out an assessment of the onshore cable route as part of the EIA (scoping report, section 4.4).

There are two SSSIs to consider for the potential landfalls, Nigg Bay and Cove. Information about both of these sites, including the features for which they are notified, is available through the Sitelink[22] database on our website.

From figure 4.3, the cable landfall and onshore route is either on or adjacent to Nigg Bay SSSI. The EIA should consider potential impacts to the SSSIs, both direct and indirect. The report recognises the possible expansion of Aberdeen harbour into Nigg Bay and we recommend that the applicants discuss their proposal with Aberdeen Harbour Board and Aberdeen City Council regarding any implications for the cable route.

The second options are shown in figure 4.4. It appears these HDD route options are at least 1km north of Cove SSSI and there is unlikely to be any impact on this SSSI should this route be selected. This option is therefore preferable from a natural heritage perspective

There is a local nature conservation site, Balnagask to Cove, in the area of the onshore cable. Aberdeen City Council will be able to provide advice on this.

cii. Mammals

The proposed cable corridor route associated infrastructure and facilities (both permanent and temporary) will need to consider potential impacts to mammals, notably badgers. Badgers are protected by the Protection of Badgers Act 1992.

We recommend as part of the assessment of the onshore cable route that a badger survey forms part of the assessment.

ciii. Landscape and Visual Impacts

We have provided advice in section **aii** above in relation to Seascape, Landscape and Visual Impacts. We reiterate our recommendation that the applicant discusses these aspects further with Marine Scotland, Aberdeen City Council and ourselves**.**

[22] http://www.snh.gov.uk/publications -data-and-research/snhi-information-service/sitelink/

APPENDIX B

HABITATS & BIRDS DIRECTIVES, & HABITATS REGULATIONS

The two most influential pieces of European legislation relating to nature conservation are the Habitats and Birds Directives. The „Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora" was adopted in 1992 and is commonly known as the Habitats Directive. It complements and amends (for classified SPAs) Directive 2009/147/EC of the European Parliament and of the Council on the conservation of wild bir ds (this is the codified version of Directive 79/409/EEC as amended), commonly known as the Birds Directive.

The Birds Directive protects all wild birds, their nests, eggs and habitats within the European Community. It gives EU member states the power and responsibility to classify Special Protection Areas (SPAs) to protect birds which are rare or vulnerable in Europe as well as all migratory birds which are regular visitors.

The Habitats Directive builds on the Birds Directive by protecting natural habitats and other species of wild plants and animals. Together with the Birds Directive, it underpins a European network of protected areas known as Natura 2000 comprising SPAs classified under the Birds Directive and Special Areas of Conservation (SACs) designated under the Habitats Directive.

The Habitats and the Birds Directive are transposed into domestic law in Scotland by the „Conservation (Natural Habitats, &c.) Regulations 1994" which came into force on 30 October 1994 – usually called simply the Habitats Regulations. For all onshore elements that may be consented through the Town and Country Planning system these amended Habitats Regulations will apply. Certain provisions of The Conservation of Habitats and Species Regulations 2010, as amended (the "2010 Habitats Regulations") apply to Natura sites in Scotland where they may be affected by activities consented under section 36 or section 37 of the Electricity Act 1989.

The Habitats Regulations apply to the Scottish territorial waters, and the rules for the protection of marine Natura sites and marine European Protected Species (EPS) apply here exactly as they do on land.

Habitats Regulations Appraisal

Where a plan or project could affect a Natura site, the Habitats Regulations require the competent authority – the authority with the power to undertake or grant consent, permission or other authorisation for the plan or project in question – to consider the provisions of regulation 61. This means that the competent authority has a duty to:

- determine whether the proposal is directly connected with or necessary to site management for conservation; and, if not
- determine whether the proposal is likely to have a significant effect on the site either individually or in combination with other plans or projects; and, if so, then
- make an appropriate assessment of the implications (of the proposal) for the site in view of that site's conservation objectives

This process is now commonly referred to as Habitats Regulations Appraisal (HRA). HRA applies to any plan or project which has the potential to affect the qualifying features of a Natura site, even when those features may be at some distance from that site.

The competent authority (Marine Scotland), with advice from SNH, decides whether an appropriate assessment is necessary and carries it out if so. It is the applicant who is usually required to provide the information to inform the assessment. Appropriate assessment focuses exclusively on the qualifying features of the Natura site affected and their conservation objectives. A plan or project can only be consented if it can be ascertained that it will not adversely affect the integrity of a Natura site (subject to Regulation 49 considerations).

Further information and advice on HRA

In this scoping response we provide tailored advice for HRA in respect of birds that are qualifying features of SPAs, and for the various qualifying features of marine and terrestrial SACs in the area.

- Appendix D – SNH Advice on Habitats Regulations Appraisal for SPAs
- Appendix E – SNH Advice on Habitats Regulations Appraisal for SACs

In respect of this, further information on the ***qualifying features*** and the ***conservation objectives*** for each relevant Natura site is available from our Sitelink[23] database.

For further advice on the HRA process we direct the applicant to our website, including the leaflet on "Natura sites and the Habitats Regulations[24]" which provides a helpful summary. Some of the key concepts are explained in the European Commission's guidance on Article 6 of the Habitats Directive[25]. Revised guidance updating the Scottish Office Circular 6/1995 on the implementation of the Habitats and Birds Directive in Scotland was produced in June 2000. This sets out Government policy relating to Natura sites.

[23] http://www.snh.gov.uk/publications -data-and-research/snhi-information-service/sitelink/
[24] http://www.snh.gov.uk/docs/C204761.pdf
[25] http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/provision_of_art6_en.pdf

APPENDIX C

EUROPEAN PROTECTED SPECIES

Certain species are listed on Annex IV of the Habitats Directive as species of European Community interest and in need of strict protection. The protective measures required are outlined in Articles 12 to 16 of the Directive. The species listed on Annex IV whose natural range includes any area in the UK are called „European protected species". All cetaceans, and otters are EPS; however this legislation does not currently extend to pinnipeds, basking sharks, birds or benthic habitats or species.

SNH is the statutory nature conservation body who provides advice on EPS in respect of the Habitats Regulations in Scotland, including Scottish Territorial Waters[26]. A summary of the legal requirements for EPS is as follows:

The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) Known as the 'Habitats Regulations'

Protection of certain wild animals

39. (1) It is an offence –

(a) deliberately or recklessly to capture, injure or kill a wild animal of a European protected species;
(b) deliberately or recklessly –

i. to harass a wild animal or group of wild animals of a European protected species;
ii. to disturb such an animal while it is occupying a structure or place which it uses for shelter or protection;
iii. to disturb such an animal while it is rearing or otherwise caring for its young;
iv. to obstruct access to a breeding site or resting place of such an animal, or otherwise to deny the animal use of the breeding site or resting place;
v. to disturb such an animal in a manner that is, or in circumstances which are, likely to significantly affect the local distribution or abundance of the species to which it belongs;
vi. disturb such an animal in a manner that is, or in circumstances which are, likely to impair its ability to survive, breed or reproduce, or rear or otherwise care for its young; or
vii. to disturb such an animal while it is migrating or hibernating;

(c) deliberately or recklessly to take or destroy the eggs of such an animal; or

(d) to damage or destroy a breeding site or resting place of such an animal.

(2) Subject to the provisions of this Part, it is an offence to deliberately or recklessly disturb any dolphin, porpoise or whale (cetacean).

Scottish Government has also provided guidance on the 2007 amendments addressing EPS – Explanatory guidance for species related activities[27].

[26] SNH advice on EPS under the Habitats Regulalions 1994 (as amended) at: http://www.snh.gov.uk/protecting-scotlands-nature/protected-species/legal-framework/habitats-directive/euro/
[27] Scottish Government Guidance available at: http://www.scotland.gov.uk/Resource/Doc/1221/0050637.pdf

EPS licences

Licences may be given authorising activities that could affect EPS which would otherwise be illegal under the Habitats Regulations. For Scottish territorial waters these licences will be issued either by Marine Scotland[28] or by SNH[29] depending on the reason for the licence request. Please note that Marine Scotland are now responsible for issuing licences for cetaceans, and SNH will be responsible for issuing licences for otters. Licences are only issued under strict conditions as set out in regulations 44 and 45 of the Habitats Regulations.

As highlighted in Scottish Government Interim Guidance[30], three tests must be satisfied before the licensing authority can issue a licence under Regulation 44(2) of the Conservation (Natural Habitats &c.) Regulations 1994 (as amended) to permit otherwise prohibited acts. An application for a licence will fail unless all of the three tests are satisfied. The three tests involve the following considerations:

Test 1 The licence application must demonstrably relate to one of the purposes specified in Regulation 44(2) (as amended). For development proposals, the relevant purpose is likely to be Regulation 44(2)(e) for which Marine Scotland / SNH are currently the licensing authorities. This regulation states that licences may be granted by Marine Scotland / SNH only for the purpose of "preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment."

Test 2 Regulation 44(3)(a) states that a licence may not be granted unless the licensing authority (Marine Scotland / SNH) is satisfied "that there is no satisfactory alternative".

Test 3 Regulation 44(3)(b) states that a licence cannot be issued unless the licensing authority (Marine Scotland / SNH) is satisfied that the action proposed "will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range" (The licensing authority will, however, seek the expert advice of SNH on this matter).

Consideration of European Protected Species must be included as part of the application process, not as an issue to be dealt with at a later stage. Any consent given without due consideration to these species is likely to breach European Directives with the possibility of consequential delays or the project being halted by the EC.

WILDLIFE AND NATURAL ENVIRONMENT (SCOTLAND) ACT 2011

Basking Sharks

Although not a European Protected Species, Basking Sharks are afforded protection under the Wildlife and Countryside Act 1981 (as amended) and the Wildlife and Natural Environment (Scotland) Act 2011, with disturbance licensing requirements similar to those for EPS. Marine Scotland is the licensing authority.

[28] http://www.scotland.gov.uk/Topics/Environment/Wildlife-Habitats/16330
[29] http://www.snh.gov.uk/protecting-scotlands-nature/species-licensing/mammal-licensing/marine/
[30] http://www.scotland.gov.uk/library3/environment/epsg.pdf

APPENDIX D

KINCARDINE FLOATING OFFSHORE WIND DEMONSTRATOR PROJECT: HABITATS REGULATIONS APPRAISAL - SPECIAL PROTECTION AREAS

Introduction

In the following advice for HRA we set out the three steps that need to be considered in order to determine whether or not the proposal is likely to have a significant effect on qualifying interests of SPAs, and any possible adverse impact on site integrity – Appendix B provides more detail on the legislative framework. It is the competent authority (Marine Scotland) who will carry out the appropriate assessment, the final step of the HRA, based on our advice and using information and data collated by the applicant.

Under HRA, the potential impacts of this proposal will need to be considered alone and in combination with other plans and projects. At this stage, we would advise that the following projects may require further consideration:

- European Offshore Wind Deployment centre
- Moray Firth Offshore Wind farm applications
- Forth and Tay Offshore Wind farm applications
- NRIP (harbour and port applications)
- Cable works in the vicinity of Peterhead, including the proposed HVDC cable to NE England
- The Hywind proposed floating wind demonstrator project.

We also note that HRA should address all elements of the wind farm proposal – onshore works as well as offshore elements.

Special Protection Areas for inclusion in HRA

We strongly recommend at this stage of the assessment that an HRA screening report is provided by the applicant.

In order to assist with provision of the HRA screening report, we have identified SPAs and features that should be considered.

For birds, we use the mean maximum foraging ranges + 10% buffer to develop a long list of species of birds that are qualifying features from relevant SPAs within Scottish waters that may be affected by the project. Thaxter et al. 2012 provides the most up to date source of information for foraging ranges and assigns confidence levels (high, moderate and low) to the representative foraging ranges for each species. BirdLife International data from BirdLife International Seabird Wikispace has been used to provide mean maximum foraging ranges for species not included in Thaxter et al, (2012).

Although this initially produces a long list of SPAs, this will be refined through an iterative process as further results from baseline characterisation surveys are available. Surveys will help inform this process by identifying species present at the site, their abundance, seasonal patterns of use and behaviour and as species sensitivity to potential impacts from the proposal are defined.

Furthermore, this process should reduce the likelihood of connectivity with Natura sites being missed early on, thus helping to ensure that the final ES / HRA is complete, appropriate and fully informed. In addition, for some seabird species, the meta-data is such that it is appropriate to use cumulative frequency plots to determine the foraging

range at which 95%
of the population will be included. Note that these ranges are subject to some variance and so are not used as a hard cut off (i.e. an SPA only a few kilometres further than the foraging range have not automatically been scoped out).

It is necessary to determine the connectivity and thus potential impacts to birds during the post-breeding period, migration and winter as well. The connectivity with all protected sites is conducted using biologically relevant information. We understand however, that outside the breeding season most species tend to range more widely, complicating the identification of connectivity with sites and the HRA process. The Statutory Nature Conservation Bodies (SNCB"s) have been consulting on this topic but we do not expect to be able to provide detailed guidance to the applicant in near future.

List of SPAs for inclusion in HRA
We recommend that the following initial list of SPA sites and features are considered. We would suggest this indicative list is compiled in conjunction with a thorough review of relevant SPAs and features to insure inclusion of all relevant sites and species. With the exception of non-breeding eider, a feature of Montrose Basin SPA, all features are breeding seabirds:

Buchan Ness to Collieston Coast SPA: kittiwake, guillemot, fulmar herring gull

Fowlsheugh SPA: kittiwake, guillemot, fulmar, herring gull, razorbill

Troup, Pennan and Lions Heads SPA: kittiwake, fulmar, herring gull, guillemot

Forth Islands SPA: fulmar, gannet, lesser black backed gull

East Caithness Cliffs SPA: fulmar

North Caithness Cliffs SPA: fulmar

Ythan Estuary, Sands of Forvie and Meikle Loch SPA: sandwich tern

Montrose Basin SPA: non-breeding eider

Fair Isle SPA: gannet

Flamborough head and Bempton Cliffs SPA: gannet

The following non-breeding goose and swan features should be given consideration only during the migratory period:

Montrose Basin SPA: pink-footed goose, greylag goose

Loch of Strathbeg SPA: pink-footed goose, greylag goose, Svalbard barnacle goose, whooper swan.

Loch of Skene SPA: greylag goose

The scope of HRA should be based on a consideration of the range of bird species that may be affected, their ecology and the types of impacts which may affect them.

We would also welcome further discussion on this initial list, upon receipt of the first year baseline survey report.

Further information on SPAs, including their conservation objectives, is available from SNH Sitelink web pages[31]. We recommend that the most recent, reliable population figures should be used when assessing potential effects on SPAs. These estimates must be interpreted with reference to the original baseline (site citation – see SNH Sitelink[32]) population figures to establish whether there have been any significant changes in numbers supported by the site since classification. Recent population figures may be gathered from the SNH Site Condition Monitoring and the Seabird Monitoring programmes. Further information may also be found in the Marine Scotland report – *Population sizes of seabirds breeding at Scottish SPAs*[33]. Importantly, site populations also need to be considered in the context of the wider population trends and the current conservation status of the species.

We are currently in the process of finalising a guidance note on how to apportion impacts on breeding seabird colonies, including SPAs, and recommend that this guidance note is incorporated into HRA process. We will provide the applicant with a copy of this as soon as it is available and would be happy to give further advice as the HRA progresses. However, in the absence of this guidance we are content for the applicant to use a reasoned approach to apportioning, and recommend that colony size and distance from the proposed size are factored in to any calculation.

We advise that cumulative impact assessment will require to be discussed in sufficient detail. Early discussion with SNH will be important to establishing the sources of cumulative and in- combination impacts for discussion. We recommend providing a methodology for assessing which projects may have connectivity with the same populations that may be impacted by the proposed KOWL development. We can then provide comments on the methodology, without having to consider each potential cumulative impact individually. This should be informed by knowledge of foraging ranges during the breeding season, post-breeding dispersal patterns, known or estimated migration routes and known or estimated wintering areas.

Advice for HRA in respect of SPA qualifying interests
We provide advice on the legislative requirement for HRA in Appendix B. The steps of the process are as follows:

Step 1: Is the proposal directly connected with or necessary to the conservation management of the SPAs?

The proposal is not directly connected with or necessary to site management for the conservation the SPAs.

Step 2: Is the proposal likely to have a significant effect on the qualifying interests of the SPAs either alone or in combination with other plans or projects?

This step acts as a screening stage: it removes from the HRA those proposals (plans or projects) which clearly have no connectivity to SPA qualifying interests or where it is very obvious that the proposal will not undermine the conservation objectives for these

[31] http://www.snh.org.uk/snhi/
[32] http://www.snh.gov.uk/publications -data-and-research/snhi-information-service/sitelink/

interests, despite a connection. When this screening step is undertaken at an early stage in

the development process, it usually means that it takes the form of a desk-based appraisal. We advise that this is kept broad so that potentially significant impacts are not missed out, or discounted too early, in any HRA (or EIA).
The SPA bird interests being considered in respect of OSWF are wide-ranging – many seabirds make long foraging trips, especially during the breeding season. This means that OSWF proposals may be „connected to" SPAs even at great distances. Although connectivity is thus established the fact that the proposal is located further away from the designated sites means that direct impacts are less likely on qualifying species while they are within the SPA. This presents challenges in determining from which SPA species on the site have arisen.

Expert agreement over species sensitivity should help to identify those SPA qualifying interests for which the conservation objectives are unlikely to be undermined by OSWF developments, despite any possible connection (e.g. SPA qualifiers which are recorded within a proposed OSWF site but where their flight behaviour and / or foraging ecology means that the OSWF will not have a likely significant effect).

Determination of „likely significant effect" is not just a record of presence or absence of bird species at a site, but also involves a judgement as to whether any of the SPA conservation objectives might be undermined. Such judgement is based on a simple consideration of the importance of the area in question for the relevant species. Understanding the behavioural ecology of the species, and the characteristics and context of the proposed OSWF site, will help in determining whether there are likely significant effects.

There are three possible conclusions for this step of HRA:

- The likely impacts are such that there is clear potential for the conservation objectives to be undermined – conclude likely significant effect;

- The likely impacts are so minimal (either because the affected area is not of sufficient value for the birds concerned or because the risk to them is so small) that the conservation objectives will not be undermined – conclude no likely significant effect;

- There is doubt about the scale of the likely impacts in terms of the conservation objectives – conclude likely significant effect.

Step 3: Can it be ascertained that the proposal will not adversely affect the integrity of the SPA, either alone or in combination with other plans or projects?

This stage of HRA is termed **appropriate assessment**, and it is undertaken by the competent authority based on information supplied by the developer, and with advice provided by the relevant nature conservation organisation.

Appropriate assessment considers the implications of the proposed development for the **conservation objectives** of the qualifying interests for which a likely significant effect has been determined. SNH's website provides details on the conservation objectives for each SPA. Based on these objectives, we discuss key questions relevant to each interest, to determine overall whether it can be ascertained that the proposal will not adversely affect the integrity of any of these SPAs.

[33] http://www.scotland.gov.uk/Topics/marine/marineenergy/Research/seabirdsize

Our advice on appropriate assessment, and how many of these questions may need to be answered, will become clearer when the development process is further advanced, when baseline data has been collected, and when construction methods, location of infrastructure, choice of port, and other aspects of the proposal have been finalised.

Conservation objectives for SPA bird species

To ensure that site integrity is maintained by:

(i) Avoiding deterioration of the habitats of the qualifying species.

(ii) Avoiding significant disturbance to the qualifying species.

To ensure for the qualifying species that the following are maintained in the long term:

(iii) Population of the bird species as a viable component of the SPA.

(iv) Distribution of the bird species within the SPA.
(v) Distribution and extent of habitats supporting the species.

(vi) Structure, function and supporting processes of habitats supporting the species.

repeat of (ii) No significant disturbance of the species.

It is important to recognise that the conservation objectives primarily offer site-based protection and that some of them will not directly apply to species when they are outwith the boundaries of the SPA. This is particularly true of objectives **(i)**, **(v)** and **(vi)** which relate to the supporting habitats within the SPA.

Objective **(iii)** however – maintenance of the population of the bird species as a viable component of the SPA – will be relevant in most cases because:

- It encompasses direct impacts to the species, such as significant disturbance to qualifying bird interests when they are outwith the SPA;

- It addresses indirect impacts such as the degradation or loss of supporting habitats which are outwith the SPA but which help to maintain the population of the bird species of the SPA in the long-term.

Finally, in rare circumstances, it is possible that factors / events outside site boundaries may have the capacity to affect the long term distribution of bird species within the SPA – see objective **(iv)**.

Issues to consider under appropriate assessment
The key question in any appropriate assessment for KOWL of development is whether it can be ascertained that this proposal, alone or in combination, will not adversely affect the population of any qualifying bird species as a viable component of the SPAs under consideration.

In considering this matter, there may be further issues to consider if the proposal is likely to affect the conservation objectives that relate to bird species while they are in an SPA or to the habitats in the SPA that support them.

- Will the offshore wind proposal(s) cause a deterioration in the habitats of any of the SPAs?
- Will the offshore wind proposal(s) cause any significant disturbance to bird interests while they are in any of the SPAs?
- Will the offshore wind proposal(s) alter the distribution of the birds within any of the SPAs?
- Will the offshore wind proposal(s) affect the distribution and extent of the habitats (that support the bird species) in any of the SPAs?
- Will the offshore wind proposal(s) in any way affect the structure, function and supporting processes of habitats in any of the SPAs?

Ongoing Liaison

We will continue to review our advice on HRA as the proposal progresses, as survey work and analyses are undertaken, and when construction / installation methods, location of infrastructure, and other aspects of this proposal have been finalised.

APPENDIX E

KINCARDINE FLOATING OFFSHORE WIND DEMONSTRATOR PROJECT: HABITATS REGULATIONS APPRAISAL - SPECIAL AREAS OF CONSERVATION

Introduction

In the following advice for HRA we set out the three steps that need to be considered in order to determine whether or not the proposal is likely to have a significant effect on qualifying interests of SPAs, and any possible adverse impact on site integrity – Appendix B provides more detail on the legislative framework. It is the competent authority (Marine Scotland) who will carry out the appropriate assessment, the final step of the HRA, based on our advice and using information and data collated by the applicant.

At this early stage in the process we do not have full details on the development being proposed or finalised locations of all elements of infrastructure. We can provide more focused advice for HRA once further project details and baseline survey reports are submitted.

We recognise that the HRA is set wide initially, but will become more focused as information is collected and we will continue to review our advice as the wind farm development progresses.

Under HRA, the potential impacts of this proposal will need to be considered alone and in combination with other plans and projects. At this stage, we would advise that the following projects may require further consideration:

- European Offshore Wind Deployment centre
- Moray Firth Offshore Wind farm applications
- Forth and Tay Offshore Wind farm applications
- NRIP (harbour and port applications)
- Cable works in the vicinity of Peterhead, including the proposed HVDC cable to NE England
- The Hywind proposed floating wind demonstrator project

We also advise that HRA should address all elements of the wind farm proposal – onshore works as well as offshore elements.

Special Areas of Conservation for Inclusion in HRA

We advise that the applicant will need to consider the following SACs for HRA, initially, due to potential connectivity between the development and the site:

- **Moray Firth SAC** designated for its Bottlenose dolphins (*Tursiops truncatus*).
- **River South Esk SAC** designated for its Atlantic salmon and freshwater pearl mussel.
- **River Dee SAC** designated for its Atlantic salmon and freshwater pearl mussel.
- **River Spey SAC** designated for its Atlantic salmon, sea lamprey and freshwater pearl mussel.

We have considered other qualifying features from the SACs above and other SACs in close proximity to the development site, and included only those that we consider relevant i.e. where there may be connectivity between the OSWF and the SAC.

Further information on SACs, including their conservation objectives, is available from http://www.snh.org.uk/snhi/.

SNH advice for HRA in respect of Special Areas of Conservation
We provide advice on the legislative requirement for HRA in Appendix B. The steps of the process are as follows, independently of the characteristics or size of the project:

Step 1: Is the proposal directly connected with or necessary for the conservation management of the SACs?

The proposal is not directly connected with or necessary for the conservation management of any of the SACs listed above.

Step 2: Is the proposal likely to have a significant effect on the qualifying interests of the SACs either alone or in combination with other plans or projects?

This step acts as a screening stage: it removes from the HRA those proposals which clearly have no connectivity to SAC qualifying interests or where it is very obvious that the proposal will not undermine the conservation objectives for these interests, despite a connection. When this screening step is undertaken at an early stage in the development process, it usually means that it takes the form of a desk-based appraisal.

Screening begins early in the development process (at scoping), at which point we advise that the scope of the HRA is kept broad so that potentially significant impacts are not missed out. The HRA will then be refined over time as further information arises, from the developer and experience elsewhere. The SAC interests listed here may therefore change as the HRA process progresses and we recommend early discussion to agree which qualifying interests can be scoped out of the HRA and at what stage.

There are three possible conclusions to this step of HRA:

a) The likely impacts are such that there is clear potential for the conservation objectives to be undermined – conclude likely significant effect.

b) The likely impacts are so minimal that the conservation objectives will not be undermined – conclude no likely significant effect.

c) There is doubt about the scale of the likely impacts in terms of the conservation objectives – conclude likely significant effect.

Until the proposal has been further progressed and more details are available, we will not be in a position to present definite conclusions for this step. Instead, we therefore provide a summary of our current advice for each qualifying interest.

- **Bottlenose dolphins** of Moray Firth SAC

  The dolphins are not confined to this SAC and will range more widely within the Firth and along the East coast of Scotland. It is unclear whether noise from construction (and other sources) is likely to extend beyond the wind farm footprint and therefore overlap with dolphin use of the surrounding environment. Boat movements, cable-laying and other construction activity may give rise to disturbance. There may also be impacts to the prey species of dolphin – either from the placement of infrastructure or due to noise. We therefore advise that there is potential for the proposal to have likely significant effects on

bottlenose dolphins and discuss below (under step 3) the issues that we think need to be considered.

Summary of our current advice: Potential likely significant effect, so impacts (including cumulative) will need to be considered in appropriate assessment (see step 3).

- **Atlantic salmon** of River South Esk SAC, River Dee SAC and River Spey SAC.

  The development may be located within the migratory pathways of Atlantic salmon from these designated sites. Construction and operational noise/vibration may give rise to disturbance of Atlantic salmon. There is also the potential for disturbance from EMF. We advise that there is potential for the proposal to have likely significant effects on Atlantic salmon and we discuss below (under step 3) the issues that we think need to be considered.

  Summary of our current advice: likely significant effect due to the potential disturbance to migrating Atlantic salmon, so impacts (including cumulative) will need to be considered in appropriate assessment (see step 3).

- **Freshwater pearl mussels** of River South Esk SAC, River Dee SAC and River Spey SAC.

  Atlantic salmon (and other salmonids) are integral to the life cycle of freshwater pearl mussel (FWPM), therefore any impacts to Atlantic salmon that prevent them from returning to their natal rivers may have a resulting effect on FWPM populations. While we consider this matter needs discussion in any appropriate assessment we do not identify any survey or research requirements. The impacts are indirect, dependent on the impacts the proposal may have on Atlantic salmon.

  Summary of our current advice: likely significant effect due to changes to the distribution and viability of the freshwater pearl mussel host species, so direct and indirect impacts (including cumulative) will need to be considered in appropriate assessment as part of the assessment of any direct impacts on host species (see step 3).

- **Sea lamprey** of the River Spey SAC.

  The proposed OSWF may be located within the migratory pathways of sea lamprey from this designated site. Construction and operational noise/vibration may give rise to disturbance of sea lamprey. There is also the potential disturbance from EMF. We advise that there is potential for the proposal to have likely significant effects on sea lamprey and we discuss below (under step 3) the issues that we think need to be considered.

  Summary of our current advice: likely significant effect due to the potential disturbance to migrating sea lamprey, so impacts (including cumulative) will need to be considered in appropriate assessment (see step 3).

<u>Step 3:</u> Can it be ascertained that the proposal will not adversely affect the integrity of the SAC, either alone or in combination with other plans or projects?

This stage of HRA is termed **appropriate assessment**, and it is undertaken by the competent authority based on information supplied by the developer, and with advice provided by the relevant nature conservation organisation.

Appropriate assessment considers the implications of the proposed development for the **conservation objectives** of the qualifying interests for which a likely significant effect has been determined. SNH"s website provides details on the conservation objectives for each SAC. Based on these objectives, we discuss key questions relevant to each interest, to determine overall whether it can be ascertained that the proposal will not adversely affect the integrity of any of these SACs.

Our advice on appropriate assessment, and how many of these questions may need to be answered, will become clearer when the development process is further advanced, when baseline data has been collected, and when construction methods, location of infrastructure, choice of port, and other aspects of the proposal have been finalised.

Moray Firth SAC: advice on bottlenose dolphins

Advice for further consideration of the requirement for appropriate assessment in respect of bottlenose dolphin of the Moray Firth SAC.

The **conservation objectives** for bottlenose dolphin are:

(i) to avoid deterioration of the habitats of bottlenose dolphin or

(ii) significant disturbance to bottlenose dolphin, thus ensuring that the integrity of the Moray Firth SAC is maintained and that the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features.

And to ensure for bottlenose dolphin that the following are established then maintained in the long term:
(iii) Population of bottlenose dolphin as a viable component of the site.
(iv) Distribution of bottlenose dolphin within site.
(v) Distribution and extent of habitats supporting bottlenose dolphin.
(vi) Structure, function and supporting processes of habitats supporting bottlenose dolphin.
repeat of **(ii)** No significant disturbance of bottlenose dolphin.

Based on these conservation objectives the following questions may need to be addressed:

- Will the proposal cause any deterioration to habitats within the Moray Firth SAC which support bottlenose dolphin?

- Will it affect the extent or distribution of any of these habitats in the SAC?

- Will it affect the structure and function of these habitats or of any of their supporting processes?

- Will the proposal cause significant disturbance to bottlenose dolphin while they are in the SAC, and will it cause any change to their distribution within the site?

- Will the proposal cause significant disturbance to bottlenose dolphin while they

are outwith the SAC such that the viability of this SAC population is affected?

- Will the proposal in any way affect the population viability of the bottlenose dolphins of the Moray Firth SAC?

The last question encompasses the indirect impacts that a wind farm development could have – such as the degradation or loss of supporting habitats or feeding grounds which are outwith the SAC but which help to maintain the population of bottlenose dolphin in the SAC in the long-term. The risk of impacts, and how many of these questions may need answered, will become clearer when the development process is further advanced and construction methods, location of cable routes, choice of port, and other aspects are finalised.

We advise that noise impact assessment from vessels, anchoring and other operations is likely to be an important part of assessing any direct disturbance to bottlenose dolphin, including their potential displacement from feeding grounds and other supporting habitats. While we consider that the construction phase may give rise greatest risk of disturbance, we do highlight that impacts during the operational phase also need to be considered, as well as any repowering and decommissioning work. It will also be important for the applicant to consider impacts on prey species.
We highlight that cumulative impacts are a key concern and should be addressed.

River South Esk SAC, River Dee SAC and River Spey SAC: advice on Atlantic salmon Advice for further consideration of the requirement for appropriate assessment in respect of Atlantic salmon of River South Esk SAC, River Dee SAC and River Spey SAC

The SAC **conservation objectives** for Atlantic salmon are:

(i) to avoid deterioration of the habitats of the qualifying species or

(ii) significant disturbance to them, thus ensuring that the integrity of the SAC is maintained and that they make an appropriate contribution to achieving favourable conservation status for the qualifying species.

And to ensure for the qualifying species that the following are maintained in the long term:

(iii) Population of the species, including range of genetic types for salmon, as a viable component of the SACs.
(iv) Distribution of the species within sites.

(v) Distribution and extent of habitats supporting each species.
(vi) Structure, function and supporting processes of habitats supporting each species.
repeat of **(ii)** No significant disturbance of the species.

The key question in any appropriate assessment is whether it can be ascertained that this proposal, alone or in-combination, will not adversely affect the population of the qualifying species as a viable component of these SACs.

Information to support the application should consider all aspects of the proposal with the potential to affect the conservation objectives of these sites and, through this, ascertain whether the proposal will not adversely affect the integrity of a Natura site.

We advise that a noise/vibration/EMF impact assessment is likely to be an important part of assessing any disturbance to Atlantic salmon while they are outwith these SACs. Further information on the installation, operation, maintenance and decommissioning of the array is required to assess whether there will be any direct disturbance to Atlantic salmon.

River South Esk SAC, River Dee SAC and River Spey SAC: advice on fresh water pearl mussels

Advice for further consideration of the requirement for appropriate assessment in respect of Freshwater pearl mussels of River South Esk SAC, River Dee SAC and River Spey SAC

The SAC **conservation objectives** for Atlantic salmon and freshwater pearl mussel (where appropriate) are:

(i) to avoid deterioration of the habitats of the qualifying species or

(ii) significant disturbance to them, thus ensuring that the integrity of the SAC is maintained and that they make an appropriate contribution to achieving favourable conservation status for each species.

And to ensure for each species that the following are maintained in the long term:

(iii) Population of the species, including range of genetic types for salmon (where relevant), as a viable component of the SACs.**(iv)** Distribution of the species within sites.

(v) Distribution and extent of habitats supporting each species.

(vi) Structure, function and supporting processes of habitats supporting each species. repeat of **(ii)** No significant disturbance of the species.
And in addition for freshwater pearl mussel in particular, to ensure that the following are maintained in the long term:

(vii) Distribution and viability of freshwater pearl mussel host species

(viii) Structure, function and supporting processes of habitats supporting freshwater pearl mussel host species

The key requirement will be to demonstrate that the distribution and viability of the freshwater pearl mussel host species are maintained in the long term - conservation objective **(vii)**. This is discussed above in the section for Atlantic salmon.

River Spey SAC: advice on sea lampreys.

The conservation objectives for the sea lamprey populations of this SAC are the same as those we have listed above for Atlantic salmon. Those requiring consideration – objectives **(ii)** and **(iii)** – as discussed in the section above for Atlantic salmon.

Ongoing Liaison

As noted above, we will continue to liaise with the developers and Marine Scotland in respect of this HRA process. Agreeing the scope of, and information required for, HRA will be an iterative process.

SNH response to the "Kincardine Offshore Wind Farm - Final report on aerial surveys from April 2013 to April 2014" consultation:

We have considered the information presented in the HiDef report 'Kincardine offshore wind farm final report on aerial surveys from April 2013 to April 2014 – Draft 2' with regard to our previous scoping advice, including our advice for the interim 8 month survey report, which we provided on 9 June 2014. We offer the following detailed comments in relation to ornithology and marine mammals:

1. Ornithology

General comments

The report presented covers a 12 month baseline survey period for the KOWL proposed demonstrator project. The quality of survey and report is of an appropriate standard required for use to determine baseline use of the development area by birds. The survey indicates that the proposed project area contains important concentrations of seabirds which are likely to originate from Scottish Special Protection Areas (SPAs).

Given the number of birds recorded using the development area and survey area, we expect that estimated impacts from collision with turbines (for several species) and from barrier or displacement effects, particularly for auks, will be sufficient to require further consideration.

We would welcome further discussion about the approach to Habitats Regulations Appraisal (HRA), especially with regard to assessing the impact to auk populations. We recommend that on-going survey work is used to improve precision of the estimates of bird populations. As outlined in our scoping advice of 9 June 2014, further proposed digital aerial surveys should be carried out during 2014, covering the breeding/post breeding period and continuing up to and including September 2014. Details of the design of future monitoring, including planned post-consent and post-construction monitoring would be welcomed.

Detailed comments

<u>Observations on presented data, including bird densities</u>

Design of survey and sampling frequency has been previously agreed with Marine Scotland. Although we did not see the design of the survey prior to it commencing, it is compliant with SNH guidance, following modification early in the sampling period to increase the number of transects within the proposed development area.

Twelve separate surveys were completed at approximately monthly intervals, although none fall into August or October. This spread of survey timing is suitable, although it would be preferable to bias survey effort on periods of high interest or to fill data gaps, if possible. Two surveys were undertaken during May and two during October.

The exact limits and location of the development area are not known at this time. The survey area covers approximately 450km2. The project area is approximately 73km2. The footprint of the development area, based on information on number of turbines and possible turbine spacing, is expected to be around 10km2 or around 2% of the survey area.

Bird densities are provided for the whole survey area, but kernel maps are provided for most species by month. These species maps do not indicate any consistently high areas of bird density across species or months. It is therefore assumed at this stage that there are

no particular locations within the survey area that show consistently higher or lower densities of species.

The project area generally holds higher densities of birds than the survey area as a whole. As noted in the discussion section of the report, there appears to be a north-south orientation of high densities of birds. Although this is not marked or universal this possibly contributes to the observed effect of the central area holding higher densities. Comparing the densities in these surveys with those calculated for other east coast bird surveys (e.g. Kober et al 2010, Stoneet al 1995) shows them to be largely within the range expected, with some notable exceptions.

The numbers of diving birds recorded were adjusted for availability bias using generic information on dive times. This is a useful approximation and we welcome its use in lieu of any direct measure.

Where sufficient numbers of birds are available, flight heights of birds are reported, including the proportion of birds in flight that are measured as being above 20m (a nominal height for the lowest point of rotor sweep). There is an issue with the technique used to calculate flight heights which is detailed in the method section. This leads to a small percentage (no more than 10%) of heights being overestimated, which would tend to slightly increase collision estimates.

The presentation of counts and density estimates by survey, by species and by species groups is useful. Approximately 6% sitting birds and 12% flying birds were not identified, with some birds being identified in species groups (such as 'large auk' and 'small gull species'). The overall identification rate is claimed as 93.1%. The number of birds with no identification is fairly constant on each survey. This level of specific identification is acceptable, given that it does not appear to be particularly biased (although some species groups will have higher degree of specific identification than others), but it is obvious that there is still room for improvement in the technique. It is noted that for 'difficult' species groups identifications with lower confidence are included in the sample.

The density estimates are accompanied by confidence intervals derived from bootstrap samples with replacement. Many of the monthly samples produce large coefficient of variance values, indicating that the power to detect change at that level is small. Amalgamation of samples into biological periods may help improve power, as would more samples in the same period.

The surveys indicate that the area may hold high densities of birds at times, especially of kittiwakes and large auks in the period at the end of the breeding season. At other times there are still significant densities of some species.

Species considered sensitive to collision impacts

Gannet densities at peak equate to 145 gannets within the development area. The maximum density across the whole survey area is 1.51 birds/km2. 27% of flying gannets (76% of total) were flying above 20m. This is slightly higher than previous estimates of flight height from Furness and Wade (2012), Cook et al (2012) and Johnston et al (2013). These numbers are not large, but it can be expected that a significant number of birds from Forth Islands SPA as well as the Troup, Pennan and Lion's Head SPA will be involved. Smaller numbers of birds from other sites will almost certainly occur in the area.

Kittiwake densities reached 9.6 birds/km2 at the end of July but average 2.7 birds/km2 across the year and is similar to estimates elsewhere (Kober et al 2010, Stone et al 1995). The late breeding season influx occurred at a time when breeding birds should be feeding

young. This may relate to breeding birds, failed breeders or non-breeders. Presentation of age class ratios for this species (and others) would aid interpretation of the results.

Large gull densities in the breeding period appear to be low, but there are higher numbers recorded in winter. Herring gull shows winter peak density of c500 birds in late December surveys with 2.93 birds/km2 recorded. Large gulls are one of the groups considered most vulnerable to collision with wind turbines.

Species considered sensitive to displacement and barrier impacts

Guillemot numbers were very high (but variable) with a peak density of 102.26 birds/km2, estimating that over 13,000 birds were present in the survey area in late July. This is consistent with post breeding dispersal of birds from colonies on the Scottish east coast, but is considerably higher than that recorded in surveys in the Moray Firth, Pentland Firth and Orkney waters or in the Forth and Tay area, although it is quite possible that some of the birds may have originated from those areas.

During colony attendance, the densities were considerably lower, but average more than 20 birds/km2 over the year for the entire survey area. As the footprint of the current proposal is small, the number of birds expected to be affected by displacement or barrier impacts will not be large when compared to local populations. However, assessment of cumulative impacts determines that these must be accounted for and this concentration of birds could prove to be important. We do not yet understand how these flightless auks will react when encountering a turbine array.

Razorbills occurred at a lower density than guillemots (peak density 4.43 birds/km2 in late July survey). It appears that guillemots in particular use the area post breeding season and may be from any east coast sites, but the same is probably true of razorbill. Logic suggests that a higher proportion of birds originating from close-by breeding sites will occur on the survey area, but the birds are no longer central place foragers at this time. As these are almost all flightless (a number will be dependent young) the most likely impact is from displacement from a preferred feeding or resting area, or possibly barrier impacts to birds reluctant to move through a wind turbine array.

Puffin numbers in the survey area were high in the June survey. A peak density of 3.30 birds/km2 is not especially high compared to other east coast survey results. It does not appear that a significant post breeding gathering or passage takes place in the vicinity, unlike the other auks. However, this observation is based on two surveys over an 11 week period, which indicates that cautious assessment must be applied.

The high peak densities of large auks at the end of July indicate that the area is important in dispersal of breeding auks from a number of colonies. At present a second year of surveys covering the auk dispersal period is planned. It is not clear what use is being made of the area by these auks, or how long they are present. The high density is only found in one survey and is not obvious in either June or September. No surveys were undertaken in August and there are more than 5 weeks either side of the July survey without a survey being undertaken. It is also not clear what the age structure of these birds is, if they are mostly adult males with dependent young or mostly adult females moulting after breeding or a mixture.

On the assumption that this is a normal pattern for the site (an assumption made based on one year's data), there are implications from the proposed development that populations could be affected from disturbance or displacement. At present there is not a recommended approach to addressing this for the post breeding dispersal of auks. Identification of which birds are dependent young at sea and which are adults would be

helpful in assessing impacts. The developer should discuss any approach being taken to assess this impact with us and
MS-LOT.

Recommendations for survey data presentation and analyses
This is a thorough report of the surveys conducted. As the surveys are digital aerial surveys, distance analysis is not applied. The HiDef method of flight height calculation has been undertaken which provides a data set potentially for use in the collision risk analysis (Band 2012), or can be compared with published flight height estimates. A known issue with the technique to calculate flight height is noted in the text, and the approximate level and direction of bias it will produce.

The percentage of positive species identification is good, but improvement to this is still sought by the consultants. As identifications of more difficult species include records with a higher degree of uncertainty, it would be useful to have a breakdown of how this affects the specific totals i.e. tables including the proportions of identifications of different confidence levels.

At present this report presents data per survey. This may be usefully re-structured into biologically relevant periods (e.g. breeding season, winter or migration / post breeding periods) for further analyses. Provision of the survey data 'as is' as well as that following treatment for availability bias and density calculation is beneficial for our understanding. The coefficient of variance (CV) values for the population estimates are often large, but repeat sampling may help reduce these values when the samples are aggregated into biological periods.

19 bird species were recorded in surveys. Only 2 divers were recorded in these surveys, although it might be expected that a spring migration of birds moving from the major wintering grounds in the southern North Sea to northerly breeding grounds would pass through the sample area.

One year of data also reduces sampling precision and therefore reduces the power to detect change in numbers of birds during post construction monitoring. This negative aspect is mitigated to some extent by continuing surveys and by post consent monitoring, should consent be granted.

The survey area includes a large buffer and offers opportunities for a preferred BAGI (Before After Gradient Impact) to detect changes. Details of on-going or post consent monitoring designs, especially given the likely scenario of the decision to develop in the northern part of the exclusivity zone, should be provided as soon as possible.

Although the flight direction graphics are provided and give some indication of the direction that birds may be coming from or going to, although useful supporting evidence, we consider this to be quite weak evidence for assigning birds to colonies.

2. Marine mammals

General comments
This one year baseline survey report does not fundamentally change our scoping advice in relation to marine mammals for the 8 month interim survey report provided in our response of 9 June 2014. There were no additional species of marine mammal observed and the calculated densities are still relatively small.

Detailed comments

Methodological changes associated with availability bias

In the interim report, the authors alluded to potential issues with the correction for availability bias. As a result of this issue the methodology in this one year report differs slightly from that in the 8 month interim report.

There are two approaches using known diving rates using data from Teilmann et al (2013): *"either applying a correction based on an assumption that all animals are visible at the surface and when submerged down to 2m depth; or by applying a correction factor only to the density of animals observed breaking the surface".*

These approaches are used in both reports, however, the analysis method has changed in the one year report when using the surfacing rate approach. In the 8 month interim report all observations within the video transect were used. This generated an upward adjustment of the density by a factor of 7-10. In the one year report, the number of observed surfacings on a reference line within the videoed area has been used. This new method results in an upward adjustment of the density by a factor of 2.8 - 3.9, which is much less than the previous report. We note that the authors consider that the previous method in the 8 month interim report gives too high an estimate and therefore recommend that the reference line method be used for calculations instead. We would be interested of learning of any studies or analyses by the authors to explore the efficacy of this novel reference line surfacing rate density correction approach that would suggest the method is more accurate than that previously used.

Population density estimates for harbour porpoise

The density levels quoted are similar or higher than those cited in SCANS-II (2005). In the ES, abundance numbers should be fully referenced so it is clear where the data has been generated from.

The population estimate in the one year report is higher than that in the 8 month interim report. In the one year report, estimates are on cited for the smaller site rather than the wider buffer area. We recommend a population estimate for the wider buffer area for the one year report in included in the ES.

Aberdeen Harbour Board

Aberdeen Harbour Board (AHB) is grateful for the opportunity to respond to this consultation and recognises that Kincardine Offshore Wind Farm (KOW) is a valuable development that will bring welcome economic and technological benefits to the region.

We understand that Pilot Offshore Renewables Ltd. (POWL) propose a demonstrator offshore wind farm to the south east of Aberdeen, approximately eight miles offshore. POWL will also need to install inter-array cabling as well as an export cable, possibly via a landfall in Nigg Bay, to connect to the national grid at Redmoss substation south of Aberdeen.

We believe KOW, as described in the Scoping Report, has the potential to interact with our proposals for new harbour facilities in Nigg Bay (AHB-NB) during the impact assessment phase as well as during construction and operation. AHB has already received a Scoping Opinion for AHB-NB and is in the process of producing an ES.

The KOW Scoping Report acknowledges that the north western part of the proposed site could affect AHB-NB and concludes that the south west portion of the site is preferable. We advise you that, irrespective of which part of the site KOW occupies, there is material potential for it to impact shipping linked to AHB's current operations as well as those from AHB-NB. More importantly, Cable Route Corridor 1 would have a direct and negative impact on both the construction and operation of AHB-NB.

We believe that prompt and pragmatic discussions with POWL will easily resolve these issues and would like to preface our comments on KOW's Scoping Report by assuring MS-LOT and POWL of our sincere desire to meet as soon as possible.

<u>Policy and Regulatory Background</u>

We have considered POWL's summary of the policy and regulatory background and do not believe it adequately acknowledges the relevance or importance of the emerging third National Planning Framework (NPF3), the Aberdeen City and Shire Strategic Development Plan (SDP) or the emerging Local Development Plan (LDP).

There are references to NPF3, but these are out of date and do not reflect the most recent Proposed Framework that recently received parliamentary scrutiny. This latest version clearly identifies the need for expansion at Aberdeen Harbour and specifically refers to AHB-NB as a National Development.

The Aberdeen City and Shire Strategic Development Plan (SDP), which was recently approved by Scottish Ministers, and the emerging Aberdeen City Local Development Plan (LDP) also identify and support the expansion of Aberdeen Harbour.

POWL do acknowledge AHB-NB, referring to it as AHB's 'preferred option'. AHB-NB is generally no longer referred in this way because a considerable body of evidence now indicates that it is the only viable option for growing port capacity in a way that meets the requirements of NPF3. AHB-NB is also identified as the only option for expansion in the LDP Main Issues Report.

Whether the planning authority for the terrestrial elements of POWL's proposals is Aberdeen City Council or the Scottish Ministers, either body would have to have due regard to NPF3, the SDP and the LDP in granting permission. Any application contrary to or jeopardising the

delivery of NPF3, SDP or LDP (all of which are likely to be in effect at the time of determining KOW's application) may be determined unfavourably by the planning authority.

Again, we believe that discussion – particularly in relation to the cable route – could easily remove any possibility that KOW interferes with AHB-NB or the delivery of NPF3, the SDP and the LDP and would urge POWL to contact us as soon as possible.

Socio-Economic Impact Assessment

Evidence produced by BiGGAR Economics on behalf of Scottish Enterprise has found that the consequences of not progressing with AHB-NB are considerable – a potential loss to the Scottish economy of nearly £1 billion, with an attendant loss of 7,500 jobs.

Accordingly, we believe that POWL's proposals for the socio-economic assessment of KOW's impact are not sufficient. They must be enhanced so they properly consider the significant losses to the national economy should KOW interfere with or prevent AHB-NB.

Project Timing

POWL's timescales indicate that the formal application for KOW will be submitted to MS-LOT in October 2014, with a consent determination expected in July 2015 and construction work happening throughout 2016 and 2017.

The project timeframes proposed by POWL are similar to those proposed by AHB for AHB-NB. We believe that this will give rise to a number of combined/cumulative effects during the construction and operational phases. The ES must consider these.

Further detail on POWL's proposed methodology for assessing combined/cumulative impacts is required before comment can be made regarding its adequacy. Other authorities are better placed to comment on specifics in relation to ecology and other specialist topics but we highlight the following as the most obvious:

- During construction, sediment plumes generated by both projects.

- During construction and operation, changes to local hydrodynamics and the potential for these to affect benthic communities, water and sediment quality.

- During construction and operation, effects on the terrestrial and marine ecology of the area especially on marine mammals, migratory fish and birds.

- During construction and operation, changes to the seascape, landscape and visual amenity of the area.

- During construction and operation, underwater and airborne noise for those works likely to occur concurrently.

Most importantly, we request that MS-LOT and other authorities give specific and careful thought to the ways the environmental assessments as well as the pre- and post-consent monitoring they are likely to request for KOW and AHB-NB interact.

This comment relates, firstly, to judgements about the validity of surveys, assessment and pre- consent monitoring carried out for one project if the other is already underway. It also relates, rather more seriously (given the likelihood that both projects will be undertaking works with similar impacts concurrently), to how post-consent monitoring would accurately identify which project was responsible for any observable impact.

This has the potential to become particularly contentious if the timescales for AHB-NB are delayed (which has a material effect on the project's affordability) or if Construction Environmental Management Plans for either project impose site/activity restrictions based on live monitoring data.

Because of the importance of clarifying this matter, AHB would welcome early discussion with MS-LOT and any other body they deem relevant.

Sediment Movement

Whilst we do not think any effect would be significant, the ES should refer to the long established and licenced spoil disposal ground to the north west of the KOW site. Any assessment of changes to sediment movement in the area should consider the potential to disrupt or alter the effective dispersal of spoil deposited at this site. A deleterious effect would have both environmental as well as socio-economic impacts.

Navigation and Maritime Traffic

Current shipping traffic from Aberdeen Harbour is in the order of 16,000 vessel movements each year. There are also heavily used anchorages north and south of the current AHB's port approaches. AHB also operates a VTS service as well as two marine radar stations.

Overall, our primary concern is that the Scoping Report does not adequately acknowledge the intensity of local shipping activity or the way in which KOW constrains sea-space. We advise that at least one year's AIS data is required to characterise the use of local sea space.

While there may be just 5-18 movements a year in the KOW site, a far greater number of vessel movements would be affected by its construction and operation. KOW will confine north-south traffic to a channel between the shore and the wind turbines – posing risks that, given the exposed coastline, are especially great in heavy weather and/or low visibility. We believe that a significant proportion of this traffic is oil tankers.

The Scoping Report does not adequately acknowledge the presence of marine radar installations in the area, the likelihood that AHB-NB will involve the installation of further marine radar sites or the crucial need for this equipment to perform efficiently in such an intensely trafficked area of sea.

The proposed assessments do not appear to consider future traffic associated with AHB-NB or that Aberdeen VTS and AHB's Port Limits will be extended to include AHB-NB.

Unless these matters above are acknowledged and reflected in a revised assessment methodology, it would be difficult for AHB to consider the conclusions of the navigation and maritime traffic chapter of the ES as valid.

Again, we do not believe any of these issues are unsurmountable and recognise that there is clearly a need for both AHB and POWL to better understand the concerns and constraints of the other.

We recommend that MS-LOT and POWL seek further advice from Captain Ray Shaw, AHB's Operations Director and Harbour Master, on marine safety matters. He will be able to provide POWL and MS-LOT with valuable guidance in the development of appropriate and effective mitigation measures.

For other matters raised in this letter the point of contact is Patrick Jordan, our Environmental
Advisor.

Aberdeen International Airport

All applications received by the airport for turbines involve a two staged approach; one to assess against any physical infringements into flight safety surfaces, and the second assessing against the technical impacts such as effects on flight radar or navigational aids in the wider area. NATS conduct the technical assessment on behalf of the airport and, since 2010, offer developers a pre-planning consultancy service.

Whilst there are no coordinates provided, I have roughly assessed the turbines against the physical heights and their location, and I do not foresee an issue in that respect but in order for the Developer to determine whether there will any potential technical impacts, they will need to apply for the NATS pre-planning service. I attach guidance by NATS on how you might initially assess the site location prior to contacting NATS, as well as details on the pre-planning process. Further details can also be found on the NATS' website at the address below. Please note that NATS will continue to meet its statutory obligations and comment on all formal planning applications received by local planning authorities.

http://www.nats.co.uk/services/information/wind-farms/pre-planning-assessment/.

I hope the above is of some assistance. Please feel free to forward exact location details and heights of turbines once confirmed and I can run a full physical assessment.

Association of Salmon Fishery Boards (ASFB)

Introduction
The Association of Salmon Fishery Boards is the representative body for Scotland's 41 District Salmon Fishery Boards (DSFBs) including the River Tweed Commission (RTC), which have a statutory responsibility to protect and improve salmon and sea trout fisheries. The Association and Boards work to create the environment in which sustainable fisheries for salmon and sea trout can be enjoyed. Conservation of fish stocks, and the habitats on which they depend, is essential and many DSFB's operate riparian habitat enhancement schemes and have voluntarily adopted 'catch and release' practices, which in some cases are made mandatory by the introduction of Salmon Conservation Regulations. ASFB creates policies that seek where possible to protect wider biodiversity and our environment as well as enhancing the economic benefits for our rural economy that result from angling. An analysis completed in 2004 demonstrated that freshwater angling in Scotland results in the Scottish economy producing over £100 million worth of annual output, which supports

around 2,800 jobs and generates nearly £50million in wages and self-employment into Scottish households, most of which are in rural areas.

We have significant concerns relating to a number of recent offshore wind, wave and tidal projects, particularly with regard to the uncertainty surrounding the potential negative effects on Atlantic salmon and sea trout and the integrity of a number of Special Areas of Conservation for Atlantic salmon.

As stated above, DSFBs have a statutory duty to protect and improve salmon and sea trout *fisheries.* All salmon fishing rights in Scotland (freshwater and marine) are private heritable titles. As the environmental effects of offshore technologies are uncertain, we would expect that developers should be required to remedy any negative consequences of such developments on the heritable assets and the value of those assets (including employment within the fishery) of all fishery proprietors. We therefore believe that, as a condition of consent (should such consent be granted), there should be a requirement for a formal mitigation agreement between the developer and relevant DSFBs.

1. Designated Species

Seventeen rivers in Scotland are designated as Special Areas of Conservation (SAC), part of the Natura 2000 network – a series of internationally important wildlife sites throughout the European Union. The conservation objectives for these sites are set out below[1].

To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features; and

To ensure for the qualifying species that the following are maintained in the long term:

- *Population of the species, including range of genetic types for salmon, as a viable component of the site*
- *Distribution of the species within site*
- *Distribution and extent of habitats supporting the species*
- *Structure, function and supporting processes of habitats supporting the species*
- *No significant disturbance of the species*
- *Distribution and viability of freshwater pearl mussel host species*
- *Structure, function and supporting processes of habitats*
-

The Habitats Directive (article 6) requires that *Member States shall take appropriate steps to avoid, in the special areas of conservation, the deterioration of natural habitats and the habitats of species as well as disturbance of the species for which the areas have been designated, in so far as such disturbance could be significant in relation to the objectives of this Directive.*

It also states: *In the light of the conclusions of the [appropriate] assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public*.

[1] http://gateway.snh.gov.uk/sitelink/index.jsp

If this is not the case and there are no alternative solutions, the proposal can only be allowed to proceed if there are imperative reasons of overriding public interest.

The conservation status of the Atlantic salmon qualifying interest for the various SACs (First Assessment Cycle) are set out in Table 1 below. In addition, a number of these SACs are also designated for FW pearl mussel.

SAC	Qualifying Interest	Conservation Status
River Tweed	Atlantic salmon	favourable
River Teith	Atlantic salmon	unfavourable recovering
River Tay	Atlantic salmon	favourable
River South Esk	Atlantic salmon	unfavourable recovering
River Dee	Atlantic salmon	favourable
River Spey	Atlantic salmon	unfavourable recovering
River Moriston	Atlantic salmon	unfavourable recovering
River Oykel	Atlantic salmon	favourable
Berriedale & Langwell Waters	Atlantic salmon	favourable
River Thurso	Atlantic salmon	unfavourable recovering
River Naver	Atlantic salmon	favourable
River Borgie	Atlantic salmon	favourable
Little Gruinaird	Atlantic salmon	favourable
Langavat	Atlantic salmon	unfavourable recovering
North Harris	Atlantic salmon	favourable
Endrick Water	Atlantic salmon	unfavourable recovering
River Bladnoch	Atlantic salmon	unfavourable recovering

Table 1*: Conservation status of SACs for Atlantic salmon in Scotland.*

Due to the uncertainties regarding migration routes, it will often be impossible, particularly with regard to developments on the North Coast and Orkney waters, to scope out *any* of these SAC rivers. In the case of the proposed Kincardine Development we believe that the following SACs should be scoped in: River Tweed, River Teith, River Tay, River South Esk, River Dee, River Spey.

In addition, District Salmon Fishery Boards have a statutory obligation to protect sea trout. The marine phases of both Atlantic salmon and sea trout have also been included on the draft list of Priority Marine Features drawn together by SNH - the habitats and species of *greatest conservation importance* in inshore waters.

2. Climate Change Mitigation and Adaptation

As for many other species, climate change has been identified as a threat to Atlantic salmon. The species' developmental rate is directly related to water temperature, and increasing temperature in freshwater may result in smolts developing more rapidly and entering the ocean at a suboptimal time in relation to their planktonic food sources.

In addition, as air temperatures warm, much of the snow that feeds the river systems is expected to melt earlier. This will lead to a reduction in the flow of many rivers in the spring and summer, which will increase water temperatures further and may reduce the overall optimal habitat available to the Atlantic salmon. It is also clear that survival of salmon and sea trout during their marine migration phase has fallen over the last 40 years. Some of this reduced survival can be explained by changes in sea surface temperature and subsequent contraction of feeding grounds.

The first priority in mitigating these effects is to control atmospheric concentrations of greenhouse gases and we note that the Scottish Government has committed to meeting a stated target of 50% of Scotland's electricity demand from renewable sources by 2015. However, with further climate change inevitable in the short to medium term, attention is now focusing on the development of accommodation and adaptation strategies, through which adverse effects on species or ecosystems can be minimized. Some of the key needs with respect to developing adaptation strategies for rivers and their biodiversity were summarised by Ormerod (2009 – *Aquatic Conserv: Mar. Freshw. Ecosyst.* 19: 609–613).We would highlight the following key point in particular: *to minimize the adverse effects on river biodiversity of actions taken to mitigate climate change*.

3. Potential Negative Effects of Offshore Renewable Devices

Offshore renewable developments have the potential to directly and indirectly impact anadromous fish such as Atlantic salmon and sea trout. We would therefore expect developers to assess the potential impacts of deployed devices on such fish during the deployment, operation and decommissioning phases. Such potential impacts have been highlighted by Marine Scotland Science and could include:

- Avoidance (including exclusion from particular rivers and subsequent impacts on local populations);
- Disorientation effects that could potentially affect behaviour, susceptibility to predation or by-catch; and
- Impaired ability to locate normal feeding grounds or river of origin; and delayed migration
-

ASFB therefore recommend to our members that careful consideration should be given to the following activities:

i. *Subsea noise during construction*
   A recent review commissioned by SNH[2] states that 'Marine renewable energy devices that require pile driving during construction appear to be the most relevant to consider, in addition to the time scale over which pile driving is carried out, for the species under investigation'. We recognise and welcome that the proposed floating offshore wind substructures will reduce, and possibly eliminate the need for subsea piling operations. However, we would seek assurance that the deployment of possible mooring/anchoring options will not adversely affect emigrating smolts or returning adults.

ii. *Subsea noise during operation*

iii. *Electromagnetic fields (EMFs) arising from cabling*
   The SNH-commissioned review (cited above) has shown that EMFs from subsea cables have the potential to interact with European eels and possibly salmonids if their migration or movement routes take them over the cables, particularly in shallow waters (<20m). Marine Scotland Science are currently undertaking a research programme which aims to investigate electro-magnetic force impacts on salmonids. It is vital that all cables are appropriately shielded to ensure that EMF effects are below any threshold of effect for salmonids. We would seek assurance that the cabling arising from the proposed floating offshore wind substructures, which we assume will not be shielded and will sit within the water column, will not adversely affect emigrating smolts or returning adults.

EMFs arising from operation of devices

[2] Literature review on the potential effects of electromagnetic fields and subsea noise from marine renewable energy developments on Atlantic salmon, sea trout and European eel. Available at: http://www.asfb.org.uk/wp-content/uploads/2011/06/SNH-EMF-Report1.pdf

It is important to ensure that such effects are quantified and assessed in the Environmental Statement.

iv. *Disturbance or degradation of the benthic environment (including secondary effects on prey species)*
It is important to ensure that such effects are quantified and assessed in the Environmental Statement.

v. *Aggregation effects*
Whilst the aggregation of prey items around physical structures might be seen as a positive effect, possible negative effects might include the associated aggregation of predators.

4. General Comments

Guidance issued by Marine Scotland Science relating to information requirements on diadromous fish of freshwater fisheries interest states that an Environmental Statement should provide information on the use of the development area by such fish and that if such information was lacking then a suitable monitoring strategy should be devised. Indeed, Marine Scotland Science regard the monitoring undertaken at existing offshore developments such as Robin Rigg as being inadequate. We believe that the lack of meaningful monitoring in all previous proposals assessed by ASFB has been extremely disappointing and completely inadequate. We would emphasise that any monitoring strategies must include pre-construction monitoring in order that baseline information on salmon and sea trout movement, abundance, swimming depth, feeding behaviour etc. can be collected.

Electromagentic fields

We are aware that Marine Scotland Science are currently undertaking a research programme which aims to investigate electro-magnetic force impacts on salmonids. Until this work is completed, we are unable to assess the relative magnitude of this impact, or relate any potential EMFs arising from the proposed development to those magnetic fields likely to initiate a behavioural response in salmonids. Having responded to a number of proposed offshore windfarms it is clear that there is not a consensus between developers as to the appropriate depth to which cables should be buried. We believe that burial depth of cables should be based on research, but in the absence of definitive data we believe that **all** cables should be buried to a **minimum** depth of 1.5m, for **all** offshore renewable developments. Where cable burial is not possible due to hard substrates etc. we believe that all cables should be shielded to an equivalent depth by placing a suitable substrate on top of the cable or by some other means.

There is a clear need to assess the swimming depths of salmon and sea trout transiting the area of the wind farm in relation to the effects of EMFs from cabling. We note that the SALSEA project has shown that Atlantic salmon are capable of diving to considerable depths. In addition, Malcolm et al (2010) concluded based on research undertaken to date (Jakupsstovu, 1986; Holm et al, 2005; Starlaugsson, 1995) that in general terms salmon spend most of the time close to the surface although dives to greater depths of up to 280m have often been observed. Dives do not appear restricted to offshore areas, persisting late into the migration on the return to home waters. Early studies (Jakupsstovu, 1986) suggest an association between diving and feeding.

It is important to consider the foraging behaviour of sea trout, which in the absence of evidence to the contrary, we must assume use the area in question. Sea trout are more likely to be benthic feeders than salmon. Pemberton (1976) suggested a diel feeding pattern, with bottom feeding being greatest during the day and mid-water and surface feeding increasing between sunset and sunrise.

Noise

The assessment of noise impacts carries high uncertainty. It must be recognised that the significance of behavioural avoidance is dependent on the behaviour disrupted. For example, avoidance may be significant if it causes a migratory species to be held up or prevented from reaching areas of biological importance, e.g., spawning and feeding areas. We believe that where the predicted area which salmon would avoid is significant it may have the potential to at least delay smolt migration. As no information is available on smolt migration routes, we must assume that such a delay could, for example, make smolts more susceptible to predation. It must also be noted that salmonid smolts are physiologically stressed in adapting to the environmental challenge of movement between freshwater and seawater. Simultaneous challenge from noise, EMFs etc. during this transition will constitute a significant additional stressor. Stress leads to increased plasma levels of the stress hormone cortisol. Corticosteroids cause a range of secondary effects, including hydromineral imbalance and changes in intermediary metabolism (Wendelaar Bonga, 1997)[3]. In addition, tertiary responses extend to a reduction in the immune response and reduced capacity to tolerate subsequent or additional stressors (Wendelaar Bonga, 1997).

Environmental Statements that we have assessed to date operate under the assumption that Atlantic salmon and sea trout are present in the development area. However, the zones of avoidance set out do not appear to be related to the swimming speeds of fish (at different life stages), in order to assess the possibility of such fish swimming out of the zone of effect.
During pre-application discussions with the developers we have continually stressed the need for information on migratory routes and habitat usage for migratory salmonids. In the absence of such data, ASFB and DSFBs, in assessing the risks of the development to migratory fish, have no alternative but to assume that the entire run of each river will use the area under development. We note that Marine Scotland Science have previously commented that '*it needs to be categorically established which species are present on the site, and where, before the application is considered for consent'*.

Monitoring and mitigation measures

We have so far been disappointed at the lack of salmonid-specific monitoring set out in previous applications for developments. We are keen to work with the developers and Marine Scotland to identify appropriate monitoring programmes. We would emphasise that any monitoring strategies must include pre-construction monitoring in order that baseline information on salmon and sea trout movement, abundance, swimming depth, feeding behaviour etc. can be collected.

Conclusion

As stated above, ASFB recognises the importance of offshore renewable energy. Where a Natura site is involved, the onus is on the developer to demonstrate no impact and in the absence of that the precautionary principle will apply. It should be emphasised that we have no wish to prevent or delay any proposed development unnecessarily and we remain keen to work constructively with the developers and Marine Scotland to identify appropriate monitoring programmes which will allow us to be able to assess the acknowledged risks of this development, and other proposed developments more appropriately. There is a clear and urgent need to fund, plan and start strategic research on the movement, abundance, swimming depth, feeding behaviour etc. of salmon and sea trout. ASFB are members of the steering group overseeing the national strategy into strategic research for offshore marine renewables and anadromous fish. We will continue to engage positively with this process, in order to develop and help deliver a credible and effective research strategy. It is clear that the strategy will not be delivered in time to inform several of the developments currently in the consenting process. We would emphasise the importance of developing a finalised,

[3] Wendelaar Bonga, S. E. (1997). The stress response in fish. *Physiol.l Rev.* 77, 591-625.

agreed research plan, with a clear time schedule for delivery, at the earliest possible date. It is vital that adequate resources (both public and private) are made available to this work, in order that these key questions can be answered, in a robust and timeous manner. This would allow migratory fish interests to approach the consenting process in the knowledge that a strategy is in place to address the legitimate concerns relating to possible negative interactions resulting from the construction and on-going operation of these developments.

We would also emphasise the importance of the process adopted towards consent being flexible enough to take into account relevant information relating to migratory fish, as and when such information becomes available. It is therefore important that conditions are included which allow appropriate additional mitigation to be put in place, should negative interactions prove to be more likely than set out in the ES.

Civil Aviation Authority

Having reviewed the Scoping Report, the Civil Aviation Authority confirms that appropriate statutory aviation consultees have been identified. The official position of all aviation stakeholders regarding the proposed development should be established. The impact of wind turbines on aviation may include the potential impact on the communications, navigation and surveillance infrastructure and also that turbines can cause a physical obstruction to aviation stakeholders which should be taken into account.

If the proposed development is approved, I would add the need to inform the Defence Geographic Centre dvof@mod.uk of the locations, heights and lighting status of the turbines and meteorological masts, the estimated and actual dates of construction and the maximum height of any construction equipment to be used, prior to the start of construction, to allow for the appropriate inclusion on Aviation Charts, for safety purposes.

Historic Scotland

Our comments here concentrate on our statutory remit which includes scheduled monuments and their setting, category A listed buildings and their setting, gardens and designed landscapes appearing in the Inventory, Inventory battlefields and designated wrecks (now protected within Historic Marine Protected Areas (HMPAs)).

Proposed Development
We understand that the proposal is for a commercial development for a demonstrator floating offshore wind farm located SE of Aberdeen approximately 17km from the Scottish coastline. The windfarm is likely to incorporate 8 x 198m turbines (above the waterline at high water) using floating semi-submersible technology. The turbines would be inter-connected by 33kV cables connecting to one or two export cables to transmit the power ashore. Additional electrical onshore facilities will be required, with 2 options proposed for cable route landfall at Nigg Bay to Redmoss.

Our Views on the Principle of this Proposal
On the basis of the information supplied, we are content with the general principle of the proposal. In our view, it is considered unlikely that there shall be significant adverse impacts on marine or terrestrial assets within our statutory remit with the exception of one

key asset - SM Dunottar Castle (index no 986) - we have provided more detailed comments on this below. Our comments here therefore are provisional and we would need to see any Environmental Statement (ES) to give our final view on the proposed development.

In terms of assessing marine archaeology, subject to the comments provided below, in our view the proposed methodology for baseline surveys and assessment of impacts is considered acceptable.

In terms of assessing the impact of the offshore elements of the proposal on terrestrial assets, we acknowledge that the Scoping Report commits to assessing the impact on the setting of historic sites and assets within a coastal study area. However, we note that data sources for the terrestrial historic environment are listed as being obtained from SNH (Appendix B). Please can this be amended to show Historic Scotland as data source for the historic environment. We can provide up to date GIS datasets under licence for scheduled monuments, listed buildings, and gardens and designed landscapes and battlefields (contact hsgimanager@scotland.gsi.gov.uk). This information can also be downloaded from Historic Scotland's spatial data warehouse at Historic Scotland Data Website

The relevant Council archaeological and conservation service will be able to provide information and advice on unscheduled archaeology and category B and C listed buildings. The relevant Council's archaeological and conservation service will also be able to advise on the historic environment and of the likely impacts for any sites of regional and local importance.

Potential impacts for consideration

On-shore effects

There is potential with such off shore developments for significant impact for on shore effects on the setting of historic environment coastal sites, of which there are numerous within the search area for this off shore development. However, given the distance of the proposal from the coast at approximately 17km, it is unlikely to have significant adverse effects on the setting of such coastal sites with the exception of SM Dunottar Castle (index no 986). From the information provided we note that the ZTV clearly demonstrates visibility from the scheduled monument and from a wider area around the site, which consequently is very likely to have a significant impact on our understanding and appreciation of this important monument and its wider context.

In order to assess this impact and provide our view on the development, we request the production of wireframes and photomontages of the proposed wind farm from various viewpoints from the castle and its wider setting. We note that there is one photo location proposed, which is located nearby but not on the actual site, it would therefore be helpful to provide the following viewpoints/photomontage locations:

- one photo viewpoint taken from the grounds of Dunnottar Castle
- and at least another one taken from the main approach to the castle, which will show the castle in its wider setting with the wind farm in the background.

Potential cumulative impact should also be considered in relation to potential cumulative and / or in-combination impacts setting impacts on Dunnottar Castle from other wind developments and other marine environment developments.

We consider that due to the 17 km distance between the wind farm and the coastline, we would not have significant concerns with regards to potential adverse impact on coastal sites other than on Dunnottar Castle and its setting. These could therefore be scoped out from the assessment.

Off-shore effects
There are no HMPAs in the vicinity of the site or the wider area. However, we welcome that the assessment will consider direct disturbance and loss to known and unknown assets of historic importance and indirect impacts and indirect potential for impacts relating to disturbance and changes to the physical environment and coastal sediment dynamics of the area. The relevant Council Archaeology Services may also wish to comment.

General comments
We note and welcome the comprehensive list at Table 11.20 and Appendix A of relevant guidance documents that will be consulted for the historic environment including Historic Scotland's Marine Environment Strategy, COWRIE Historic Environment Guidance for Offshore Renewable Energy sector and Joint Nautical Archaeology Policy Committee Code of Practice 2006.

Our website also provides general information on a number of issues including our role in the EIA process and guidance about the scoping exercise. It also explains what we would expect to be included in the ES, such as how far any area of search should extend to, the assessment of impacts and what visualisations should be submitted. In addition it provides information on policy and guidance, with links to our Managing Change setting guidance. It also includes relevant links to marine archaeology guidance and can be found at:http://www.historic-scotland.gov.uk/index/heritage/policy/environmental-assessment/eiafaqs.htm.

Health and Safety Executive

HSE is the national independent watchdog for work-related health, safety and illness. They have a dedicated team that regulates occupational health and safety standards for the offshore renewable energies industry. You are advised to contact this team to discuss how you will manage health and safety during the planning, construction and operation of your offshore renewable project.

They are contactable at:

Health and Safety Executive
Belford House
59 Belford Road
Edinburgh
EH4 3UE
trevor.johnson@hse.gsi.gov.uk
offshore.renewables@hse.gsi.gov.uk

The Joint Radio Company Limited

Planning Ref: Scoping Opinion

Name/Location: Kincardine Offshore

Site Centre at NGR: 402000 789000

Development Radius: 2km - 8 turbines

(estimated figures - please advise corrections where necessary)

Hub Height: 107m (above LAT) Rotor Radius: 85m

(defaults used if not specified on application)

Cleared with respect to radio link infrastructure operated by:-

The Local Electricity Utility and Scotia Gas Networks

JRC analyses proposals for wind farms etc. on behalf of the UK Fuel & Power Industry and the Water Industry in north-west England. This is to assess their potential to interfere with radio systems operated by utility companies in support of their regulatory operational requirements.

In the case of this proposed wind energy development, JRC does not foresee any potential problems based on known interference scenarios and the data you have provided. However, if any details of the wind farm change, particularly the disposition or scale of any turbine(s), it will be necessary to re-evaluate the proposal.

In making this judgement, JRC has used its best endeavours with the available data, although we recognise that there may be effects which are as yet unknown or inadequately predicted.JRC cannot therefore be held liable if subsequently problems arise that we have not predicted.

It should be noted that this clearance pertains only to the date of its issue. As the use of the spectrum is dynamic, the use of the band is changing on an ongoing basis and consequently, developers are advised to seek re-coordination prior to considering any design changes.

Maritime and Coastguard Agency

We have now had an opportunity to review the Kincardine Offshore Windfarm Environmental Scoping Assessment, provided by Atkins Ltd on behalf of Kincardine Offshore Wind Ltd, and would comment as follows:

The Environmental Statement should supply detail on the possible the impact on navigational issues for both Commercial and Recreational craft, viz.

Collision Risk
Navigational Safety
Visual intrusion and noise
Risk Management and Emergency response
Marking and lighting of site and information to mariners
Effect on small craft navigational and communication equipment
The risk to drifting recreational craft in adverse weather or tidal conditions

The likely squeeze of small craft into the routes of larger commercial vessels.

A Navigational Risk Assessment will need to be submitted in accordance with Marine Guidance Notices 371 (and 372) and the DTI/DfT/MCA Methodology for Assessing Wind farms, which was revised in 2013 and is now available electronically at http://www.dft.gov.uk/mca/nra_methodology_2013.pdf.

Particular attention should be paid to cabling routes and burial depth for which a Burial Protection Index study should be completed and, subject to the traffic volumes, an anchor penetration study may be necessary

Reference should be made to any Marine Environmental High Risk Areas (MEHRAS) established on adjacent coastlines.

The cumulative and in combination effects require serious consideration, and particularly the adjacent wind farm proposals.

Casualty information from the MAIB and RNLI would also be good data sources, in establishing the risk profile for the area.

Given that neither the capacity nor structure of the individual wind turbine generators have been decided the principles of the Rochdale envelope should be used in the EIA. Minimum safe air clearances between Mean High Water Springs (MHWS) and turbine blades ahould be suitable for the vessel types identified in the traffic survey and not less than 22 metres.

Any reference to IALA recommendations on the marking of wind farms should refere to O-139 Edition 1 December 2008 which replaced all previous versions.

The shipping and navigation study should include radar and manual observations in addition to AIS data to ensure vessels of less than 300gt are captured.

The offshore human environment should also include recreational and other sport activities. Any application for operational safety zones will need to be carefully assessed and additionally supported by evidence and experience from the construction phase

Although noting this is a demonstrator site, and therefore could be considered as a small scale development with respect to SAR issues, particular consideration will need to be given to the implications of the site size and location on SAR resources and Emergency Response & Co-operation Plans (ERCOP) the latest version of which (March 2014) is available electronically at http://www.dft.gov.uk/mca/mcga07-home/shipsandcargoes/mcga-shipsregsandguidance/offshore-renewable_energy_installations/dops_-_all-newpage-26.htm.

Developers need to be aware that the radar effects of OWF on ship's radars are an important issue and will be subject to further discussion within the radar sub group of NOREL The radar effects will need to be assessed on a site specific basis taking into consideration previous reports on the subject available on the MCA website at: http://www.mcga.gov.uk/c4mca/mcga07-home/shipsandcargoes/mcga-shipsregsandguidance/mcga-windfarms/offshore-renewable_energy_installations.htm Extending the wind farm in the proposal will significantly increase the exposure of vessels to these effects.

For floating turbines, third party verification of the mooring arrangements will be required.

Further discussion would need to be undertaken with UKHO and MCA with regard to charted marking anchors and ground tackle as exclusion zones are not necessarily appropriate or available.

UKHO, not MCA,are the appropriate contact for the issuing of Notices to Mariners. Local Notices to Mariners may need to be issued by the various ports involved.gs not the MCA,

Navigational Lighting requirements are the responsibility of the appropriate General Lighthouse Authority, in this case Northern Lighthouse Board, not Trinity House.

Ministry of Defence

I am writing to inform you that the MOD objects to the proposal. Our assessment has been carried out on the basis that there will be 8 turbines, 192 metres in height from ground level to blade tip and located at the grid references below as stated in the planning application or provided by the developer:

Turbine	100km Square letter	Easting	Northing
1	NP	07317	90468
2	NP	07766	89574
3	NP	08214	88681
4	NP	08663	87787
5	NP	08453	92841
6	NP	08901	91948
7	NP	09350	91054
8	NP	09799	90160

Air Defence (AD) radar

The turbines will be 51.4 km from, detectable by, and will cause unacceptable interference to the AD radar at RAF Buchan.

Trials carried out in 2005 concluded that wind turbines can have detrimental effects on the operation of radar which include the desensitisation of radar in the vicinity of the turbines, and the creation of "false" aircraft returns.

The probability of the radar detecting aircraft flying over or in the vicinity of the turbines would be reduced, and the RAF would be unable to provide a full air surveillance service in the area of the proposed wind farm.

Physical Safeguarding

The proposed offshore wind farm will partly occupy UKCS blocks 19/26 and 26/1. The latter block contains highly surveyed routes supporting defence interests. Accordingly whilst there is no offshore safeguarding objection to this scheme in principal we would wish to review the finalised positioning of turbines and associated sea floor
infra-structure

If the developer is able to overcome the issues stated above, the MOD will request that all turbines be fitted with a minimum of 200cd of visible red lighting at the highest practicable point.

MOD Safeguarding wishes to be consulted and notified about the progress of planning applications and submissions relating to this proposal to verify that it will not adversely affect defence interests.

I hope this adequately explains our position on the matter. Further information about the effects of wind turbines on MOD interests can be obtained from the following website:

***MOD*:**
http://www.mod.uk/DefenceInternet/MicroSite/DIO/WhatWeDo/Operations/ModSafeguarding.htm

NATS

I attach some general guidance from NATS regarding the potential impact upon our infrastructure and operations. Whether any potential impact might exist, can be ascertained through the use of our self-assessment maps or pre-planning service. Please note these maps are now available as easy to use Google Earth layers.

Our advice is for developers to familiarise themselves with the aviation aspects of wind farms and to include any evidence of assessments in their documentation. We would also advise developers to engage with NATS should they anticipate any issues, at the earliest opportunity.

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Wind Turbine/Farm Scoping Opinion Requests and Pre-Planning Enquiries

NATS have a policy of early engagement with developers, particularly in the area of wind turbines and wind farm developments. Since NATS is processing an unsustainable number of scoping opinion requests received from developers and Local Planning Authorities (LPAs), the decision has been made to provide some clarification on this matter.

NATS have offered pre-planning services to developers since 2005, however, in 2010, it revised and launched its pre-planning consultancy service. This provides an early, yet formal indication to developers of the anticipated impact of their proposed development upon NATS' infrastructure. The service subsequently allows developers and applicants to engage in dialogue with NATS in order to identify and discuss any potential mitigation. This allows identified solutions to be discussed and potentially agreed, at an early stage, *before the formal planning process*.

In order to promote a consistent nationwide approach, NATS has determined that all pre-planning enquiries and scoping opinion requests received from planning authorities or directly from applicants should be treated in the same manner. To this end we provide two options: our free self-assessment maps, and the chargeable pre-planning application.

As such we kindly request that developers and applicants use either of these tools to determine whether an impact on the NATS infrastructure is anticipated or not.

If your request is for scoping, we advise you to use our self assessment maps to determine whether a planned application is likely to have an impact. Instructions for using our maps are included below. Should a planned application fall within an area of radar coverage or other safeguarded zone, our advice would be to undertake our pre-planning assessment in order to engage with us early. Should an application fall outside the radar or other safeguarded zone, it is unlikely that NATS would object during the planning process.

Please note that NATS will continue to meet its statutory obligations and comment on all formal planning applications received by local planning authorities.

Instructions for the use of NATS self assessment maps.

To ascertain whether your development is likely to have an impact or not, you will need to use our self-assessment maps. You will also require a GIS/mapping package to plot your turbines (ARCGIS etc or GOOGLE "Forestry GIS" (fGIS™) which is freeware). All turbine heights are tip heights.

- You should be able to visualise your turbine(s) position(s) on the GIS map. For most packages you can create a text file with the NGR Eastings and Northings, to plot the turbine position.

- Download our self assessment maps free from our website.

- Add the relevant map for the turbine height to the GIS map, i.e. the height equal to the turbine height, or just below it if the exact height is not listed. e.g. 60m map for a 60m turbine, 40m map for a 50m turbine, 80m map for a 90m turbine etc.

- You should now be able to see both the radar coverage map AND the turbine position.

- You can now determine whether your turbine is visible to radar. Ideally a radar will not cover the turbine's position at all, or coverage will be at heights greater than the turbine height. *For example, if you have a 60m turbine, ideally the radar will not cover that area at 60m. i.e. although there may be cover over that position at 100m and 80m, when selecting the 60m map, the cover is reduced leaving the turbine outside radar cover. Conversely if you have a 100m turbine, and the radar can see down to 100m over the turbine location, that turbine is visible to radar.*

- By using the different maps, you should then be able to look at radar cover in different areas at different heights. This can be a useful tool for assessing a specific area and in some cases can be used to determine which positions are more likely to be an issue than others. It can also be used to determine a maximum acceptable turbine height. *e.g a potential location is visible to radar at 120m and 100m but not 80m hence a 120m and a 100m turbine would be visible to radar (possible objection) whereas an 80m turbine would be acceptable.*

Once you've assessed your turbine location against primary radar cover, the same must be done for secondary radar (SSR), navigation aids and radio stations by downloading and adding the SSR, AGA and NAV maps. These have 15km/15nm circles representing safeguarded areas for these assets. When you have carried out your self-assessment, you will have determined whether your proposed turbine(s) falls in an SSR/NAV/AGA safeguarded or radar cover area:

If the turbine is outside all these areas, it is unlikely that NATS would object as there should be no technical impact.

If your proposed development is within a safeguarded or radar cover area, while this does not automatically mean an objection, it is recommended that you take out our pre-planning assessment whereby NATS undertakes further studies and provides you with a formal statement on the turbine's impact.

More generic information can be found on our website together with the details of our pre-planning assessment.

Frequently Asked Questions

1. Who are NATS?

NATS is the company that provides air traffic control (ATC) services in the UK. Our service is provided at 15 of the UK biggest airports and "en-route" i.e. in the airspace above the UK and over the north-eastern part of the Atlantic Ocean.

2. What is safeguarding?

In order to provide safe air traffic services, both NATS and aircraft rely on a number of ground based radars, navigation aids and communication stations. Radars are used by NATS and other agencies to monitor aircraft traffic, navigation aids are used by aircraft to navigate along their route and to land at airports. Communication stations are used by both ground based agencies (control towers and ATC centres) and aircraft to communicate with each other.

Safety is NATS' first and foremost priority and in order to provide a safe service and to meet the terms of the licence granted by the Civil Aviation Authority, this equipment needs to be continuously in operation and protected by any form of interference or disturbance.

3. What are the problems?

Common examples of interference that affect our infrastructure are:

• effects of wind turbines upon radar (radar shadows, false radar returns)
• degradation of radio and radar signals due to fixed obstructions or turbines

4. How is safeguarding done and how are problems prevented?

Safeguarding is ensured by legislation and processes designed to protect NATS's infrastructure. For construction and fixed obstructions, all NATS assets are notified via maps lodged with Planning Authorities. The Planning authorities will consult NATS when a planning application that conflicts with safeguarding is received.

For wind turbines, the process is different because of the major impact a wind turbine can have on the NATS infrastructure. As such consultation with NATS is compulsory and planning authorities will consult NATS for all wind turbine planning applications over the whole of the UK territory.

NATS is a statutory consultee for all wind turbine planning applications in the UK.

Civil Aviation Publications CAP764 and CAP670 contain relevant information and are available on the Civil Aviation Authority's website (www.caa.co.uk).

5. How can I find out if a wind turbine application is likely to be granted or objected to?

With respect to wind turbines, the safeguarded area encompasses the whole of the UK and consultation with NATS is mandatory. Planning authorities will consult NATS during the planning process, but applicants for wind turbines may wish to ascertain whether their application is likely to be objected to or not by NATS in advance of submitting for planning
In this case the options are to carry out a self-assessment (free of charge) or undertake a pre-planning assessment (chargeable).

6. What are the NATS self-assessment and pre-planning assessment? The **self-assessment** is a process whereby prospective wind turbine planning applicants can get a preliminary idea of whether their proposed application is likely to be granted or not, or whether it is advisable to request a pre-planning assessment. The service is free and relies on theoretical radar coverage maps for different obstacle heights. These are available on our website.

The **pre-planning assessment** is a chargeable service that NATS offers to prospective wind turbine applicants. This provides an opportunity for developers to gain a further insight into whether a proposed installation is likely to be objected to or not by NATS prior to submitting a planning application. In order to reach a decision, NATS carries out a range of studies and investigations to determine whether a wind turbine is likely to cause an impact on air traffic safety or not.

Where the turbine is anticipated to cause an issue, further work may be possible to determine whether any remedial action can be taken in order to grant permission subject to certain conditions being met.

7. Why has my application been turned down when there are other turbines nearby?

In order to consent or object to planned development, NATS has to consider a number of factors, these include but are not limited to:

- geographical position and line of sight shielding between obstruction and NATS equipment (this may vary over a few metres)
- specific equipment at the NATS site
- terrain features
- airspace class and use (distance and density of air traffic)
- signal levels and characteristics
- turbine characteristics

An additional important factor is the cumulative impact, in some cases a number of turbines are deemed to be acceptable but no more. Unfortunately in some cases this will mean that although a number of turbines are located in a specific area, a new application is turned down. This is because the effect is deemed to be tolerable, however an additional turbine would cause further degradation which would not be acceptable.

Another additional factor is the distance between turbines and the way radar processing treats radar returns from turbines that are lined up. In some cases these can be interpreted as a valid aircraft track (i.e. 2 turbines may be tolerable but a third one may cause 3 reflections to appear as an aircraft moving along its route and to bypass radar filtering).

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More generic information can be found on our website together with the details of our pre-planning assessment.

Northern Lighthouse Board

With regard to the proposed consultation and the scope of assessment, we would only comment on that part relating to Shipping and Navigational Safety.

Formal recommendations for lighting and marking of the wind farm, infrastructure and vessels engaged in operations associated with the wind farm will be given through the formal Marine (Scotland) Act 2010, Part 4 Marine Licensing application process.

We require that the Marine Licence application include a Navigational Risk Assessment in accordance with the requirement of MCA Marine Guidance Notice 371. We would encourage a workshop approach to the development of this NRA and suggest that as well as shipping density, it is important to take regard of type and cargo, draught and number of persons on board, to assess the likelihood and consequence of any shipping incident relating to the development or accumulation of developments.

We would further advise that with regard to shipping routes, it is important to understand the proximity to major ports engaged in supply and support to the offshore oil industry, transiting vessels, and the impact of any deviations required.

We would welcome any intention to work with other Offshore Wind Developers such as those at the European Offshore Wind Development Centre in Aberdeen Bay and the Buchan Deeps project to reduce the cumulative impacts of offshore wind farm development and would expect this cumulative impact to be described and quantified within the application.

We would anticipate that the development site would be marked with buoyage during the construction phase, and with Aids to Navigation based on IALA Recommendation O-139 installed on the turbines during the operational phase. We note that at present there is only an indicative plan showing 8 floating turbines and that the final design and layout will be confirmed following engineering and onsite investigations. We will however require information regarding the initial layout and deployment sequence of turbines in order that we may recommend marking and lighting that will provide safe warning through any transition from construction to operational phase.

The Statutory Sanction of the Commissioners of Northern Lighthouses must be sought to deploy, exhibit and subsequently remove any proposed navigational marking and lighting or any buoy stations required within the conditions of the consent to establish the site or for any preparatory work in the marine environment.

As with the development of the site, any preparation and installation of inter-turbine cables or cables for the export of power to shore would require Notices to Mariners, Radio Navigation Warning and publication in appropriate bulletins stating the nature and timescale of any works being carried out. The warnings should be promulgated before any commencement of any work and mobilisation of vessels engaged in the works. Once the landing site has been identified, it is usual to mark these landing points by a Yellow Diamond board mounted approx 3 metres above ground level on a pole or lattice structure. The board has the wording ‘Power Cables’ or ‘Cables’ in black lettering across the horizontal axis to inform the mariner of the cable route landing. The cable marker board may also be required to have a navigation light mounted above the vertical axis of the board.

We would advise that the United Kingdom Hydrographic Office (UKHO), Admiralty Way, Taunton, Somerset, TA1 2DN to be informed of the cable route(s) in order that the appropriate admiralty charts can be correctly updated.

RSPB Scotland

RSPB Scotland is a strong supporter of the Scottish Government's greenhouse gas reduction targets. We recognise the important role that renewable energy, including offshore wind, can play in minimising emissions and hence the effects of climate change, which poses the single greatest long-term threat to birds and other wildlife, in Scotland and globally. RSPB Scotland engages with the renewable energy industry and Government to help ensure renewables are delivered in the right locations and in the right manner, in order to ensure a clean and sustainable energy supply for Scotland. We are therefore fully supportive of test and demonstration scale proposals for floating wind technologies such as Kincardine Offshore Wind Farm. We also welcome the opportunity to comment on the Kincardine proposal at this early stage in the process.

Notwithstanding our support for offshore wind the importance of adequately understanding the potential impacts on marine wildlife must be a priority to ensure projects such as this are delivered in the least environmentally sensitive locations and in a sensitive manner. We have reviewed the contents of both the scoping report and interim aerial survey supplied as part of the scoping request and provide detailed comments in the attached annex. Our primary concern is that large numbers of birds have been found within the site. This corroborates with data held for the region, particularly in a wider context, with known areas of international importance for breeding and wintering species located in proximity to this site. Consequently particular focus is required to consider the importance of this site to seabirds and therefore the appropriateness of delivering offshore wind in this location. In this light a summary of our concerns and recommendations raised in the annex include:

- requests for further information that better demonstrates the suitability and accuracy of the aerial survey methods, including flight height estimation, whilst also outlining the limitations of the methods used;
- the potential requirement for surveys at an increased frequency during mid-July to mid-August to identify regularity and seasonal duration of peak on site numbers, particularly for guillemot;
- the need for a focused assessment of the effects of displacement and collision impacts, particularly on qualifying features of seabird SPAs within foraging range (with focus on Fowlsheugh SPA). We also agree that HRA is required;
- the need for cumulative/ in-combination assessment of effects with Moray Firth, Forth and Tay and English east coast proposals;
- need to interrogate site data to explore opportunity for project design mitigation (i.e. turbine location).

Given the test and demonstration nature of this proposal, should it progress, every effort should be made to implement environment focused monitoring and research programmes that contribute to a better understanding of the interactions and environmental risks of offshore floating wind with marine wildlife.

We acknowledge and understand the time constraints facing this particular proposal and the need for it to progress through an ambitious programme of necessary assessment and licensing procedures. In this regard we look forward to future engagement in this proposal

and would welcome requests for discussion, expert advice and recommendations on any ornithological aspects of the environmental assessment.

RSPB response to the "Kincardine Offshore Wind Farm - Final report on aerial surveys from April 2013 to April 2014" consultation:

Thank you for providing us with a final copy of the Kincardine aerial survey report. Having reviewed the updated contents, RSPB Scotland's original Scoping response remains relevant and we do not wish to update the keys points raised.

A single additional request is for information on the density mapping methodology described in paragraphs 36-39. We request that further information is provided in the Environmental Statement on the workings of this method and in particular that the 'best global choice' of kernel width is provided for each species/mapped using these smoothed density estimates.

The Royal Yachting Association Scotland

I have read the seeping report for the above windfarm on behalf of the Royal Yachting Association Scotland. It is my opinion that safety of navigation by recreational vessels is of significant importance although risks should be minimised by the adoption of appropriate mitigation measures including the promulgation of information about the position of the devices in places where yachtsmen and women will see them and appropriate marking and lighting, the latter being a matter for the Northern Lighthouse Board who are well aware of the needs of small boats. The direct effect on the marine tourism and recreation sector is likely to be small. There is unlikely to be any impact of the cable landfall on recreational boating.
Such issues as there are should be considered under Navigation and Maritime Traffic. RYA Scotland wishes to be directly involved in the Navigational Risk Assessment as has been the case with other marine windfarms.

The RYA has published a position paper on *Offshore Renewable Energy Installations-wind.* The third revision was published in 2014 and refers to floating schemes. Fig. 11.6 in the seeping report showing the cruising routes is taken from the UK Coastal Atlas of Recreational Boating published by the RYA in 2008. There is additional information that goes with the charted routes pointing out that these are considered typical routes but that vessels will deviate from them for a range of reasons. For example, the route taken will depend on whether the vessel is proceeding under sail or power, whether the passage is being made by day or by night, and on the prevailing conditions of weather and tide. With the widespread adoption of electronic navigation, the course will also depend on which waypoints are set to avoid hazards such as the concentration of shipping off the port of Aberdeen. The studies associated with planned windfarms in the Forth provided an opportunity for quality assurance of the data and showed that the routes were broadly correct but that other routes were also taken. Since then, the *Pentland Firth and Orkney Waters Shipping Study* commissioned by Marine Scotland has shown that although only a small proportion of recreational craft transmit on AIS, these vessels follow routes that are generally typical of recreational craft as a whole. Thus AIS data can be used to identify routing corridors but not to ascertain the number of vessels. The atlas is in the process of being revised so that 'heat maps' can be produced for recreational vessels in the same format as is presented for commercial vessels

in Fig. 11.4. However, that will not be achieved in time for the present study. The shipping study also showed the seasonal movement of recreational craft and these data should be appropriate for this area also. The cruising routes marked on the atlas in this area are categorised as of medium recreational use, not light as is suggested in the seeping report. This is a qualitative assessment where 'heavy recreational use' has to take account of the crowded conditions on the Selent. Moreover, the number of vessels heading for the Northern Isles or the Caledonian Canal is likely to have increased since 2008 with the opening of new facilities and an increased appreciation of the importance of marine tourism by local authorities.

RYA Scotland will be happy to work with the developer to elaborate on these points if requested.

Scottish Fisherman's Federation (SFF)

The Scottish Fishermen's' Federation responds on behalf of its nine constituent member Associations, Anglo Scottish Fishermen's Association, Clyde Fishermen's Association,Fishing Vessel Owners & Agents Association, Mallaig & North West Fishermen's Association, Orkney Fishermen's Association, Scallop Association, Shetland Fishermen's Association, Scottish Pelagic Fishermen's Association and the Scottish Whitefish Producers Association, any or all of whom may have interest in this area which, we should point out is contrary to the statement at 11.4.4.2.

It is worrying that on page 29 it is stated that fishing activity at the site is limited despite scallop dredging value in the area (represented by the 2 ICES rectangles) amounts to almost £1.5 million and other species combine to over £1million.

When it becomes clear in 3.8 that the development is quite likely to become a fishing exclusion zone due to constraints of the moorings and inter-array cables, it is obvious that the development will need to define the mitigation which will be provided for this potential clash, both in terms of the turbine areas and the export cables.

The SFF has attempted to point out to the development the areas which will least affect the fishing fleets and it is now incumbent on the developer, as they have chosen a particular segment of the search area, to show the potential impacts on each sector and all commercially fished species in the area.

Whilst the very nature of the development, mooring and inter array cables may preclude fishing, the SFF would maintain that the export cable must be buried to avoid negative interaction with the inshore fisheries which it will impact on.

The SFF would expect the EIA to include detailed baselines of nursery areas, spawning grounds and commercial species. Further to that baseline, the SFF would expect to see some substantiation of the simplistic statements in the table 10-11 on page 75,inferring that fishing is a negative and destructive activity in the marine environment which is further reiterated in tables 10-12 and 10-13.

The SFF would agree with the list given in 10.6.1.3 on page 73 of potential impacts all of which must be addressed and mitigation defined.

Finally referring to the table 11-15, the SFF agrees with the list of items seeped in and would expect to see mitigation defined for any/all negative impacts on the fishing fleet.

Sports Scotland

In terms sport it is important to consider impacts on navigation, on landscape, on water quality, noise impacts, potential safety issues, and impacts on coastal processes e.g. impacts on wave climate and the implication this could have for surf sports. We note the commentary on various of these impacts in section 10 of the assessment but it is not clear that all of these factors have been assessed for their potential implications for sport and recreation. Where recreation impacts do appear to have been assessed it is also unclear who was consulted to assess levels of impact on some of the sports highlighted. It will be important to ensure that a comprehensive approach is taken to engaging with sport interests in gauging the potential impact of the proposal.

The sports to consider as part of the proposal include sailing, surf sports, canoeing/sea kayaking, coastal walking cycling and horse riding and perhaps climbing, motorised water sports such as jet skiing, recreational sea angling interests , sub aqua, open water swimming and links and coastal golf. We note and support the bodies that have been consulted in Appx E, in addition however it will be important to consult with the Ramblers, possibly mountaineering, with RYAS for marine motor sports and possibly with Triathlon Scotland for any open water swimming interests. In relation to LA consultation it will be important to consult with LA access officers. We also support consultation with clubs as outlined in Appx E but encourage such consultation across all sports. Contact details for SGBs are on our web site at http://www.sportscotland.org.uk/sport-a-z.aspx, who will be able to advise on clubs locally.

In assessing impacts on sport it is important to consider impacts during construction, operation and decommissioning, including the impact of associated infrastructure e.g temporary access roads, required for the development. It is important to consider impacts of the sea and landfall cables, terrestrial sub station requirements as well as the proposed floating array itself.

Having read Section 11.2 on Tourism and Recreation we are concerned by the apparent focus on tourism interests with limited assessment of recreational impacts, as distinct from tourism. We recognise however that impacts on recreation are considered throughout sections 10 and 11 of the assessment e.g. landscape impacts on North Sea trail and Aberdeenshire coastal path in S 11.1.3, or impacts on recreation navigation in section 11.3. It is perhaps worth making this point in the scoping report or to clearly cross reference such impacts in any section on tourism and recreation in the EIA. It is important that S 11.3 is not looked at in isolation to conclude that impacts on recreation are low.

We note from Fig 11-3 that RYA cruising routes pass through the proposed site (Fig 11-3) and cable routes. We note the potential medium impact on navigation in table 11-11 and that in relation to navigation there will be a need for vessel re routing. It will be important to consult RYAS and potentially with sea angling and canoeing interests (in relation to the cabling) on this aspect of the proposal to ensure impacts are acceptable or can be appropriately mitigated against.

Fig 11-3 also indicates surfing beaches at Stonehaven and Aberdeen that it will be important to ensure the proposal does not impact negatively on.

We note Fig 11-10 showing wreck sites both within the array and adjacent to the cable line. It will be important to consult with Scottish sub aqua on any potential impacts this may have on their interests.

We note and support the intention in table 11-25 to identify sea angling sites during the EIA process, as a basis for a fuller assessment of impact on sea angling interests.

Marking and lighting of arrays and individual turbines and the floating platform will be crucial and detail needs to be provided on this and consulted on as part of the development of the ES.

It would be useful for the EIA to include timeframes for construction works and to give a clear indication of how long construction will last for. Length of construction time will indicate the significance of impacts on sport interests.

Consideration needs to be given to the terrestrial impact of the proposal, particularly on access rights and on core and important paths, as advised on in para 150 of the Scottish Planning Policy (and not just on the Aberdeenshire Coastal Path and North Sea trail). This will include an assessment of the impact of the landfall cable, any onshore substation works and any associated infrastructure. Depending on works proposed and their impact on access rights the applicant may require a section 11 Order (Land Reform Act) to remove areas of land from access rights while works are in progress.

Transport Scotland

With reference to your recent correspondence on the above development, we write to inform you of our involvement as Term Consultants to Transport Scotland – Trunk Road and Bus Operations (TRBO) in relation to the provision of advice on issues affecting the trunk road network.

We have been passed a copy of the Environmental Scoping Report prepared by Atkins Ltd on behalf of PILOT in support of the above development. Having reviewed the information provided, we would make the following comments on behalf of Transport Scotland.

We understand from the Scoping Report that the proposed development is for the installation of 8 wind turbine generators, within a water depth of 60-80m providing up to 50MW of power. The site is approximately 17km south-east of Aberdeen and runs approximately parallel to the adjacent coastline.

We note that the nearest trunk road to the site is the A90(T) approximately 19km west of the development site.

Site Access

It is noted from Chapter 4 of the Scoping Report that the proposed location of the landfall point (where the power generated will be brought ashore) is at Nigg Bay 1km south of Aberdeen. The exact location of this is still to be finalised due to the potential development plans for Aberdeen Harbour. Two options have been presented in the Scoping Report with regard to this and for the route of the cabling to a substation located at Redmoss to the Altens Industrial Estate, Aberdeen. As a result the final location of the landfall point and cable routing will be a matter for further consideration.

A no direct access is required from the Trunk Road Network, Transport Scotland would not offer any further comments on the access point itself.

Assessment of Impacts

We would accept that the potential environmental impact associated with development traffic on receptors adjacent to the A90(T) trunk road is minimal and we can confirm that we do not require any further information in this regard.

If abnormal loads are required to be transported on the Trunk Road network then the ES should finalise the expected port of delivery for large components such as cable drums and transformers. A separate report should also be provided to assess the route to the site in terms of its suitability for the transportation of these abnormal loads.

The details required would include swept path analysis, any mitigation measures required including the temporary removal of street furniture, any proposed junction widening, traffic management etc to ensure that the movement of these loads will not have any detrimental effect on structures within the route path.

Whale and Dolphin Conservation

Given our area of interest, we have only focused on the marine mammal sections.

WDC are endeavouring to assist with the environmentally sustainable development of marine renewable energy in Scotland. Whilst welcoming the Scottish Governments' commitment to renewable energy generation, particularly noting the potential consequences of climate change for cetaceans, we have serious concerns about current levels of uncertainty and the possible negative impacts these developments, both individually and cumulatively, may have on cetaceans (whales, dolphins and porpoises) and seals in Scottish waters.

We understand that the project will deploy five to ten floating semi-submersible Wind Turbine Generators (WTG) to the south east of Aberdeen, approximately eight miles offshore. The development will have a maximum capacity of up to 50MW. The WTGs will be installed in approximately 60-80 meters of water and fixed to the seabed using moorings.

Specific comments

Overall, we mainly agree with the potential impacts to be 'scoped in' to the EIA in Table 10.24 – Potential impacts on marine mammals. Whilst we do not agree that floating offshore devices can have positive benefits to marine mammals during construction and decommissioning as stated in Table 10-24, we agree that this is 'scoped out' of the EIA.

Noise disturbance should be 'scoped in' due to the present uncertainty of the type of mooring to be used for the turbines e.g. anchors requiring pile driving might potentially be used.

We agree with how the developers will obtain information and account for other developments in the cumulative impacts in Section 1.17. Developments in the Moray Firth, e.g. BOWL and MORL, should also be included because they are within the known range (and management unit) for the SAC bottlenose dolphin population and construction will potentially overlap.

Habitats Regulations Appraisal (HRA) Screening

Whilst not a requirement for the HRA, the potential impact on cetacean species not covered in Annex II of the Habitats Directive e.g. minke whale, harbour porpoise and white-beaked dolphin, should also be given adequate consideration. These species are listed as Priority Marine Features and minke whale and white- beaked dolphin are drivers in the Scottish Marine Protected Areas project.

The following organisations did not have any comments to make on the Kincardine Offshore Wind Farm Scoping Report:

British Telecom (Radio Network Protection Team)
Transport Scotland – Ports & Harbours

The following organisations did not provide a response in relation to the consultation on the Kincardine Offshore Wind Farm Scoping Report:

Aberdeen and Stonehaven Yacht Club
Bond Offshore Helicopters
Bristow Helicopters Ltd
Chamber of Shipping
CHC Helicopters
East Grampian Coastal Partnership
Inshore Fishery Group (East Coast)
Marine Safety Forum
Marine Scotland Compliance
Montrose Port Authority
Scottish Canoe Association
Scottish Surfing Federation
Scottish Wildlife Trust
Surfers Against Sewage
The Crown Estate
Visit Scotland

THE RYA'S POSITION ON OFFSHORE RENEWABLE ENERGY DEVELOPMENTS: PAPER 1 (OF 3) – WIND ENERGY SEPTEMBER 2013

Executive Summary

This paper sets out the RYA position in relation to the development of *offshore renewable wind energy*. It is intended to enable developers accurately to take account of recreational boating concerns when developing their Environmental Statements and Navigational Assessments.

In summary, the RYA believes that the impact that offshore renewable wind energy has on recreational boating can be minimised provided developers fully consider the following key points which are drawn from the paper that follows:

- **Collision risk**. The RYA believes that the collision risk posed by wind farms and associated infrastructure to recreational craft can be minimised by specifying:
    - a minimum rotor tip air draft of 22 metres above Mean High Water Springs
    - a minimum underwater clearance of 4 metres below Chart Datum for submerged structures and associated infrastructure, assuming flat water conditions. However, where turbines are situated where there may be significant wave height, the RYA proposes that an underwater clearance of 8 metres below chart datum would give an appropriate safety margin for submerged devices and infrastructure
    - UK wide standardisation of wind farm layouts in rows and columns which are uniform and predictable.
- **Charting, marking and lighting**. The RYA supports the guidance provided by the MCA, UKHO and General Lighthouse Authorities on the charting, marking and lighting of wind farms and works with them to identify site specific issues that may occur.
- **Navigational and communication equipment**. Any proposed development should account for any effect on small craft navigation and communication equipment in detail.
- **Location**.
    - Recreational routes, general sailing areas, racing areas and access to boating facilities and anchorages must be accounted for when examining the impacts of wind farm developments and their associated infrastructure.
    - Poorly sited wind farms and those that are built within the 12nm limit may increase the risk to Safety of Navigation and discourage visiting boaters to the area. This would have an adverse effect not only on visitors but also on the local economy.

- **Sailing and racing areas**. Any interference in wind speed and/or turbulence created by a wind farm in a sailing or racing area would create a significant negative impact on the site and diminish its value for recreation.

- **Cumulative and in-combination effects**. The RYA expects development site plans to include all adjacent developments that may have cumulative and in-combination effects on shipping and navigation.

The Royal Yachting Association – who we are

The RYA is the national body for all forms of recreational and competitive boating. It represents dinghy and yacht racing, motor and sail cruising, RIBs and sportsboats, powerboat racing, windsurfing, inland cruising and personal watercraft. The RYA manages the British sailing team and Great Britain was the top sailing nation at the 2000, 2004 and 2008 Olympic Games.

The RYA is recognised by all Government offices as being the negotiating body for the activities it represents; as such, it takes an active role in influencing policy and has been a voice for recreational boating for more than a century.

The RYA currently has over 100,000 personal members, the majority of whom choose to go afloat for purely recreational non-competitive pleasure on coastal and inland waters. There are an estimated further 500,000 boat owners nationally who are members of over 1,500 RYA affiliated clubs and class associations.

The RYA also sets and maintains an international standard for recreational boat training through a network of over 2,200 RYA Recognised Training Centres in 20 countries. On average, approximately 160,000 people per year complete RYA training courses. RYA training courses form the basis for the small craft training of lifeboat crews, police officers and the Royal Navy and are also adopted as a template for training in many other countries throughout the world.

The RYA Position

The RYA recognises the UK Government's and devolved administrations' efforts to promote renewable energy[1]. We note that it is Government policy that any potential adverse impacts, including long-term and cumulative adverse impacts, as well as any measures to avoid, reduce or compensate for any adverse impacts should be taken into account. We further note that when considering cumulative effects, the Environmental Statement should provide information on how the effects of the applicant's proposal would combine and interact with the effects of other development (including projects for which consent has been sought or granted, as well as those already in existence[2]).

Our primary purpose in engaging in consultation regarding the development of offshore energy developments is to secure navigational safety and to ensure that recreational boating interests are not adversely affected. The RYA has made objections to some of the proposed developments on grounds explained in this document. As more issues have come to light, we have reviewed our position on offshore energy development. We recognise that some marine renewable schemes may provide opportunities to benefit recreational sailors, for example, active breakwater types of power generation can provide areas of sheltered water which will enable sailing local clubs to thrive.

This position paper sets out our concerns from a general perspective regarding wind energy and should enable developers accurately to take account of recreational boating concerns in their environmental impact assessments. This paper is one of three position papers discussing renewable energy, with the other two addressing wave and tidal energy.

In summary the concerns of recreational boating and offshore renewable energy developments relate to:

1. Navigational safety
    a. Collision risk
    b. Risk management and emergency response
    c. Marking and lighting
    d. Effect on small craft navigational and communication equipment

2. Location
    a. Loss of cruising routes and impact on offshore racing
    b. Squeeze into commercial routes
    c. Effect on sailing and racing areas
    d. Cumulative and 'in combination' effects

3. End of life
    a. Dereliction
    b. Decommissioning

4. Consultation

The MCA has developed guidance[3] on the issues that need to be taken into consideration when assessing the impact on navigational safety and emergency response (search and rescue and counter pollution) caused by offshore renewable energy installation developments proposed for United Kingdom internal waters, territorial sea or in the Renewable Energy Zone beyond the territorial sea. The RYA expects this guidance to be used by offshore renewable energy developers seeking consent to undertake marine works. Furthermore, the RYA expects to be consulted on matters that may affect recreational craft during any type of assessment on proposed marine works.

The RYA expects applications and accompanying supporting documents for development consent to be consistent with the instructions and guidance set out in the Overarching National Policy Statement for Energy (EN-1) and the National Policy Statement for renewable energy infrastructure (EN-3).

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1 The UK Renewable Energy Strategy 2009

2 National Policy Statement for Renewable Energy Infrastructure (EN-1)

3 (MGN 371(M+F) Offshore Renewable Energy Installations (OREIs) - Guidance on UK Navigational Practice, Safety and Emergency Response Issues, MGN 372(M+F) Offshore Renewable Energy Installations (OREIs): Guidance to Mariners Operating in the Vicinity of UK OREIs.

1 Navigational Safety

Prior to departure, mariners are required to make a passage plan based on assessments of weather, tides, limitations of the vessel and crew, and navigational dangers. Offshore renewable energy developments are an additional navigational hazard to the mariner. However, if sited sensitively, designed well and managed effectively these developments can satisfy the safety issues of concern to recreational boating.

Since 2004, a total of 21 offshore wind farm sites have been commissioned, a further 5 sites are under construction and 27 are under development. In that time, there have been no recorded incidents involving recreational craft and offshore wind farms since the start of operations around the UK coast.

Collision risk

The RYA believes that wind farm design must adhere to certain consistent design parameters to reduce the risk of collision with recreational craft. There are three main hazards that must be considered:

- Collision with rotating rotor blades

- Underwater allision with sub-surface structures, inter-array and export cable protection and rock armour and scour protection. It is important that where cables cannot be buried, the most appropriate type of cable protection is used taking into account the water depth and mariners using the area. The risk of underwater allision can also be increased where cables cross other cables and water depths are significantly reduced.

- Unpredictable wind turbine layouts, such as edge-weighted boundaries and curved rows, prevent surface craft from steering a consistent track over the ground, particularly in poor visibility. These irregular layouts are confusing at surface level and affect situational awareness. Standard layouts such as grids in straight rows and columns in accordance with known and agreed formats avoid these problems.

The RYA believes that the collision risk posed by wind farms and associated infrastructure to recreational craft can be minimised by specifying:

- **a minimum rotor tip air draft of 22 metres above Mean High Water Springs [5]**
- **a minimum underwater clearance of 4 metres below Chart Datum for submerged structures and associated infrastructure, assuming flat water conditions. However, where turbines are situated where there may be significant wave height, the RYA proposes that an underwater clearance of 8 metres below chart datum would give an appropriate safety margin for submerged devices and infrastructure**
- **UK wide standardisation of wind farm layouts in rows and columns which are uniform and predictable.**

The RYA has developed its position on minimum clearances on the available data. An estimation of the air draft of the national fleet of yachts around the UK was established in the knowledge that these types of yachts may be found in all UK waters. These data are taken from the Royal Ocean Racing Club (RORC) Rating Office's database. For more detail see the final section on *Developing RYA policy on minimum clearance height and depth*.

Risk management and emergency response

Risk management provisions should be formulated from the results of a site specific risk assessment that accounts for small craft of less than 24m LOA, recognising the significant differences between small and large vessels. This distinction is important when it comes to equipment and other requirements for small and large craft. Guidance was developed in 2005 to outline the requirements for assessing the navigation impacts of offshore renewable energy developments[5]. This is currently being updated by the MCA and should be closely followed throughout any assessment.

For recreational craft, such an assessment should take into account the following parameters:

- The number, size and type of local vessels
- The number, size and type of national and international vessels
- Annual events that are not covered in a short term monitoring
- Wave height and sea state conditions
- Seasonal variations in vessel number, size and type including weather conditions
- Proximity to ports of refuge
- A range of possible incidences including loss of propulsive power and failure of navigational systems

Risk assessment consists of an objective evaluation of actual and potential hazards and subsequent evaluation of any associated risks. During the assessment, assumptions and uncertainties must be clearly considered and presented. Part of the difficulty in risk management is that measurement of both of the quantities in which risk assessment is concerned - potential loss and probability of occurrence - can be very difficult to measure and the chance of error in measuring these two concepts is large.

As the number of vessels using an area varies with the season, any traffic monitoring should be carried out in the high season. However, it is not the number of vessels passing through an area that is important but the number passing through in adverse conditions and when tidal streams are strongest. Moreover, local vessels will gain experience of navigating in wind farms arrays and the biggest risks are likely to be to visitors. General information on sailing areas is given in the *UK Coastal Atlas of Recreational Boating* (mentioned later) and the RYA can provide additional detailed information about particular sites on request.

Commercial offshore wind farms have now been deployed in UK waters since 2004, and to date there have been no recorded life threatening incidents involving small recreational craft reported to HM Coastguard. This experience should be factored into any navigational risk assessment to provide an accurate and realistic predicted level of risk and to enable proportionate and practical measures to be implemented where a risk is shown to be intolerable.

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[4] The UKHO references air draft to Highest Astronomical Tide (HAT) and all other heights to Mean High Water Springs (MHWS). Maintaining a design requirement of 22 metres MHWS is consistent with our past approach and each wind farm will have its air draft in relation to HAT marked on UKHO charts.

[5] Guidance on the Assessment of the Impact of Offshore Wind Farms: Methodology for Assessing the Marine Navigational Safety Risks of Offshore Wind Farms. 2005. DTI.

In order to manage the risk of a vessel in distress drifting towards an installation effectively, there needs to be an effective Emergency Response System in place. This will require the ability to shut down the moving parts, such as the turbine rotors, when an emergency call is reported. In some cases, where traffic is high, a stand-by safety vessel may be required.

In addition, irregular turbine layouts, including the use of curved rows and dense boundaries, decrease the ability to navigate through a wind farm either by sea or by air. These unpredictable layouts require the use of detailed charts to navigate and make search and rescue operations much more difficult.

Safety zones

The RYA's opinion remains that the simple declaration of a safety zone around an offshore renewable energy installation that exclude small craft on a wholesale basis are likely to be unnecessary, impracticable and disproportionate. In our view, such a restriction on small craft right of navigation and legitimate use of the sea is not justifiable in terms of safety alone and it must be recognised that there is little possibility of enforcing such zones. In some locations, a safety zone may increase risk of collision if small craft are consequently forced to use commercial craft shipping lanes. Wind farms have been proposed where turbines are mounted on floating towers which are anchored to the seabed by cables extending over a much wider area. It is important that the size of any proposed safety zone for such devices should be proportionate to the risk posed to vessel types and should not be derived from the perimeter of the anchor locations.

European standards are now being considered where small craft less 24m LOA are exempt from any operational safety zones. The German Government was the first to recognise the negative implications of imposing safety zones on small craft and has exempted small craft from such zones. In fact, where a wind farm is next to a busy shipping lane an aspect of mitigation might be to exclude large vessels from the wind farm to permit small craft to pass through in safety.

In principle the RYA has no objection to the creation of *advisory or precautionary zones* but such zones must be designed and implemented on a case-by-case basis and with due respect to the right of navigation. The RYA believes that the purpose of any *advisory or precautionary zones* should be to warn vessels to navigate with particular caution but they should not permanently restrict navigation or exclude recreational vessels.

The RYA does, however, understand that there may be occasions when it may be prudent to impose short-term temporary restrictions, for example during engineering, maintenance or construction works. Such temporary restrictions should be promulgated through clear and timely Notices to Mariners. These need to show clear start and end dates and must be promulgated well in advance of any works. Notices to Mariners should not simply advise mariners to avoid an entire wind farm site, but instead should highlight the areas where works will be undertaken and define the location(s) of such safety zone(s). Many vessels visit the UK from continental Europe and this should be taken account of in any communication.

Cables and anchoring

In most cases, small craft will not anchor within an offshore wind farm. However, in emergency situations this may be the only way of securing a vessel drifting towards a turbine and reduce the likelihood of allision. To secure the safety of navigation, cables should be buried to a sufficient depth to avoid being uncovered. This should take into account shifting sediments on the seabed.

Where export cable corridors have not been surveyed in detail or there is a possibility that

inter- array and export cabling cannot be successfully buried, it is important that alternative types of cable protection are carefully considered and set out in the Environment Statement; this should take account of the depth of water and the type of mariner using the area. Where there is any possibility that rock protection might be used which might reduce the depth of navigable water, particularly where cables cross, the RYA would expect this to be fully discussed in the Environmental Statement.

Charting, marking and lighting

The requirements for charting, marking and lighting offshore wind farm sites should be consistent with IHO and IALA requirements and guidelines. Much work has been done in this field and guidance supported by the RYA is available from the UKHO and General Lighthouse Authorities. As a minimum, each turbine should be clearly marked in high visibility yellow paint to a height of 12m, low level lighting should allow the turbine number to be read from a 'safe' distance, corners of the wind farms should be marked and any other points or routes through the wind farm marked accordingly. These requirements should be discussed with the MCA, UKHO and General Lighthouse Authorities.

The RYA supports the guidance provided by the MCA, UKHO and General Lighthouse Authorities on the charting, marking and lighting of wind farms and works with them to identify site specific issues that may occur.

Effect on small craft navigational and communication equipment

Most small craft will have some form of navigational equipment on board. The most common will be a magnetic compass. Large quantities of steel, cabling and the transmission of electrical power may produce interference with a magnetic compass, particularly in shallow waters.

Studies have shown that the effect on systems such as GPS, VHF and mobile phones from wind farms is negligible. However, there is a demonstrable 'echo' effect on some marine radar systems which may reduce the visibility of small craft to larger commercial vessels where radar scanners are often poorly sited and affected by the vessels superstructure. Adjustment of gain settings can minimise the unwanted effects, but over-reduction and consequential loss of small targets is of concern. For these reasons small craft may well be safer within wind energy sites and particular attention should be paid to developments that are sited close to commercial shipping lanes and which may obstruct visibility and avoidance of commercial routes.

Any proposed development should account for any effect on small craft navigation and communication equipment in detail.

2 Location

The location of offshore energy installations may well conflict with access for recreational craft. It should also be noted that commercial routes and shipping lanes do not represent those routes taken by the vast majority of recreational craft. The RYA, has collated recreational routes into the *UK Coastal Atlas of Recreational Boating* which is available from the RYA. The lines in the atlas represent corridors of varying width that are most commonly used as cruising routes. In addition, the atlas marks sailing areas, racing areas and the location of marinas, RYA affiliated clubs and RYA recognised training centres. The *UK Coastal Atlas of Recreational Boating* should be used to inform decision

making when planning the location of offshore energy developments. When writing an Environmental Statement local knowledge should be sought through the RYA.

Loss of cruising routes and impact on offshore racing

When examining the routes and location of turbines it is important to recognise that sailing boats behave differently to power driven craft and that their actual line of travel may 'zigzag' across their intended direction of travel upwind as they are dependent on the wind direction. The *UK Coastal Atlas of Recreational Boating*, the RYA's spatial dataset[6], should be consulted together with other available information to inform the siting of the developments and individual installations and the potential provision of navigation routes through the larger sites.

Along many stretches of coast, recreational craft may need to seek shelter in poor weather. Sheltered harbours and anchorages and routes to these harbours of refuge should be protected. In many cases these are identified in the Atlas.

Loss of routes would also lead to an increased distance of travel. This has environmental implications for powered craft and safety implications for all craft. Some routes, typically narrow channels or those with strong tidal flows may already be hazardous at times to navigate through and adding hazards in these areas may seriously compromise navigational safety. There are also safety issues with the creation of turbulence and wind shadowing in confined areas where craft may be moving slowly and gusty turbulent conditions may create problems.

- **Recreational routes, general sailing areas, racing areas and access to boating facilities and anchorages must be accounted for when examining the impacts of wind farm developments and their associated infrastructure.**
- **Poorly sited wind farms and those that are built within the 12nm limit may increase the risk to Safety of Navigation and discourage visiting boaters to the area. This would have an adverse effect not only on visitors but also on the local economy.**

Squeeze into commercial routes

Recreational routes differ from commercial routes as recreational craft essentially aim to keep out of the major commercial navigation routes by travelling in the shallower adjacent waters or taking entirely different routes. As a result, the examination of commercial routes through AIS plotting alone will not ensure the safe positioning of offshore renewable energy installations (OREI); recreational boating must also be taken into account when assessing the impact on navigational risk. This may require routes through large developments to be identified or inshore routes for

[6] A dataset with associated geographic information (e.g. lat/long coordinates) which can be mapped to provide a visual representation.

smaller craft to be safeguarded. The cumulative impact of all marine developments is becoming increasingly important when assessing these issues of squeeze.

Effect on sailing and racing areas

Most of the general day sailing and racing areas are close to the shore and in sheltered waters where wind speed and/or turbulence may have an adverse impact. The Strategic Environmental Assessment for Round 3 offshore wind development[7] recognises the busy inshore areas and states that the majority of offshore wind development should be beyond 12nm. The Netherlands and Germany have already excluded any development within 12nm of the shore in order to retain
'open space' for its amenity and recreational value. Recreational activity is important to the health and wellbeing of the community as well as providing economic support for the local coastal economies. Retaining the undisturbed remoteness of some waters will be important in terms of its wilderness and amenity value for recreation.

Any interference in wind speed and/or turbulence created by a wind farm in a sailing or racing area would create a significant negative impact on the site and diminish its value for recreation.

Cumulative and 'in-combination' effects

As a result of the large increase in the number and scale of offshore wind projects in the UK, it has been recognised that the cumulative effects of these projects and other developments have potential implications for small and large craft alike. Existing and future offshore wind farms developed by other EU Member States may also add to the cumulative effects.

There is an awareness that the intended development of offshore wind farms could also lead to in- combination effects (effects arising from these developments with other activities; e.g. wave and tidal renewable installations, fishing and offshore oil and gas activities and those associated with UK and European Marine Protected Areas, including Marine Conservation Zones) that might impact all mariners. The cumulative and in-combination effects of offshore energy installations on navigation routes will be increasingly significant and must be taken into account in future siting proposals and plans.

Currently it is common practice for developers to provide site plans that show their proposed development in isolation. Examples of this are readily available in application documents for developments in the Irish Sea and in the southern North Sea. This is confusing and fails to provide a visual understanding of the cumulative and in-combination effects on shipping and navigation that might be caused by other adjacent offshore developments in the area. As the number and complexity of future developments increases, the RYA expects development site plans to include all adjacent developments that may affect shipping and navigation safety.

The RYA expects development site plans to include all adjacent developments that may have cumulative and in-combination effects on shipping and navigation.

[7] Offshore Energy Strategic Environmental Assessment: Post consultation report. June 2009. DECC.

3 End of Life

Dereliction

Whilst we would hope that these installations remain economically viable for the lifetime of the structures, the RYA would support any measures taken by Government to secure the financial provision for removing the structures, prior to consents being given. This will ensure that after the installation ceases to produce electricity for whatever reason, derelict structures that are not charted, marked and lit and remain a hazard to navigation or anchoring are removed from UK waters.

Decommissioning

Equally, any decommissioning plan needs to ensure that the structures are completely removed. Any parts of the structure remaining after the commercial operation of the installation may pose a hazard to navigation. However, we recognise that secondary uses may be identified for these structures once energy generation ceases. If structures are to remain in the water, navigational safety must be taken into account and structures should be appropriately charted, marked and lit.

Consultation

The RYA's main office in Hamble is a primary point of contact for matters concerning the development of Offshore Renewable Energy Installation sites and the recreational boating sector. Throughout the English regions, RYA Hamble maintains a network of Regional Planning and Environmental Co-ordinators (RPEC) who are able to provide more detailed site specific information for developments that fall within an RPEC's area of responsibility. Developers may find this a useful resource for timely site specific information, particularly at the start-up of any project.

In addition, the RYA's main office maintains close links with its Scottish, Welsh and Northern Irish offices, which work with the relevant jurisdictions and they can provide detailed site-specific information in the same way as the RPECs do for England.

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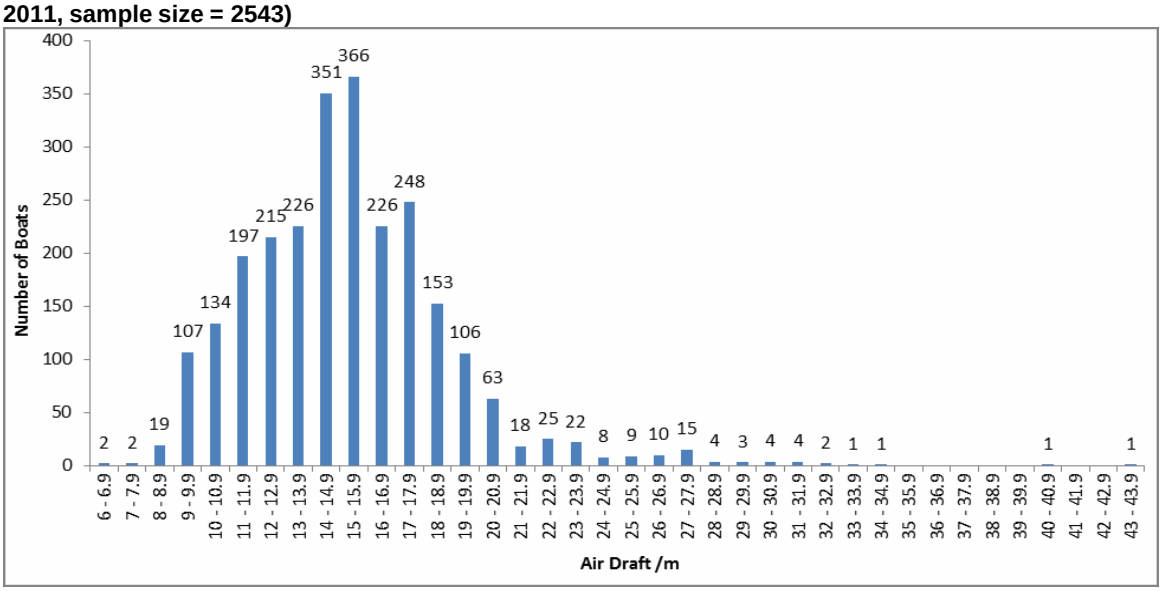
Development of the RYA policy on minimum clearance height and depth

The RYA originally developed its position on clearance height and depth on the available data in 2003. This was based on data taken from the Royal Ocean Racing Club (RORC) Rating's Office database which is representative of the types of yachts that are found in common use in UK Waters. Since then the 'Arkenford' survey[8] carried out by Arkenford, a market research and modelling company, has shown that usage and participation data have remained remarkably stable, which would suggest that the data used for development of the RYA policy on minimum clearance and height is still valid. The graphs shown below are based on RORC data from 2011.

Although there are other rating systems in use, the RORC system is widely accepted and applied worldwide. Rating is a technical handicapping process that enables adjustments to be made to yacht racing results so as to allow a wide range of different boats to be raced on equal terms. The boats contained in the database are mainly cruisers and yachts. Many yachts taking place in club races are registered with the RORC Rating Office. The RYA believes this data, containing in excess of 2500 records, is a good representation of the type of yacht to be found sailing around the shores of the UK. Although the total number of yachts around the UK has not been specifically quantified because there is no single database that records this information, it is estimated that this represents more than 6% of the total number of boats owned in the UK according to the data on boat ownership and usage supplied by Arkenford and by the British Marine Federation.

'Air draft' as presented here is the distance from the waterline to the top of the mast structure. This is based on the 'p' measurement, boom to top of mast, in the rating system (RORC). Air draft is derived by adding the 'p' value to the sum of estimated values for each boat for midships freeboard and boom above deck. It should be noted that masthead equipment and instrumentation has not been included in the calculation of air draft, although it will also add a further half to one metre to the air draft of a yacht. Loss of this equipment may produce failure in communication from the yacht although not structural failure to the yacht.

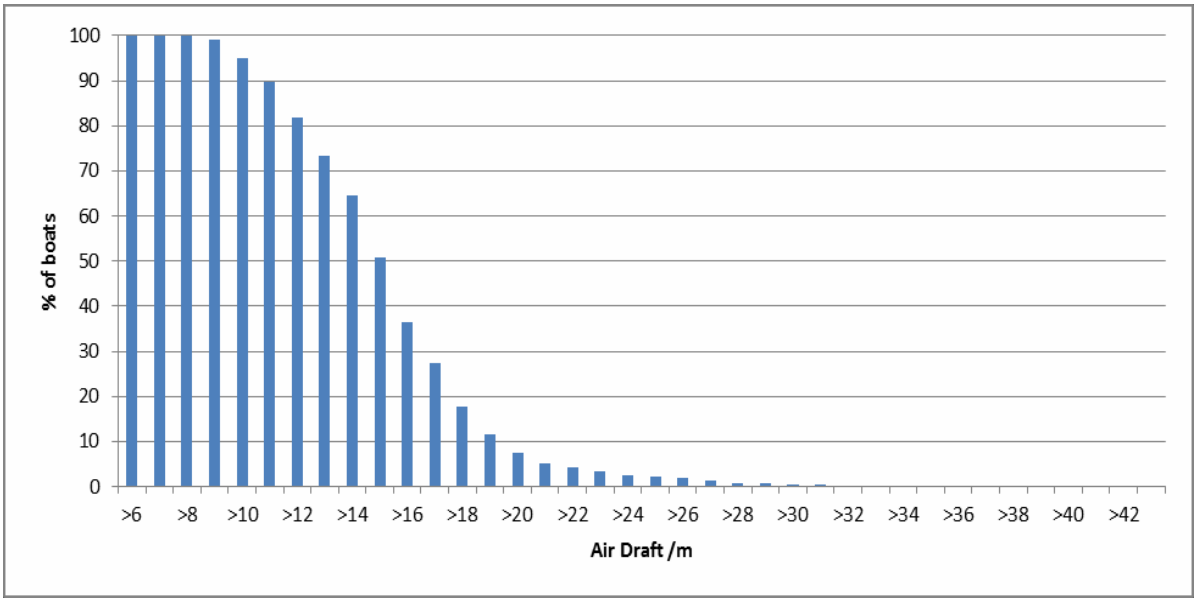
Figure 1: Graph showing the air draft in metres of the boats within the IRC fleet (data collected 2009-2011, sample size = 2543)



8 Annual Watersports and Leisure Participation Survey carried out on behalf of RYA, BMF, MCA and RNLI

Looking at the above data in the form of percentage of the UK boating fleet, we can see the percentage of recreational yachts at risk from different rotor clearance heights. Figure 2, shows that a clearance height of 14 metres above sea level will put 65% of the national fleet at risk from rotor height collision. Reducing this to 18 metres above sea level, substantially reduces this percentage, however it still leaves 18% of the national fleet at risk from rotor height collision. This is still an unacceptable level of risk to the yachts found in UK waters. A clearance of 22 metres has been shown to be possible in engineering terms, which would put 4% of the national fleet at risk, a more acceptable level of risk in the view of the RYA.

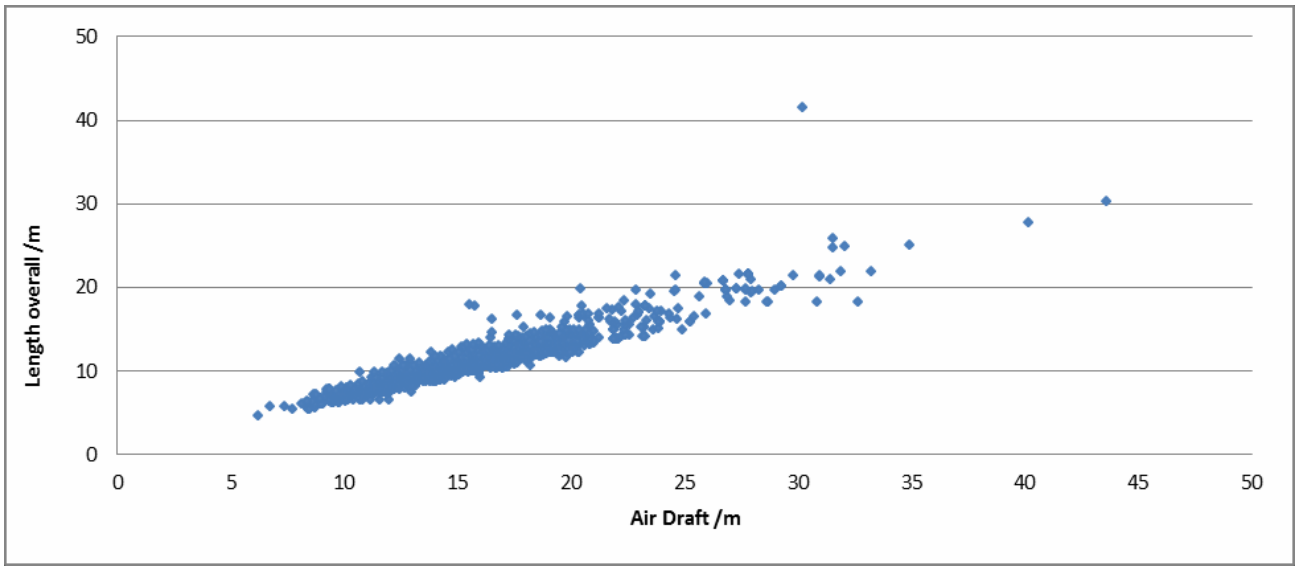
Figure 2: Graph showing the percentage of boats in the IRC fleet with different air draft shown in metres (data collected 2009-2011, sample size = 2543)



As a matter of common observation, larger yachts over 22 metres in length (see Figure 3), representative of this 4% group are more likely to be run by highly experienced crews and skippers. The datum of mean high water springs (MHWS) is taken as the clearance datum rather than mean sea level and then factoring in a site specific wave height parameter. However, wave height should be examined in the risk assessment at each site. It should be noted that 22 metres above MHWS has already been specified as a minimum clearance height in several of the wind farms consented in the first round of consents and is therefore a feasible, cost-effective option for developers.

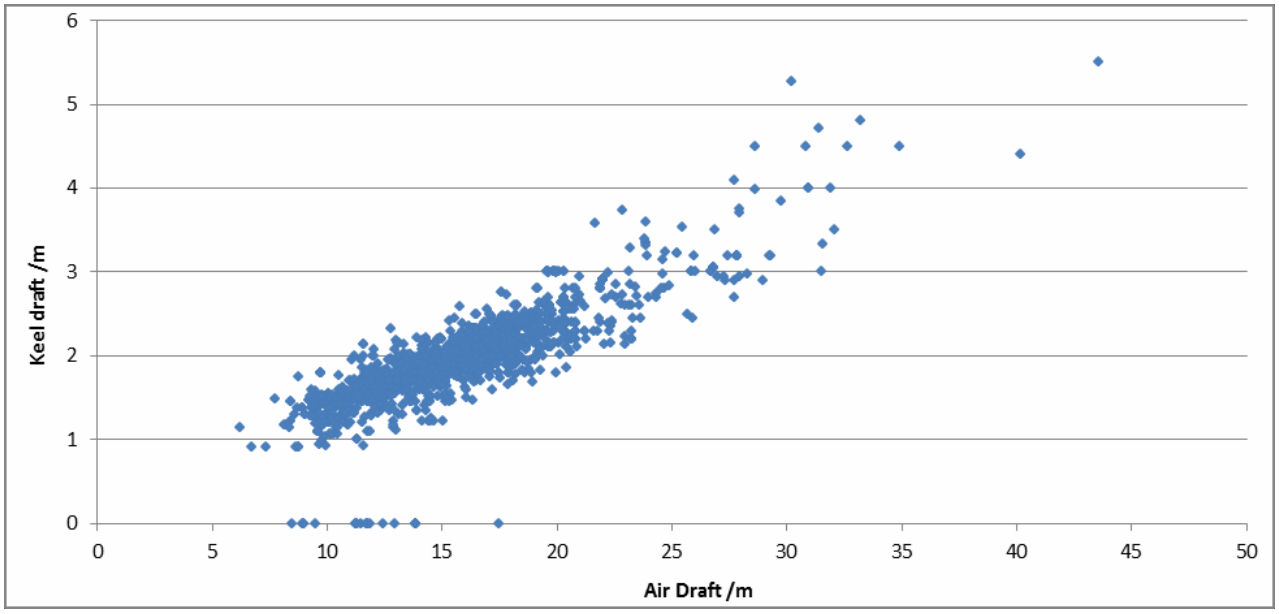
It should also be noted that while this is currently an acceptable level of clearance, yachts are increasing in size and future developments may require a greater clearance height.

Figure 3: Graph showing the relationship of Length Overall (LOA) in metres and air draft in metres of the IRC fleet (data collected 2009-2011, sample size = 2543)



Additional data is provided showing the relationship between air draft and the depth of water required for clearance below the vessel's keel (Figure 4). Figure 4 shows that a depth of 3.5 metres corresponds to an air clearance of 22 metres above MHWS which is relevant for subsurface wave and tidal developments. Allowing for a safety margin, therefore, the RYA specifies a minimum underwater clearance of 4 metres below Chart Datum to provide a tolerable level of risk.

Figure 4: Graph showing the relationship of keel draft in metres and air draft in metres of the IRC fleet (data collected 2009-2011, sample size = 2543)



Annex 3 – SCA Renewable Energy Policy

Introduction

In passing the Land Reform (Scotland) Act 2003 the Scottish Parliament has provided a statutory right of access to inland water and confirmed the customary freedoms of access that paddlers have always enjoyed in Scotland.

However, the quality of the resource that we take access to, Scotland's rivers, lochs and coastal areas, is coming under increasing threat from various types of development, most notably at the current time from renewable energy proposals. Whilst the Scottish Canoe Association (SCA) welcomes the passing of a statutory right of access, we are concerned that the canoeing resource in Scotland does not suffer from damage by inconsiderate or poorly planned renewable energy schemes.

With this in mind the SCA has developed a Renewable Energy Policy in order to express our concerns about the value of the places where canoeing takes place and to explain to developers, planners, government agencies, councillors and politicians the views that the SCA holds and the kind of sites that we would wish to see protected from development.

Throughout this document we will use the generic term canoeing to refer to the use of both canoes and kayaks.

Policy Context

The SCA believes that government should make the promotion of energy efficiency a much higher priority. There is a fundamental issue with causing damage to our natural heritage in order to generate energy that is then wasted on inefficient appliances, under insulated buildings and overly relaxed public attitudes to use of energy.

The SCA recognises the global problems associated with carbon emissions and climate change, and accepts there is a need to alter our sources of energy and societal attitudes towards use of energy.

The appendices to this policy statement describe the historical context to the SCA's involvement in the energy debate as well as the current relevance of national energy policy. The appendices then go on to review the trends in hydro and marine energy development.

The SCA's policy for dealing with Renewable Energy issues is set out below.

SCA Policy

1. The SCA wishes to be involved in the debate on the future of the nation's energy policy in order to play a proactive role in determining the impact on water that canoeists make recreational use of.

2. The SCA seeks to work with developers, agencies, consultants and planning authorities to help identify potential conflicts between canoeing and proposed renewable energy projects. The SCA believes that early consultation should lead to the avoidance of damaging conflicts between recreational interests and energy companies.

3. The SCA will form a view on each new renewable energy proposal taking into account a number of factors. These include: the likely impact on paddling interests; the importance of the water body involved in paddling terms; the protection of scenery and a judgment on any cumulative effect of a range of different renewable projects.

4. We are concerned that good rivers are being threatened for a very small power output in return. Therefore, in assessing any proposed energy scheme the SCA will perform a

power output to canoeing interest comparison. We believe this will enable us to consider and compare two important factors: what is being lost and what is being gained.

5. Where the canoeing value of a river is not so great that we would wish to see the proposed development stopped we will work with the developer to comment on the safety aspects of the inlet and outlet features, negotiate shut down days for the river to be paddled and in most cases request an online river level gauge.

6. The SCA will oppose renewable energy proposals when we consider the watercourse or coastal area that is under threat to be of national or international value to our sport.

7. The SCA is concerned that building barrages in estuaries could hinder navigation and introduce safety issues for paddlers. Any barrage should have continuously navigable channels near the coast to ensure safe passage for canoes, kayaks and other small craft. The possible ecological and silting problems caused by tidal barrages are also of concern.

8. The SCA seeks to protect our finest coastal scenery. Scotland's coastline is the most scenically attractive in Europe and should be offered special protection to recognise this. Major developments on our remoter and most scenically attractive stretches of coastline should be resisted and will be opposed by the SCA. The SCA would prefer to see offshore wind turbines located well out to sea; and tidal and wave power stations either out to sea or located entirely below the surface of the water.

9. The SCA is concerned about the safety implications of certain marine renewables and the consequences for sea navigation. For this reason we are opposed to developments on stretches of coast that would require small craft to go further out to sea to navigate around or stop paddlers from landing on the coast in an emergency.

10. The SCA is concerned about the access implications of marine renewables on the water close to the coast and in the coastal zone. We are opposed to developments on the sea and coastline that limit where small craft can navigate. Where it is necessary to have renewable energy installations or their shore facilities near the coast, existing launch sites should be preserved. Where it is necessary to use part of the coast for the installation, provision of car parking and access to the water for recreational users should be maintained or improved as part of the installation. The principle of multiple uses for coastal sites should apply.

11. Tidal energy represents the only form of renewable energy that could produce large amounts of new base load energy. For that reason we believe it is inevitable that tidal energy will eventually become widely utilised and will contribute to our nation's security of supply. We would like to see a locational strategy drawn up well in advance of Scotland's tidal energy being harnessed.

12. The SCA is concerned that starting up and shutting down turbines can cause rapid and artificial fluctuations in river levels. This could cause problems for canoeists, as well as anglers and other recreational visitors, especially in gorge sections of white water rivers. The artificial altering of water levels by hydro schemes switching on and off could lead to accidents or contribute to existing incidents turning into accidents. The SCA will assess the safety implications of any proposed scheme on paddlers. This will require information on the anticipated normal running regime for the turbine and the implications of an emergency shutdown. The anticipated number of controlled start ups and shut downs on a daily basis and the speed at which the water levels change will be required to carry out this assessment.

13. The SCA believes that water release information from existing hydro power stations should be more freely available to canoeists so that more recreational use can be made of the water.

14. The SCA seeks to work with developers and energy companies to secure good quality access facilities that will assist canoeing, such as passes navigable by canoe and footpaths round new obstructions on the river as well as car parks close to the access and egress points on controlled rivers.

15. The SCA believes the practice of cutting the capacity of existing hydro schemes in order to qualify for subsidies is indefensible and should be stopped.

16. The SCA believes in the principle of early consultation being used to identify problems with proposed plans at an early stage and as a way of avoiding protracted conflicts between developers and opponents of a proposed scheme as well as generally improving the public perception of renewable energy.

17. The SCA believes that government should provide a lead by developing a locational strategy for all forms of renewable energy.

18. The SCA would like to see renewable energy developed in such ways that the need for unsightly transmission systems is reduced and any environmental impact is minimised. As renewable energy projects eventually move offshore we would like to see more use of sub-sea cabling, albeit with due care taken to consider the natural heritage value of our underwater ecosystems.

Appendix A

Historical Context

A great deal of hydro development took place in the Scottish glens in the post-war years. These schemes had a major impact on our upland landscapes, but they did provide energy to remote parts of Scotland for the first time. These schemes are still operational and providing electricity to the national grid some 50 years after they were built. The dammed storage schemes that were built in those days still provide electricity as well as predictable water for canoeing via releases in the form of freshets, which are primarily aimed at helping fisheries management but are sometimes specifically for canoeing events.

With the exception of the massive Glendoe hydro scheme, the modern day renewable energy industry appears not to be looking to build anymore dammed storage schemes. Whilst storage schemes do provide opportunities for good canoeable water during releases, the landscape impacts caused by their highly visible draw-down scars can be significant, and are considered unacceptable to a wide range of recreationalists, and this is one reason why they are not currently being seen as a viable proposition in Scotland.

The building of nuclear power stations in Scotland during the 1950s and 1960s led to the need for pump storage hydro schemes and the Cruachan and Foyers power stations were constructed for this purpose. Should government commit to replacing our ageing nuclear power stations there could be a renewed interest in pump storage. Should this happen there could be implications for high mountain lochs and the burns and rivers that drain them. The decision about our future commitment to nuclear power will be based on the political direction Scotland chooses to follow, but it could also depend on future developments in the international quest for power from waste free nuclear fusion as opposed to nuclear fission with its associated problem of how to dispose of the waste nuclear material. A return to nuclear power in combination with pump storage hydro would be likely to impact on a small number of mountain burns and the main concern to canoeing would be whether these were canoeable.

Appendix B

National Energy Policy

The UK and Scotland are undergoing a change in energy policy, partly brought about by ageing power stations and partly because of our Kyoto and other commitments to reducing carbon emissions. As well as reviewing our energy mix in terms of power sources, we also have to review our network for electricity transmission. The Beauly to Denny powerline upgrade proposals are highlighting the problems of landscape impact, health concerns and affect on property prices associated with overland pylons. With renewable energy production set to move increasingly offshore the arguments for sub-sea transmission lines becomes a more viable option. Also, the greater the amount of power produced the more economically viable the higher investment in sub-sea cabling becomes. Onshore transmission lines have a scenic impact for a number of recreational activities, including canoe touring on open water, especially lochs. Sub-sea cabling, on the other hand, would usually be buried well out to sea and should not have any impact on kayakers who generally keep close in to shore. We would have concerns that the places where cabling leaves the land or comes back onto land should be well protected, but the high voltages concerned would require that in any case. Our other concern in this area is that access to the foreshore is not affected by the building of shore based structures for new developments.

The comment is often made that if energy efficiency were taken more seriously we would not have to destroy valuable parts of our countryside in order to power inefficient electrical appliances and allow householders to leave their appliances on standby overnight or workplaces their lights and computers on overnight. The threat to our countryside in general, and canoeing resource in particular, would be lowered if more effort were put into the promotion of energy efficiency.

We believe the public perception of renewable energy is being harmed by contentious planning applications that create critical opposition. Anti wind farm campaigns, protests against the proposed Beauly to Denny powerline and objections to hydro proposals are all on the increase and the combined effect is of a growing opposition to renewable energy. This may also be having a related impact of increasing support for nuclear power. Public opposition to renewable energy proposals may eventually influence government policy, and developers may begin to take this opposition more seriously. A way in which developers can react positively is to seek early consultation with interested communities and to work to avoid key recreational and landscape sites with the intention of trying to achieve greater public support for renewable energy.

The SCA is concerned that the drive to increase the proportion of our energy derived from renewable sources is leading to a loss of support for renewable energy. Much of this opposition to renewable energy is coming from previous supporters of such energy. The terms renewable energy and environment-friendly have become inter-changeable, but in many cases renewable energy proposals carry a massive cost to the environment and this leads to the levels of opposition that such proposals are encountering. We believe the quality of our environment and quality of our recreational enjoyment of our environment should be given higher priority.

The economic value of tourism, and of segments of tourism such as adventure sports tourism, should be given greater recognition for the revenue it creates for the national economy. The scenic quality of the countryside is the foundation for the majority of that tourism spending.

Appendix C

Hydro Power

The current trend in hydro development is for run-of-river schemes. With no facility for storing water, only for running the water down a pipe parallel to the river, a run-of-river scheme means that the water in the river is either at its natural level if the hydro is not operating, or at a lower than natural level if the hydro is operating. In this respect a run-of-river scheme can only be to the detriment of canoeing. Furthermore, run-of-river schemes can create dangers, especially on constricted gorge sections of rivers, when the hydro system is being switched on or off and the water level is being artificially altered. Recent trends in hydro power generation and canoe design have led to power companies and canoeists being interested in the same types of rivers.

Run-of-river hydro developers are looking for relatively small rivers with a steep gradient, usually with a waterfall to increase the overall gradient. The development of shorter playboats, made possible by the advances in roto-moulded plastic construction over the past 20 years, has opened up for canoeing the narrower and steeper creek-type rivers with steep drops. This interest in the same type of river by the two different groups is causing a significant problem, and with the lack of storage facility in a run-of-river scheme there is little space for compromise. Where the potential impact is too great we would wish to see the proposed scheme being dropped, but where the value of the river to canoeing is not that great we would wish to comment on the safety aspects of the intake and outlet features, as well as agreeing some kind of system of shut down days when the river can be paddled and requesting that an online river level gauge be made available.

The changing trends within canoeing, mainly brought about by the radical transformation in the size, strength and manoeuvrability of white water canoes, means that rivers that were considered impossible then are now increasing in popularity. This trend towards paddling narrow creek style rivers is certain to continue into the future and is likely to increase the potential for energy production and canoeing to come into conflict.

Canoeing guidebooks cannot keep up with this trend towards exploring steep narrow rivers, so energy companies referring to such guidebooks is not going to be sufficient to gather an accurate assessment of a river's interest for canoeing. Furthermore, whilst some rivers are going to be paddled by a few but never become popular, others are going to become increasingly popular and are likely to be amongst Scotland's most paddled rivers in a few years time. The SCA is going to be far more concerned about protecting the latter category of rivers than the former.

With the increase in leisure time and disposable income in modern society, canoeing has become increasingly popular and as some enthusiasts have moved on to creek rivers so the availability of conventional kayaks, sit-on-tops and open boats has also led to increased paddling on the less extreme rivers, some of which may be of interest to hydro developers.

The avoidance of conflict between canoeing and energy companies can be avoided through the use of early consultation. The SCA responds to a number of scoping study requests for initial reaction to hydro proposals on behalf of various developers. This provides the opportunity to flag up at a very early stage the SCA's interest in a particular river.

The SCA is willing to work with the Scottish Environment Protection Agency, Scottish Natural Heritage and hydro developers in order to devise ways of avoiding conflicts of interest on strategically important Scottish rivers. We would hope that this willingness to work proactively and discuss ways of helping the industry identify key paddling rivers would be recognised and respected by all the relevant companies in the hydro power sector and that we can find ways to achieve protection for our finest rivers and burns so that they can be kept in their current state. We would enter into any discussions on the basis that the SCA retains the right to oppose proposals on any river or burn, and that we would still have the right to take part in any consultation exercise.

The SCA would like to see more commitment to micro renewable energy schemes. Micro scale hydro power has the potential to harness power from burns that are too small for canoeing, but which could produce power for single houses or small communities without causing damage to scenically attractive and recreationally important watercourses.

Appendix D

Marine Energy

The greatest source of renewable energy is undoubtedly from the marine environment. The potential for harnessing power from sources such as tides, waves and wind at sea are enormous and we believe the power generating industry will eventually make much greater use of these marine based energy sources. One of the huge advantages of harnessing tidal energy is that it is entirely predictable and when several geographically spread stations are used in combination it is capable of generating large amounts of base load power. This element of predictability gives tidal power an advantage over all other forms of renewable energy.

As marine renewable energy schemes become more commercially viable and the civil engineering capability develops further, it is likely the government subsidy system will adapt to encourage a wider range of technologies. As this happens it is inevitable that developers' interests will turn increasingly to our estuaries, coastlines and the open sea.

The greatest resource enjoyed by sea kayakers in Scotland is our stunning coastal scenery. Our concern with marine renewables is therefore the impact on the scenery, especially close to the coastline. Man made developments close to shore also represent a significant safety concern as they can force small craft such as kayaks and dinghies to go out to sea in order to travel around them, which in times of bad weather or poor visibility can make them serious hazards to navigation. For these reasons it is preferable from a kayaking point of view if marine energy developments are located further out to sea or contained below the surface of the water.

The potential amount of renewable energy available in our estuaries is massive. However, renewable energy in estuaries can be harnessed with or without the need for tidal barrages. Barrages mean that greater amounts of energy can be produced, but experience from overseas suggests that they lead to enormous ecological problems with the silting up of the estuary and a gradual reduction in the amount of power produced. We believe the tidal flow can be harnessed in estuaries without the need for barrages, and with a predictable flow of water we see this as a form of renewable energy worth harnessing as long as it is developed with recreation and nature conservation firmly in mind. Scotland's estuaries are valuable areas for recreation and canoeists make great use of these vast expanses of water. Whereas a barrage would affect the ecological balance of an entire estuary, a non-barrage power plant would have a more localised ecological impact and could be designed so that it would not have a significant impact on recreational water craft.

There are certain locations around the Scottish coast that hold the potential for truly massive amounts of tidal power to be generated. The Pentland Firth is perhaps the most obvious example of a natural power source that could one-day produce sufficient power to replace a major fossil fuel power station, but there are several other locations around the Scottish coast that could be of interest to energy companies searching for tidal energy projects. The civil engineering capability entailed in such a proposal could be a significant hurdle to such schemes, but as that barrier is overcome we are likely to see a move towards more tidal power generation facilities being proposed. From a kayaking point of view the massive tidal races around Scotland are all of great interest to our activity and we would have concerns with any plans to develop within them any structures that would break the surface of the water. We are particularly concerned in this respect for the protection of Corryvreckan, which is one of a handful of tidal whirlpools in the world. Due to our concerns regarding safety and seascape already discussed in this policy document the SCA would wish to be consulted on any such planning proposals.

Structures on the surface of the water such as the Polaris wave machine and structures that break the surface of the water such as turbines mounted on vertical posts could present small boat users such as kayakers with serious safety issues. The risk of collision combined

with the navigational challenge of going around such structures could be quite significant, so we would always welcome the opportunity to comment on proposals for such developments.

Our final concern with marine renewable energy projects is the impact of any landfall facilities. Shore based infrastructure such as servicing facilities for sea based plant, wave machines and interface equipment between renewable energy generators and the grid have the potential to impact on the coastal landscape and restrict access to and along the foreshore. From a safety point of view, as well as aesthetic and access, we would wish to be consulted on proposals for such shore based facilities. The SCA's policy is that any shoreside infrastructure associated with renewable developments should be designed to minimise encroachment on the foreshore and that access to the foreshore from the land and water is preserved for kayakers and other recreational users. Any downside caused by the developer's shoreside infrastructure should be balanced by creating better pathways, car parking and access to the foreshore and water for recreational purposes.

17 December 2008

Annex 4.

DEVELOPER APPLICATION AND ENVIRONMENTAL STATEMENT CHECKLIST

	Enclosed
1. Developer cover letter and fee cheque	□
2. Copies of ES and associated OS maps	□
3. Copies of Non Technical Summary	□
4. Confidential Bird Annexes	□
5. Draft Adverts	□
6. E Data – CDs, PDFs and SHAPE files	□

Environmental Statement	Enclosed	ES Reference (Section & Page No.)
7. Development Description	□	
8. Planning Policies, Guidance and Agreements	□	
9. Economic Benefits	□	
10. Site Selection and Alternatives	□	
11. Baseline Assessment data – air emissions	□	
12. Design, Landscape and Visual Amenity	□	
13. Construction and Operations (outline methods)	□	
14. Archaeology	□	
15. Designated Sites	□	
16. Habitat Management	□	
17. Species, Plants and Animals	□	
18. Water Environment	□	
19. Sub-tidal benthic ecology	□	
20. Hydrology	□	
21. Waste	□	
22. Noise	□	
23. Traffic Management	□	
24. Navigation	□	
25. Cumulative Impacts	□	
26. Other Issues	□	

N.B. Developers are encouraged to use this checklist when progressing towards application stage and formulating their Environmental Statements. The checklist will also be used by officials when considering acceptance of formal applications. Developers should not publicise applications in the local or national press, until their application has been checked and accepted by officials.