

# **Beatrice Offshore Wind Farm Transmission Works – Moray Firth**

## **Scoping Opinion**

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

## SCOPING OPINION FOR THE PROPOSED SECTION 36 APPLICATION FOR THE BEATRICE OFFSHORE WIND FARM TRANSMISSION WORKS, MORAY FIRTH

### 1. Introduction

I refer to your letter of 31<sup>st</sup> May 2011 requesting a scoping opinion under Marine Works (EIA) Regulation 2007. In the view of Marine Scotland, as part of a project intending to generate over 1MW of energy, it was more appropriate to scope the above mentioned works under the Electricity Works (Environmental Impact Assessment) (Scotland) (EIA) Regulations 2000. This ensures that a single EIA will cover all aspects of the project.

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 transmission works. 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 (SG) 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 development**

The proposal is to connect the electricity generated by Beatrice Offshore Wind Farm into the existing National Grid infrastructure. The National Grid connection point for the Beatrice Offshore Wind Farm is Blackhillock, near Keith where capacity has been identified. To enable this connection the project requires approximately 65 km of subsea cable (either ac or dc, in either two or four trenches) to the landfall point and then approximately 24 km of probable underground cable to Blackhillock near Keith. All onshore aspects should be applied for through Town and Country Planning via the relevant Local Authority.

## **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 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/htmldb/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 MS-LOT. MS-LOT 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. Marine Renewable energy consents information and guidance, including the specific details of the adverts to be placed in the press, can be obtained from Marine Scotland.

### 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.

### 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

Roger May

06 October 2011

Authorised by the Scottish Ministers to sign in that behalf

Enclosed - Developer Application Checklist

## **Annex 1**

### **Consultee Comments Relating to Beatrice Offshore Wind Farm Transmission Works, Moray Firth**

The following organisations provided a scoping opinion in relation to the Beatrice Offshore Wind Farm Transmission Works, Moray Firth:

#### **Statutory Consultees**

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

#### **Non Statutory Consultees**

BT Network Radio Communication (BT)  
Civil Aviation Authority (CAA)  
Defence Infrastructure Organisation  
Health and Safety Executive (HSE)  
Historic Scotland  
Inshore Fisheries Group (IFG)  
Joint Radio Company Ltd (JRC)  
Maritime & Coastguard Agency (MCA)  
Marine Scotland  
National Air Traffic Services (NATS)  
Northern Lighthouse Board (NLB)  
Royal Yachting Association (RYA) Scotland  
Royal Society for the Protection of Birds (RSPB)  
Scottish Government Planning

## **Scottish Environmental Protection Agency**

Please note that all of the issues below should be addressed in the ES, but there may be opportunities for several of these to be scoped out of detailed consideration. The justification for this approach in relation to specific issues should be set out within the ES.

However to assist the preparation of the ES we consider following to be of high significance in terms of our remit – water environment, coastal processes, seabed marine life, marine and land waste and disposal.

### **1. Scope of the ES for all elements of the proposals**

- 1.1 We note that the transmission works will comprise the offshore cable, onshore cable 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. Water Framework Directive and River Basin Management Planning**

- 2.1 The ES should identify if the impacts of the proposal are likely to lead to deterioration of the water environment or present opportunities for improving the water environment. Please note that the Water Framework Directive (WFD) and Scotland's River Basin Management Plan (RBMP) refer to all surface waters including marine waters to 3 nautical miles. The planning authority should take this into account in considering the application, as, in order to meet the requirements of the Water Framework Directive (2000/60/EC), planning authorities are designated "responsible authorities" by the Water Environment and Water Services (Designation of Responsible Authorities and Functions) Order 2006. Responsible authorities must carry out their statutory functions in a manner that secures compliance with the objectives of the Directive (i) preventing deterioration and (ii) promoting improvements in the water environment in order that all water bodies achieve "good" ecological status by 2015.
- 2.2 In order to assist both applicants and planning authorities, we have made information available on our website. RBMPs have been prepared to support the successful implementation of the Directive and include measures set against individual water bodies which require to be implemented if "good" status is to be achieved. The GIS interactive map (<http://gis.sepa.org.uk/rbmp/>) (complete with user guide) or the RBMP data download function, both available on the RBMP section of our website ([http://www.sepa.org.uk/water/river\\_basin\\_planning.aspx](http://www.sepa.org.uk/water/river_basin_planning.aspx)), should be used in assessing any development proposal. The map enables a search for individual water bodies by grid reference, place name or postcode. The data download tool allows water body information to be filtered by planning authority. Both the map and data download tool hold data sheets relating to each individual water body. The water body data sheets set out the water body's ecological status, any pressures upon it, measures set up to resolve any issues and targets for any improvement needed. As responsible authorities, planning authorities should promote measures already agreed in respect of relevant water bodies as well as considering other opportunities for the proposals in question to contribute to Directive objectives.

2.3 All coastal water out to three nautical miles seaward from the Scottish territorial baseline falls under the Directive which requires them to be considered in terms of their chemical, ecological and hydromorphological status. Water body data sheets are available on the RBMP section of our website for the Lossiemouth to Port Gordon (200147), Portgordon to Findochty (200146) and Findochty to Knock Head (200497) water bodies.

### **3. Coastal Processes**

3.1 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

3.2 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.

### **4. Marine ecological interests**

4.1 An assessment of the intertidal and subtidal habitats and species found along the cable route should be submitted. This should include any UK Biodiversity Action Plan habitats and species (e.g. *Modiolus modiolus*). Information on the extent and abundance of any important habitats and species including the introduced non-native Magellan mussel (*Aulaomya ater*) should be included in the ES. Additional information on the UK Biodiversity Action Plan is available at: <http://jncc.defra.gov.uk/page-5155>.

4.2 We also recommend the ES should assess risks of introduction of marine non-native species and biosecurity principally in terms of bringing ships and materials into the area and we encourage the developer to draw up a protocol or method statement to remove the risk of introducing marine non-natives into this area either during the development of this project or during the construction, operational, maintenance or decommissioning phases of the project. Given that the accidental introduction of marine non-native has been highlighted as a risk for water body degradation SEPA recommends that controls should be included in development planning for marine non-native species in line with WFD and Marine Strategy Framework Directive objectives. [An example of guidance that may be drawn upon is the non-natives advice produced by the Oil & Gas industry: [www.ogp.org.uk/pubs/436.pdf](http://www.ogp.org.uk/pubs/436.pdf)]. Further information can also be found on the SNH website at <http://www.snh.gov.uk/land-and-sea/managing-coasts-and-sea/marine-nonnatives/>.

4.3 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.

- 4.4 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.
- 4.5 For the marine benthos, we would recommend that it could be useful to include Priority Marine Features (PMF) along with UKBAP interests. A draft list is currently with the Scottish Government for consultation, and due out later in 2011.

## **5. Terrestrial Non-native species**

- 5.1 It is anticipated that invasive non-native species (INNS) are noted on field surveys to allow measures to be taken during engineering and other works to prevent the spread of INNS which may affect biodiversity of the burns and adjacent habitats and spread disease. Please note the national framework in link below.  
[http://www.invasivespeciesscotland.org.uk/invasive\\_non\\_native\\_species/legislative\\_framework.asp](http://www.invasivespeciesscotland.org.uk/invasive_non_native_species/legislative_framework.asp)
- 5.2 A link is also provided for the Deveron District Bio-Security Plan which is focussed on particular species of relevance to freshwaters and fish health.  
<http://www.invasivespeciesscotland.org.uk/FileLibrary/Plans/Deveron%20Biosecurity%20Plan%20Final%20Oct%2009.pdf>
- 5.3 *Baseline data*  
Information on ecological data collected by SEPA for those burns/rivers which are legible on Figure 43 of the scoping report is provided as an attachment to this response. In addition all monitoring sites for Deveron and Banff are included in anticipation that those may also be required. This initial data availability search focussed on 2005 onwards, but there is data for before 2005 for many of the invertebrate sites and for sites also not listed. Please contact SEPA Ecology, Aberdeen if it becomes apparent there are gaps in baseline data for some watercourses. Please note the attached Excel spreadsheet SEPA baseline data & INNS recorded. Note that the latter also includes information on bankside plant species which fall under the INNS category. These INNS records do not represent comprehensive records, but opportunistic recording while on site visits for other purposes, but are included as a starting point. Some baseline data which may be of some assistance in relation to Biological elements present in watercourses and invasive species.
- 5.4 In relation to any relation to impacts on the water environment and water dependant ecosystems, section 4.3.1 page 72 Desk Based assessment please note that the Moray Council Biodiversity Action Plan (BAP) is referenced, whereas the BAP falls under the North East Scotland Biodiversity Action Plan area and species and habitat action plans relevant to Moray & Aberdeenshire can be located here.  
<http://www.nesbiodiversity.org.uk/>

## **6. Wetland ecology (including groundwater dependent terrestrial ecosystems)**

- 6.1 A Phase 1 habitat survey should be carried out for the whole site and the guidance 'A Functional Wetland Typology for Scotland' (currently available for free download on the SNIFFER website) used to help identify all wetland areas. National Vegetation Classification should be carried out for any wetlands identified. Results of these

findings should be included in the ES, including appropriate maps with the location of infrastructure clearly marked.

- 6.2 Generally the layout of the site should be designed to avoid impacts on all wetlands. Peatland (active blanket bog in particular) should be avoided. If impacts on wetlands are likely then details of appropriate mitigation measures are required
- 6.3 Groundwater dependent terrestrial ecosystems are specifically protected under the Water Framework Directive. The results of the National Vegetation Classification survey and Appendix 2 of our Planning guidance on windfarm developments can be used to identify if wetlands are groundwater dependent terrestrial ecosystems. If any groundwater dependent terrestrial ecosystems are located within a radius of (i) 100m from roads, tracks and trenches or (ii) 250m from borrow pits and foundations the likely impact of these features will require further assessment. This assessment should be carried out whether or not the features in (i) and (ii) occur within or outwith the site boundary in order that micro-siting and small changes to site layout do not necessitate further National Vegetation Classification work being carried out during unfavourable weather conditions. The results of this assessment and measures that will be taken to ensure the proposals do not have an unacceptable impact should be included in the ES
- 6.4 Infrastructure that is within 100m or 250m and likely to have an unacceptable impact on groundwater dependent terrestrial ecosystems identified as highly sensitive (in Appendix 2 of our Planning Guidance on windfarm developments) should be reconsidered. Further detailed studies will be required if infrastructure remains within the buffer zones.

## **7. Disruption to Peatlands**

- 7.1 If there are peatland or mire systems present, the ES or planning submission should demonstrate how the layout and design of the proposal, including any associated borrow pits, hard standing and roads, avoid impact on such areas where possible. For areas where avoidance is impossible details of how impact is minimised and mitigated should be provided, including a detailed map of peat depth for all construction elements that affect peatland habitats. The peat depth survey should include details of the basic peatland characteristics. Peatland impacts that should be considered include those from waste management, drainage, dewatering, excavation and pollution.
- 7.2 By adopting an approach of minimising disruption to peatland, the volume of excavated peat can be minimised and the commonly experienced difficulties in dealing with surplus peat waste reduced. The generation of surplus peat waste is a difficult area which needs to be addressed from the outset given the limited scope for re-use. Landscaping with waste peat (or soil) may not be of ecological benefit and consequently a waste management exemption may not apply, and the position regarding disposal of waste peat within borrow pits can be very difficult. Early discussion of proposals with us is essential, and an overall approach of minimisation of peatland disruption should be adopted.

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

- 8.1 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.

- 8.2 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 (e.g. 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](#).
- 8.3 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](#).
- 8.4 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.
- 8.5 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).
- 8.6 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 and PPS, if required. The requirements from the obtained licences and consents should be included within the final CEMPs.

## **9. Site layout and nature of construction for marine developments**

- 9.1 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 and

subsea cabling. 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.

- 9.2 With regard to Section 2.4 in the scoping report and the neighbouring BOWL and SHETL developments opportunities to share trenches and combine cabling should be considered so as to reduce the footprint and cumulative impacts of these developments on the marine environment.

## **10. Offshore water abstractions and discharges**

- 10.1 Sensitive water uses, such as bathing waters and shellfish growing waters, and associated potential impacts should be assessed. The proximity to existing discharges and designated areas (i.e. estuarine abstractions and cooling water discharges), should also be assessed.

## **11. Land reclamation and construction**

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

## **12. Timing and duration of project**

- 12.1 All submissions should include information on likely timing and duration of the project, possible long-term locational and/or operational impacts and short-term construction impacts.
- 12.2 The local authority is the responsible authority for local air quality management under the Environment Act 1995; however we recommend that this development proposal is assessed alongside other developments that are also likely to contribute to an increase in road traffic. This increase will exacerbate local air pollution and noise issues, particularly at busy junctions and controlled crossing points. Consideration should therefore be given to the cumulative impact of all development in the local area in the ES or supporting information. Further guidance regarding these issues is provided in NSCA guidance (2006) entitled

[Development Control: Planning for Air Quality.](#)

- 12.3 Excavation works, particularly through drilling and blasting, may cause nuisance to adjacent land users due to the generation of dust and noise. Comments from the local authority environmental health officers should be sought on the potential nuisance to adjacent land users during the construction and decommissioning phases of the project.

### **13. Onshore engineering activities in the water environment**

- 13.1 In order to meet the objectives of the [Water Framework Directive](#), the on shore components of the development should be designed wherever possible to avoid engineering activities in the water environment. The water environment includes burns, rivers, lochs, wetlands, groundwater and reservoirs. We prefer the water environment to be left in its natural state, with engineering activities such as culverts, bridges, watercourse diversions, bank modifications or dams avoided wherever possible. Where watercourse crossings are required, bridging solutions or bottomless or arched culverts which do not affect the bed and banks of the watercourse should be used. If the proposed engineering works are likely to exacerbate flood risk, then a flood risk assessment should be submitted in support of the planning application and we should be consulted.
- 13.2 Scottish Planning Policy states “Culverts are a frequent cause of local flooding, particularly if the design or maintenance is inadequate. Watercourses should not be culverted as part of a new development unless there is no practical alternative and existing culverts should be opened whenever possible. If culverts are unavoidable, they should be designed to maintain or improve existing flow conditions and aquatic life. A culvert may be acceptable as part of a scheme to manage flood risk or where it is used to carry a watercourse under a road or railway” (Paragraph 211). Planning applications should be determined in line with this planning policy.
- 13.3 A site survey of existing water features and a map of the location of all proposed engineering activities in the water environment should be included in the ES or planning submission. A systematic table detailing the justification for the activity and how any adverse impact will be mitigated should also be included. The table should be accompanied by a photograph of each affected water body along with its dimensions. Justification for the location of any proposed activity is a key issue for us to assess at the planning stage. The detailed design of engineered structures in the water environment will be considered under regulations administered by us. Where flood risk may be an issue, this will need to be addressed at the planning stage.
- 13.4 Further guidance on the design and implementation of crossings can be found in our [Construction of River Crossings Good Practice Guide](#). Best practice guidance is also available within the water [engineering](#) section of our website.

### **14. Groundwater**

- 14.1 Cable laying, roads, foundations and other construction works can disrupt groundwater flow and impact on groundwater abstractions. To address this risk a list of groundwater abstractions sources both within and outwith the site boundary, within a radius of i)100 m from cable trenches, roads and tracks ii) 250 m from borrow pits and foundations) should be provided. Further details can be found in our Planning guidance on windfarm developments.
- 14.2 If groundwater abstractions are identified within the 100m and 250 m radii from development infrastructure, then either the applicant should ensure that the route or location of engineering operations avoid this buffer area or further information and investigations will be required to show that impacts on abstractions are acceptable. We hold some information on groundwater quality in the area which may be relevant and which is available on request through our Freedom of Information Service.

## **15. Onshore water abstraction**

- 15.1 Where water abstraction is proposed we request that the ES, or planning submission, details if a public or private source will be used. If a private source is to be used the information below should be included. Whilst we regulate water abstractions under The Water Environment (Controlled Activities) (Scotland) Regulations 2011 we require the following information to determine if the abstraction is feasible in this location:
- Source eg ground water or surface water;
  - Location eg grid ref and description of site;
  - Volume eg quantity of water to be extracted;
  - Timing of abstraction e.g. will there be a continuous abstraction;
  - Nature of abstraction e.g. sump or impoundment;
  - Proposed operating regime e.g. details of abstraction limits and hands off flow;
  - Survey of existing water environment including any existing water features; and
  - Impacts of the proposed abstraction upon the surrounding water environment.
- 15.2 If other development projects are present or proposed within the same water catchment then we advise that the applicant considers whether the cumulative impact upon the water environment needs to be assessed. The ES or planning submission should also contain a justification for the approach taken.

## **16. Borrow pits**

- 16.1 Detailed investigations in relation to the need for and impact of such facilities should be contained in the ES or planning submission. Where borrow pits are proposed, information should be provided regarding their location, size and nature including the depth of the borrow pit floor and the final reinstated profile.
- 16.2 The impact of such facilities (including dust, blasting and impact on water) should be appraised as part of the overall impact of the scheme. Information should cover, in relation to water; at least the information set out in [Planning Advice Note PAN 50 Controlling the Environmental Effects of Surface Mineral Workings](#) (Paragraph 53). In relation to groundwater, information (Paragraph 52 of PAN 50) only needs to be provided where there is an abstraction or groundwater dependent terrestrial ecosystem within 250m of the borrow pit. Additional information on groundwater is provided in Section 14.
- 16.3 Details of the proposed depth of the excavation compared to the actual topography, the proposed restoration profile, proposed drainage and settlement traps, turf and overburden removal and storage for reinstatement should be submitted. The reinstatement of borrow pits can raise significant waste management issues and it is essential that any proposals are discussed with our regulatory teams as part of the development of the scheme to ensure that such proposals are feasible in terms of cost and regulatory requirements.

## **17. Waste management**

- 17.1 Details of how waste will be minimised at the construction stage should be included in the ES preferably as part of the CEMD, 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
- 17.2 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.
- 17.3 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).

## 18. Air quality

- 18.1 The local authority is the responsible authority for local air quality management under the Environment Act 1995, and therefore we recommend that Environmental Health within the local authority be consulted. They can advise on the need for this development proposal to be assessed alongside other developments that could contribute to an increase in road traffic. They can also advise on potential impacts such as exacerbation of local air pollution and noise issues, particularly at busy junctions and controlled crossing points. They can advise on the cumulative impact of all development in the local area in the ES or planning submission. Further guidance regarding these issues is provided in NSCA guidance (2006) entitled [Development Control: Planning for Air Quality](#).
- 18.2 Excavation works, particularly through drilling and blasting, may cause nuisance to adjacent land users due to the generation of dust and noise. Comments from local authority Environmental Health Officers should be sought on the potential nuisance to adjacent land users during the construction and decommissioning phases of the project.

## 19. Flood risk

- 19.1 The site should 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 your 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 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 Flood Risk Assessment, 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](#).

## 20. Regulatory advice

20.1 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).

### **Scottish Natural Heritage**

Our advice below relates to the potential impacts from the offshore section of the transmission works required to connect the proposed Beatrice offshore windfarm to the National Grid.

We provide advice relating to:

- Hydrodynamic Processes & Coastal Geomorphology: p15 - 25 of applicant's scoping report.
- Benthic Ecology: p28 - 30 of scoping report.
- Fish of Conservation Concern: p31 - 37 of scoping report.
- Marine Mammals: p37 - 42 of scoping report.
- Ornithology: p42 - 43 of scoping report.
- Landscape, Seascape and Visual Impact Assessment: p45 of scoping report.

Our advice on each of these interests includes our consideration of potential cumulative impacts.

While Figure 2.2 (p14) shows the extent of the proposed study area for the Beatrice offshore cable, it would be helpful to have greater clarity on the specific route options that are being considered. There are a number of cables being proposed in the Moray Firth, including the SHETL HVDC link, and the export cable(s) for the Round 3 offshore windfarm zone. We recommend liaison between the various parties involved, to try and take a more strategic approach to planning these routes – including the cable landfall points. On Figure 2.2 it would also be helpful to present the proposed cable route options for the first development phase of the Round 3 offshore windfarm zone.

We have also had a number of discussions with the applicant and Marine Scotland regarding the use of a Rochdale envelope for the proposed Beatrice windfarm. Such an approach allows the applicant to retain flexibility in their consent application, if project details have not been confirmed by the time of application. With regard to the transmission works, does the applicant propose to use a Rochdale envelope? If so, to which project details will this apply? We recognise the importance of allowing some flexibility with regard to project design in the marine environment, however, it needs to be carefully balanced against increasing complexity of assessment.

In conjunction with the information to be gathered on the proposed cable route through geophysical, geotechnical and benthic survey work, we highlight that it would be helpful to have confirmed details on the following technical aspects relating to the installation and operation of the offshore export cable for the Beatrice windfarm:

- Type of cable (DC or AC?).
- Rate of cable-laying.
- Method of cable-laying (jetting? ploughing?).
- Footprint of area affected by cable laying.
- Method of cable protection (trenching? rock armouring?).
- Footprint of area affected by cable protection.

- Duration of cable-laying (how long will it take?).
- Direction of cable-laying (offshore in? inshore out?)
- Number and types of vessels to be used in cable-laying operations.
- Routes of vessels to cable works.
- Estimation of electromagnetic fields (EMF) potentially arising from cables.
- Estimation of noise emissions from cable-laying works.
- Anticipated lifespan of cable in this location (using any proposed method(s) of protection).

Having confirmed details and understanding of these technical aspects will be helpful for Environmental Impact Assessment (EIA) and any Habitats Regulations Appraisal (HRA) relating to the proposed offshore cable works.

Potential cumulative impacts may also need consideration in respect of EIA and HRA: we can advise further in this regard as part of our ongoing dialogue with BOWL and MORL through the Moray Firth Offshore Wind Developers' Group (MFOWDG). We highlight below the studies and modelling work, jointly commissioned by BOWL and MORL, which may be relevant to the offshore cable works for each proposal.

#### Hydrodynamic Processes & Coastal Geomorphology

We are aware that the applicant, BOWL, along with MORL – the developer for the Moray Firth offshore windfarm zone – have commissioned a joint study “Proposed Methodology for Coastal Processes EIA for the Beatrice and Moray Firth Offshore Wind Farm Developments”. It remains unclear whether the offshore cable routes and landfall points will be addressed in this study, and the scoping report for the Beatrice transmission works does not mention it.

As we previously advised (please see our response to the joint study, dated 14 January 2011), we **strongly recommend** that the direct, indirect and cumulative effects of the cable landfalls are considered within the joint study. It is important that any cable route through the ‘wave base’ (the region where waves actively affect the seabed) is carefully chosen, as well as the cable landfall point itself.

Section 3.2.1 of the scoping report (p23) should cross reference to Section 4.2.1. As indicated in the latter section (p62), consideration will need to be given to the geological interests of Spey Bay SSSI and the Cullen to Stakeness Coast SSSI. As we have previously recommended – in our scoping advice to the Beatrice windfarm proposal, dated 14 May 2010 – we think that employing an experienced coastal geomorphologist should help in the assessment of the suitability of potential landfall options, particularly if geological SSSI interests may be affected.

Given the number of proposed cables requiring landfall there is the potential for cumulative impact. We would welcome early dialogue with the applicant in this regard, and recommend their ongoing liaison with MORL and discussion with SHETL. With regard to Spey Bay SSSI, the confirmed cable landfall point for the Shetland HVDC connection is in this SSSI. We would welcome further dialogue with the applicant with regard to their proposals. We advise that the potential effects of sea level rise (amongst other climate change variables) should be considered within the planning of this development (known as ‘future-proofing’), particularly in respect of the cable landfall, and possibly also with regard to the onshore substation, dependent on location.

We confirm that the proposed cable-laying works can be scoped out of any HRA required for the Marine and coastal habitats of the Moray Firth, Dornoch Firth and Culbin Bar Special

Areas of Conservation (SACs). The advice we provided in Appendix E of our scoping response to the Beatrice windfarm (letter dated 14 May 2011) relates only to the turbines and their foundations: we confirm that the proposed export cable does not require consideration in this regard.

### Benthic Ecology

We have separately received a copy of the applicant's proposed benthic survey methodology and provided our advice on this in an email dated 6 June 2011. Our principle recommendation is that during survey work the applicant checks for habitats and species listed as Priority Marine Features, as well as checking for Annex I habitats.

SNH and JNCC are currently reviewing the lists of marine biodiversity and geodiversity features in order to help identify 'Priority Marine Features' including habitats and species for which MPAs could make a contribution to their conservation. SNH has drawn up a draft list of 'Priority Marine Features' (PMFs) in Scottish territorial waters, and JNCC is in the process of doing so for the offshore zone. The lists will be combined and submitted to Marine Scotland for their consideration and review later this year. In advance, further information on PMFs, including SNH's draft list, is available from:

<http://www.snh.gov.uk/protecting-scotlands-nature/safeguarding-biodiversity/priority-marine-features/priority-marine-features/>

We recommend that the submitted ES presents clear information on, and identification of, the main biotopes found along the chosen cable route (as well as along the other routes considered, for comparison). In this regard, the applicant has indicated that they will liaise with MORL in respect of benthic ecology: see Section 4.3.1, page 27 of the discussion document on cumulative impact assessment submitted jointly by BOWL and MORL. We also recommend that they liaise with SHETL in respect of the benthic survey work for the HVDC link.

This will be particularly important with regard to data-sharing and interpreting data in order to classify biotopes (see Section 4.3.7, page 32 of the discussion document). We have advised that this liaison should be formalised with regard to biotope classification, so that it is agreed and recorded consistently for the two windfarm sites and their proposed cable routes: please see our response to the discussion document, dated 26 May 2011. Any locations where there may be disagreement or differing interpretations of data should be highlighted for further discussion and/or consultation with ourselves and JNCC.

### **What potential impacts need to be considered?**

We agree with the scope of impacts to be considered as set out in the applicant's report (see Section 3.2.1, p23; Section 3.3.2, p29 and 30; and Section 3.3.3, p36):

- **Habitat loss:** the nature, extent and duration of habitats loss will primarily depend on the proposed method(s) of cable-laying and/or trench-digging, and/or whether cable protection is required (such as rock armouring). The EIA should consider loss of habitat once the technical aspects and proposed working methods have been confirmed (see introductory section above), and in the context of the biotopes recorded along the length of the cable route. If a Rochdale envelope approach is to be used, then habitat loss will need to be estimated for each option being considered, so that comparisons can be made.
- **Smothering effects / suspended sediment:** associated with the above impact, the applicant should consider the potential for benthic species to be smothered by sediment released from cable-laying and/or trench-digging (as discussed on p23 and p36 of the



scoping report). The potential for any buried contaminants to be released from such work should also be considered.

- **Electromagnetic effects:** the applicant will also need to consider the potential impacts on benthic communities from any thermal load or electro-magnetic fields (EMF) arising from the cables during operation (see further discussion in the next section).

#### Fish & Shellfish of Conservation Concern

In our scoping advice for the proposed Beatrice windfarm, we recommended that BOWL and MORL collaborate to address the possible cumulative and 'in combination' effects on fish and shellfish of conservation concern. As indicated in Section 4.4.9 (p45) of their cumulative impact discussion document, they intend to do so and will be including the proposed transmission works for Beatrice and for the Moray Firth Round 3 windfarm zone in their consideration.

As we advised in our response to this discussion document, dated 26 May 2011, the qualifying freshwater fish interests of the following Special Areas of Conservation should be considered:

Berriedale & Langdale Waters SAC  
River Evelix SAC  
River Moriston SAC  
River Oykel SAC  
River Spey SAC  
River Thurso SAC

We confirm that this advice on freshwater SAC qualifying interests updates that provided in our scoping response to the Beatrice windfarm site itself: the River Naver SAC and River Borgie SAC (to the north) and River Dee SAC (to the south) do not need further consideration in respect of the Beatrice offshore cable route, nor in respect of the proposed windfarm itself.

Other than this, the advice we provided on Habitats Regulations Appraisal in this previous scoping response (see Appendix E) remains current. Both BOWL and MORL should consider the effects of their offshore export cables on SAC fish interests, alongside consideration of construction impacts arising from the other offshore elements of each windfarm proposal including turbine placement and inter-array cabling (the cabling between the turbines).

The SAC fish species to consider are Atlantic salmon and sea lamprey, as well as any indirect effects to freshwater pearl mussel (which could arise from effects to salmonid species). SNH and JNCC have agreed – as discussed at our meeting with BOWL and MORL on 28 February 2011 – that the potential impacts to these SAC fish species can be considered through desk-based appraisal: the developers themselves are not required to undertake survey work in this regard.

Other fish and shellfish species of conservation concern – such as sea trout, European eel and other proposed PMFs – will need to be considered in the desk-based appraisal, as discussed below. Please also refer to the advice we gave in our scoping response to the windfarm, dated 14 May 2011.

#### **What potential impacts need to be considered?**

- **Smothering effects:** as discussed in the previous section for benthic ecology, the applicant should consider the potential for less mobile fish and shellfish species, and for the eggs of

species which spawn in the area, to be smothered by the sediment released from cable-laying and/or trench-digging works. Clarification of the footprint of the cable route and the timing / seasonality of operations would help in the assessment of these potential effects.

- **Construction noise:** we provided comment on the proposed methodology commissioned jointly by BOWL and MORL for underwater noise modelling in respect of Beatrice and the Moray Firth Round 3 windfarm proposals (advice sent by email on 20 April 2011). We recommend that this modelling work explicitly includes cable-laying and associated vessel activity as potentially noisy construction activities. This will ensure that these aspects are adequately considered with regard to the EIA and HRA processes.

If a Rochdale envelope approach is proposed, then the potential noise impacts arising from the full range of construction options for the offshore cable will need to be considered and compared.

For the offshore cable works we highlight that the qualifying interests of the River Spey SAC need particular attention. Other fish of conservation concern will also need to be addressed – including other species which use the area on migration, or for spawning or as a nursery ground, and those species which are less mobile such as shellfish.

- **Electromagnetic effects:** the response of fish and shellfish to electromagnetic fields (EMF) is poorly understood but will need consideration under EIA and HRA. It would be helpful if the applicant could estimate the EMF emissions from the chosen cable type (AC or DC) and compare this as follows:
  1. EMF emitted without any mitigation.
  2. Any residual EMF emitted after adoption of mitigation methods.

In particular, we seek to understand whether cable burial limits the strength, or reach, of EMF effects? Or may more advanced cable casing limit such effects? The adoption of precautionary mitigation may be particularly relevant in respect of reducing potential cumulative effects from the range of cables proposed in the Moray Firth.

If a Rochdale envelope approach is proposed for the Beatrice cable works, and the choice of cable type cannot be confirmed prior to a Section 36 application for consent, then the applicant will need to consider EMF transmissions from both cable types, AC and DC, in order for comparisons to be made.

The potential effects of EMF on the qualifying interests of the River Spey SAC needs consideration. Other fish and shellfish may also need consideration with regard to EMF – in particular we have highlighted elasmobranchs in our scoping advice to the Beatrice windfarm proposal (response dated 14 May 2010).

### Marine Mammals

BOWL and MORL have jointly commissioned a review of available information on marine mammals in the Moray Firth: “Technical Report on Pre-consent Marine Mammal Data Gathering at the MORL and BOWL Windfarm Sites”. While this report concentrates on the locations of the proposed windfarms, it is a useful collation of data which also has relevance to the proposed offshore cable works for each site.

Section 3.3.4 (p37 and p 39) of the scoping report identifies the key marine mammal species which need to be considered in respect of the Beatrice offshore cable works, although the reference to ‘common porpoise’ should be removed. Please also refer to Appendix E of our

scoping advice on the windfarm site, dated 14 May 2011, where we identify the SAC interests that may need consideration under HRA: bottlenose dolphin of the Moray Firth SAC, and common seals of the Dornoch Firth SAC.

### **What potential impacts need to be considered?**

- **Construction noise:** noise arising from the offshore cable works and associated vessels will need consideration in respect of marine mammals. As discussed above, we strongly recommend that the offshore cable works are included in the scope of the joint study on underwater noise commissioned by BOWL and MORL for the Beatrice and Moray Firth Round 3 windfarm sites.
- **Effects of ducted propellers:** BOWL is aware of this concern because we have raised it in response to their recent applications for geophysical and geotechnical survey of the cable study area. This matter can be further considered in respect of the offshore cabling works once the applicant has confirmed the technical details of their proposal (see introductory section).
- **Indirect effects:** as well as any direct effects of construction noise on marine mammals, indirect effects – particularly the effects of noise on their prey species – will need consideration. In this regard the proposed underwater noise modelling should be helpful (and see further discussion under the section on ‘Fish of Conservation Concern’ above).

### Ornithology

As agreed at our initial meeting with BOWL and MORL over their transmission works, held 28 February 2011, we consider that ornithological interests can be addressed through desk-based appraisal. While Section 3.3.5 of the applicant's report suggests scoping out ornithological interests, we do recommend that they are included for consideration under EIA and any HRA. We think a qualitative appraisal is likely to be helpful once the applicant has confirmed the technical details of their proposed offshore cabling works (see introductory section).

While we do not identify any requirement for boat-based survey in the cable study area, depending on the information available it may be necessary for the applicant to undertake foreshore counts at the proposed cable landfall point.

### Landscape, Seascape and Visual Impact Assessment

As agreed at our initial meeting with BOWL and MORL over their transmission works, held 28 February 2011, we advise that landscape and visual interests can be scoped out of the EIA for the offshore cable works – as indicated in Section 3.4.1 (p45) of the applicant's report.

### **British Telecom (Radio Network Protection Team)**

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.

## **Civil Aviation Authority**

We do not anticipate any aviation impacts associated with the onshore transmission works as the cables will be underground.

## **Defence Infrastructure Organisation**

I can confirm that we have no objections. However, the cable route runs through an area which is used by the Navy for their Joint Warrior Exercises. Therefore, I'd be grateful if you could provide information on the dates BOWL are planning to lay the cables when available.

## **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

## **Historic Scotland**

This letter contains our comments for our historic environment interests. That is scheduled monuments and their setting, category A listed buildings and their setting, gardens and designed landscapes included in the Inventory and designated wreck sites. This letter falls into two parts, the first covers the offshore elements of the proposed transmission scheme and the second covers its onshore aspects.

### **Offshore cable**

We welcome the recognition on page 45 that some of the actions involved with cable installation and removal may have an impact on marine archaeology. In light of that, I recommend that archaeological analysis of geophysics is undertaken as this is consistent with guidelines set out in Historic Environment guidance for the offshore renewable energy sector. We would also encourage the analysis of any geotechnical surveys which we are gathered for other purposes as part of the EIA process. This could make a positive contribution to our knowledge and in this regard it would be helpful if the results were archived through the Royal Commission on the Ancient and Historical Monuments of Scotland.

### **Onshore cable route and substation**

We welcome recognition that the proposed onshore elements of the proposed development may have an impact on the historic environment. However, I note the intention as set out in the scoping report to assess the scheme's impact on these features as part of the landscape and visual impact assessment (L&VIA). I would strongly advise against this as although there is a relationship between some aspects of the two assessments, the assessment of setting is also different to L&VIA. It will be important that your cultural heritage advisor draws out these differences and reports them as part of the cultural heritage chapter in any Environmental Statement produced. An assessment of the impact of the scheme on Inventory Gardens and Designed Landscapes should also be included in the cultural heritage chapter as they are designated primarily for their cultural significance. This is reflected in the fact that the designation of these assets is undertaken by Historic Scotland. You may find our

Managing Change guidance on assessing the effect of new development on setting helpful in considering this issue further.

On a technical note and in relation to Inventory gardens and designed landscapes, I note that there appears to be an error on page 75 of the scoping report which states that there are no Inventory sites within the study area. The map on page 81 shows that the study area crosses the Cullen House garden and designed landscape. Any assessment undertaken should demonstrate how the proposed cable route will impact on the cultural significance of this site.

It is not clear from the scoping report if you have contacted the Moray Council Archaeologist for information and advice on issues including unscheduled archaeology. I would advise that you contact the Aberdeenshire archaeologist at Planning and Environmental Service, Aberdeenshire Council, Woodhill House, Westburn Road, Aberdeen AB16 5GB if you have not already done so.

I hope this letter has been helpful to you. I would be happy to provide further comments as your assessment progresses if you would find this useful.

### **Inshore Fishery Group**

The following comments are restricted to the marine aspects of the scoping exercise as they relate to inshore fisheries within the area. Notation follows that within the report and original text is in italics.

It should be noted that the MFIFG responded to the BOWL EIA Scoping Exercise Consultation (our letter of 9<sup>th</sup> April 2010 to Stuart Szylak) and some key issues were raised regarding cabling within and export cabling from the site to shore. In this context it is considered that these two aspects should be considered as having potential cumulative and in combination effects, particularly with respect to EMF and thermal heat loss issues. It was made clear in our letter of 9<sup>th</sup> April that it is the total package of developments which require to be considered in terms of any possible environmental impact.

#### 1.4 OBJECTIVE OF THE SCOPING REPORT

This scoping report sets out the findings of the preliminary investigations into the potential environmental impacts and opportunities arising from the construction and operation of the Beatrice Transmission Works.

The only key Transmission Works component listed for the marine environment is Offshore Cable.

Based on an understanding that the individual turbines of the wind farm will generate in AC it is assumed that there would need to be a converter station or at least an interconnector to collect power before transmission through the export cable?

In past discussions it has been suggested that such a structure may well have to be located outwith the boundary of the wind farm site and effectively would be part of the export cable infrastructure. If this is the case it is considered that this should be considered as part of the Transmission Works and subject to this scoping exercise.

## 2.3 PROJECT DESCRIPTION

The wind farm requires an export cable to leave the Beatrice Offshore Wind Farm site and connect to the National Grid. .... To enable this connection the project requires approximately 65 km of subsea cable to the landfall point .....

Dependent on the final power output of the wind farm there are two potential options for the cable to be used dependent on whether the power from the wind farm is transferred as Alternating Current (AC) or Direct Current (DC). DC will be favoured for higher power outputs (likely >600MW).

From the descriptions given the DC cabling option would appear to have a lower impact on the seabed namely two trenches each containing two cables within a corridor between 250 and 500 m wide. However, it is understood that such a set up would require the current to be ramped up to high voltage and converted from the AC produced by the turbines. Such a system would require a converter station and no mention is made of the scale or siting of such a structure or of the potential environmental impact of this.

One of the main problems in seeking to anticipate any environmental issues associated with the export cabling is the lack of clarity on the form of electrical energy transmission. Depending on whether it is AC or DC this has considerable potential to influence the area of seabed impacted and also possible EMF and thermal impacts on the environment. Equally depending on energy form there is the option for cable runs to be optimised to negate EMFs through orientation of cabling or depth of trenching.

**It is considered that there is a clear need to better define the development before seeking to produce an Environmental Statement.**

## 3 OFFSHORE CABLE ROUTE

### 3.1 Introduction

The OSPAR Commission study "Assessment of the environmental impacts of cables" published in 2009 found that if sensitive benthic habitats and contaminated sediments were not disturbed that cable placement in Region II (the Greater North Sea) would be of low intensity in terms of environmental effects and that operationally the only potentially significant effects expected would relate to the generation of electromagnetic fields and heat.

### 3.2 Physical Environment

#### 3.2.1 Coastal Processes and Geology

##### Suspended Sediment Concentrations / Potential Impacts

It is not considered that there will be any significant impacts on the marine physical environment as a result of the operation of the cable. There is the potential (depending on design specification) for locally elevated temperature and/or electromagnetic fields but these would be unlikely to have any significant effect on physical environmental receptors but are considered later in relation to potential biological receptors.

#### 3.3.2 Seabed Marine Life

##### Potential Impacts

Potential impacts on benthic fauna during the operational phase include the following;

- Impacts on benthic communities related to thermal load on surrounding sediments and waters and the intermittent nature of these (Intermittent power supply which may occur from wind farms, which for example shut down in high wind, may result in

intermittent EM field and thermal load associated with cables which will have different affects from a constant power supply)

- Impacts on benthic communities due to the presence of electro-magnetic fields and the intermittent nature of these.

While the Studies, Methods and Assessment suggested are supported they do not appear to be comprehensive enough to assess the potential environmental impact on the seabed community of EMFs and waste heat generated by any export cable configurations.

In the context of EMFs there is a need to establish if these are likely to interact with the migration of important shellfish stocks (please refer to the letter of 9<sup>th</sup> April 2010 point 3.3.3). In addition the presence of fauna on a seasonal basis such as starfish and the potential impact of waste heat on their reproductive capacity and growth rate which may lead to predation on bivalve shellfish species needs to be considered (see also 9<sup>th</sup> April correspondence).

### 3.3.3 Fish Ecology Baseline

It is considered that the king scallop should be added to the list of important fish species which have nursery or spawning grounds in the area of the export cable corridor. Important commercial stocks of the species are found on the Smith Bank with juveniles likely to recruit to the fishery from the immediate area. Such individuals are often associated with coarse sand gravel substrates and bryozoan/hyroid communities onto which they settle post plankton stages.

The inshore waters of the corridor area are also important spawning and egg laying areas for squid. This is an extremely important shellfish for the local fisheries with recruitment typically taking place inshore in early spring based on autumn/winter spawning and egg laying. The egg masses are found attached to biogenic and man made structures and surfaces and are often seen on creels and ropes in the area. It will be extremely important to gain an understanding of the spawning and recruitment processes and the potential impact of disturbance caused by the cable laying process or operation (further detail of the importance of squid can be found in our letter of 9<sup>th</sup> April Section 3.3.4 Fish Ecology).

#### Potential Impacts

Potential impacts during construction / installation and decommissioning include the following;

- Localised seabed disturbance increase in suspended sediments during installation / removal of cable and seabed structures may in turn locally impact on fish feeding and spawning patterns.

Given the above and with particular respect to the spawning of squid stocks and the need for specific areas and substrate types for egg laying it is considered that there is likely to be a strong seasonal component to the impact of operations on spawning success within the area. Any such consideration should be identified with respect to the potential timing of cable laying operations.

During construction and decommissioning the impact on the demersal and pelagic fish populations in the Moray Firth is likely to be very small and is scoped out from further assessment.

Based on this statement it is assumed that shellfish stocks are not scoped out from further assessment. This is fully supported as the above species spawning and recruitment may be impacted by the construction works and this requires to be part of the EIA.

During operation there is the potential for electromagnetic fields to have some effect on sensitive fish populations both resident and transitory, a group being elasmobranch species which are sensitive to such fields.

With respect to shellfish species there is potential for lobster spawning migration to be impacted and this should be part of any assessment. In addition the impact on adult and juvenile squid migrations for both spawning when adults are found close to the seabed, and juvenile recruitment to the fishery, which involves an offshore migration, should be investigated. The sensitivity of cephalopod molluscs to EMFs appears to be largely unknown and requires to be established before assumptions are made.

#### Studies, Methods and Assessment

Following a review of available information on fish populations and ecology in the Beatrice Transmission Works corridor additional studies will be undertaken to assess the fish populations utilising the area.

The above is noted and it is considered that the prevalence of juvenile scallops and associated habitat type which is vulnerable to smothering by sediments should be evaluated together with any use of the area as a migratory route for lobster stocks. Such considerations obviously require the seasonal distribution of species to be evaluated across the corridor area. This is an important consideration with respect to the migration/ distribution and spawning of squid and the deposition of egg masses.

#### 3.4.5 Commercial Fisheries

##### Potential Impacts

Potential impacts during construction and decommissioning may include the following;

During construction / decommissioning fishermen will be excluded from the area around the cable laying vessel, cable and plough (or other sea bed equipment as utilised). This will potentially prevent fishermen from temporarily accessing parts of their regular fishing grounds. A cable installation rate 1 – 1.5 km per day, including for delays due to poor weather, is used for planning purposes by The Crown Estate in relation to installation of marine cables in sands and muds. As a result no one area would be expected to be excluded from access to fishermen for extended periods.

It is likely that where possible the cable will be buried limiting operational phase impacts on fixed or mobile gear fishing operations. In areas of hard ground the cable may require to be laid on the surface and/or under protective mattresses.

It is fully accepted that for operational safety reasons fishing vessel activity will be excluded from the cable corridor during construction. However, there is an issue with mobile gear safety following the disturbance of the seabed or with mitigation measures to protect the cable such as rock armouring or protective matting. These issues were raised in our letter of 9<sup>th</sup> April under section 3.4.5 Shipping and Navigation.

The trenching of cables into the seabed in areas of heavy clay has the potential to leave clay boulders exposed. If these are picked up and accumulate in mobile gear they become a safety risk during hauling or at least can cause gear damage. It is extremely important that the environmental impact of this is recognised and that mitigation measures such as over fishing of the trenched areas with heavy gear is planned for. In the context of areas of



seabed where cables are unable to be buried the use of matting or armouring must allow safe passage of fishing gear. These points need to be recognised within the EIA.

It should also be recognised that fishing activity with mobile gear for certain stocks is highly seasonal and as such timing of construction works may be able to avoid disruption to mobile gear activity. One good example of this is the inshore fishery for squid within the Transmission Works corridor. This is primarily a spring and early summer fishery with the stocks progressively moving further offshore. Timing of construction works inshore could effectively avoid conflict with this fishery.

I hope the above comments are useful in determining the scope of the EIA for the BOWL Transmission Works. If you require any further information regarding fishing activities in the area please do not hesitate to contact me.

I would be grateful if you would confirm as soon as possible the intended export cable configuration and the possibility of converter/interconnector stations being placed outside of the wind farm site boundary.

### **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. Please note that due to the large number of adjacent radio links in this vicinity, which have been taken into account, clearance is given specifically for a location within 10m of the declared grid reference (quoted above).

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.

JRC offers a range of radio planning and analysis services. If you require any assistance, please contact us by phone or email.

### **Maritime Coastguard Agency**

The optimum cable route based on the data provided does not appear logical; the ES should expand on the evidence base for the preferred potentially higher risk option both in terms of distance and traffic. Running the cable into Dunbeath would without the benefit of detailed data analysis appear to be a more appropriate route.

Overall, shipping appears relatively low, however there are distinct areas where shipping routes intersect the path of the cables particularly along the E/W tracks along the southern

coast of the Moray Firth. The traffic study and associated Navigational Risk Assessment will need to focus on these areas.

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. In particular reference to Annexe 2(4)vi, electro magnetic effects on ships compasses and navigation.

Particular attention should be paid to cabling routes and burial depth for which a Burial Protection Index study should be completed and, subject to the traffic volumes, an anchor penetration study may be necessary.

## **Marine Scotland**

Marine Scotland recognises that the full scope of the project has not yet been identified and would therefore expect the Environmental Statement to either resolve these issues or take the Rochdale envelope approach where the worst case scenarios are examined, especially with regard to either ac or dc voltages, EM fields and the number of cables and trenches required.

### **Offshore Cable Construction (section 2.3)**

Marine Scotland advises that the three methods described for installing the cables offshore vary considerably. Trenching followed by backfilling can result in the loss of sediment depending on the duration between dredging and infilling. It is surprising that jet trenching is equally efficient for installing cables into mud and sand. Also the depth of installation for the cables offshore is not recorded. Please provide additional information as to how the different cable options will impact on the marine environment for example if there are likely to be differences in the potential electromagnetic interactions with sensitive species.

### **Coastal Processes and Geology (section 3.2.1)**

#### **Tidal Range**

Marine Scotland regards the use of the phrase “co-tidal chart” confusing. Co-tidal lines are lines of constant tidal phase, whereas Figure 3.1 shows tidal range and tidal current speeds. The tidal ranges quoted in the text are not really supported by Figure 3.1 as is indicated in the text. Figure 3.1 shows that within the Beatrice Transmission Works corridor, tidal range varies between 2.51 - 3.5 m at spring tides and 1.01 - 2 m at neap tides. If you have alternative tidal range values please cite them.

#### **Tidal Currents**

Marine Scotland noticed that the ABPmer et al. (2008) reference is not (1) as indicated (page 23). Clarification is sought on whether the quoted current speeds, like the tidal range values, are inferred from Figure 3.1, and whether they are representative of the whole transmission works corridor. Figure 3.1 shows that the current speeds during neaps are up to 1 m/s within the transmission works corridor. Please provide detail on what depth these currents are at, or whether they are depth average.

### **Non-Tidal Influences of Sea Level and Currents**

Marine Scotland requests clarification on what is meant by “land - water interface”.

#### **Wave Regime**

Figure 3.2 shows that the annual mean significant wave height is 1.01 - 1.75m, not “1.33 - 1.54m”. It is unclear what is meant by “instantaneous significant wave heights”. Marine Scotland understands that this means that for 10% of the year the significant wave height is 2 – 2.5m. If this is correct please give information on what 10% of the year this represents.

The only mention of the met ocean equipment is in the last sentence on page 16. Marine Scotland requires clarification on whether these are deployed already, and how long will they be deployed for. Please state what an AWAC frame is and what it measures. Please also state what the point of the met ocean equipment is, what is measured, what the data shows, and how it will help you.

### **Potential Impacts**

The potential impacts identified are relevant and appropriate. In addition to the text it would be useful for the impacts to be tabulated indicating whether the impacts are expected during construction, operation and/or removal.

### **Studies, Methods and Assessment**

Marine Scotland appreciates that a baseline assessment of sediment transport processes is proposed. Similar methods should be used to investigate possible changes in these processes due to the wind farm and the cables. Similarly, the levels of suspended particular matter (SPM) expected during the installation and removal of the cables should be predicted or modelled. If the levels are predicted to change during installation/operation/removal of the cables, then how this might impact on both physical and biological sensitive receptors should be considered as part of an EIA.

### **Seabed Marine Life (section 3.3.2)**

Marine Scotland suggests that when looking at mitigation measures for Electromagnetic Field (EMF) field/thermal load on surrounding sediments, the worst case should be covered i.e. what would the maximum field and thermal load be if there was a period of time that the turbines were shut down due to high wind. It would be useful if the developers/contractors mapped the distribution of *Modiolus* along the cabling route (page 29 para 5). It would be interesting to see if *Arctica* appear in the benthic surveys, as a small patch of live individuals were identified in the Moray Firth (Witbaard *et al* 2003). Potential changes in the sediments (loss of fines for example) should be considered as there is the potential for release of contaminants from disturbed sediments. Marine Scotland advises that sediment samples be collected for both particle size and chemical analysis. Marine Scotland requires that the cable route is towed using a standard sled capable of catching video and still images and that this is analysed by a qualified benthic specialist. This is to ensure that quantitative data is gathered.

### **Fish Ecology (section 3.3.3)**

**Cod** – Marine Scotland believes that there is a key nursery ground for cod at the proposed site. The exact patch would need to be investigated as the Moray Firth cod are a thought to be a distinct group. There have been high densities of 0-group cod found in the area. The cod spawning period would be from February through to April but the peak time would be between February and March. There may be some spawning occurring in mid to late January but this is less likely. Due to the patchy nature of these nursery grounds a finer scale sampling programme is recommended to further advise on relevance of the proposed area for cod. Investigation into noise associated with the cable work should be mentioned with regard to cod. Cod leek using noise during their mating pattern and may be disturbed if this is in a similar range to the noise of the development, or disturbed during breeding (if spawning is found to occur). Lecking would occur a couple of weeks before and during the peak spawning period. It is thought that male Cod arrive on the scene first and setup patches and produce a series of grunts to attract potential mates and to display reproductive fitness. This is continued through the spawning period as Cod can mate with several individuals. Investigation of this would be useful when carrying out the noise survey.

**Herring** - Again Marine Scotland advises that it would be preferable to avoid works during herring spawning periods (Aug-Sep). As the cable route comes south this may be less of an

issue as the sediment will be unsuitable for herring spawning as it moves into the muddier sediments associated with the Nephrops grounds.

**Sandeels** – Marine Scotland had identified patches of sandeels in and around the site and proposed routes. Providing a patch is not completely within the cable route then there should be the opportunity for decolonisation of the site. There are records of sandeels off Cullen, and these may be important for wintering seabirds from Shetland. There may be some localised disturbance and suspended sedimentation but this should be limited due to the sediments involved.

**Diadromous and freshwater fish** - 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. The review is available from <http://www.scotland.gov.uk/Resource/Doc/295194/0111162.pdf>. This will assist the developers in identifying what pre-existing information is available and what supplementary site specific data will be required.

#### **Marine Mammals (section 3.3.4)**

Marine Scotland suggests that there should be some calculations to demonstrate the degree of alteration of natural fields (EMF) that would be caused by the cables. This will involve knowing the current in the cables, whether it is ac or dc, the degree of shielding inherent in the cable, the depth of burial and/or armouring, and the consequential alteration to natural fields at the sediment surface and in the water column. The predicted changes to fields should then be compared with what is known about sensitivity of mammals to EMF. Marine Scotland feel that there are several challenges to overcome as the exact nature of the cabling is unknown. The exact EMF field of ac and dc are not clearly defined in the document and a worst case scenario for EMF should be provided in the ES. In order to mitigate against corkscrew injuries to seals an MMO protocol will be required along with an EMP 3 months prior to work commencing.

#### **Cumulative Impacts (section 5)**

Marine Scotland welcome the idea that a joint approach should be taken from all developments in the area. This should help to establish a coherent approach to the possible impacts and resulting mitigation.

#### **References**

**Witbaard, R, Bergman, M.J.N.** 2003. The distribution and population structure of the bivalve *Arctica islandica* L. in the North Sea: what possible factors are involved?. Journal of Sea Research 50, 11-25.

#### **National Air Traffic Services**

The cable installation and operation (I assume also decommissioning) will not have an impact on civil aviation.

#### **Northern Lighthouse Board**

With regard to the consultation and the scope of the assessment, we would only comment on any part relating to Shipping and Navigational Safety. We would require that 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.

It may be necessary to mark the landfall site of the export cable routes depending on the location chosen after the OFTO process has been completed. 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 also welcome and encourage engagement with any other Offshore Renewable Energy Developers in order to work together to minimise the cumulative impact of site development in the vicinity.

### **Royal Yachting Association**

It seems unlikely that there would be any significant impact of the proposed works on recreational sailing either in the construction or operational phases. Most recreational vessels will pass along the coast and although the small harbours are used by recreational craft, the landfall will presumably not occur at one of them. We draw your attention to the possible opportunities for improving local harbour infrastructure during the construction phase of the project to the benefit of all harbour users.

### **Royal Society for the Protection of Birds**

The proposed content of the EIA scoping contains most of the relevant issues. However, the report recognises a potential impact on fish feeding and spawning patterns as a result of seabed disturbance during installation/decommissioning of the cable. It is noted that the Beatrice Transmission Works Corridor encompasses sprat and sandeel spawning areas, as well as a sandeel nursery area. These fish are an important food source for seabirds and therefore, any impact on such fish species may have a secondary impact on seabirds. Whilst the impact on fish may be localised, given the significant population declines in seabirds in recent years, it is suggested that any potential impact on their food source should be considered within the assessment. Therefore, RSPB Scotland recommends that the impact of construction / decommissioning on demersal and pelagic fish populations in the Moray Firth should not be scoped out from further assessment. In particular, the potential cumulative impact on fish resulting from this proposal and other developments in the area should be assessed.

RSPB Scotland welcomes the stated intention to work in liaison with SHETL, who are planning a high capacity electricity connection between the Scottish mainland and Shetland, regarding assessment of any potential cumulative impacts of the two proposed transmission cables.

It is accepted that the proposal is unlikely to have a significant long-term impact on moulting and overwintering bird species using the Moray Firth, although some temporary displacement will be experienced during the construction and decommissioning of the cable. Breeding and summering birds using the Moray Firth will also experience displacement during these phases of the development. This should be taken into account when considering potential impacts on the various coastal SPAs around the Moray Firth, many of which are designated because of the populations of breeding seabirds which they hold. In recognition of the above, the impact of bird displacement during construction and decommissioning should not be scoped out of the assessment.

We are satisfied that the proposed survey methods are adequate in order to allow the assessment of the impact on terrestrial breeding birds. In addition, RSPB Scotland welcomes the opportunity to be involved in the development of mitigation for the onshore cable and substation.

## **Scottish Government Planning**

1. The consultation letter refers to the Scottish Executive Planning Circular 15/1999. This Circular has been superseded by Planning Circular 3/2011: The Town and Country Planning (EIA) (Scotland) Regulations 2011. Also, while further practical guidance is contained in Planning Advice Note (PAN) 58 on Environmental Impact Assessment, published in 1999, it is our intention to update PAN 58 in due course, and the 2011 Regulations and Circular 3/2011 take precedence over the advice in that PAN.

2. The scoping report identifies Scottish Planning Policy as a relevant guideline. It also mentions the Moray Development Plan however in limited detail. The relevant development plan covering The Moray Council is the Moray Structure Plan 2007 and the Moray Local Plan 2008 which should be considered throughout the course of the EIA. The developer should be aware that the Moray Local Development Plan Main Issues Report is expected to be published for consultation in January 2012 and that will be a material consideration.

3. The ES should contain a section setting out the national, strategic and local planning policy context. In this case the National Planning Framework (NPF2), SPP and the development plan as described above.

4. The scoping report contains a section on Archaeology. The ES should take into account the recently published Planning Advice Note (PAN) 2/2012: Planning and Archaeology, published 27 July 2011.

5. It may be useful at this stage to highlight the main planning policy areas relating to the application site. Obviously a full assessment of these documents by the developer is required. In summary:-

- **National Planning Framework**

Recognises that the crown Estate has identified the Moray Firth as a location with potential for the development of offshore windfarms.

- **SPP**

National planning policy on renewables is set out in Scottish Planning Policy (SPP). Planning authorities should support the development of a diverse range of renewable energy technologies, guide development to appropriate locations and provide clarity on the issues that will be taken into account when specific proposals are assessed. Also where planning control extends offshore, planning authorities should ensure that development will not adversely affect the integrity and setting of scheduled wreck sites or wrecks designated under the Protection of Wrecks Act 1973 or the Protection of Military Remains Act 1986.

- **Moray Structure Plan 2007 and Moray Local Plan 2008**

Both note that Moray offers the potential for various forms of renewable energy and have policies and a range of criteria to consider applications against.

6. **Emerging Advice** - The Scottish Government is currently seeking to promote best practice in onshore and offshore wind generation, by leading the European Good Practice (GP) Wind Project. This European EU-funded project, identifies good practice in reconciling objectives on renewable energy with wider environmental objectives and in the active involvement of communities in planning and implementation. By bringing together developers, regional and local government, environmental agencies and NGOs from different countries to share experiences, the study team is developing a guide to good practice and a 'how to' toolkit, which will be used to facilitate deployment of renewable

energy in support of the 2020 targets. Countries participating in GP WIND are Belgium, Greece Ireland, Italy, Malta, Norway, Scotland and Spain. Sixteen thematic areas will drive the output of GP Wind, including one on ‘tackling cumulative impact issues’ and a draft paper on this topic is seeking to further define cumulative impact.

**Annex 2.**

**DEVELOPER APPLICATION AND ENVIRONMENTAL STATEMENT CHECKLIST**

- |  |                          |
|--|--------------------------|
|  | <b>Enclosed</b>          |
| 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<br>(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.