

## **EUROPEAN OFFSHORE WIND DEVELOPMENT CENTRE (EOWDC) – ABERDEEN**

### **Scoping Opinion**

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# Contents

<b>Introduction</b>	<b>3</b>
<b>Aim of Scoping</b>	<b>4</b>
<b>Description of your Development</b>	<b>4</b>
<b>Land use planning</b>	<b>4</b>
<b>Natural Heritage</b>	<b>5</b>
<b>General issues</b>	<b>5</b>
<b>Contents of the ES</b>	<b>6</b>
<b>Archaeology and Cultural Heritage</b>	<b>7</b>
<b>Navigation</b>	<b>8</b>
<b>Ecology, Biodiversity and Nature conservation</b>	<b>8</b>
<b>Water Environment</b>	<b>9</b>
<b>Other Material Issues</b>	<b>10</b>
<b>General Issues</b>	<b>10</b>
<b>Annex 1 – Consultee Comments</b>	<b>14 – 67</b>
<b>Checklist</b>	<b>68</b>

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

**SCOPING OPINION FOR THE PROPOSED  
SECTION 36 APPLICATION FOR THE EOWDC  
OFFSHORE WINDFARM, ABERDEEN**

**1. Introduction**

I refer to your letter of requesting a scoping opinion under the Electricity Works (Environmental Impact Assessment) (Scotland) (EIA) 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** 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 the natural beauty of the countryside, of conserving flora, fauna and geological and physiological 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)(EIA) 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 EIA process is vital in generating an understanding of the biological and physical processes that operate in the area and 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 which have been collated from expert consultees whom the Scottish Government has consulted. It should provide clear advice from consultees and enable developers to address the issues they have identified and address these in the EIA process and the ES associated with the application for section 36 consent.

## **3. Description of your development**

From your submitted information it is understood that Aberdeen Offshore Wind Farm Limited (AOWFL) is proposing construct and operate an offshore wind farm and deployment centre off the coast of Aberdeen. The site will be known as the European Offshore Wind Deployment Centre (EOWDC). The maximum electrical output, as governed by the crown estate lease conditions is 100 Megawatts (MW) the site is located approximately 2 to 4.5km east of Blackdog, Aberdeenshire. The development can accommodate up to 11 turbines with a variety of generating capacities. The turbine layout and size will undergo an iterative design process as the EIA progresses.

## **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 land use planning documents which may be relevant to this proposal include:

- PAN 42: Archaeology–Planning Process and Scheduled Monument Procedures
- PAN 45: 2002 Renewable Energy Technologies
- PAN 50: Controlling the Environmental Effects of Surface Mineral Workings
- PAN 51: Planning, Environmental Protection and Regulation
- PAN 56: Planning and Noise
- PAN 58: Environmental Impact Assessment
- 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
- Marine Guidance Note 371 (M)
- The Highland Structure Plan
- West Highland and Islands Local Plan (WHILP).

## **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](http://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 (ES)**

### 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 (SG) 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 the historic environment and 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.

National policy for the historic environment is set out in:

- Scottish Planning Policy *Planning and the Historic Environment* at: <http://www.scotland.gov.uk/topics/built-environment/planning/National-planning-policy/themes/historic>
- The Scottish Historic Environment Policy (SHEP) sets out Scottish Ministers strategic policies for the historic environment and can be found at: <http://www.historic-scotland.gov.uk/index/heritage/policy/shep.htm>

Amongst other things, SPP paragraph 110–112, Historic Environment, 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. Consequently, both direct impacts on the resource itself and indirect impact on its setting must be addressed in any EIA undertaken for this proposed development. Further information on setting can be found in the following document: Managing Change in the Historic Environment <http://www.historic-scotland.gov.uk/managing-change-consultation-setting.pdf>.

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](http://www.PASTMAP.org.uk)

Data on scheduled monuments, listed buildings and properties in the care of Scottish Ministers can also be downloaded from Historic Scotland's Spatial Data Warehouse at

<http://hsewsf.sedsh.gov.uk/pls/htmlldb/f?p=500:1:8448412299472048421::NO>

For any further information on those data sets and for spatial information on gardens and designed landscapes and World Heritage Sites which are not currently included in Historic Scotland's Spatial Data Warehouse please contact

[hsgimanager@scotland.gsi.gov.uk](mailto:hsgimanager@scotland.gsi.gov.uk). Historic Scotland are also available to provide any further information on all such sites.

## 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
- 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.
- Visual intrusion and noise

## 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

- Coast Protection Act 1949 section 34
- Council Directives 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
- Protection of Badgers Act 1992
- 1994 Conservation Regulations
- Scottish Executive 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 SG 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 EC. 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**

Developers are strongly advised to consult with the Scottish Environment Protection Agency (SEPA), at an early stage. SEPA are the regulatory body responsible for the implementation of the Controlled Activities Regulations (CAR), to identify if a CAR licence is necessary and clarify the extent of the information required by SEPA to fully assess any licence application.

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.

SEPA produces a series of Pollution Prevention Guidelines (PPG), several of which should be fully utilised in preparation of an ES and during project development. These include SEPA's guidance note PPG6: Working at Construction and Demolition Sites, PPG5: Works in, near or liable to affect Watercourses, PPG2 Above ground storage tanks, and others, all of which are available on SEPA's website at <http://www.sepa.org.uk/guidance/ppg/index.htm>. SEPA would look to see specific principles contained within PPG notes to be incorporated within mitigation measures identified within the ES rather than general reference to adherence to the notes.

Prevention and clean-up measures should also be considered for each of the following stages of the development;

- Construction.
- Operation.
- Decommissioning.

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 CIRIA guidance on the control of water pollution from construction sites and environmental good practice ([www.ciria.org](http://www.ciria.org)). Design guidance is also available on river crossings and migratory fish (SE consultation paper, 2000) at <http://www.scotland.gov.uk/consultations/transport/rcmf-00.asp>.

## **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 SG website. Developers are asked to issue ES directly to consultees. Consultee address lists can be obtained from the Energy Consents Unit. The Energy Consents Unit also requires 8 hardcopies to be submitted for onward distribution.

Where the developer has provided Scottish Ministers with an ES, the developer must publish their proposals in accordance with part 4 of the Environmental Impact Assessment (Scotland) Regulations 2000. Energy consents information

and guidance, including the specific details of the adverts to be placed in the press, can be obtained from the Energy Consents website; <http://www.scotland.gov.uk/Topics/Business-Industry/Energy/Energy-Consents>

### Gaelic Language

Where s36 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 (see also Energy consents website as above).

### 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 SG's 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 SG); 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  
Fiona Thompson

Authorised by the Scottish Ministers to sign in that behalf

Enclosed - Developer Application Checklist

## 14. Annex 1

### **Consultee Comments Relating To EOWDC Offshore Windfarm, Aberdeen**

The following organisations provided a scoping opinion in relation to the EOWDC Offshore windfarm, Aberdeen

#### **Statutory Consultees**

Scottish Natural Heritage (SNH)  
Aberdeen City Council  
SEPA

#### **Non Statutory Consultees**

Marine Scotland  
Defence Estates  
Health and Safety Executive  
RYA Scotland  
Marine Safety Forum  
Northern Lighthouse Board  
Chamber of Shipping  
BT Radio Network Protection  
Association of Salmon Fishery Boards  
Civil Aviation Authority – Airspace  
Maritime Coastguard Agency  
Joint Radio Company  
RSPB  
Aberdeen Harbour Board  
Transport Scotland  
Historic Scotland  
Ports and Harbours

# SNH Comments

## POSITION STATEMENT

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. For this offshore windfarm proposal, we have reviewed the scoping report and our advice is provided in Appendix A, and with respect to Natura sites in Appendices D and E. A summary of the key points is provided below.

Please note the comments in this letter are made without prejudice to any further comments that we may make when consulted on an application for this proposal.

## Habitats Regulations

It is important to take into account the range of interests and potential impacts of Natura sites that may need to be considered in relation to regulation 48 of the Conservation (Natural Habitats, &c.) Regulations 1994 as amended, and in particular whether an Appropriate Assessment is required. More detail on the legislative requirements relating to Natura Sites and species is contained in Appendices B and C.

Although data has been collected for some time, this has been for different iterations of the development and when submitted, there will be less than the minimum two years data which we recommend. It is also not clear how much of the data available will relate to the current site and layout. **We strongly recommend** that AOWFL consider in detail how they will prepare the report to inform an Appropriate Assessment, and whether the types and amount of information that will be available to them at the time (both their own data and that from other sources) will be sufficient.

The report to inform an Appropriate Assessment must consider the conservation objectives for each Natura site. We hope that the scoping advice contained within the appendices to this letter and the draft table we provided on 19 January 2009 (for impacts to the Moray Firth and River Dee SACs), provide a useful starting point that AOWFL can develop. We would welcome the opportunity to assist AOWFL by commenting on first a detailed scope of the report to inform an Appropriate Assessment and subsequently a draft. There is a risk that Marine Scotland will not be able to carry out the Appropriate Assessment and draw sufficiently robust conclusions when the application is submitted early next year. A detailed scope would help identify if this is the case and may be used to consider how the consenting process can address this.

## Key Points

Some of the key points that we wish to draw out are:

- The layout and footprint of the proposal have changed several times and it is unclear which of the data collected so far, and available from other sources, cover the current footprint and how much data will be available when the application is submitted.
- We do not think that the report covers migrant waterfowl sufficiently. For example, there has only been one radar study that was designed to detect migrant geese and it may have taken place too late to measure anything meaningful. There needs to be more information before we can advise whether this can be dismissed as an important issue.

- Impacts on relevant Annex 1 Birds Directive species (e.g. Common Scoter, Red-throated diver, Black-throated diver etc.) and Annex IV Habitats Directive species (all cetacea) should be specifically identified, including their activity outwith any SPAs. It is unclear whether the additional boat survey will give sufficient data to assess impacts to red-throated diver and common scoter and if not, how this will be addressed.
- We strongly recommend that Aberdeen Offshore Wind Farm Limited consider in detail how they will prepare a report to inform an Appropriate Assessment, and what information will be available to them at the time (both their own data and that from other sources).
- It is important to consider the different 'sections' in an integrated way that considers the effect of impacts on one aspect of marine ecology on another, taking into account all relevant factors such as coastal processes.
- Little information is available on the offshore research centre and it is unclear if it is covered in the current scoping report. The report states that the location for this has yet to be decided and it will be subject to a separate consent application. We recommend that a clearer rationale is provided for the research centre and that an application is submitted at the same time as that for the offshore wind deployment centre. This would help inform the overall assessment of the project, as well as providing an opportunity for monitoring protocols to be prepared in advance on any works. More consideration of the timing that application is submitted may be needed if the centre is to be used for research before the windfarm is constructed.
- We would welcome the preparation of research proposals in a construction and post-construction monitoring plan. We recommend that the ES includes an outline of such a plan.

## APPENDIX A

### SNH's DETAILED ADVICE ON EOWDC SCOPING REPORT

#### 1.6 Approach to EIA

##### 1.6.1 Impact Assessment Methodology

Para 30 – We have raised concerns in meetings about the use of a matrix approach, both for birds and marine mammals and seascape impacts. We encourage a more flexible approach that uses a thorough assessment based on rigorous professional judgement, as this better recognises the complex and unique aspects of the proposal.

##### 1.6.2 Cumulative and In-combination Impact

Actual projects anticipated to be included should be outlined at this stage. We recommend AOWFL consider other east coast windfarm sites such as the 3 STW sites in the Outer Forth and Tay Area (Inch Cape, Neart na Gaoithe and Forth Array), the two Round 3 Zones (Zone 1 and Zone 2) as well as the STW site in the Moray Forth (Beatrice).

#### 2.3 The Project Concept / Consenting Process

Para 46 – We understand that the timing of this proposal is in part driven by the funding requirements of the grant this project will receive from the European Energy Programme for Recovery. In order for us to advise further, for example in relation to the consenting process, it would help to know what those funding requirements are.

#### 2.4 Proposed Development

The report states that there are likely to be onshore deployment facilities, substation and cable which will be dealt with under a separate scoping report. It would be helpful if a timescale was given for when that scoping report and subsequent application will be submitted. Please note for the purposes of the Habitats Regulations Appraisal, the project requires to be assessed as one (please see our comments in Appendix E). We can provide further advice on this aspect once we have received the scope of the report to inform an Appropriate Assessment.

Please note that the landfall is on an erosional soft coastline. Future-proofing the cables and landfall infrastructure is therefore important. It should be ensured that there are no obstructions to net northerly sediment movement within the Bay, otherwise the existing erosion problem on the southern two thirds of Aberdeen Bay (and particularly at Blackdog) may worsen.

Fig 2 (p 161) implies two offshore cables merge into one, to cross the intertidal. The ES should consider if there would be jointing infrastructure where the cables merge as this could create a potential impact in terms of obstruction on a lowering & erosional foreshore.

##### 2.4.1 Wind Turbines

Paras 5, 52 and 56 - It is stated that there may be multiple turbine foundation, tower and turbine designs deployed at the proposed development site. We recommend that if any of these designs depart substantially from the standard foundation (jacket, monopile, gravity base), tower (single tubular tower) or turbine (three bladed upwind turbine) designs that the potential for increased or additional impacts from these designs are carefully considered in consultation with us and others. For example lattice design towers may cause attraction to the wind farm and turbine as birds try to roost on the structure. Any turbine with more or fewer blades than the normal three bladed design may result in very different bird collision risk calculations. Floating turbine designs may result in increased underwater collisions for marine mammals and diving birds although there is unlikely to be sufficient depth of water for floating turbines at this site.

We support the idea of trialling new foundations so long as appropriate monitoring is in place to look at and assess the impacts.

### **2.4.3 Ocean Laboratory**

The report states that the location for this has yet to be decided and it will be subject to a separate consent application. It is unclear whether or not it is covered in this scoping report (cf 2.4, paras 49-51) and therefore will be covered within the ES. It would be helpful to have further clarification on this aspect.

## **2.5 Project Construction**

### 2.5.1 Construction Timescales

Para 62 – We note that 4 turbines are expected to be installed in 2012 and that work will be continuous during construction. Given that these four turbines may have entirely different foundations and thus differing vessel requirements, it will be important that the EIA considers all the possible options of likely numbers and types of vessels on site over the construction period.

### 2.5.2.3 Inter-Array Cables

Para 74 – Any stabilisation methods for the cables should not interrupt tidal or wave driven currents, otherwise they may have significant onshore implications in terms of sediment movement.

### 2.5.2.5 Scour Protection

Para 76 – This could be an opportunity to trial different methods which is particularly important if AOWFL wish to investigate artificial reef properties (see comments on 5.1.7.1 below).

## **4.1 Meteorological Conditions**

### 4.1.2 Baseline Information

Haar is frequent on the north east coastline and the ES should take this into account e.g. increased likelihood of accidents and associated environmental effects of these measures and requirements for foghorns and lighting. The section on wind turbines (2.5.2.2) says that aviation warning lighting will be required but does not mention foghorns.

## **4.3 Coastal Processes**

### 4.3.2 Baseline Information

Para 125 - 'a narrow ridge of unknown origin situated in the region between the offshore and littoral zones; it is possible that this ridge affords some protection to the coast from wave action.' This should be investigated, it may be the lower limits of former emerged shorelines, representing themselves within the nearshore. This could have implications for the cable-installation approach.

Para 126 - The implications of the wind farm on tidal currents should be considered. Halcrow (working for Aberdeen City Council) established that south-north tidal currents at the southern end of the bay, played an important role in sediment dynamics and beach health. Given the wave shadow effect of a nearshore array (with cables, defences, scour protection etc), and the propensity of erosion on the adjacent coast, it would be prudent to ensure that there are unlikely to be knock-on effects.

## **4.5 Sediment and Water Quality**

### 4.5.2 Baseline Information

Please consider whether the sampling takes into account any pollution from the nearby contaminated land at Blackdog.

## **5.1 Marine Ecology**

### **5.1.2.2 Benthic Habitats**

Para 230 - We note that the sampling approach set out in the scoping report is different to the recently agreed benthic survey strategy. The ES should report on results obtained from the recently agreed benthic sampling strategy (September 2010).

#### **5.1.7.1 Further research opportunity: reef effect**

Para 239 - We agree this would be a good location to study the reef effects of structures and distinguish between (a) perceived benefits through enhanced diversity/productivity and (b) the structures acting simply as fish aggregation devices. This should form part of a post-construction monitoring plan that we would welcome the opportunity either to comment on or become more directly involved in. Careful consideration should be given to what would be required for post construction monitoring.

As mentioned above (2.5.2.5) there is also the opportunity to look at the best methods of scour protection and recovery of the site following cable installation.

## **5.3 Fish, Shellfish and Elasmobranchs**

The benthic section of the report should make appropriate links to fish and shellfish where there are strong habitat associations for particular species. For example, muddy sediment is closely associated with Nephrops and their fishery. The sand and gravelly sand which dominates the area for this proposal is likely to have associations particularly with scallops, but also various flatfish and sandeels (in terms of fisheries species).

### **5.3.2.1 Spawning and nursery grounds**

Para 256 - We are pleased that the report acknowledges the spatial and temporal variability of these areas. The spawning and nursery habitats data provided is from Coull et al (1998). Further and more recent information is/should shortly be available from the Defra Data Layers project.

### **5.3.2.5 Diadromous and freshwater species**

Para 268 - We suggest that sparling should also be considered as a diadromous fish species of conservation importance. Sparling is included in the UK Biodiversity Action Plan Priority Species list. They are found in coastal waters and estuaries and migrate into large clean rivers to spawn. Sparling was previously known to occur in a number of Scottish rivers, but has now disappeared from almost all of these sites.

Para 269 - We note that sturgeon have been recorded which are a European Protected Species and must be considered accordingly in the ES (Please see appendix C).

Para 271 - The scoping report identifies various rivers that are important for salmonids, but does not consider whether the River South Esk SAC, to the south of the proposed site, may be affected. The qualifying interests of the River South Esk SAC are Atlantic salmon and freshwater pearl mussel. A recent review by Marine Scotland Science (Malcolm, I., Godfrey, J. & Youngson, A. In prep. Review of migratory routes and behaviour of Atlantic salmon, sea trout and European eel in Scotland's coastal environment: implications for the development of marine renewables. *Marine Scotland Science draft report.*) summarises available information on the migratory routes and behaviour of Atlantic salmon, sea trout and European eel. Although the report indicates that the dominant direction of travel for Atlantic salmon (1 SW and MSW) on the east coast of Scotland, in the area around Aberdeen, is a northerly direction, there is also some southerly movement, and there is both easterly and westerly movement on the east coast to the north of Aberdeen. The River South Esk should be included in the list

of Natura sites that are identified in the report. Please see our advice in Appendix E on HRA scoping.

To the south of the River South Esk, there are three SACs with anadromous fish species as qualifying interests - the River Tay SAC (Atlantic salmon, river lamprey, sea lamprey), River Teith SAC (Atlantic salmon, sea lamprey, river lamprey) and the River Tweed SAC (Atlantic salmon, sea lamprey, river lamprey). These SACs are likely to be sufficiently well removed from the proposed site not to be significantly affected by the development.

There are also several SACs with diadromous fish and freshwater pearl mussel qualifying interests to the north of the development, but they are also likely to be sufficiently well removed from the proposed site not to be significantly affected by the development.

Para 277 - Not all sites containing freshwater pearl mussel are designated as SSSI or SAC. Any populations in non-designated sites in the vicinity of the development should be considered, but only within the ES.

#### 5.3.2.6 Elasmobranchs

Para 282 – Basking Sharks are known to occur along the east coast and we recommend AOWFL look for more recent literature or sighting records to check this. They may wish to liaise with some of the other east coast offshore wind developers who are also undertaking surveys to see if they are reporting similarly low numbers. We recommend that basking sharks are recorded as a feature if observed during any marine mammal or bird surveys. As Basking sharks are protected under Schedule 5 of the Wildlife and Countryside Act, no development licences are currently available.

Para 283 - We would have thought that there were other elasmobranchs in the area worth mentioning, not only basking and porbeagle sharks.

Para 286 - This should include the effects of displacing fishing activity; i.e. impacts on areas where fishing activity moves to and therefore becomes concentrated. Also could be put in wider fisheries management context, by considering efforts of Scottish Government to bring fishing (and other marine activities) within environmental and biological limits.

#### 5.3.4 Potential impacts

The scoping report recognises that the potential impacts of noise, electromagnetic fields and other disturbance on diadromous fish species needs to be evaluated. A draft SNH report (Gill, A.B. & Bartless, M. In prep. 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) considers the current state of knowledge with regard to the potential impacts of noise and electromagnetic fields associated with marine renewable energy, on Atlantic salmon, sea trout and European eel.

The draft report by Marine Scotland Science (referred to above, para 271) considers available information on migratory routes and behaviour of Atlantic salmon, European eel and sea trout in Scotland's coastal environment, and should also be useful.

Para 597 - The Inshore Fisheries Group (IFG) that covers this area is not yet set-up but should be established soon - this will be another appropriate point of contact for consulting local fishermen, in theory including those that are not affiliated with fishermen's associations.

Table 6.2, p133: - (a) displacement effects should be included, (b) some of the conclusions in this table make assumptions. We do not know the impacts much of the time or how effective mitigation measures will be e.g. impacts of electromagnetic fields and underwater noise.

#### **5.4 Birds**

The layout and footprint of the proposal have changed several times and it is unclear which of the data collected so far, and available from other sources, cover the current footprint and how much will be available when the ES is prepared and application submitted.

One of the subjects that we have consistently raised is the need to consider impacts to red-throated divers and common scoter. It is unclear whether the additional boat survey will give sufficient data to address this.

We also do not think that the report covers migrant waterfowl sufficiently. There has only been one radar study that was designed to detect migrant geese and it may have been undertaken too late to really measure anything meaningful. There needs to be more information before we can advise whether this can be dismissed as an important issue.

##### 5.4.1 Introduction

Paragraph 291 and Table 5.2 – Please note that the JNCC programme for designating SPAs for inshore aggregations of non-breeding waterbirds is ongoing and Aberdeen bay is still an active Area of Search. For any marine area which does become an SPA the provisions of Article 6 of the Habitats Directive (Reg 48 ) will apply. Meantime the area should be considered as an important area for birds and the effects of development seen in this context. The obligations of Articles 2 and 3 of the Birds Directive also need to be considered.

Para 291 - Aberdeen bay is also used by birds during the spring and autumn migration periods and potentially by moulting birds. Indeed, para 296 notes the Aberdeenshire coast as important for divers, grebes and seaduck for all months of the year.

Paragraph 292 – it is stated that seven SPAs within “daily flight distance” of the proposed development site were identified as being relevant. It is unclear which foraging distance data was used for which species. We recommend that the distances used for each species considered is stated and those SPAs that may have connectivity to the proposed development site is listed for each species. We recommend that foraging distance data is not used as a hard cut off value, but that those SPAs that are close to the cut off value are included at this stage (Please also see our comments in Appendix D on the HRA process for SPAs).

##### 5.4.1.1 Project Reports

Additional data sources should include all data available such as North East Scotland Bird Survey reports.

##### 5.4.2 Baseline information

We welcome the consideration in paras 294-309. As well as considering where particular species are a feature of interest of an SPA, the ES should also consider where they are a feature of interest of an SSSI. The SSSI, SAC and SPA interests for a designated site are not always the same nor have the same boundary. For example, some SSSIs such as Corby, Bishops and Lily Lochs are not SPAs. Ramsar sites should also be considered.

Paragraph 299 – due to the very long foraging distances of northern gannet it is likely that some of the birds observed are from other breeding colonies. We recommend that at this stage other gannet colonies further north than Troup Head are scoped in (Please also see our comments on Appendix D).

Para 300: Kittiwake and herring gull also form part of the Fowlsheugh SPA interests.

Paragraph 302 – auks make multiple foraging trips per day during breeding, not one single all day foraging trip as stated here. Thus the energetic impacts due to barrier effects may be multiplied.

Paragraph 305 – note that redshank and lapwing are qualifying features of the non-breeding waterfowl assemblage of the Ythan Estuary, Sands of Forvie and Meikle Loch SPA and not the “seabird assemblage interest feature” as stated here.

Table 5.2 – please add black-legged kittiwake to the species covered by Article 4.2 for the Troup, Pennan and Lions Head SPA. Also please add northern fulmar as a qualifying feature of the seabird assemblage of the Forth Islands SPA. Please remove whooper swan as a feature of the Loch of Skene SPA.

#### 5.4.3.1 Vantage Point Surveys

Para 312 – it is unlikely that detectability of many species is very good as far out as 2km. If distances to each bird (or group of birds) was recorded during vantage point watches we recommend that the number birds detected is plotted against distance to estimate the detectability function for each species. For some species it may be necessary to plot age and/or sex separately (e.g. young gannets have more cryptic plumage than adults, or female eider are more cryptic than males). It should then be possible to assess the range at which each species was reliably detected and thus constrain the analysis to those records within this distance. In addition the effects of sea state may influence detectability with increasing distance. We recommend that the detectability functions for each species are compared across different sea states to determine at which sea state the detectability becomes too low to reliably record birds.

Para 314 – flight height data in the near shore area recorded from vantage point may not be a good model for flight heights further from shore and in deeper water. We urge caution in interpreting flight height data recorded by shore based observers. If flight height data recorded from shore is to be used, we recommend that analysis is undertaken to determine if flight heights measured from shore differs significantly from flight heights measured either by boat based observers or from radar.

#### 5.4.3.2 Boat Based Surveys

Table 5.5 – It is unclear how the assessment of collision, barrier and displacement risks was made. These are probably derived from the presentation we received from Vattenfall in September 2008. Our comments on those results are contained in our letter of 10 December 2008. In particular, the assessment needs to consider all sources of data available and be based on a sufficient length of time to give confidence in the results.

Table 5.5 – We recommend that rather than providing some data on flight heights that a frequency plot of flight heights is provided for each species when these data are presented in the ES.

Table 5.5 – It is not clear where the wind farm and control survey areas are as these are not indicated in any figures. It is not clear whether these observations have been adjusted to the current proposed development foot print or whether or whether they

relate to a former iteration. If it is a former iteration it would be helpful to know which one. This also applies to section 5.4.3.4 Radar studies.

#### 5.4.3.3 Boat Based Surveys 2010-2011

Para 326 - It is important that there is sufficient data available to enable Marine Scotland to carry out an Appropriate Assessment. Currently it is unclear whether or not this will be the case.

#### 5.4.3.4 Radar Surveys

Para 329 - Does this refer to the current windfarm footprint or that at the time the radar study was carried out?

Para 333 – It is stated that previous studies have found that “very high avoidance rates by geese” and that collisions being “extremely unusual”. There should be reference made to these studies and an indication of where they were undertaken and which species were involved and in what numbers. In order to assess the ability of the conducted radar study to adequately assess the presence and numbers of migrating geese much more information needs to be provided. We recommend that the timing of the deployment of the radar is compared to the known time of passage and numbers of geese recorded at regularly counted sites in the area (e.g. Montrose Basin, Loch of Strathbeg). It will then be possible to show whether the radar was deployed at an appropriate time but should also take into account the variation in goose movements between years. We also recommend that the results of radar ground truthing are included in the ES.

#### 5.4.4 Predicted Impacts

Para 335 – We recommend that the details of the analysis that resulted in the redesign of the turbine layout are included in the ES. Any future analysis of impacts should include indirect effects and disturbance from increased boat traffic for operation and maintenance of the proposed turbines. It should consider all aspects of the turbines such as navigation and aviation warning measures including possible lighting and/or foghorns.

Para 336 – We recommend that for those species where there is insufficient data to apply Distance analysis, plots of the locations and numbers of birds are included, e.g. by varying the size of symbols relative to the number of birds recorded.

Para 338 - The ES should include information on how flight height data was verified.

#### 5.4.6 EOWDC future research and monitoring

Para 343 - We welcome the proposal to continue monitoring during and post-construction and welcome the opportunity to discuss research needs further.

### **5.6 Marine Mammals**

#### 5.6.2.3 Future Boat Based Surveys 2010-2011

Para 392 - From the text it appears that the data presented in the ES will be four months of ‘new data’ combine with approximately 15 months of ‘old data’ which didn’t cover the same points and used a different method. If it is unclear if this will be sufficient for an assessment and we advise that AOWFL ensure that the mitigation and monitoring of impacts is extremely robust. We also recommend the assessments include as much data as possible, albeit if necessary with some months having less analysis.

### 5.6.5 Mitigation

There is an opportunity to look at how effective different forms of mitigation are on minimising impacts of installation – noise. This is referred to in 5.7 but not with any detail. As a test centre we recommend that there is a detailed look at underwater noise and robust monitoring of marine mammals (which should include behavioural studies to determine whether behavioural effects are occurring). Ideally we would wish to see a number of readings at various distances from each installation to record noise. This would help gain a better understanding of whether or not various types of mitigation are working or indeed worth doing. We would be happy to meet with AOWFL or their consultants at an early stage to discuss this and try to get the most out of this research.

### 5.6.6 EOWDC Future Research and Monitoring

C-Pods are now proposed as “future research” and not for gathering data for the ES. As explained above in the main letter, it is unclear whether there will be enough data for assessing impacts to bottle-nose dolphins both as a feature of the Moray Firth SAC and as EPS, when the ES is submitted. It would be useful to get clarification of what survey protocol will be used for C-Pods, when and where they will be deployed. Please see also our Comments in Appendix E.

## **5.9 Statutory Designations and Conservation**

For comments on Natura sites, please refer to our advice in Appendices D and E on the HRA for SPAs and SACs.

Table 5.9 – This should include the River South Esk SAC, to the south of the proposed site. The qualifying interests of the River South Esk SAC are Atlantic salmon and freshwater pearl mussel. The draft Marine Scotland Science report referred to in our comments above indicates that the dominant direction of travel of Atlantic salmon on the south east coast is a northerly one, but there is also some southerly movement. See comments in Appendix E.

The scoping report does not directly consider Ramsar sites and we recommend these are addressed in the ES.

## **6.5 Seascape, Landscape and visual effects**

In general, it appears that the proposed SLVIA outlined takes due cognisance of our previous scoping comments and discussions at meetings. In particular the report recognises the proximity of major and smaller population centres as sensitive receptors, and gives particular consideration to any effects arising as a result of differing wind turbines devices.

### 6.5.2 Baseline Information

Para 556 – Given the large height of the turbines, it is important to retain a flexible approach to the study area, increasing it if the ZTVs indicate that visual effects are likely to occur in a wider area.

#### 6.5.2.1 Landscape and Seascape Character

Paras 557 - 558 - As we discussed at a meeting with the developer’s consultants on 14<sup>th</sup> April 2010, it is important to consider how the assessments of seascape, landscape and local landscape character types will fit together to prevent duplication and avoid confusion. We would be happy to provide further advice once AOWFL have developed a methodology for this.

#### 6.5.2.2 Visual Amenity

Para 560 – Recreation users at Donmouth LNR should also be considered.

Para. 561 and Table 6.1 - Representative viewpoint locations. Ideally to inform our input into further discussion on viewpoint locations (over and above that previously agreed), it would be useful to have a comparative ZTV, illustrating the extent of changed visibility occurring between the 2009 layout and the current 2010 layout. This would ensure optimum locations are chosen.

Para. 567 - The photomontages should illustrate a range of conditions - eg. sunrise; turbine lighting (dawn/dusk); the international aviation (2.5.2.2) requirement for the turbines to be painted white and aviation warning lighting; the size of the ocean lab (we appreciate this would be a separate application, but some initial indicators of scale, form etc. would be useful).

We had previously suggested allowing for some fixed photomontage 'boards' on site to engage the public. There is no mention of this in the scoping report (within either of the SLVIA or Recreation and Tourism sections) and we recommend that this is undertaken.

#### 6.5.5 Cumulative Impact

Para. 574 - Further engagement on methods for cumulative impact assessment should include both Aberdeen City and Aberdeenshire councils.

Para 576 – This refers to the choice of colour of turbines being used to mitigate landscape and visual impacts, however, section 2.5.2.2 indicates that much of the turbines should be white.

### **6.8 Recreation and Tourism**

#### 6.8.2 Baseline Information

Paras 626-633 – Surfing is another recreational activity that takes place in Aberdeen and kite surfing at Balmedie. All forms of recreation should be considered in the ES and there should be consultation with relevant user groups.

### **7. Consultations**

Para 678 – we recommend that the Whale and Dolphin Conservation Society (WDCS) are added to the list of other consultees. The WDCS have commented on marine mammal survey methods for this proposal and interim reports.

## APPENDIX B

### HABITATS & BIRDS DIRECTIVES, & HABITATS REGULATIONS

Paragraphs 434-436 of the scoping report outline the Habitats and Birds Directives. The Habitats Directive is 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. Several amendments have been made to the Habitats Regulations since they came into force.

The Habitats Regulations apply to the inshore zone, 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 48. 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 interests of a Natura site, even when those interests may be at some distance from that site.

The competent authority, 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 interests 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 interests of SPAs, and marine mammals, habitats and fish that are qualifying interests of SACs:

- 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 interests and the conservation objectives for each relevant Natura site is available from SNH's Sitelink database.

For further advice on the HRA process please see SNH's website, including the leaflet on "Natura sites and the Habitats Regulations" 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. Revised guidance updating the Scottish Office Circular 6/1995<sup>38</sup> on the implementation of the Habitats and Birds Directive in Scotland was produced in June 2000. This sets out current Government policy relating to Natura sites.

## 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'.

**SNH** is the statutory nature conservation body who provides advice on EPS in respect of the Habitats Regulations in Scotland, including Scottish Territorial Waters. 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.

## 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 Scottish Government or by SNH depending on the reason for the licence request. Licences are only issued under very strict conditions as set out in regulations 44 and 45 of the Habitats Regulations.

As highlighted in Scottish Government Interim Guidance, 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 Scottish Government is currently the licensing authority. This regulation states that licences may be granted by Scottish Government 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 (Scottish Government) 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 (Scottish Government) 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.

## APPENDIX D

### EWDC: HABITATS REGULATIONS APPRAISAL (HRA) – 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 European offshore Wind deployment Centre proposal is likely to have a significant effect on the 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 (most likely Marine Scotland) who will carry out the HRA, based on our advice and using information and data collated by the developer.

Under HRA, the potential impacts of the EOWDC offshore windfarm proposal will need to be considered alone (all aspects of the proposal i.e. including onshore deployment facilities, substation, cable and offshore research station) and in combination with other plans and projects. It needs to be considered in combination with the Scottish Round 3 zones as well as the following proposed Scottish territorial water sites (Near na Gaoithe, Inch Cape, Forth Array and Beatrice) and with other types of industry and activity in and around Aberdeen bay and harbour.

#### Special Protection Areas for inclusion in HRA

We would welcome the opportunity to discuss the scope of HRA with AOWFL (as noted in this response) and we recommend that the following SPAs are considered for individual and also for cumulative assessments:

Troup, Pennan and Lion's Heads SPA  
Forth Islands SPA  
Fowlsheugh SPA  
Buchan Ness to Collieston Coast SPA  
Ythan Estuary, Sands of Forvie and Meikle Loch SPA  
Loch of Strathbeg SPA  
Loch of Skene SPA  
Montrose Basin SPA

Please see also our comments in Appendix A, para 299 recommending that gannet colonies further north than Troup Head are also scoped in at this stage (eg Fair Isle).

#### Advice for HRA in respect of SPA qualifying interests

The steps of the process are as follows and our advice is tailored to consideration of this offshore windfarm:

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

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

**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 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 offshore windfarms are wide-ranging – many seabirds make long foraging trips, especially during the breeding season, and there are also migratory species to consider such as geese and swans. This means that offshore windfarm proposals may be ‘connected to’ SPAs at much greater distances than what has so far been experienced in respect of onshore development. 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.

Expert agreement over species sensitivity should help to identify those SPA qualifying interests for which the conservation objectives are unlikely to be undermined by offshore windfarm development, despite any possible connection (e.g. SPA qualifiers which are recorded within a proposed windfarm site but where their flight behaviour and / or foraging ecology means that the windfarm 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 an offshore windfarm 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. Complex data analysis should not be required at this stage. For example; How many birds have been recorded? What are they using the area for? Is this the only area that they can use for this particular activity? Understanding the behavioural ecology of the species, and the characteristics and context of the proposed windfarm site, will help in determining whether there are likely significant effects. There are three possible conclusions for 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 (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.
- c) 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, with advice provided by SNH. 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. These conservation objectives follow a standard format requiring protection of the qualifying bird interests and protection of the habitat in the SPA which supports them.

### **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're 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)**.

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### **Issues to consider under appropriate assessment**

The **key question** in any appropriate assessment for the EOWDC windfarm proposal 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, we refer to the helpful summary of the main risks of offshore windfarm development to birds provided in Langston 2010. In addition, there may be further issues to consider if the proposal is likely to affect the conservation objectives that relate to bird species while they're 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? NB. *This question relates specifically to the habitats in the SPAs that support the bird interests.*
- Will the offshore wind proposal(s) cause any significant disturbance to bird interests while they're in any of the SPAs?  
N.B. *See the previous discussion in respect of disturbance outside an SPA.*

- 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? NB. Those habitats which support the bird species.

We highlight that these questions will be applicable to the habitats which support bird interests in any new SPAs designated for inshore and / or offshore aggregations of seabirds – please see JNCC’s website for potential areas of search, including Aberdeen Bay.

As noted above, we hope to further discuss these various aspects with AOWFL once a scope for the HRA has been provided

## APPENDIX E

### EOWDC: HABITATS REGULATIONS APPRAISAL – SPECIAL AREAS OF CONSERVATION

#### Introduction

In the following advice for Habitats Regulations Appraisal (HRA) we set out the three steps that need to be considered in order to determine whether or not the EOWDC windfarm proposal is likely to have a significant effect on the qualifying interests of Special Areas of Conservation, and any possible adverse impact on the site integrity of SACs – Appendix B provides more detail on the legislative framework. It is the competent authority (most likely Marine Scotland) who will carry out the HRA, based on our advice and using information and data collated by the developer.

Under HRA, the potential impacts of the EOWDC proposal will need to be considered alone (all aspects of the proposal i.e. including onshore deployment facilities, substation, cable and offshore research station) and in combination with other plans and projects. It needs to be considered in combination with the Round 3 development and with other types of industry and activity in the Moray Firth. We therefore recommend that the Beatrice and Round 3 developers collaborate on the assessment of cumulative impacts and we would welcome discussion of this matter and, preferably, a joint meeting between the developers, Marine Scotland and ourselves (SNH and JNCC).

For those SAC qualifying interests that are also European protected species (such as bottlenose dolphin) please see Appendix C for our advice in respect of their EPS status and for EPS licensing arrangements. The advice that we give below solely relates to their consideration as an SAC qualifying interest and how the HRA process therefore applies.

#### Special Areas of Conservation for Inclusion in HRA

We advise that the applicant will need to consider the following SACs. Further information, including their conservation objectives, is available from <http://www.snh.org.uk/snhi/>.

#### SACs designated for marine mammals:

- Moray Firth SAC - designated for bottlenose dolphin (*Tursiops truncatus*) and for subtidal sandbank habitat.

#### SACs designated for fish of conservation concern:

- River Dee SAC - designated for Atlantic salmon, freshwater pearl mussel and otter.
- River South Esk SAC - designated for Atlantic Salmon and freshwater pearl mussel (Please see our comments in Appendix A, para 271).

#### SNH advice for HRA in respect of Special Areas of Conservation

The steps of the process are as follows; our advice is tailored to consideration of this offshore windfarm proposal:

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

The EOWDC proposal is not directly connected with or necessary for the conservation management of the South-East Islay Skerries SAC.

**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.

In respect of the above SACs, we identify that the EOWDC may have connectivity to the following qualifying interests, which will therefore require further consideration under HRA. While a desk-based review is helpful for this screening step, this part of the HRA will only be fully completed when the windfarm proposal has been further progressed – when survey work and analyses have been completed, and when the location of / construction methods for windfarm infrastructure, including onshore elements, has been finalised.

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**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.

However, we are not yet in a position to present a definite conclusion for this step, so we provide a **summary of our current advice** for each qualifying interest.

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**Marine and coastal habitats** of the Moray Firth.

We do not consider any aspect of the offshore wind deployment centre will have an impact on the habitat qualifying interest of the Moray Firth SAC

**Summary of our current advice:** no likely significant effect.

- **Bottlenose dolphins of the Moray Firth SAC.**

While the EOWDC proposal is located approximately 140 km from the Moray Firth SAC, the dolphins are not confined to this SAC and will range more widely within the Firth and beyond. Observations around the area of Aberdeen Harbour have confirmed sighting of individual dolphins from the Moray Firth SAC. Construction (and other) noise arising from the proposal is likely to extend beyond the windfarm footprint and may 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 we discuss below (under step 3) the issues that we think need to be considered.

It would be beneficial for applicants to collaborate on this issue with other offshore wind developers as appropriate assessment of the cumulative impacts on bottlenose dolphins is likely to be required in combination. Joint discussion and co-ordination of survey and monitoring proposals, mitigation proposals and construction time-tabling would be helpful.

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

- **Atlantic salmon** as a qualifying interest of the Rivers Dee and South Esk SACs.

We recognise that there is a significant data / research gap on this issue, and that very little is known about salmon movements – adults and post-smolts – around the Scottish coastline. Marine Scotland have analysed historic tagging data and should be issuing a report soon, however, it is likely that this report will highlight further research requirements.

We recommend that the applicant assumes all individuals are SAC salmon, and considers the effects on these fish from construction and operational noise / vibration, as well as any other types of disturbance. Mitigation could include timing restrictions on construction work / noisy activities in order to avoid any significant disturbance to migrating salmon, or disruption of their (as yet unknown) migratory routes.

Onshore infrastructure and / or any required upgrades to roads or bridges may need to be considered under HRA if the work is likely to affect any of these freshwater SACs.

**Summary of our current advice:** likely significant effect in relation to offshore infrastructure; impacts (incl. cumulative) will need to be considered in appropriate assessment (see step 3). Consideration of onshore infrastructure may also be required.

- **Freshwater pearl mussels** – qualifying interests of the Rivers Dee and South Esk SACs

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.

Onshore infrastructure and / or any required upgrades to roads or bridges may need consideration in respect of HRA if the work is likely to affect any of these freshwater SACs.

**Summary of our current advice:** likely significant effect, so indirect impacts will need to be considered in appropriate assessment as part of the assessment of any direct impacts on Atlantic salmon (see step 3).

- **Otters of the River Dee SAC.**

The River Dee SAC is located too far away from the EOWDC proposal for there not to be any likelihood of significant effects on otters there, presuming that no onshore infrastructure is proposed in proximity to this SAC.

**Summary of our current advice:** no likely significant effect, although this may need review depending on the proposed location of onshore infrastructure

**Step 3:** 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, with advice provided by SNH. 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. We discuss this below for each of the qualifying interests listed above.

### **Advice 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

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

- 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 windfarm 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 dolphins 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. It is possible that onshore elements of infrastructure will need to be considered as well as those offshore.

We advise that noise impact assessment 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 we consider that collaboration between other offshore wind applicants on noise impact assessment is likely to be helpful, along with discussion / co-ordination of mitigation proposals and construction time-tabling.

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### **Ongoing Liaison**

As noted above, SNH will continue to liaise with the west coast developers in respect of this HRA process. It may be helpful for the developers to collaborate in order to address cumulative impacts on common (harbour) seals and their mitigation.

### **Advice for appropriate assessment in respect of Atlantic salmon & freshwater pearl mussel**

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 SACs are 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, 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 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

In respect of the offshore elements of infrastructure, appropriate assessment will focus on conservation objective (iii) – the population viability of Atlantic salmon – considered for the Rivers Dee and South Esk SACs.

There would not be any impacts to supporting habitats in any freshwater SACs arising from offshore infrastructure, however, the placement of onshore infrastructure – including any road / bridge upgrades – may need further consideration. We will be able to give further advice when the applicant presents more information on this aspect.

So the main impacts to Atlantic salmon would arise when the fish are outwith the freshwater SACs, on migration. An adverse impact on site integrity could arise if individuals are significantly disturbed / their behaviour altered / displaced from their migratory routes such that it affects the population viability of the species. The applicant may also need to consider whether the proposal could in any way act as a barrier to salmon movements, whether it might prevent any salmon from accessing the freshwater SACs, in particular the River Dee SAC.

Noise impact assessment is likely to be a key part of any overall appropriate assessment, and all phases of the development should be considered – construction, operation, repowering and decommissioning.

As discussed above, the applicant also needs to consider the potential (indirect) impacts to freshwater pearl mussel (FWPM) arising from offshore infrastructure. This will be a desk-based appraisal following on from the assessment of impacts to Atlantic salmon. We note that direct impacts to FWPM could arise from the placement of onshore infrastructure if this work takes place close to, or is likely to affect, the River Dee SAC.

### **Ongoing Liaison**

We will continue to review our advice on HRA as this proposal progresses, and as survey work, modelling and other analyses are undertaken. We will discuss any strategic research needs with Marine Scotland and the Crown Estate, particularly those in respect of Atlantic Salmon.

## **Local Authority – Aberdeen City Council**

It is unclear what is meant by “onshore deployment facilities” as referred to at para 50. It is noted at para 51 that the report only deals with the offshore elements of the project. It should be noted that separate planning permission will be required for the onshore elements of the project from the relevant planning authority (e.g. substation / transmission lines). Given the integral and essential nature of the onshore elements to the project as a whole, it is recommended that they be considered as part of a robust EIA process for the wider project. This has the benefit of potentially avoiding the need for undertaking a separate EIA, as well as enabling a holistic approach to evaluation of the project impacts. It is recommended that scope of the ES should include consideration of the options for the routing of the cable connection, the location of the substation and related environmental and visual impacts, including the need for mitigation measures such as grounding of cable connections to the grid and provision of landscape measures such as tree planting. You may wish to request a screening opinion regarding the specific onshore elements from the relevant planning authority.

It is suggested that the scope of the ES also be expanded to consider the possible indirect environmental, economic and social benefits of the proposed development to the Aberdeen area resulting from the implementation of a community fund. I would appreciate clarification of what specific mechanism is proposed to ensure that such potential community benefits for the City of Aberdeen may be delivered.

As regards consultees, it is recommended that you include Scottish Enterprise (Grampian), UKOOA and North East Scotland Biological Records Centre (Nesbrec), You may also wish to contact relevant technical specialists within the Council directly (e.g., Aftab Majeed, Environmental Planner; Andrew Gilchrist, Environmental Health and Judith Stones, Archaeologist).

# SEPA

## 1. Scope of the ES for marine developments

- 1.1 This project will be developed during a period of fast development of marine policy at national and international levels and this should be addressed with respect to the Marine (Scotland) Act 2010 and Marine Strategy Framework Directive. More information can be found on the Marine Science website at <http://www.scotland.gov.uk/Topics/marine/seamanagement>.
- 1.2 From the information submitted we understand the overall project will include both onshore and offshore components including 11 turbines, foundations, cabling, ocean laboratory, and onshore works including landfall and substation. As such, the development will be subject to a range of different consenting regimes. We would encourage you to consider producing a single ES which covers all aspects of the proposed development. This will enable a full assessment of the potential effects of the development as a whole, rather than assessing certain details of the development individually.

## 2. Site layout and nature of construction for marine developments

- 2.1 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.
- 2.2 Plans should be included in the ES showing the layout of the devices, cabling routes and associated onshore infrastructure.
- 2.3 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](http://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.
- 2.4 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.
- 2.5 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.

### 3. River Basin Management Planning

- 3.1 Under the Water Environment and Water Services (Scotland) Act 2003, SEPA is responsible for producing and implementing River Basin Management Plans for the Scotland and the Solway Tweed River Basin Districts. River basins comprise all surface waters (including transitional (estuaries) and coastal waters) extending to 3 nautical miles seaward from the Scottish territorial baseline. Any proposed development within these waters must have regard to the requirements of the Water Framework Directive to ensure that all surface water bodies achieve 'Good Ecological Status' and that there is no deterioration in status. The Water Framework Directive requires the consideration of chemical, ecological and hydromorphological status. Further information on River Basin Management planning can be found on the SEPA website at [www.sepa.org.uk/water/river\\_basin\\_planning.aspx](http://www.sepa.org.uk/water/river_basin_planning.aspx). Information on the current status of Scotland's surface waters can be found on the water body data sheets on the the River Basin Management Planning Web Mapping Application available on SEPA's website at (<http://213.120.228.231/rbmp/>).
- 3.2 Under section 4, page 57 (baseline data) we would suggest that inclusion of the data held on 'Cruden Bay to Don Estuary' coastal water body should also be included in the baseline dataset. This water body is currently classified at high ecological status – a full datasheet is available at [apps.sepa.org.uk/rbmp/pdf/200117.pdf](http://apps.sepa.org.uk/rbmp/pdf/200117.pdf). Any proposed development within these waters must have regard to the requirements of the Water Framework Directive (WFD) to ensure that all surface water bodies achieve 'Good Ecological Status (GES)' and that there is no deterioration in status. The WFD requires the consideration of chemical, ecological and hydromorphological status. The ecological status of surface water bodies which may be affected by the proposal should also be considered in section 5, alongside the discussion of protected areas for salmon and freshwater pearl mussel. These can be accessed via the interactive map at [www.sepa.org.uk/water/river\\_basin\\_planning.aspx](http://www.sepa.org.uk/water/river_basin_planning.aspx).
- 3.3 The cumulative assessments should consider the proposals alongside any existing coastal development already present within the water bodies in which landfall locations are being considered. EC guidance defines cumulative impacts as "impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project" (<http://ec.europa.eu/environment/eia/eia-studies-and-reports/guidel.pdf>).
- 3.4 Maps should be included in the ES showing the areas of seabed likely to be affected by the footprint of the turbine bases and cabling, and the area of intertidal zone that is likely to be affected by shoreline infrastructure development. To allow for the RBMP classification to be updated and the assessment of cumulative impacts within these water bodies footprint data for the turbines and cabling components of the development should be provided in the ES.

#### **4. Construction Environmental Management Document (CEMD) and pollution prevention**

- 4.1 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.
- 4.2 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](#).
- 4.3 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](#).
- 4.4 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.
- 4.5 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).
- 4.6 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.

## **5. Waste management**

5.1 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

5.2 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.

5.3 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](http://www.sepa.org.uk/waste/resource_efficiency.aspx).

## **6. Flood risk**

6.1 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](#).

## **7. Onshore drainage strategy**

- 7.1 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.
- 7.2 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.

## **8. Marine ecological interests**

- 8.1 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](http://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.
- 8.2 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).
- 8.3 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.
- 8.4 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.

## **9. Coastal Processes**

9.1 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.

9.2 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.

9.3 With regard to diagram 4.1 in section 4.3.3.2 the hydrodynamic modelling should be robust and should represent reality as best as possible. Model performance should be checked in order to demonstrate accuracy and should include sensitivity analysis or estimate of errors in order to enable confidence levels to be applied to model results.

9.4 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.

## **10. Regulatory advice**

10.1 Details of regulatory requirements and good practice advice for the applicant can be found on our website at [www.sepa.org.uk/planning.aspx](http://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

## Marine Scotland

Recently, offshore wind has focussed on large scale windfarm sites leased by The Crown Estate for Round 3 and Scottish territorial waters. These will involve the installation of a large number of turbines over several years to ensure the UK and Scottish Governments meet their commitments to generating electricity from renewable sources. Issues associated with cumulative and in combination effects of these developments will arise, MS-LOT wishes to have further discussions with the developers on this issue, at a recent meeting EOWDC indicated that a separate document addressing these matters was being drafted. The scoping document clearly states that the developer will apply for Town and Country planning for the onshore works and will not be incorporating any of the onshore infrastructure works into the EIA for the wind farm.

The definition of the 'Rochdale envelope' approach described in Section 3.4.1 is consistent with all large offshore wind developments. This allows developers to describe their projects in a hypothetical manner by fully assessing any impacts associated with all technology that may be considered on the site. However, MS-LOT understands that only one technology described within the EIA will be progressed towards commercial deployment. The EOWDC project is proposing to use more than one type of foundation i.e. there are 6 described in the scoping document. Therefore, the 'Rochdale envelope approach' should be applied differently; the assessment should include the interactions and cumulative impacts between each different type of foundation. However, if EOWDC do intend using the same foundation base throughout then the standard approach could be adopted. Due to the description of the 'Rochdale envelope' approach described above; points 56 – 58, within the scoping document, cannot be considered without the above assessment. Therefore, indicative layouts should be presented within the EIA. MS-LOT are available to discuss this issue in greater detail.

The same is also true for the actual turbine(s), the EIA can be drafted on a hypothetical machine with a maximum height to the tip of 195m above Lowest Astronomical Tide (LAT), the technology going forward on the site has been described as between 4-10MW, the 4MW has a maximum hub height of 100m and the 10MW turbine has a max hub height of 120m above LAT. The final design will dictate the maximum rotor diameter and an assessment should be carried out on the worst case scenario.

At the meeting on the 13/05/2010 (please refer to the minutes), EOWDC were advised by MS-LOT on the inflexibility of the Section 36 consent and that a generic EIA for the site should be undertaken. Separate assessments for each foundation could then be undertaken and inserted as an appendix when developers sign up to use the site. It was understood, by MS-LOT, at the time of the meeting, that each type of foundation chosen would require a separate consent, thus a single Section 36 consent would not cover the whole installation. MS-LOT has subsequently reviewed both the Section 36 legislation and its position in regard to the proposal set out in the scoping document and are of the opinion that a degree of flexibility might exist when considering the consenting strategy. MS-LOT would like to discuss this matter with you early in the New Year .

## **Inter array cabling**

Installation methodologies must be detailed as the FEPA/Marine licence applications require a list of deposits. Point 74.

## **Construction timelines**

Phase 1 – 4 x turbines year 1 (2012)

Phase 2 – 7 x turbines year 3 (2014)

MS-LOT requires a further update on the construction timeline and potential funding constraints, a further meeting should be scheduled to discuss the above information. EOWDC should note that mitigation measures for marine mammals will be included in the conditions and at this stage we warn you that a 24hr working window might not be possible as the Marine Mammal Observer onboard will not be able to identify marine mammals in the dark. However, we can discuss this aspect further and we are prepared to be open minded on the outcome of those discussions.

The scoping document highlighted (point 70) that a major turbine service would be required every 12 months. However, MS-LOT are not aware that the proposed technology is fully understood. Therefore please notify MS-LOT if this assessment is based on historical knowledge, and provide references. It was also stated that 'gearbox oil changes are required every 5 years', EOWDC will be required to provide method statements and contingency plans for these operations.

## **Section 36A**

We understood that this does not apply in Scottish waters and therefore there are no provisions through section 36 for safety areas around the turbines, however, recent discussions with colleagues indicate that this situation might have changed. We will report back to you as soon as possible.

## **3.2 Marine Licensing**

- MS-LOT will continue to administer all of the consents after April 2011.
- The Environmental Statement (ES) is the section 36 application.

## **Appropriate Assessment (AA)**

In order for the AA to be carried out by the competent authority the installation technologies would have to be known in order to assess the impacts.

## **Marine Scotland Science (MSS)**

The following comments have been received from MSS colleagues.

The Environmental Impact Assessment (EIA) must informatively and clearly identify the key impacts associated with the EOWDC. Within the EIA all useful sources of existing surveys and studies need to be specified.

## **Proposed survey techniques**

The scoping document appears to have identified the potential key impacts with regard to the development. Useful sources of data from existing surveys and studies have been identified but these may not cover the whole area. However, the proposed combination of video survey and benthic grabs is essential to adequately determine the dominant habitat types and species present in the development area, large epifauna are generally under sampled by grab and trawl sampling.

## **Marine ecology**

The Benthic Habitats Para 216 requires the reference for the biotope names to be inserted. Clarification is required within paragraph 230 as single grabs are now being collected from each position, does this mean that the sampling strategy is now considered randomly stratified; please confirm.

Sedimentary shores on the east coast Para 244: MS-LOT would like to highlight that Collieston beach is bounded by a breakwater/pier and the meiofaunal distributions may reflect this artificial situation. Therefore the sediment and the fauna distributions are localised for this area and may not represent soft sediment shores from the area of interest. Beach profiling to quantify erosion / modification should be considered, and the outcome discussed with MS-LOT prior to any action being taken., The name "*diversicolor*" should be rendered in italics.

## **Coastal processes**

Sedimentation/erosion patterns on Aberdeen Beach are influenced by the presence of coastal structures (near shore rock structures and timber groynes), and beach re-charge. Using beach profiles taken by the University of Aberdeen may not be representative of the ongoing processes at the beach near the development site, and MS –LOT are of the opinion that a local survey would give more confidence in the interpretation of current processes and the potential impact of the development on these processes. In case Aberdeen Offshore Wind Farm Ltd has not yet been in contact with Aberdeen University regarding this data, the Aberdeen Beach project is managed by Ms. Amy Taylor and Prof. T. O'Donoghue at the School of Engineering.

Figure 11: The Ythan estuary is not in the area considered for far-field effects. Should there be significant changes in the sediment mobility in the far-field area, then this could have potentially important effects on the sedimentation/erosion patterns of the estuary. Extending the domain in the first instance, could avoid having to do this at a later stage should sediment mobility become an important issue. Again, we request you consider this point and refer to MS-LOT.

## **Construction**

Details of any noise pollution resulting from any construction activity and any associated potential effects on cetaceans/pinnipeds/fish will be required. Noise assessments should take into consideration background noise, including vibration produced from ships' engines, piling hammers and auguring operations during the

construction of turbine foundations. Considerable studies have already been conducted on cetaceans in the Moray Firth area, but the particular cause for concern is the potential additional extensive Round 3 wind farm site to the North of this development.

The proposed development will need to consider, in the first instance through a desk study, potential impacts on migratory fish including salmon (*Salmo salar*), sea trout (*Salmo trutta*), sea lamprey (*Petromyzon marinus*), river lamprey (*Hyperoplus lanceolatus*) and sandeels (*Ammodytes marinus*) during all phases of the project. The potential for offshore renewable projects to impact on migratory fish will vary depending on the design and location of the development in relation to the migration routes of adults and juveniles. Potential impacts may include physical or avoidance reactions at both the individual and population level and there may also be avoidance due to electromagnetic sensitivity at both adult and juvenile stages.

In cases where there is uncertainty over potential impacts it may be necessary for the developer to implement a monitoring strategy to assess the influence on salmonid fish populations. The expected levels of noise production must be identified in the ES and derived by using published literature, decide what impact, if any, this will have on fish movements through the area. Will it result in avoidance of the area and, if so, what does this mean for migrating fish. Please refer to Appendix A and after consideration get in contact to MS-LOT.

### **Inshore fisheries**

From a marine fisheries perspective the following comments are provided on the range of issues and impacts identified. The assessment methodologies are proposed and sources of data identified, indicating any perceived information gaps or inaccuracies.

### **Section 5.3 Fish, shellfish and elasmobranches**

The scoping report adequately identifies fish (commercial and non commercial), shellfish and cephalopod species known to and / or likely to occur in the area and the potential impacts of the development on these species.

Species present include some threatened and/or declining species (on OSPAR list) and UK Biodiversity Action Plan (BAP) priority species. The latter have not however been specifically identified. None of the species are unique to the area. The scoping report includes a recorded observation of a basking shark in the vicinity of the proposed development, basking sharks are protected under Schedule 5 of the Wildlife and Countryside Act thus it is a criminal offence to cause any form of disturbance to them. MS-LOT should be informed if any protected species are recorded on the site.

The report includes some reproductions of spawning and nursery grounds data from the fisheries sensitivity maps (Coull et al 1998). The developers are aware that these represent very broad scale (indicative) distributions and that more detailed and site specific information may be available elsewhere (proposal for desk studies). These maps are in some cases misleading, Nephrops distribution for example is

limited by suitable (mud) habitat - both juveniles and adults live in burrows in the mud, emerging to feed and breed. MS – LOT is not aware of any specific spawning or nursery grounds within the site.

The colour reproduction of the maps, particularly the colours of the legend compared to the mapped areas make them very difficult to interpret and, in the case of Fig 5.1, render the maps misleading. If they are to be reproduced in the EIA this should be rectified.

In relation to the underwater noise impacts, MS-LOT note that no specific data will be collected on noise effects (associated with piling / installation). MS-LOT concur with the proposal that the current information is adequate for evaluating impacts of the development on fish.

Studies on possible reef effects are proposed, MS-LOT encourages this approach but recommend that it will require robust baseline information. The potential survey methodology plans should identify both mobile and more sedentary species present for all and/or part of the year. The report states there is already an established 'baseline' of data. If these data are from historic surveys it may require updating or expanding.

It is indicated in Section 5.8 that potential impact of Electromagnetic Fields (EMF) will be assessed as part of the EIA process using the results of the Cowrie studies referenced. Although this is probably adequate, given the relatively limited extent of this development and lack of others in the vicinity (limited potential for cumulative effects) results of other relevant research should be considered.

#### **Section 6.1.4.2 fishing vessels**

Few vessels appear to transit this area and restrictions during the construction phase are unlikely to cause particular problems. Discussion with fishing stakeholders about any action required appears to be reasonable.

An assessment of the cumulative impacts of fishing in association with other marine activities in the area should be addressed as indicated.

#### **Section 6.6 commercial fisheries**

Sources of 'baseline' information on fishing in the area of the proposed wind array and possible impacts on fishing have been adequately considered in the scoping document. MS-LOT would like to see the updated versions of the earlier reports. MS-LOT concurs that with mitigation residual effects on commercial fishing are likely to be minor / negligible.

MS-LOT note, however, that the area of the proposed development does not coincide with suitable habitat for *Nephrops* - interference with *Nephrops* fishing is therefore unlikely to be a major issue.

Consultation with commercial fishermen has to date been through the Scottish Fishermen's Federation (SFF). Although this is appropriate, and the SFF should

continue to be consulted, the developers should be aware that many inshore fishermen in Scotland are non-affiliated i.e. not members of Associations represented by the SFF. Some form of local consultation should therefore be considered.

### **Cumulative and in combination effects**

A cumulative and in combination impact assessment is also a requirement of the Habitats Regulations Appraisal (HRA) with respect to the designated Special Areas of Conservation (SAC) and Special Protection Areas (SPA) which may be affected. As a result, the cumulative and in combination assessment of impacts on the marine mammals and seabirds of the Moray Firth's European designated sites will be an important consideration within the EIA process. Other cumulative effects, which consider the impacts arising from the proposed EOWDC wind farm in the context of other non wind farm developments (e.g. oil and gas operations) and activities (e.g. the shipping and fishing industries) will also be considered in the course of the EIA. MS-LOT await a document that addresses these aspects and, once it has been reviewed, may wish to update this advice.

### **Cable route and layout**

Marine Scotland would like to emphasise that all developers are required to include maps, 'baseline' data and any details associated with the cable route within their ES as it is incorporated into the overall footprint of the works.

Throughout the document there is reference to Fisheries Research Services (FRS), Marine Scotland, and the Scottish Fisheries Protection Agency (SFPA) as data sources for all 'baseline' assessments. Developers should be aware that as of April 1 2009 - FRS became Marine Scotland Science, SFPA became Marine Scotland Compliance and that Marine Scotland is a Directorate (not an Executive agency) of Scottish Government.

## Appendix A

### Scoping comments in relation to information requirements on diadromous fish of freshwater fisheries interest

Offshore renewable developments have the potential to directly and indirectly impact diadromous fish of freshwater fisheries interest including Atlantic salmon, anadromous brown trout (sea trout) and European eel. These species use the coastal areas around Scotland for feeding and migration and are of high economic and / or conservation value. As such they should be considered during the EIA process. Developers should also note that offshore renewable projects have the potential to impact on fish populations at substantial distances from the development site.

In the case of Atlantic salmon information will be required to assess whether there is likely to be any significant effect of developments on rivers which are classified as Special Areas of Conservation (SAC's) for Atlantic salmon under the Habitats Directive. Where there is the potential for significant impact then sufficient information will be required to allow Marine Scotland to carry out an Appropriate Assessment.

In order that Marine Scotland is able to assess the potential impacts of marine renewable devices on diadromous fish and meet legislative requirements the developer should consider the site location (including proximity to sensitive areas), type of device, and the design of any array plus installation methodology. Specifically we request that developers provide information in the following areas:

1. Identify use of the proposed development area by diadromous fish (salmon, sea trout and eels)
  - a. Which species use the area? Is this for feeding or migration?
  - b. At what times of year are the areas used?
  - c. In the case of salmon and sea trout what is the origin / destination of fish using the area?
2. Identify the behaviour of fish in the area
  - a. What swimming depths do the fish utilise
  - b. Is there a tendency to swim on or offshore

3. Assess the potential impacts of deployed devices on diadromous fish during deployment, operation and decommissioning phases. Potential impacts could include:
  - a. Strike
  - b. Avoidance (including exclusion from particular rivers and subsequent impacts on local populations)
  - c. Disorientation that could potentially affect behaviour, susceptibility to predation or by-catch, or ability to locate normal feeding grounds or river of origin
  - d. Delayed migration
4. Consider the potential for cumulative impacts if there are multiple deployments in an area.
5. Assess 1-4 above to determine likely risk.
  - a. If there are insufficient data to determine use of the development area, these should be obtained
  - b. If there are insufficient data on the origin / destination of fish using the area then these should be obtained
  - c. Where it is not possible to obtain site specific data, the developer should make a convincing argument why this is the case and apply appropriate expert judgement based on published information.
6. If there is any remaining doubt as to the potential impacts of a particular development, then the developer should recommend a scientifically robust monitoring strategy to assess any impacts either on stocks as a whole, or on particular rivers as necessary.

Marine Scotland Science has just completed a review of migratory routes for Atlantic salmon, sea trout and eels relevant to Scotland, which should be available in 2011. This will assist the developers in identifying what pre-existing information is available and what supplementary site specific data will be required.

## Ministry Of Defence

The scheme outlined involves the construction of 11 free standing wind turbines with associated infra-structure. The turbines are expected to be 195 metres to blade tip above ground level.

The principal safeguarding concern of the MOD with respect to the development of wind turbines relates to their potential to create a physical obstruction to air traffic movements and cause interference to Air Traffic Control and Air Defence radar installations.

Consultation by the developer at the pre-planning stage has identified the following concerns:

### Air Defence (AD) radar

The turbines will be 26 km from; in line of sight to; and will cause unacceptable interference to the AD radar at Buchan. Following trials carried out in 2005, it has been concluded that wind turbines can affect the probability of detection of aircraft flying over or in the vicinity of wind turbines. Due to this, the RAF would be unable to provide a full air surveillance service in the area of the proposed wind farm.

Accordingly the applicant should take account of MOD aviation and radar operations in completing the EIA particularly in identifying a suitable site for development and the dimensions of the turbines that are to be installed.

It should be noted that this response is based on current levels of wind farm development in the area. If additional wind farms are consented or built prior to this development being submitted for planning consent, our position may change.

Defence Estates Safeguarding wishes to be consulted and notified of the progression of planning applications and submissions relating to this proposal to verify that it will not adversely affect defence interests.

## **Health and Safety Executive**

Environmental Impact Assessments are concerned with projects which are likely to have significant effects on the environment. HSE's principal concerns are the health and safety of people affected by work activities. HSE cannot usefully comment on what information should be included in the environmental statement of the proposed development. However, the environmental statements should not include measures which would conflict with the requirements of the Health and Safety at Work etc Act 1974 and its relevant statutory provisions.

## **RYA Scotland**

In the case of Aberdeen Bay, recreational sailing should be considered under both 'Shipping and navigation' and 'Recreation and tourism'. The approaches to the port of Aberdeen harbour can be very busy with vessels entering and leaving. Many recreational vessels follow an inshore route from the Forth to Peterhead and vice versa, often at night to take advantage of a favourable tidal flow. Only some recreational vessels are equipped with radar and AIS and great care is needed to avoid commercial vessels entering or leaving Aberdeen. Although some recreational vessels will choose to sail further offshore to avoid the development, effective marking and lighting will be essential and needs to be considered from the point of view of recreational craft as well as much larger commercial vessels. There is a further danger of squeezing recreational craft between the commercial shipping routes and the development.

Position on offshore Energy developments attached to email.

## **Marine Safety Forum**

Whilst we are happy with the proposed locations of the wind turbines as agreed with the developer we must comment on the route proposed for the power cabling. The developers must re-route the electricity supply cables to shore well clear of the anchorage. These would present a very great marine hazard if routed as proposed even if trenched.

The Health and Safety Executive have performed studies on pipeline and cable vulnerability which will support our concerns. A vessel (which is legally entitled to use this government approved anchorage) could drag it's anchor in severe weather which in turn could foul and damage the electricity cables putting the vessel, her crew and wind deployment centre in danger.

If the cables were routed directly to shore northward of the anchorage boundaries and then southwards inshore of the western limits to the anchorage boundary then this would not pose a significant risk. We would also like to stress that it is imperative that the proposed eleven turbines are actually located as shown in the plan so as not to impinge on the safety of marine navigation any more than agreed and absolutely necessary. Any future expansions are to be only to the north and not eastwards towards the shipping lanes or southwards into the anchorage area.

## **Northern Lighthouse Board**

With regard to the consultation and the scope of assessment, we would only comment on that part relating to Shipping and Navigational Safety contained within several sections of the consultation document. Notice(s) to Mariners, Radio Navigation Warning and publication in appropriate bulletins will be required stating the nature and timescale of any works carried out in the marine environment relating to this project.

We would advise that any final marking and lighting recommendations will be made in a formal response through the Coast Protection Act 1949: Section 34 consultation process, and will be based on IALA Recommendation O-139. All navigational marking and lighting of the site or its associated marine infrastructure will require the Statutory Sanction of the Northern Lighthouse Board prior to deployment.

We would require the Navigational Risk Assessment to be in accordance with the information given at section 6.1.3 and in line with the requirement of MCA Marine Guidance Notice 371. This should cover all aspects of the site (including cable routes) during construction, operation, maintenance and de-commissioning phases of the project. We welcome the use of a local workshop to ensure all shipping and port interests are consulted.

We can advise that we have noted the charted anchorage and would require the area to be considered within the navigational Risk Assessment already requested above.

## **Chamber of Shipping**

The cable route should remain well clear of the designated anchorage in close proximity. We would also like to state that the developers must ensure that there should be no material change either to the proposed location or the number of the wind turbines as stated on the plan.

## **BT Network Radio Protection**

We have studied this wind farm proposal with respect to EMC and related problems to BT point-to-point microwave radio links.

The conclusion is that, the Wind farm Project indicated should not cause interference to BT's current and presently planned radio networks.

Therefore BT will not be providing comments on the report

## **Association of Salmon Fishery Boards**

The proposed developments should be conducted in full consultation with the local District Salmon Fishery Boards and Fishery Trusts for these rivers. The boards hold various statutory powers and duties and they will have an interest in the potential effects of offshore installations on migratory salmonids in their marine phase, both during construction and during subsequent operation. The Trusts may have a particular interest in assessing potential impacts and monitoring the interactions between fish and developments such as these. Given that the Dee has SAC status (salmon are a qualifying species), there is a particular need to consider any actions which might impact on this status, even if they are beyond the jurisdictional boundary of the SAC.

We would like to record our own concerns that such developments will have considerable implications and these very often can be conducted without proper regard or understanding of the potential impacts on the fish species and their habitat. Some of the issues and questions we would raise on behalf of our members are itemised below:

### **Effects arising from construction**

- What effect would the construction processes have on fish?
- Physiological and behavioural effects of underwater noise and vibration resulting from construction operations
- Direct effects on fish of water quality changes through suspension of sediment in the water column disturbed during construction
- Indirect effects of water quality changes through effects on food sources available to salmon and sea trout
- Will the effects of noise and mechanical disruption be assessed prior to construction and would on-going monitoring be put in place if the project is approved and completed?

### **Operational Effects**

- Physiological and behavioural effects of underwater noise and vibration resulting from turbine operation
- Are there likely to be electrical or magnetic fields associated with the installation and operation and will these have a discernable effect on salmon?
- Indirect effects on fish of permanent changes in habitat
- Whilst salmon use the Firth as a migration route and are unlikely to remain there for lengthy periods, the habits of sea trout are rather different and this species will use the firth more extensively as a feeding area before migration into freshwater systems. Accordingly there may be a risk of more prolonged interaction with sea trout in relation to the turbines.

## Civil Aviation Authority - Airspace

As alluded to with the documentation provided, like any wind turbine development, the proposed subject development has the potential to impact upon aviation-related operations; the Department for Trade and Industry (DTI – now the Department for Energy and Climate Change)-sponsored document ‘Wind Energy and Aviation Interests’ and Civil Air Publication 764 refer. The related need to establish the scale of the potential impact of the European Offshore Wind Deployment Centre development is evident.

Having reviewed the SR and in particular the site in question, I can advise that the development might have a potential impact upon operations associated with Aberdeen Airport and note that the SR indicates ongoing consultation. All parties should be aware that aerodrome safeguarding responsibility rests with the aerodrome licensee. Any related Environmental Statement, or equivalent, would be expected to acknowledge and quantify any potential impact upon the Airport-related operations and, where applicable, detail appropriate mitigation.

Similarly, as will all wind turbine developments of this scale, the Environmental Statement will need to detail the associated viewpoints of both NATS and Ministry of Defence (MoD). To that end, I note the SR also details the ongoing consultation with these organisations and the outcomes of these and any associated mitigations as agreed should be reported in the Environmental Statement.

Not highlighted in the Scoping Report is the issue of Aviation Warning Lighting. The subject wind farm will fall under the requirements of Air Navigation Order 2009 Article 220 and this will need to be acknowledged in the Environmental Statement. Given the intensity of helicopter operations in the area, I consider this to be a significant area.

With respect to Landfall, the Environmental Statement may need to address the impact on aviation of power line routing between Landfall and the onshore substation(s) if the power lines are a significant height above ground.

Additionally, if more generically, all parties should be aware that:

- International aviation regulatory documentation requires that the rotor blades, nacelle and upper 2/3 of the supporting mast of wind turbines that are deemed to be an aviation obstruction should be painted white, unless otherwise indicated by an aeronautical study. It follows that the CAA advice on the colour of wind turbines would align with these international criteria.
- There is a civil aviation requirement in the UK for all structures over 300 feet high to be charted on aviation maps. Should this development progress and the 300 feet height be breached the developers will need to provide details of the development to the Defence Geographic Agency.
- The number of pre-planning enquiries associated with windfarm developments has been significant. It is possible that the proliferation of wind turbines in any particular area might potentially result in difficulties for aviation that a

single development would not have generated. It is, therefore, not necessarily the case that, because a generic area was not objected to by the aviation industry, future, similarly located potential developments would receive the same positive response. There is a CAA perceived requirement for a co-ordinated regional wind turbine development plan, aimed at meeting renewable energy priorities, whilst addressing aviation concerns and minimising such proliferation issues. Indeed, this may be an area where the centre may be able to provide some research.

Any associated Environmental Statement should mention and, where applicable, address the issues highlighted above.

## Maritime and Coastguard Agency

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.

Particular reference will need to be made to the impact of the marine traffic associated with the wind farm throughout the lifetime of the project.

A Navigational Risk Assessment will need to be submitted in accordance with MGN 371 (and 372) and the DTI/DfT/MCA Methodology for Assessing Wind farms.

Attention should be paid to cabling routes and burial depth and subject to the traffic volumes an anchor penetration study may be necessary. Any proposed cable route should avoid the recently established anchorage area to the south of the proposal. Close liaison with Aberdeen Harbour Board, and other users, should be maintained.

Reference should be made to any Marine Environmental High Risk Areas (MEHRAS) established on adjacent coastlines.

The Offshore Ocean Laboratory will be required to be marked in accordance with the UK Standard Marking Schedule for Offshore Installations as required by the Northern Lighthouse Board

Any application for the establishment of safety zones during the construction stage will need to be submitted in accordance with the DTI Guidance.

Casualty information from the MAIB and RNLI would also be a good data source, in establishing the risk profile for the area.

Given that the capacity of the individual wind turbine generators have not been decided the principles of the Rochdale envelope should be used in the EIA.

The MCA Shipping Route template distances are based on risks having been identified As Low As Reasonably Practical (ALARP) and evidence to demonstrate this will be expected in the Navigational Risk Assessment.

Developers need to be aware that the radar effects of OWF on ship's radars are an important issue and 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](http://www.mcga.gov.uk/c4mca/mcga07-home/shipsandcargoes/mcga-shipsregsandguidance/mcga-windfarms/offshore-renewable_energy_installations.htm)

## **Joint Radio Company**

JRC analyses proposals for wind farms on behalf of the UK Fuel & Power Industry. 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, you are advised to seek re-coordination prior to submitting a planning application, as this will negate the possibility of an objection being raised at that time as a consequence of any links assigned between your enquiry and the finalisation of your project.

## **RSPB**

It has always been our contention that there is a high degree of use of the Aberdeen Bay area by many species of bird, including in particular Red-throated Diver. The numbers of this species found so far exceed the revised GB 1% threshold and we believe that at times numbers could be much higher than have been found by the limited sampling offshore so far. Use of the area by some gull species and by auks and Gannets is also high, and the importance of the concentration of moulting and feeding Common Scoters and Eiders close to the shore is also clear. Some of these birds are associated with designated European Protected Sites nearby and further afield. The information presented to date in the Scoping Report and earlier documents supports this assessment. Accordingly, there are numerous important issues to address.

### **Important issues that should be fully considered in the ES**

1. Impact on qualifying interests of existing and potential Special Protection Areas, including distant sites such as Bass Rock and Troup Head.

Aberdeen Bay is under consideration as an SPA for inshore waterbirds. Aberdeen Bay meets stage 1.1 of the UK SPA site selection guidelines for concentrations of

Red-throated Diver (in spring and autumn). If Aberdeen Bay was to be classified as an SPA, other species may be included, such as Eider, Common Scoter and possibly Velvet Scoter.

The need for **Appropriate Assessment** is referred to in Section 5.9.2. Information presented in the Environmental Statement will be used by the Competent Authority in the Appropriate Assessment. This relates to all SPAs and SACs likely to be affected by the development.

## 2. Determination of bird use of the area: Vantage Point Surveys

We note that no more of these are planned. See our comments below about further data sources. We also recommended previously that it would be useful to position observers on boats moored further out from shore, in the general zone likely to be occupied by the wind turbines and urge that this should be done. Figure 7 shows clearly that the only regular survey technique covering the revised wind farm envelope reliably would be boat surveys. Stationing observers on moored vessels, through some suitable arrangement, would add much useful information. This would be particularly useful for the April/May period in 2011, since this is a time when Red-throated Divers peak in numbers.

## 3. Determination of bird use of the area: Boat-based Surveys

We accept the revised method, and the further extension to these for at least 12 further months from August 2010 is noted. This information, coupled with earlier surveys, should produce enough baseline information for minimum level of assessment. However, we are still concerned that an application is likely to be made before a full two years of boat-based survey information has been collected. This is not good practice considering the length of time that has elapsed since the initial surveys in 2007-2008; useful data could have been gathered in the interim.

## 4. Determination of bird use of the area: Radar Surveys

We note the recent further survey period in April 2010. It is clear from previous deployments of radar that a very large number of birds of many species use the bay or fly through it at all times of year, in all weather conditions and throughout the 24-hour period. This activity is concentrated in the near shore area. Previous survey periods have provided only a snapshot of the year and sampled only a proportion of the possible conditions that can be encountered offshore. It is important that there should not be over-reliance on conclusions from limited periods of radar deployment; key movement periods and weather conditions may not be sampled, and records indicate that episodic large movements and short-term usage patterns are characteristic of this offshore environment. We recommend that consideration be given to further deployment to cover periods not yet sampled.

## 5. Predicted impacts (5.4.4.336)

Since a subjective extrapolation method is being proposed for birds recorded in low densities, it is important to provide further contextual information for this exercise from other North-East Scotland bird data sources (see below).

### *5.1 Assessment of potential disturbance and displacement*

One key issue here is that many of the sea ducks present in summer are moulting and this will influence their behaviour and needs to be taken into account.

### *5.2 Assessment of potential collision risk*

Gannet is a key species for inclusion in collision risk modelling as its flight height is more likely to bring it within the area swept by rotors.

*5.3 Assessment of impact of changed hydrodynamic regime on coastal and benthic processes and consequent impact **on location and nature of food sources for offshore birds**.* This is touched on in Sections 4.5.1.190 and 5.1.3 and in a slightly different context [reef effect] in 5.1.7.1. It should be explicitly included in the scope of assessment for shellfish and other marine invertebrates in Section 5.3.3 and the assessment proposed in 5.4.4.341 should take account of this, away from the windfarm envelope. We are concerned here about loss of potential feeding resources linked to the seabed, especially for moulting birds. Also of course, there could be changes that increase food availability. Species to consider in particular here are: Red-throated Diver, Common Eider, Common Scoter, Velvet Scoter, all Gull, Tern and Auk species

### *5.4 Assessment of cumulative and in-combination impacts*

All available data sources should be used, including those relevant to the sites proposed offshore from the Angus coast to the south, and the possible floating turbines off Peterhead (to be developed by StatOil).

## 6. Information sources for birds

These should include all recent records held in the North-East Scotland Bird records database, up to 2010 and 2011. These will include numerous counts of sea duck closer inshore than boat transects can cover, and deal with the period for which there will be no further shore-based vantage point watches by the developer.

## 7. Mitigation

There appears to be no section on this in the Scoping Report relevant to birds. (It is mentioned in passing in Section 5.4.3.2.318). A full consideration of potential mitigation of adverse effects on birds should be included in the Environmental Statement.

## 8. Issues to be addressed by the proposed Centre

We welcome the proposed Ocean Laboratory and the intent to use this to monitor environmental issues. Such monitoring should certainly include ornithological aspects, as acknowledged in Section 5.4.6. There are considerable opportunities to treat the environmental aspects of offshore wind development on an equal footing with the technical and engineering aspects. We recommend strongly that if the centre goes ahead, these environmental aspects should be incorporated as core business. A detailed plan should be produced for the development of research and

monitoring techniques for all environmental aspects of any test centre developments (including an allocation of the European financial award). RSPB Scotland would be prepared to work with AOWFL and others in taking forward ornithological monitoring and research in connection with a test centre.

If these issues were fully addressed, not only would it allow the potential environmental impacts of the Aberdeen Bay proposal to be assessed properly, but it would also lend credibility to a project which intends to be an international exemplar of good practice for offshore wind development.

## **Aberdeen Harbour Board**

Aberdeen Harbour Board welcomes the development of the European Offshore Wind Deployment Centre off Black Dog and is very interested in becoming involved in providing quayside and other facilities for the Centre's development and ongoing operational phase.

There are, however, several concerns regarding the proposal outlined in the scoping report and these are listed below:

1. Due to the high level of shipping activity both using Aberdeen Harbour and passing traffic it is essential that the location of the EOWDC does not change from that proposed. For the same reason no additional turbines or other structures should be added outside the currently proposed footprint in the future unless it is to the north.
2. The proposed cable run connecting the EOWDC to the shore currently passes through the Maritime and Coastguard Agency designated anchorage. This area is in frequent use and cannot safely be reduced in size. An alternative route for the cables should be located at a safe distance from the anchorage allowing for the possibility of a vessel dragging anchor.
3. Has sufficient information been obtained to establish the route and installation of the electricity cables in respect of the highly mobile seabed which can be subject to re-suspension throughout the tidal cycle or under stormy conditions?
4. Has modelling and monitoring been done on the impact of the turbines on the dynamic seabed? Scour and erosion are possible around the base of the turbine and if this were to increase the material in suspension it could impact on the dredging regime at Aberdeen Harbour and the beach profile of Aberdeen beach.

## **Transport Scotland**

The proposed development represents an intensification of the use of this site however the percentage increase in traffic on the trunk road is such that the proposed development is likely to cause minimal environmental impact on the trunk road network. On this basis TRNMD have no comment to make.

## Historic Scotland

Information on the location of all scheduled monuments, listed buildings, gardens and designed landscapes and designated wreck sites can be obtained from [www.PASTMAP.org.uk](http://www.PASTMAP.org.uk). This is a free, interactive website produced jointly by Historic Scotland and the Royal Commission on the Ancient and Historical Monuments of Scotland which allows anyone with internet access to display and search data on Scotland's historic environment.

The proposed Development

I understand that the proposed offshore elements of the development consists of the following:

- 11 offshore wind turbines and their associated foundations
- Subsea cables between the turbines;
- An export cable for connection to the transmission network;
- An Ocean Laboratory.

The proposed onshore elements of the proposal consists of:

- Onshore deployment facilities
- Onshore substation;
- The landfall connection between offshore export cable and onshore cable.

The scoping comments below relate to the potential impacts of the offshore aspects of the scheme only (excluding the proposed Ocean Laboratory).

### Marine Assets - Potential Impacts

In relation to the submitted search area of the proposed offshore wind farm, I can confirm that there are no designations within our statutory remit located within this identified area. I can also confirm that there are no such designations within the immediate vicinity of the proposed wind farm search area.

I note that the scoping report identifies that there are certain undesignated wrecks within the survey area and that there is a potential for former terrestrial prehistoric archaeology within the subsea survey area. I welcome the proposed approach in terms of incorporating archaeological assessment and input to the geotechnical data and geophysical surveys which shall be undertaken. This is consistent with guidelines set down in 'Historic Environment Guidance for the Offshore Renewable Energy Sector' (Cowrie 2007). The relevant Council Archaeology Services may also wish to comment.

It would be very helpful if the results of all archaeological assessments could be archived through the Royal Commission on the Ancient and Historical Monuments of Scotland.

### **Terrestrial Assets - Potential Direct Impacts**

I understand that the potential direct impacts on terrestrial assets shall be addressed separately. We shall provide further comments at this stage.

### **Terrestrial Assets - Impact on Setting**

In relation to the search area of the proposed offshore wind farm, I can confirm that there are terrestrial assets with a seascape setting, which may be subject to an indirect impact as a result of the proposed offshore turbines. I note that viewpoints are proposed to be taken from Dunnottar Castle (Index no.986) and Torry Battery, battery 130m ESE of Old South Breakwater (Index no. 9215). I would also recommend visualisations to be taken from Hare Cairn, cairn 600m W of Keir (Index no. 3277), Forvie Church and deserted village (site of) (Index no. 7644) and Straloch designed landscape.

I understand that the potential indirect impacts of the proposed onshore works shall be assessed separately. We shall provide further comments at this stage.

### **Cumulative Impact**

We welcome the proposed cumulative assessment and would refer you to the appropriate industry guidance on this matter; Cowrie 2008, 'Guidance for assessment of Cumulative Impacts on the Historic Environment from Offshore Renewable Energy'.

This can be sourced at:

<http://www.offshorewindfarms.co.uk/Assets/4Archaeological%20guidance%20final%20version.pdf> )

### **Our Views on the Principle of this Proposal**

Without prejudice and on the basis of the information supplied, we can indicate that while it may be possible to accommodate a wind farm development in this location, there are certain aspects of the proposal which we would require to be assessed. In particular, this relates to the potential impacts on the setting of the assets referred to above.

In terms of assessing marine archaeology, subject to the comments provided above, in our view the proposed methodology for baseline surveys, assessment of impacts and mitigation is considered acceptable.

In terms of assessing the potential impacts on marine archaeology, subject to the comments provided above, in our view the proposed methodology for baseline surveys, assessment of potential impacts and mitigation is considered acceptable.

The relevant Council archaeological and conservation service will be able to provide information and advice on unscheduled archaeology and category B and C(S) listed buildings.

Please refer to the advice contained in our technical guidance note on setting. This documents is available at:

<http://www.historic-scotland.gov.uk/managing-change-consultation-setting.pdf>

## **Ports and Harbours**

The application must include a full Navigation Risk Assessment in line with MGN 371. Having cables running through an anchorage area would appear to be a risky idea and they would need to be buried to a suitable depth to prevent damage.

## Annex 2.

### DEVELOPER APPLICATION AND ENVIRONMENTAL STATEMENT CHECKLIST

	Enclosed
1. Developer cover letter and fee cheque	<input type="checkbox"/>
2. Copies of ES and associated OS maps	<input type="checkbox"/>
3. Copies of Non Technical Summary	<input type="checkbox"/>
4. Confidential Bird Annexes	<input type="checkbox"/>
5. Draft Adverts	<input type="checkbox"/>
6. E Data – CDs, PDFs and SHAPE files	<input type="checkbox"/>

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Environmental Statement	Enclosed	ES Reference (Section & Page No.)
7. Development Description	<input type="checkbox"/>	
8. Planning Policies, Guidance and Agreements	<input type="checkbox"/>	
9. Economic Benefits	<input type="checkbox"/>	
10. Site Selection and Alternatives	<input type="checkbox"/>	
11. Baseline Assessment data – air emissions	<input type="checkbox"/>	
12. Design, Landscape and Visual Amenity	<input type="checkbox"/>	
13. Construction and Operations (outline methods)	<input type="checkbox"/>	
14. Archaeology	<input type="checkbox"/>	
15. Designated Sites	<input type="checkbox"/>	
16. Habitat Management	<input type="checkbox"/>	
17. Species, Plants and Animals	<input type="checkbox"/>	
18. Water Environment	<input type="checkbox"/>	
19. Sub-tidal benthic ecology	<input type="checkbox"/>	
20. Hydrology	<input type="checkbox"/>	
21. Waste	<input type="checkbox"/>	
22. Noise	<input type="checkbox"/>	
23. Traffic Management	<input type="checkbox"/>	
24. Navigation	<input type="checkbox"/>	
25. Cumulative Impacts	<input type="checkbox"/>	
26. Other Issues	<input type="checkbox"/>	

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.