

Beatrice Offshore Windfarm – 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 WINDFARM,
MORAY FIRTH**

1. Introduction

I refer to your letter of 24 March 2010 requesting a scoping opinion under the Electricity Works (Environmental Impact Assessment) (Scotland) (EIA) Regulations 2000 enclosing a scoping report.

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

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

Under the Electricity Works (Environmental Impact Assessment)(Scotland)(EIA) Regulations 2000, Scottish Ministers are required to consider whether any proposal for an offshore device is likely to have a significant effect on the environment. Scottish Ministers have considered your request for an opinion on the proposed content of the 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 may be impacted by the proposed offshore wind farm. We would however state that references made within the scoping document with regard to the significance of impacts should not prejudice the outcome of the EIA process.

It is important that any development of 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 and 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. We would suggest that the range of options considered should be informed by the EIA process in order that these objectives can be achieved. Consultation with the relevant nature conservation agencies is essential and it is advised that this is undertaken as appropriate.

2. Aim of this Scoping Opinion

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

The purpose of this document is to provide advice and guidance to developers which have been collated from expert consultees whom the Scottish Government has consulted. It should provide clear advice from consultees and enable developers to address the issues they have identified and address these in the EIA process and the Environmental Statement associated with the application for section 36 consent.

3. Description of your development

From your submitted information it is understood, the proposed development is for a proposed offshore windfarm with the approximate electrical output of up to 920Megawatts (MW), located at its closest point 13.5km off the Caithness coastline, Moray Firth. The development can accommodate up to 184 turbines.

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

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 subsequent components/scenarios procured after the ES is submitted would be subject to further environmental assessment and public consultations period if deemed to be significant.

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 confirms that developments must be managed carefully to preserve listed buildings and their settings to retain and enhance any features of special architectural or historic interest which they possess. Consequently, both direct impacts on the resource itself and indirect impact on its setting must be addressed in any Environmental Impact Assessment (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

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/html/db/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. Historic Scotland would also be happy to provide any further information on all such sites.

9. Navigation

The Environmental Statement should supply detail on the possible the impact on navigational issues for both Commercial and Recreational craft, viz.

Collision Risk

Navigational Safety

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 consultee comments on ecology, biodiversity and nature conservation.

Species

The ES needs to 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, and on Conservation of Wild Birds (commonly known as the Habitats and Birds Directives), the Wildlife & Countryside Act 1981, the Nature Conservation (Scotland) Act 2004, the Protection of Badgers Act 1992, the 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 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 at an early stage to consult with SEPA as the regulatory body responsible for the implementation of the Controlled Activities Regulations (CAR), to identify 1) if a CAR license is necessary and 2) clarify the extent of the information required by SEPA to fully assess any license 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 scheme will require to comply with new legislation. In this regard we will be advised by the Scottish Environment Protection Agency (SEPA) as the regulatory body responsible for the implementation of the Water Environment (Controlled Activities) (Scotland) Regulations 2005, 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, several of which should be usefully utilised in preparation of an ES and during 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.
- Operational.
- Decommissioning.

Construction contractors are often unaware of the potential for impacts such as these but, when proper consultation with the local fishery board is encouraged at an early stage, many of these problems 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). 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 Environmental Statement should provide information relating to the preferred route options for delivering equipment etc. via the trunk road network. The Environmental Impact Assessment 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 Environmental Statement, e.g. for construction methods, mitigation, or decommissioning, form part of the application for consent.

Consultation

Developers should be aware that the ES should also be submitted in a user-friendly PDF format which can be placed on the Scottish Government website. Developers are asked to issue ESs directly to consultees. Consultee address lists can be obtained from the Energy Consents Unit. The Energy Consents Unit also requires 8 hardcopies to be issued internally to Scottish Government consultees.

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

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

Gaelic Language

Where s36 applications are located in areas where Gaelic is spoken, developers are encouraged to adopt best practice by publicising the project details in both English and Gaelic (see also Energy consents website above).

OS Mapping Records

Developers are requested at application stage to submit a detailed Ordnance Survey plan showing the site boundary and all turbines, access tracks and onshore supporting infrastructure in a format compatible with the Scottish Government'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 Scottish Government); all metadata should be provided in this format.

Difficulties in Compiling Additional Information

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

Application and Environmental Statement

A developer checklist is enclosed with this report to help developers fully consider and collate the relevant ES information to support their application. In advance of publicising the application, developers should be aware this checklist will be used by government officials when considering acceptance 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 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 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, Government officials will use the enclosed checklist and scoping opinion to scrutinise the application. Developers are encouraged to seek advice on the contents of ESs 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, officials 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 checked and accepted by SG officials.

Judicial review

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

Signed
Fiona Thompson

Authorised by the Scottish Ministers to sign in that behalf

Enclosed - Developer Application Checklist

14. Annex 1

Consultee Comments Relating To Beatrice Offshore Windfarm, Moray Firth

The following organisations provided a scoping opinion in relation to the Beatrice Offshore windfarm, Moray Firth

Statutory Consultees

Scottish Natural Heritage (SNH)

Non Statutory Consultees

RSPB

Civil Aviation Authority

Maritime & Coastguard Agency

BT Networks

Northern Lighthouse Board

RYA Scotland

Ports and Harbours

Marine Scotland

SNH Comments

POSITION STATEMENT

In principle, we support the development of marine renewable energy devices where sensitively designed and sited – as set out in SNH Policy Statement 04/01. For this offshore windfarm proposal, we highlight the key natural heritage interests which we consider should be scoped into the Environmental Impact Assessment (EIA). We provide our full advice on these interests in Appendix A, organised into those aspects which we consider apply to the development in general; those relevant to its offshore elements; and those relevant to the onshore works.

As part of our scoping advice we include the range of interests and potential impacts that may need to be considered in relation to regulation 48 of the Conservation (Natural Habitats, &c.) Regulations 1994 as amended – now commonly referred to as Habitats Regulations Appraisal (HRA). We give more detail on the legislative requirements relating to an HRA in Appendix B.

We provide our advice on HRA tailored to the potential impacts of the Beatrice windfarm proposal in Appendix D for Special Protection Areas and Appendix E for Special Areas of Conservation. These two appendices are cross-referenced to our EIA advice as set out in Appendix A.

While the applicant indicates that they will be consulting with Highland Council and various other local authorities over their proposal, we are concerned that the onshore elements of this development are not addressed in the scoping report. There is no information on cable landfalls or grid connections – no options appraisal or consideration of potential locations / routes and installation methods. Nor are there any details on port facilities, lay down areas, transport routes and other aspects of construction activity required for both onshore and offshore elements of the windfarm.

We strongly recommend that the applicant discusses this matter with Marine Scotland who will be acting as the consent authority for Section 36 applications, and also as the competent authority in respect of Habitats Regulations Appraisal (HRA; on which we provide advice in Appendix B). In order to consider the overall environmental impacts of this proposal, and to be able to provide advice on HRA to the competent authority, we highlight that we wish to see need information on both onshore and offshore elements together. We recommend that this information is collated into a single Environmental Statement and HRA report to be submitted in support of the Section 36 application, even if separate application(s) are then also made for the grid connection and onshore works.

Finally, we query the statements made in sections 1.5.1 (Policy Framework) and 2.1 (Site Selection and Alternatives) of the scoping report in relation to SNH Policy Statement 04/01 saying that 'the Moray coastline is one of three areas identified as likely to be 'more suitable' for offshore wind farm development' (see page 10) and that it is 'favoured as an area to develop large scale wind farms' (see page 14). We clarify that our Policy Statement does not provide this type of locational guidance; we were solely indicating that offshore windfarm development was likely to be restricted to shallower waters in the first instance due to physical and technical constraints:

Initially at least, the areas likely to be most suitable for development are near shore and shallow sea areas such as the Moray coast, Solway Firth, and east of Dundee.

RSPB Comments

We welcome the stated intention to collaborate over cumulative impacts assessment with Moray Offshore Renewables Group, which has rights to progress development of the adjacent Round 3 site. It should be noted, however, that there may also be a need for cumulative assessment of bird impacts on various SPAs to consider impacts arising from other offshore developments especially, but not limited to, wind in the case of seabirds. Should there be impacts – beyond *de minimis*- on other species, especially migratory swans, geese and ducks, then consideration of cumulative impacts on other SPAs arising from land-based Windfarms may also need to be considered.

It is suggested that sub-structure towers may be of lattice design. If parts of the substructures are regularly exposed above wave height, the EIA should consider the likelihood of seabirds and migrant landbirds using these as perches and whether this might lead to any increased likelihood of collisions. This also applies to anemometer masts.

We are pleased to note (p.48) that “Outputs from previous studies (e.g. the Beatrice demonstrator EIA) will be reviewed and utilised where appropriate.” Further studies carried out here, including the PhD study of radar observations, should also be accessed.

We welcome the commitment to carry out two years of monthly ship-based bird surveys to a standard methodology. This is in addition to the aerial photography surveys from October 2009 to March 2010 which complement the HiDef Round 3 aerial digital video survey, although it is unclear whether these are to similar methodologies. Such studies will not, however, provide information on birds’ usage of the area during bad weather or at night and radar studies to elucidate activity at these times will also be needed.

Given the potentially very large size of this array, it will be essential to address the extent to which birds may be excluded from what is likely to be an important feeding area and resultant population impacts. An assessment must also be made of collision risk, to include consideration of the effects on the energetics of flying birds, should they modify their trajectory or altitude to avoid turbines, will also be necessary. This should include flights made in adverse weather or visibility.

We note that this area lies within a nursery area for sandeel and herring and spawning area for sandeel and sprat, making it an important fishing area for seabirds. If fishing vessels are to be excluded from the windfarm area, any secondary impacts on seabirds should also be considered.

Many species of seabird have had a run of very poor breeding seasons and, although many species are long-lived, significant population declines have been

noted. This must be taken into account in any consideration of predicted windfarm impacts on SPA populations.

A particular problem arises from the difficulty in attributing individual seabirds recorded at sea to particular SPA breeding-sites. Foraging ranges of some species are very extensive and birds may not come from the nearest SPA. Direct observational methods may be inadequate and the use of radar or other forms of remote sensing may be required. Whilst attaching tags may give valuable information on where birds have gone, catching large enough samples of cliff-nesting species, perhaps at several potential SPA source-sites, is a considerable task. Nevertheless, it will have to be demonstrated, beyond reasonable scientific doubt that no adverse effect on site integrity will occur. Suitable precautionary assumptions may be made about the totals of birds currently using the site and which could be affected by any windfarm proposals and a worst-case scenario of all individuals attributed to particular, source SPAs. In this particular instance, the proximity of the East Caithness Cliffs SPA, the much greater distance of other source SPAs, information from the Beatrice demonstrator EIA and subsequent studies should all help inform a decision on whether a tagging programme is essential. However, best practice is clearly that prospective developers should carry out such studies and we would encourage all applicants to pool resources into a comprehensive programme involving sufficiently-large samples of birds, of all species, at the range of SPA colonies. The downside of not embarking on such a programme at an early stage is that a decision to consent development may be held up by the absence of data which would permit a conclusion of no adverse impact. As the fitting of tags and subsequent tracking of where birds go can only be carried out at certain times of year, any delay may be considerable.

This proposal is not directly connected with, or necessary to, site management for nature conservation. As it cannot be discounted, with reasonable scientific certainty, that it will not have a significant effect upon the East Caithness Cliffs SPA (at least) then an appropriate assessment, under the terms of the Conservation (Natural Habitats &c) Regulations 1994, will be required.

CIVIL AVIATION AUTHORITY (CAA)

Directorate of Airspace Policy

I trust the following, which fundamentally mirror comment previously provided for Sea Energy Renewables, is useful. I should initially state that, by and large, I believe the SR acknowledges the major, potential, issues associated with the wind turbine development. Like any wind turbine development of this scale, the Beatrice proposal has the potential to impact upon aviation-related operations in a number of ways; the Department for Trade and Industry (DTI – now the Department for Energy and Climate Change)-sponsored document

‘Wind Energy and Aviation Interests’ and Civil Air Publication 764 refer¹. The following aviation issues (most of which are acknowledged within the SR) are relevant and should be addressed / discussed within any future associated Environmental Impact Assessment:

- *The location of the Beatrice development is such that there would be a potential impact upon helicopter operations associated with offshore platforms. It is essential that related consultation is conducted at the earliest opportunity with local helicopter and platform operators to quantify the scale of such impact upon helicopter operations:*
 - o *Offshore Helicopter Platforms. For background at Enclosure 1 is a short CAA paper associated with the aviation requirement for obstacle free zones within 6 nm of offshore helicopter platforms; clearly the subject development lies within 6nm of offshore platforms.*
 - o *Whilst the CAA stands ready to provide regulatory comment on the operation of helicopters at offshore destinations, it is for the helicopter and offshore platform operators to assess the scale of the impact upon operations and for the Department to consider whether any associated mitigation is appropriate and/or sufficient. In the mean time, it is essential that further consultation takes place involving the windfarm developer and the local helicopter and offshore platform operators aimed at agreeing a mutually acceptable way forward. In respect of the provision of air traffic services to helicopter activity in local airspace, it is essential that consultation involve relevant air traffic service providers at the earliest opportunity.*
- *Notwithstanding the helicopter related comment above there are wider ranging NATS radar related issues that need to be assessed. Initial discussion should take place between the developer and NATS.*
- *The potential for the development to impact upon operations associated with Wick Airport should be considered. Given that aerodrome safeguarding responsibility rests with the relevant aerodrome operator / licensee, it would be prudent to open lines of communication with Wick Airport. An appropriate point of contact is:*

- Ms Anne Phillips
Operations Manager
Head Office
Highlands & Islands Airports Ltd
Inverness Airport
Inverness
IV2 7JB

Telephone: 01667 464244

E-Mail – aphillips@hial.co.uk

- Some or all of the wind turbines will need to be equipped with aviation warning lighting. The legal requirement for aviation obstruction lighting on offshore wind turbines is formally documented within the UK Air Navigation Order 2009 (Article 220 refers). A related DAP Policy Statement is provided at Enclosure 2. Should any party wish to discuss this aviation lighting requirement further, the appropriate CAA point of contact is:

Mr Mark Smailes
ORA5
Directorate of Airspace Policy
CAA House
45-59 Kingsway
London
EC2B 6TE

Telephone 0207 453 6545

- International aviation regulatory documentation requires that the rotor blades, nacelle and upper 2/3 of the supporting mast of wind turbines that are deemed to be an aviation obstruction should be painted white, unless otherwise indicated by an aeronautical study. In isolation, the CAA would make no special case for marking.
- The developer should be aware that there would be a requirement for the Beatrice Offshore Windfarm (and all other similar offshore developments) to be charted for aviation purposes. In addition to the requirements of DfT / ODPM Circular 1/2003, Annex 2, it is recommended that the Defence Geographic Centre be kept fully apprised of the windfarm's development. Appropriate contact details are:

Defence Geographic Centre
AIS Information Centre
Jervis Building
Elmwood Avenue
Feltham
Middlesex
TW13 7AH
Telephone: 0208 818 2708

- We also recommend that as and when construction time frames are established specific consultation with the CAA is conducted such that charts

can be updated in a timely fashion and the turbines can be collectively promulgated to the aviation community as aviation obstacles. The appropriate CAA point of contact is Mr Mark Smailes, contact details as before.

- In reference to any landfall developments, we would not anticipate needing to make any observations other than to highlight any potential need for consultation in accordance with DfT / ODPM Circular 1/2003; this to identify any aerodrome specific safeguarding issues.

Maritime & Coastguard Agency

Navigation

It should be noted that Annex 4 of MGN 371 recommends that wherever possible individual OREI markings should conform to a "spreadsheet" layout and it is not clear from the diagrams provided how this will be achieved

Mention should be made of any Marine Environmentally High Risk Areas (MEHRAS) on the adjacent coastlines

The Annual Mean Significant Wave Height Chart (Fig 3.1) appears incomplete

MGN 372 Offshore Renewable Energy Installations (OREIs): Guidance to Mariners Operating in the Vicinity of UK OREIs is also a useful reference document within the suite available on the MCA website.

We are a little concerned to see the Airborne Noise and pipelines and cables topics have been scoped out, but would expect MGN 371 Annex 2 (4) v and Annex 1 (3) a to be fully addressed. The latter, burial depth of the cabling will be of particular interest in view of the Young Lady incident and the HSE/DfT review of strategic pipelines/cables.

The impact of the proposed quadropod structures will also be of interest in relation to Annex 2 (4) ii of MGN 371 as previous studies in that area that have largely been undertaken with monopile developments.

The cumulative and in combination effects presented by the adjacent Round 3 proposed development will also be of importance.

BT Networks

BT Networks have had a look on their systems and can confirm that the proposed Wind Farm will not impact on any of our radio links

Northern Lighthouse Board

We would advise that the Northern Lighthouse Board has given an initial response to the EIA Scoping Opinion request and that any formal recommendations for lighting and marking will be given through the Coast Protection Act 1949 – Section 34 process. We would anticipate that the CPA application would include a Navigational Risk Assessment in accordance with the requirement of MCA Marine Guidance Notice 371. We welcome and encourage the developer's intention to work together with Moray Offshore Renewable Limited, the Round 3 developers, to minimise the cumulative impact of site development, and look forward to working with both developers.

With regard to the Section 36 application consultation and the scope of assessment, we would only comment on that part relating to Shipping and Navigational Safety contained within several sections of the consultation document.

We note that Notices 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 due to the international use of this area of UK sea. The warnings should be promulgated before any commencement of any installation, operation, maintenance and decommissioning periods.

The requirement to install cables to shore would need separate comment contained within the Navigational Risk Assessment.

Under the Merchant Shipping Act 1995 (sections 193 and 198), the Northern Lighthouse Board (NLB) has the duty of superintendence over all Aids to Navigation (AtoN) within its area of jurisdiction. To this end we work in partnership with all authorities to provide a seamless interface between our own statutory and other Aids to Navigation, for the safety of the mariner.

We would anticipate that the development site would be marked with buoyage during the construction and decommissioning phases, and with Aids to Navigation based on IALA Recommendation O-139 installed on the turbines during the operational phase. The Statutory Sanction of the Commissioners of Northern Lighthouses must be sought to deploy, exhibit and subsequently remove any proposed navigational lighting or buoy stations required within any conditions of the consent to establish the Beatrice Offshore Wind Farm or for any preparatory work.

RYA Scotland

Position on offshore Energy developments attached to email.

Ports and Harbours

The application must include a full Navigation Risk Assessment in line with MGN 371.

Marine Scotland

Recently, offshore wind has focussed on large scale windfarm sites leased by the Crown Estate for Round 3 and Scottish territorial waters. These will involve the installation of a large number of turbines over several years to ensure the UK and Scottish Governments meet their commitments to generating electricity from renewable sources. Issues associated with cumulative and in combination effects of these developments will arise. At the other end of the spectrum is the installation of small demonstration projects. I have the following comments from our internal consultees within MS-LOT and Marine Scotland Science (MSS).

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

Proposed survey techniques

The scoping document seems to have identified the key impacts with regard to the development. Useful sources of existing surveys and studies have been identified but these may not cover the whole area. However the proposed combination of video survey and benthic grabs is essential to adequately determine the dominant habitat types and species present in the development area as large epifauna are generally under sampled by grab and trawl sampling. The developer has noted that boulder groups are important to the biodiversity of the area and plan to mitigate any impacts on these habitats.

An impact matrix would be a good idea to layout the potential impacts of each phase of the development. In the Environmental Statement (ES) it would be helpful for the applicant to include the following information in respect of each phase of windfarm development:

Construction

There should be an assessment of the extent and degree of damage likely to be expected on the intertidal mudflats during the construction of the turbine and the laying of the cable. The developer should provide evidence of the presence or absence of qualifying habitats or species in the vicinity of the marine turbines and cable routes especially *Modiolus modiolus* beds. Existing surveys or data may be acceptable if they can provide sufficient detail of the species and habitats present. Considerable disturbance to benthic habitats will occur from laying the inter-turbine cables by trench. Other less disturbing methods should be considered in the ES.

Details of any noise pollution due to construction and its possible effects on cetaceans/pinnipeds/fish will also be required. Noise assessments should take into consideration background noise, including vibration produced from ships' engines, piling hammers and auguring operations during the construction of turbine foundations. Considerable studies have already been conducted on cetaceans in the area, but particular cause for concern is the potential additional extensive Round 3 wind farm site to the South of this development.

The proposed development will need to consider potential impacts on migratory fish including salmon, sea trout, lamprey and sandeels during all phases of the project. The potential for offshore renewable projects to impact on migratory fish will vary depending on the design and location of the development in relation to migratory routes for adults and juveniles. Potential impacts may include physical or avoidance reactions at both the individual and population level and there may also be avoidance due to electromagnetic sensitivity at both adult and juvenile stages.

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

Operation

The proposed plans for the studies into the effects of noise during the operational phase should be sufficient to enable an assessment of impacts. Once the turbines are installed and operational, there is the potential for the development to generate noise over the longer term (for example, that generated by the gears of the turbines).

Benthic surveys

The combination of video survey and benthic grabs is essential to adequately determine the dominant habitat types and species present in the development area, as large epifauna are generally under-sampled by grab and trawl sampling.

Grab, beam trawl and TV surveys seem appropriate but effectiveness would depend on survey design and coverage. Beam trawls, for example, may not adequately sample all fish species present / known to be present in the area and grabs are not a particularly effective way of obtaining quantitative information on scallops or *Nephrops*. MS-LOT would welcome sight of the finalised methodology before the surveys commence.

Acoustic survey information should be used to develop a seabed habitat map, and to steer the video and grab surveys to cover the habitat range present.

There should be reference to JNCC biotope within section 3.3.3 Seabed Marine Life, the communities discussed need to be defined and described in more detail. Refer to SNH Report No 338 "Sublittoral Biotope Mapping of the Moray Firth SAC". An intensive literary assessment should also be carried out as more evidence is required to support the statement 'only whelk and edible crab are likely to occur on smith bank'. The introduced Magellan Mussel species is spelt *Aulacomya ater* and has been recorded twice, once in 1994 and again in 1997.

Inshore Fisheries

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

Commercial fisheries

The range of data and information sources on fisheries to be used in the EIA and identified in the scoping report is reasonably comprehensive. The fisheries sensitivity maps for the area are presented as are analyses of landings data for UK vessels at the ICES statistical rectangle level.

VMS fishing effort data could be used to evaluate the importance of the area to scallop dredgers - identified as the principal fishery on and in the vicinity of the site, and also for fisheries involving other towed gears. Such data could be obtained from Marine Scotland - Compliance (although this probably could not be provided to developers in its raw form) and it only indicates activity of vessels > 15 m in length.

Although there are landings of *Nephrops* recorded for ICES stat rectangle 45E7 the fishery in the immediate vicinity of the site is unlikely to be significant - the *Nephrops* fishery in the Moray Firth is located on more muddy grounds in the south - in areas indicated as sandy mud and muddy sand on the sediment map on page 30 of the scoping report. Marine Scotland Science conducts annual surveys in the area to estimate *Nephrops* abundance. The fishery in this area is exclusively a trawl fishery.

Data on small vessel (<15m) fishing activity, spatially resolved below ICES stat rectangle level is not currently available and it is not clear from the report how important it is within this area or how it might be impacted by the displaced of fishing effort for example. Therefore an assessment that adequately considers the smaller fishing fleets would be required.

We would also like to highlight two additional sources of information - ABMer have prepared a report on the value of fisheries 'COWRIE FISHVALUE-07-08' and Daniel Dunstone published the 'Development of spatial information layers for commercial fishing and shellfishing in UK waters' to support strategic siting of offshore wind farms on the 5th March 2009 on the Cowrie website.

The developer has identified the Defra guidelines (page 72) as a source of information to help develop the scope of the assessment, which seems very comprehensive. They have identified a range of potential impacts on fisheries associated with the construction, operation and decommissioning. The Defra guidelines also include '*concerns raised by local fishermen / fishermen's organisations*'. The developer should contact the Moray Firth Inshore Fisheries Group and discuss any concerns associated with future developments and how they will affect lobster stocks and fisheries in the area. They submitted a proposal to MSS for work on lobster movements to the Scottish Industry Science Programme in 2010. This did not attract funding under SISP because of the timescale as > 1 year was required. However the Crown Estate FLO has expressed interest in taking it forward with funding from elsewhere.

In addition the developer might consult or cross reference with:

BWEA Best Practice Guidelines for Consultation and Recommendations for Fisheries Liaison

OSPAR (2008) Guidance on Environmental Considerations for Offshore Wind Farm Development. Reference number: 2008-3

Offshore Wind Farms (2004), Guidance note for Environmental Impact Assessment in respect of FEPA and CPA requirements, version 2 – June 2004.

Cumulative and in combination effects:

The possibility that the developments of wind farm sites in Moray Firth particularly when extended to zone 3 will displace fishing effort (e.g. scallop fleet) and that this will have detrimental effects on stocks or fisheries elsewhere should be considered. The assessment of the impact of the loss of fishing grounds and possible adverse effects on local or more distant stocks subject to increased fishing pressure are not generally identified in guidance documents.

It is recognised that the Beatrice Offshore Wind Farm abuts a separate and larger offshore site that is to be developed as part of the UK Round 3 round. In assessing the environmental impacts of the Beatrice Offshore Wind Farm development it is important to consider the cumulative impacts arising from the Beatrice development taken together with the Moray Firth Round 3 development, as far as they are known at the time of assessment. We welcome the collaborative approach and the creation of the Moray Firth developers group and look forward to reviewing the approach to cumulative and in combination impacts for the Moray Firth offshore wind farms.

A cumulative and in combination impact assessment is also a requirement of the Habitats Regulations with respect to the designated SACs and SPAs which may be affected. As a result, the cumulative and in combination assessment of impacts on the marine mammals and seabirds of the Moray Firth's European designated sites will be an important consideration within the EIA process. Other cumulative effects, which consider the impacts arising from the proposed Beatrice Offshore Wind Farm in the context of other non wind farm developments (e.g. oil and gas operations) and activities (e.g. the shipping and fishing industries) will also be considered in the course of the EIA.

Natural Fish Ecology

Section 3.3.4 includes and makes reference to the fishery sensitivity maps, to identify maximum spawning and nursery habitat. Although these are useful (indicative) sources of information it is likely that for some species there is more recent and/or site specific information available from e.g. Marine Scotland Science. Particular species sensitivities should be recognised. For example:

The number of cod nursery areas has been reduced with the decline in the stock and so historic summaries may exaggerate the extent of distribution and fail to highlight the importance of what are now relatively discrete areas. Marine Scotland Science work indicates high densities of 0-group cod were very patchily distributed and so finer scale sampling would be required to provide robust advice on the relevance of the proposed areas for juvenile cod. Cod are currently scarce in the Moray Firth and there is little spawning activity in this region. During the 1960s and 1970s there was a large fishery in the Moray Firth.

Sandeels are also found on Smith Bank and may be important to local predators but very little data exists since this area is not commercially fished.

Mammals: Section 3.3.5

It is not easy to understand what the developers are proposing to do, they rightly recognise the sensitivity of mammals, but the scoping study presents no data on distribution or abundance. The scoping report does not give sufficient information to assess the adequacy of the survey work or the likely uncertainty in the data. The report states that underwater noise modelling will be done but it doesn't specify how or whether this will include any measurements. This section also states that mammals will be counted during boat-based bird surveys; it is "Likely" that passive acoustic monitoring will be done but it doesn't provide any details in order for us to make comment. The developer hopes to get access to the data from the current DECC project has this been agreed and when will the data become available?

There is no discussion of during and post development impact monitoring or assessment, or indication of how the results of any survey and monitoring work will be assessed as satisfactory or otherwise.

Birds: Section 3.3.6:

The developers have a good series of boat and aerial surveys completed or in hand, this should provide adequate data on the birds at sea but maps should be provided to show the extent of the surveys outside the wind farm footprint.

The text gives no indication as to how the data will be interpreted, how acceptable levels of impact might be developed, how the cumulative and in combination assessment will be done, how connectivity with SPAs might be handled, etc. The impact mechanisms are also limited in scope, for example there is no mention of possible impacts on prey species, or on the consequences of short or long term exclusion from fishing grounds on nesting birds. No mention of numbers of breeding birds. All of these questions above have to be answered within the ES.

The developer should bear in mind the requirement of Appropriate Assessments for seabirds and marine mammals may be required which will be undertaken by the competent authority – Marine Scotland.

At this stage of the project the sub-structure and foundation design are under development and the engineering team are currently undertaking a review of the potential design options in order to select the optimal approach to sub-structure and foundation design. The Beatrice demonstrator project uses an open lattice tower with quadropod type of foundation technology, the specification of these being 70 m tall from seabed to tower connection point. Currently the quadropod is under consideration along with other approaches such as monopiles and gravity base structures. The ES will discuss all of the options stipulated above as options.

Cable route and layout

We agree that the re-filling of the trenches and re-stabilisation of the seabed should be reasonably quick, dependent on local tide / current regime. Marine Scotland would like to emphasise that all developers are required to include maps, baseline data and any details associated with the cable route within their ES as it is incorporated into the overall footprint of the works.

Appendix A

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

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

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

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

1. Identify use of the proposed development area by diadromous fish (salmon, sea trout and eels)

- a. Which species use the area? Is this for feeding or migration?
- b. At what times of year are the areas used?
- c. In the case of salmon and sea trout what is the origin / destination of fish using the area?

2. Identify the behaviour of fish in the area

- a. What swimming depths do the fish utilise
- b. Is there a tendency to swim on or offshore

3. Assess the potential impacts of deployed devices on diadromous fish during deployment, operation and decommissioning phases. Potential impacts could include:

- a. Strike
- b. Avoidance (including exclusion from particular rivers and subsequent impacts on local populations)
- c. Disorientation that could potentially affect behaviour, susceptibility to predation or by-catch, or ability to locate normal feeding grounds or river of origin
- d. Delayed migration

4. Consider the potential for cumulative impacts if there are multiple deployments in an area.

5. Assess 1-4 above to determine likely risk.

- a. If there are insufficient data to determine use of the development area, these should be obtained
- b. If there are insufficient data on the origin / destination of fish using the area then these should be obtained
- c. Where it is not possible to obtain site specific data, the developer should make a convincing argument why this is the case and apply appropriate expert judgement based on published information.

6. If there is any remaining doubt as to the potential impacts of a particular development, then the developer should recommend a scientifically robust monitoring strategy to assess any impacts either on stocks as a whole, or on particular rivers as necessary.

Marine Scotland Science has just completed a review of migratory routes for Atlantic salmon, sea trout and eels relevant to Scotland, which should be available in June 2010. This will assist the developers in identifying what pre-existing information is available and what supplementary site specific data will be required.

Annex 2.

DEVELOPER APPLICATION AND ENVIRONMENTAL STATEMENT CHECKLIST

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

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

N.B. Developers are encouraged to use this checklist when progressing towards application stage and formulating their Environmental Statements. The checklist will also be used by officials when considering acceptance of formal applications. Developers should not publicise applications in the local or national press, until their application has been checked and accepted by officials.