moray offshore renewables ltd

Environmental Statement

Technical Appendix 1.3 B - Scoping Opinion (OGS)

Telford, Stevenson, MacColl Wind Farms and associated Transmission Infrastructure Environmental Statement

edp renewables
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MINISTRY OF DEFENCE

Richard Maisey
Safeguarding Assistant

Safeguarding - Wind Energy
Defence Estates
Kingston Road
Sutton Coldfield
West Midlands
B75 7RL

Cyranne Taylor: 0121 311 2195
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Mr Craig Milroy
Moray Forth Offshore Limited
Floor 4
40 Princess Street
Edinburgh
EH2 2BY

APPENDIX 1.3 B

Your Reference: N/A
Our Reference: DE/C/SUT/43/10/1/9405

9 September 2010

Dear Mr Milroy

MOD SAFEGUARDING: – MOD RADAR AND FLIGHT SAFETY WIND ENERGY SAFEGUARDING INTERESTS

Proposal: Notice Of Environmental Impact Assessment Scoping Study

Location: Moray Firth (Offshore)

Thank you for consulting the Ministry of Defence (MOD) on the scoping request with respect to the above proposal.

The scheme outlined involves the construction of approximately 200 free standing wind turbines with associated infra-structure. The turbines are expected to be 182 metres to blade tip above ground level.

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

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

Air Traffic Control (ATC) radar

The turbines will be between 33.6 and 76.8 km from; in line of sight to; and will cause unacceptable interference to the ATC radar at RAF Lossiemouth. Wind Turbines have been shown to have a detrimental affect on the performance of the MOD's Air Traffic Control (ATC) Watchman radars. These affects include the desensitisation of radar in the vicinity of the turbines, and the creation of "false" aircraft returns which Air Traffic Controllers must treat as real. The desensitisation of radar could result in aircraft not being detected by the radar and therefore not presented to Air Traffic Controllers.

DEFENCE ESTATES
Delivering Estate Solutions to Defence Needs

Controllers use the radar to separate and sequence both military and civilian aircraft; in busy uncontrolled airspace radar is the only sure way to do this safely, maintaining situational awareness of all aircraft movements within the airspace is crucial in achieving a safe and efficient Air Traffic Service; and the integrity of radar data is central to this process. The creation of "false" aircraft displayed on the radar leads to increased workload for both controllers and aircrews, and may have a significant operational impact. Furthermore, real aircraft returns can be obscured by the turbine's radar returns making the tracking of conflicting unknown aircraft, the controllers own traffic, much more difficult. In considering its response to this development proposal the MOD has taken account of these issues, and has concluded that the development poses a significant risk to current ATC operations.

The MOD is willing to enter discussions with the developer with the aim of finding suitable mitigation; however, research and financial responsibility rests with the developer.

Low Flying

The turbines will be within EGD (UK Danger Area) 807 and will unacceptably affect military activities. Ou advisor has stated that no low flying concerns exist for those turbines that fall outside EGD (UK Danger Area) 807.

If the developer is able to overcome the issues stated above, the MOD will request the turbines be fitted with aviation lighting.

Our assessment was based on 264 turbines at 183.71m to blade tip that would fall within the following grid references:

1	ND	46215	08884
2	ND	51782	28146
3	ND	53687	30590
4	ND	55256	33320
5	ND	56796	37463
6	ND	66549	25737
7	ND	66549	16334
8	ND	49841	25944
9	ND	47909	24223
10	ND	45345	21027
11	ND	41961	18001
12	ND	37494	15386
13	ND	33075	13663
14	ND	30818	10145
15	ND	28205	06765
16	ND	28205	02286

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

DEFENCE ESTATES
Delivering Estate Solutions to Defence Needs

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

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

I hope this adequately explains our position on this matter. If you require further information or would like to discuss this matter further please do not hesitate to contact me.

Yours sincerely

Richard Maisey
Safeguarding Assistant – Wind Energy
Defence Estates

SAFEGUARDING SOLUTIONS TO DEFENCE NEEDS

DEFENCE ESTATES
Delivering Estate Solutions to Defence Needs

Rural and Environment Directorate
Natural Resources Division

T: 0131-244 7574 F: 0131-244 4071
E: hugh.dignon@scotland.gsi.gov.uk

The Scottish Government

Craig Milroy
Stakeholder Manager
Moray Offshore Renewables Ltd
4th Floor 40 Princes Street
Edinburgh
EH2 2BY

16 September 2010

Dear Mr Milroy

Notice Of Environmental Impact Assessment Study
Moray Offshore Renewables Ltd, Eastern Development Area

Thank you for your invitation to participate in the above consultation. Unfortunately however, I wish to decline the invitation to participate.

In order to receive the Scottish Governments views on the above consultation please contact Scottish National heritage(SNH) at the following address:

Great Glen House
Leachkin Road
Inverness
IV3 8NW

SNH will be able to provide an appropriate response on behalf of the Scottish Government.

Once again thank you for the opportunity to participate.

Yours sincerely

Hugh Dignon
Head of Branch
Wildlife Management Team

marinescotland

T: +44 (0)1224 876544 Ext 5579 F: +44 (0)1224 295524
E: env_prot@marlab.ac.uk

The Scottish Government

21st SEPTEMBER 2010

Dear Sir/Madam

ELECTRICITY ACT 1989
THE ELECTRICITY WORKS (ENVIRONMENTAL IMPACT ASSESSMENT) (SCOTLAND) REGULATIONS 2000

SCOPING OPINION FOR THE PROPOSED SECTION 36 APPLICATION FOR THE MORAY FIRTH ROUND 3 OFFSHORE WINDFARM, EASTERN DEVELOPMENT AREA

Sea Energy Renewables have formally requested, in accordance with regulation 7 of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000, ("the Regulations") a scoping opinion for the above proposal.

Under regulation 7, Scottish Ministers are required to consult the specified statutory bodies (and other interested parties) as to their views on the information which ought to be provided in the environmental statement.

Paragraph 83 of the Scottish Executive Planning Circular 15/1999 states that while every Environmental Statement should provide a full factual description of the development, the emphasis of Schedule 4 of the Regulations is on the 'main' or 'significant' environmental effects to which a development is likely to give rise. In many cases, only a few of the effects are of significance and require discussion in the Environmental Statement in any great depth. Other impacts may be of little or no significance for the particular development in question, and will need only very brief consideration, to indicate that their possible relevance has been considered.

To assist the preparation of the Environmental Statement in this respect, we ask that you clearly indicate which issues you consider to be of high significance: developers will be expected to give these issues the most thorough attention. Additionally, you should identify other impacts which are of little or no significance for the development in question. For these issues, it will be sufficient that the Environmental Statement demonstrates that the developer has given due consideration to their relevance. You should note that your comments will be used to instruct the developer on what should be in the environmental statement, and also help them comply with the guidance in SPP6. Therefore, the clearer your comments the more likely that the requirements will be met. You should also state which heading this information should be provided under in the environmental statement.

The ultimate aim of the scoping exercise, as discussed in PAN 58, is to assist the developer in identifying the key environmental issues surrounding this proposal. Scottish Ministers achieve this aim by drawing on the knowledge of local authorities and consultees alike through the formal consultation process. However, PAN 58 also states that the scoping exercise should give an early indication of where mitigation measures may be necessary.

As required by the Regulations, developers must provide a description of measures to prevent, reduce and where possible offset any significant adverse effects on the environment, in their Environmental Statement. To ensure that Environmental Statements include this key section of information, consultees must highlight in their responses any areas where mitigation measures should be addressed. In tandem with the prioritising of environmental issues, this will allow Scottish Ministers to provide developers with a full and accurate opinion of what should be included in the Environmental Statements.

Please note due to the developer requesting that their consultation process would end on the 30th November, I would be grateful for your views by **30th October 2010.** This deadline allows 6 weeks to provide comments which would normally be a 28 day consultation process as per our regulations. Marine Scotland are currently reviewing the Scoping Document template and therefore request that your comments are electronically submitted to **env_prot@marlab.ac.uk**.

The developer should have already sent you a copy of their Scoping Report. We believe that this process should help those involved ensure that the Scoping Opinion reflects their views. The developer has also made their Scoping Report available to download at http://www.morayoffshorerenewables.com/

Yours sincerely

Andrew Sutherland
Marine Scotland

Northern Lighthouse Board

CAPTAIN PHILLIP DAY
DIRECTOR OF MARINE OPERATIONS

84 George Street
Edinburgh EH2 3DA
Switchboard: 0131 473 3100
Fax: 0131 220 2093
Website: www.nlb.org.uk
Email: enquiries@nlb.org.uk

Your Ref: Moray Offshore Renewables Ltd
Our Ref: AJ/OPS/CPA/O6_01_002

Mr Craig Milroy
Stakeholder Manager
Moray Offshore Renewables Ltd
4th Floor, 40 Princes Street
Edinburgh
EH2 3DA

23 September 2010

APPENDIX 1.3 B

Dear Mr Milroy

EIA Scoping Report for the Proposed Moray Firth Offshore Wind Farm

Thank you for your correspondence dated 25 August 2010 and regarding the EIA Scoping Document Consultation for the Proposed Moray Firth Offshore Wind Farm and the intention of **Moray Offshore Renewables Limited** to deploy approximately 200 turbines in the outer Moray Firth.

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

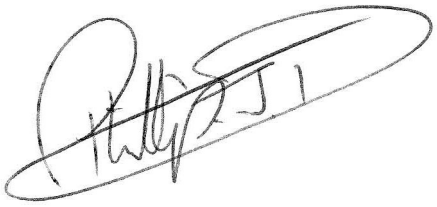
We would advise that any marking and lighting recommendations referred to in your section 2.7.2 will be made in a formal response through the Coast Protection Act 1949: Section 34 consultation process, and will be based on IALA Recommendation O-139. It may also be necessary to mark the landfall site 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 require the Navigational Risk Assessment to be in accordance with the information given at section 5.3.3, and in line with the requirement of MCA Marine Guidance Notice 371. We note that to date most of the vessel traffic analysis has been conducted through the use of AIS radar information, and that it is intended to provide further validation of statistics by gathering data regarding small craft (<15m) and leisure users at a local level, thereby enabling a more complete Navigational Risk Assessment. We would encourage the Risk Assessment to include a workshop approach to hazard identification and mitigation.

We would also welcome and encourage engagement with the Moray Firth Offshore Wind Developers Group to work together to minimise the cumulative impact of site development, including any developers within the Scottish Territorial Waters awards.

Please advise if we can be of any further assistance, or require clarification any of the above.

I would be obliged if any further communication to the Northern Lighthouse Board can be sent via fax on 0131 220 0235, e-mail to navigation@nlb.org.uk or our postal address, Northern Lighthouse Board, 84 George Street, Edinburgh, EH2 3DA.



Fw: Moray Firth Renewables
Craig Milroy para: Catarina Rei 27/10/2010 16:04

edp renewables
Craig Milroy
DEVELOPMENT
4th floor 40 Princes Street, EH2 2BY, Edinburgh, United Kingdom
Ext. 40402

Take action. Use energy efficient products
----- Forwarded by Craig Milroy/UK/EDPR on 27/10/2010 17:04 -----

Moray Firth Renewables

Higgins, Russell [LFSGB] to: craig.milroy 24/09/2010 11:28

Cc: "Higgins, Russell [LFSGB]"

Dear Sir:

I received your letter dated 15th September via our local Inverness chamber of commerce.
As a major manufacturing employer in the Highlands, employing in excess of a thousand people at our Inverness facility forming part of the Johnson & Johnson family of companies, we would be delighted to engage as a stakeholder on two fronts;

~ Review the Scoping document and proposals for the Moray Firth proposal, If I could receive a paper copy of the scoping document on that front.
~ Some form of long term agreement, either through power agreements or ownership of turbines to supply Electricity to our Inverness plant.

Kind Regards

Russell

Russell Higgins
Facilities, Engineering & EHS Manager.
LifeScan Scotland Ltd, a Johnson&Johnson Company
Beechwood Park North - Inverness - IV2 3ED - Scotland
PHONE: +44(0)1463721480 - **MOBILE:** +44(0)7768888367
FAX: +44(0)1463722000
E-MAIL: RHiggins@its.jnj.com

Subject line prefix: (U)rgent action required; (A)ction required; (I)nformation only

HSE

Health and Safety Executive

Hazardous Installations Directorate

Kirsten Laidlaw

Chemical Industries
Belford House
59 Belford Road
Edinburgh
EH4 3UE

Tel: 0131 247 2000
Fax: 0131 247 2041
kirsten.laidlaw@hse.gsi.gov.uk

http://www.hse.gov.uk/

HM Principal Inspector of Health & Safety
Dr G. A. Cook

APPENDIX 1.3 B

SeaEnergy Renewables
Moray Offshore Renewables Ltd
4th Floor
40 Princes Street
Edinburgh
EH2 2BY

Date: 29 September 2010

Our ref: GC/SO/Moray firth/4.2.1.406

Dear Sirs

ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED DEVELOPMENT OF AN OFFSHORE WIND FARM, EASTERN DEVELOPMENT AREA IN THE OUTER MORAY FIRTH.

Thank you for your letter of 21 September 2010 asking what information should be provided in the environmental statement for the proposed development at Outer Moray Firth.

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.

Yours faithfully

K. Laidlaw

Kirsten Laidlaw
Admin Support

Fw: [ACE/312467] Scoping Opinion Moray Firth Round 3

Craig Milroy para: Catarina Rei 27/10/2010 16:03

edp renewables
Craig Milroy
DEVELOPMENT
4th floor 40 Princes Street, EH2 2BY, Edinburgh, United Kingdom
Ext. 40402

Take action. Use energy efficient products
----- Forwarded by Craig Milroy/UK/EDPR on 27/10/2010 17:03 -----

Re: [ACE/312467] Scoping Opinion Moray Firth Round 3

bb.planapps to: A.Sutherland 15/10/2010 09:41

Cc: craig.milroy
Please respond to bb .planapps

Dear Sirs

I refer to your attached letter dated 21 September 2010 and also to a letter and scoping report from EDP Renewables received on 9 September 2010.

I have spoken to Mr Craig Milroy, Stakeholder Manager, and I am satisfied that the proposal for the offshore windfarm will not have any direct or indirect affects on the interests of Aberdeenshire Council.

Clearly as time progresses there may be proposals which involve "on land" development and these will have an impact on the Councils interests and Mr Milroy and I have suggested that, at that time, it will be appropriate to scope these works.

I trust that this is of assistance to you and please note that, for the sake of clarity, I have copied Mr Milroy into this correspondence.

Darren Ross
Area Planning Officer
Banff and Buchan
-----Original Message-----

Dear Sir / Madam,

ELECTRICITY ACT 1989

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

SCOPING OPINION FOR THE PROPOSED SECTION 36 APPLICATION FOR THE MORAY FIRTH ROUND 3 OFFSHORE WIND FARM

Please find attached the consultation letter for the above application. I would be grateful for any comments you have by 30th October 2010. The developer has made their Scoping Report available to download at

http://www.morayoffshorerenewables.com/

If you require further information please let me know.

Many thanks

Andrew

Andrew Sutherland

Marine Renewables Licensing Advisor

Marine Scotland- Marine Planning and Policy Division

Scottish Government | Marine Laboratory, PO Box101 | 375 Victoria Road| AberdeenAB11 9DB

Tel: + 44 (0) 1224 295582

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Email: sutherlanda@marlab.ac.uk

Web: http://www.scotland.gov.uk/marinescotland

- Scoping Consultation Letter MORL.doc - Scoping Consultation Letter MORL.doc

Scoping Consultation Letter MORL.doc

PLANNING AND ECONOMIC DEVELOPMENT
(Development Plans)

Development Services
Environmental Services Department
The Moray Council
Council Office, High Street, Elgin IV30 1BX
FAX: (01343) 563263 Tel: (01343) 543451 DX No 520666

Contact: Eily Webster
E-mail: eily.webster@moray.gov.uk
Web Site: www.moray.gov.uk

Direct Dial: (01343) 563287
Our Ref: 10/01707/SCO
EW/10-195
Your Ref:

26th October 2010

Moray Offshore Renewables Ltd
EDPR UK
f.a.o. Craig Milroy
40 Princes Street
Edinburgh
EH2 2BY

Dear Mr Milroy,

MORAY FIRTH OFFSHORE WINDFARM ROUND 3, EASTERN DEVELOPMENT AREA: RESPONSE TO SCOPING REPORT FOR ENVIRONMENTAL IMPACT ASSESSMENT (EIA)

Please find enclosed the response to the consultation taking place on the scoping report for the Environmental Impact Assessment for the proposed windfarm in eastern development area of the Moray Firth.

Should you wish to discuss, please do not hesitate to contact me on the number above.

Yours sincerely

E. White

Eily Webster
Planning Officer

Enc.

Moray Firth Round 3 Offshore Windfarm, Eastern Development Area:
Comments on Scoping Report for Environmental Impact Assessment (EIA)

The Moray Council (TMC) welcomes the opportunity to comment on the Scoping Report for the Environmental Impact Assessment (EIA) for the proposed windfarm in the eastern development area of the Moray Firth.

It is considered that the scope of the EIA is sufficient, in that it appears to cover the main issues that could affect the siting of the wind turbines. The scoping report sets out that the EIA will address the potential impacts of the development on the environment (biological, human and physical), including commercial fishing, navigation, civil and military aviation, and the offshore oil and gas industry. The impact on these industries is vitally important for Moray's economy and sustainable growth.

The **cumulative and in-combination impacts** of the proposed development, particularly visual, are an important issue for Moray. Windfarm development in the eastern development area of the Moray Firth must be considered alongside the adjacent BOWL proposal and future western development area. Photomontages included within the EIA and any subsequent application should consider the holistic impact of windfarm development in the Moray Firth from key points along the Moray coastline. The Council would welcome the opportunity to be kept informed of how this type of information will be conducted and analysed.

The Council supports MORL's **commitment to engaging** statutory and non-statutory consultees, including local communities on the proposed development. The Council would appreciate the opportunity to be kept informed of, and where required, involved in, stakeholder workshops and events. As part of the EIA, it would be useful to include a list of those consulted to ensure that all interested parties are provided opportunity to comment.

It is noted that work is ongoing in terms of the anticipated impact onshore of the **Offshore Transmissions Infrastructure**, and that a separate EIA will be conducted. The Council wishes to be consulted on the scoping report for this EIA, given the potential implications for the Moray coastline, harbours, fisheries and roads. In this respect, the Council would welcome discussion with the EDP and the Offshore Transmission Operator (OFTO) as to the likely impact of development onshore, particularly during the construction and maintenance stages. Where possible, the Council wishes to work alongside Highlands and Islands Enterprise (HIE) with the Offshore Wind Energy Industry to identify opportunities for the local economy, building on the skills associated with the offshore oil industry, military and commercial fishing.

Joint Nature Conservation Committee

Inverdee House, Baxter Street,
Aberdeen, AB11 9QA, United Kingdom

Email: lucy.greenhill@jncc.gov.uk
Tel: +44 (0) 1224 266555
Fax: +44 (0) 1224 896170
jncc.gov.uk

Marine Scotland
Licensing Operations Team
PO Box 101
375 Victoria Road
Aberdeen
AB11 9DB

Date: 28th October, 2010

For the attention of: Fiona Thompson

Dear Ms Thompson,

MORAY OFFSHORE RENEWABLES LTD: EASTERN DEVELOPMENT AREA SCOPING REPORT

Thank you for requesting our advice on the Moray Offshore Renewables Ltd (MORL) Scoping Report for the Eastern Development Area. In this response we present combined scoping advice from the Joint Nature Conservation Committee (JNCC) and Scottish Natural Heritage (SNH).

Following the format used for the Firth of Forth Round 3 Zone 2, and for the Scottish territorial waters wind farm sites, our detailed advice is provided in the annexes to this letter, as follows:

- Annex A: Advice on the Development in General
- Annex B: Receptor-Specific Advice on EIA
- Annex C: Legislation: European Protected Species and Habitats Regulations Appraisal
- Annex D: Moray Firth Zone 1: Habitats Regulation Appraisal for Special Protection Areas
- Annex E: Moray Firth Zone 1: Habitats Regulation Appraisal for Special Areas of Conservation

Background

The scoping report refers to the proposed development of offshore wind within the Eastern Development Area of Zone 1 of the Round 3 leasing process, within the Moray Firth (beyond 12 nautical miles). The intended maximum installed capacity of the Eastern Development Area 1.14 Gigawatts (GW); encompassing an area of 296 km^2 and approximately 200 turbines. As well as the turbines, the proposals include inter-array cables, substations and inter-array cables. We note that the scoping report does not include detail on the OFTO offshore substation, offshore export cable, onshore export cable and onshore substation.

We strongly recommend that MORL discusses their approach 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 below). In order to consider the environmental impacts of this project in its entirety, through EIA and HRA, we highlight that information on onshore and offshore elements is required. The developer identifies that they intend to include within the offshore wind farm EIA, any in-combination effects resulting from the onshore and offshore activities, and we support the collation of information within 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.

General Approach to EIA

EIA is a statutory process which should highlight the potential positive and negative impacts of a project, and identify how effects can be prevented, offset or reduced through mitigation, enabling the regulator to make a decision on whether to consent. Overall, MORL have undertaken a useful scoping exercise and present a comprehensive understanding of the EIA process. The key objectives of scoping are well presented, including recognition of the need to determine the range of factors that need to be considered within the EIA, and also ensuring that environmental studies are planned appropriately to gather sufficient environmental information.

For complex and large-scale development proposals, the EIA process is not straightforward, and we highlight that there may be opportunities to improve its practice as knowledge is improved. In respect of offshore wind development, it is important to highlight the much larger scale and geographic spread of Round 3 compared to Rounds 1 and 2. Therefore, while lessons are being learned from Rounds 1 and 2 sites, there is the potential for a different range and / or a greater level of impacts to arise from Round 3 development. Consequently, there is a need to work more confidently with the levels of uncertainty apparent in the EIA process and we advise that EIA is undertaken in the context of risk management; and identify the need to consider what level of confidence in the data it will be realistically possible to achieve, and how this will be presented to enable conclusions to be reached.

We particularly welcome the proposal by MORL to consider ecological links and assess the projects holistically (p.23), as although adding complexity to the EIA process, this is likely to improve the ability to reach conclusions regarding the effects of the development, and can be built on through the assessment of subsequent development plans.

Zonal Assessment

We note for Marine Scotland that MORL have not presented this scoping report within the wider context of zonal characterisation and assessment (other than the siting of development within the Eastern area). The Scoping Report adequately addresses the issues to be considered and we consider it to be sufficient for the purpose of scoping for the EIA for the Eastern Development Area, however it may be relevant to discuss data gathered at a zonal level for better understanding of individual receptors, e.g. birds. It would be key to identify how zonal assessment will be managed to inform later development, as it is planned.

Habitats Regulations Appraisal

As part of our scoping advice we include the range of interests and potential impacts that may need to be considered in relation to the The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (applying to the offshore zone beyond 12 nautical miles) and to the Conservation (Natural Habitats, &c.) Regulations 1994 as amended (applying to Scottish territorial waters). These regulations protect Natura (European) sites – a network of designated sites across Europe which are internationally important for threatened habitats and species – encompassing Special Protection Areas (SPAs) designated for a range of important bird species, and Special Areas of Conservation (SACs) which include a variety of sensitive or rare marine habitats.

Under the above regulations, Habitats Regulations Appraisal (HRA) is the process whereby potential impacts to Natura sites – SPAs and SACs – are considered. We provide more detail on the process of HRA in Annex E. We provide our advice on HRA tailored to the potential impacts of the Eastern Development Area in Annex C for SPAs and Annex D for SACs.

Further Liaison and Advice

This Round 3 zone lies close to the Beatrice Offshore Wind Farm proposal within Scottish territorial waters of the Moray Firth, and we welcome and encourage collaborative working between the developers in the area, through the Moray Firth Offshore Wind Developer's Group. This will be of particular use in the assessment of cumulative impacts and we will continue to liaise with the group over collaborative work. It may also be appropriate to collaborate at a wider level, i.e. with developers in the Forth and Tay regions for certain aspects.

We encourage Marine Scotland and the developer to approach JNCC and SNH to discuss any issues we raise within this response.

Yours sincerely

Lucy Greenhill
Offshore Industries Advisor
Joint Nature Conservation Committee

(cc: Catriona Gall, Scottish Natural Heritage;
Clare Lavelle, MORL)

ANNEX A – ADVICE RELATING TO THE DEVELOPMENT IN GENERAL

Site selection within Zone

1.1 MORL have produced a zone development strategy determining the phasing by which the zone will be developed, which has resulted in prioritisation of the eastern section for development. We recognise the value of constraints mapping in the planning of development, however from an environmental perspective, we note that there are limitations in the ability to map environmental risks with sufficient confidence to influence decisions on the location of development (as apparent from p.11 of the scoping report, where environmental considerations have not resulted in preference of east over west development areas). We encourage on-going communication on the approach taken and how this might be further refined and reflected within the EIA process.

1.2 In particular, it is relevant to consider:

- How environmental data is expressed within the mapping tool in GIS; e.g. has aerial survey data been incorporated into the tool?
- How has uncertainty / lack of data been incorporated into decision making?
- How has weighting been applied to each layer, including environmental information? It would be extremely useful to see a map of the environmental constraints only, and presentation of a range of outputs would help to understand how the changing of 'weightings' and other scoring can affect the range of outcomes.

1.3 We note that the applicant states that scoping will assist in identifying wind farm sites within the development area – how influential will the process be, and what is the flexibility within the plans to accommodate new recommendations following scoping? While we welcome MORL's proposal to amend site selection based on the results of scoping, we highlight that it is unlikely to be possible to understand in sufficient detail at the scoping stage (i.e. prior to survey results being analysed), the potential environmental constraints. It is therefore important to acknowledge that constraints mapping at this stage is likely to be focussed on those constraints which are more easily mapped (e.g. navigation).

Approach to EIA

1.4 We note that MORL intend to use 'standard EIA methodologies' for the assessment of significance of impacts. It is important to note that there is a need to discuss and agree what this approach will be for each receptor. As far as possible, impacts should be quantified and assessed against relevant thresholds; however there is currently uncertainty in defining thresholds of significance for some sensitive receptors which will necessitate a qualitative appraisal of results in these cases. Guidance applied in wind farm development thus far has been weak and sometimes arbitrary, and as the information base is lacking to enable a statement of quantified thresholds, we strongly encourage appropriate consideration of the information collected pertaining to this specific area and development, and close consultation with relevant experts to ensure that there is on-going agreement between the developer, SNCAs and Marine Scotland as to what is deemed to be significant, in proportion to the anticipated effects.

1.5 We note that MORL recognise the importance of developing understanding of the ecological links between different receptors, in order to better assess the impacts on different receptors, including the potential for indirect impacts. It may be useful to consider whether there is a way to 'map' effects? This would be complex but could

highlight where the EIA effectively overlaps (e.g. effects on fish on their own merit, as prey species for marine mammals and birds).

1.6 The developer intends to follow the 'Rochdale envelope' principle for the turbine parameters (p.13) which is necessary in order to assess the possible impacts of the range of various design options, include the worst-case scenarios (which may be different for individual receptors). We recognise that this will be complex for developments such as these which are developed over a number of years, and which therefore need to remain flexible to enable amendments in response to particular investigations. It would be useful if the potential for mitigation is considered during the early stages of design consideration, e.g. the selection of turbine installation technique to minimise the risk of impacts of noise on marine wildlife.

1.7 We note that jacket structures are being considered (p.13), including braced monopods, tripod structures and four legged jacket structures. An important aspect of EIA will be modelling of noise emitted during the installation of these structures, in order to assess which is the best option. How will this be undertaken – are there existing studies of the noise from different installation methods? Beatrice demonstrator experience with jacket installation – are there sound studies from this and monitoring undertaken during construction?

1.8 We note the proposal to assess rock dumping and mattresses and emphasise that this in itself, will exert an effect on the benthic habitat (i.e. altering the substrate and therefore the communities which live therein), and we therefore advocate minimisation of stabilisation material (within the limits of safe installation) and consideration of using mattresses instead of rock as this offers the possibility of removal during decommissioning.

1.9 Regarding the transmission plans – is there a possibility that the project will connect with other planned connections e.g. the Moray Firth Hub? From an environmental perspective, strategic planning will overall reduce impact, and potentially consenting risk.

1.10 Regarding the phases of development, we welcome the proposal to detail the decommissioning phase within the ES. We also request that MORL clarify whether there is any 'repowering' planned for the development during the lifetime of the project, to ensure that the effects of this are also considered and do not hinder operations through consenting at a later stage. It is important to be clear on what repowering entails and whether there is likely to be any relocation of subsea infrastructure or alteration of the wind farm layout. This includes whether further scour protection is required for foundations in the same, or in new, locations across the wind farm site. Any alterations to the locations of offshore elements for repowering may require an update to the benthic survey work and assessments that have previously been carried out.

Baseline Data

1.11 JNCC and SNH have thus far had useful engagement with MORL regarding data collection, however it is important to note that at this stage it is not currently possible to conclude whether the data being gathered will be sufficient to answer all of the consenting questions identified. It is therefore appropriate to discuss the outputs of surveys at relevant intervals (e.g. 1 year), evaluate the occurrence of receptors and then to adapt / improve assessment strategies as appropriate.

1.12 As identified, it would be relevant to refer to the SEA for Offshore Wind in STW, and the on-going Offshore Energy 2 SEA which will cover the area of proposed development. Both will be informative for the project and should be used in analyses of baseline and cumulative impact assessment.

1.13 We note that MORL recognise the potential impacts of climate change on certain receptors which may act in-combination with the wind farm, and we also highlight the need to consider the impacts on environmental baselines, and how this should be accounted for in the prediction of effects on certain parameters.

Cumulative Impact Assessment

1.14 We note the definitions here are not in line with those used in Habitats Regulations Appraisal, where in-combination is used to refer to the potential effects of multiple projects of the same type, in this case multiple wind farm projects. We are aware that these terms are used interchangeably and are content that MORL understand the need to present the effects of both multiple wind projects, as well as with other types of activities and environmental pressures.

1.15 In particular we note and welcome the approach of forming the Moray Firth Offshore Wind Developer's Group (MFOWDG), in line with those being undertaken within the Firth of Forth (and also that there will be discussion between these groups). Could we request that the planned activities of this group be clearly outlined, so that JNCC and SNH understand when it is appropriate to feed into the discussions. Has a cumulative impact document been produced, in which the activities of both BOWL and MORL are identified, showing how they are consistent and outlining what can be undertaken strategically to inform the consenting of both projects?

ANNEX B – RECEPTOR-SPECIFIC ADVICE FOR EIA

This Appendix provides our advice on the environmental interests which need to be considered for the Eastern Development Area of the Moray Firth Zone. This will cover the topics below, with reference to the scoping report and zonal appraisal and planning document:

1. Ornithology
2. Marine Mammals
3. Hydrodynamics and Coastal Geomorphology
4. Marine Ecology
5. Fish
6. Seascape, Landscape and Visual Impact Assessment

1 ORNITHOLOGY

1.1 In Annex C we provide overall advice on the Habitats & Birds Directives and Special Protection Areas (SPA) for birds, and the process of Habitats Regulations Appraisal (HRA) that considers impacts to these interests. In Annex D we provide advice on HRA, tailored to consider the potential impacts of the proposal on those bird species which are qualifying interests of SPAs, and which may be affected by the development of offshore wind in the Moray Firth Round 3 zone.

Species to Consider

1.2 Table 5.5 (p.72) provides a useful overview, however we advise caution in the general statement that the majority of seabirds are in coastal areas (Table 5-5; p.72), which may not be borne out by the survey data. We recommend that the EIA fully discusses (with references) similar statements (such as "most breeding guillemots do not feed further than 30km from their breeding site"). It is also important to consider seasonal changes in foraging distances; a range of studies have shown that many breeding seabirds will forage further and further from the colony as the breeding season progresses due to prey depletion in closer areas. This effect on seabird distribution ('Ashmole's Halo'[1]) is greater for larger colonies and is also likely to be variable from year to year. References are also requested for the review of the distribution of seaducks and diving ducks within the Moray Firth.

Survey Work

1.3 In respect of the boat-based survey methodology (as discussed in section 5.2.5.5) we seek to clarify whether both sides of the ship are to be surveyed simultaneously or only one side? Regarding survey methodology, the developer should justify that the survey particulars are sufficient to adequately gather information at the development area. We recommend that there is a minimum of three bird surveyors and one marine mammal observer (dedicated to that task) and that observers are suitably trained and experienced (at least one ESAS trained observer with at least 50 hours, preferably more, of survey experience). It may be appropriate to use a higher number of observers, for example if there are high densities of birds being encountered. It is

[1] GASTON, A.J., YDENBERG, R.C. & SMITH, G.E.J. 2007. Ashmole's halo and population regulation in seabirds. Marine Ornithology, 35: 119–126.

important that observers are rotated at regular, predefined intervals in order to prevent fatigue.

1.4 In regards to the number of observers, if distance analysis techniques are to be employed (please see Analysis below), we note that the precision and robustness of the estimates derived will be greatly improved by ensuring that the assumption of 100% detectability at 0m from the transect is met. One method of achieving this is to employ a forward-scanning observer (in addition to the recorder surveying the 90° arc, and the scribe). It is also beneficial when conducting one-sided surveys (i.e. 90° arc), to include an 'out-of-transect' band adjacent to Band A (this decreases the tendency for inclusion of birds in the A band that are, in reality, just out of transect).

1.5 In respect of our ongoing liaison with MORL, we support the approach to discuss interim outputs of on-going survey work, to inform discussion as to whether methodologies are suitably informative.

1.6 Regarding data gaps (section 5.2.5.2), we understand that in addition to the listed methods, radar is also under consideration to assess the frequency and height of migratory flights through the development area. (We also note that PVA is not a method for further data collection, but agree that it *may* be appropriate for assessing the long term effects on populations).

Habitat Modelling

1.7 Camphuysen et. al. (2005) and Maclean et. al. (2009)[2] recommend that oceanographic and fish data is collected during boat-based seabird surveys as this may allow habitat modelling to be undertaken. Such modelling will help us to better understand the reasons for bird numbers in the Round 3 zone – their spatial distribution and use of the site. We recommend that this issue is carefully considered; such habitat modelling is likely to benefit from a collaborative approach with the Beatrice developer (BOWL).

Species Sensitivity

1.8 We urge caution in applying the species sensitivity ratings described in Garthe and Hüppop (2004)[3] and in COWRIE guidance (King et al. 2009)[4], which were based on seabirds occurring in the southern portion of the North Sea, as this may not always be applicable for other areas (even if the species are the same). Bird behaviour is dependent on the season / lifecycle stage and thus there will be differences in sensitivity to windfarm development between breeding and wintering populations. The breeding seabird populations found in the Moray Firth are therefore likely to have a

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2 Camphuysen C.J., Fox A.D., Leopold M.F. & Petersen I.K. (2005). Towards standardised seabirds at sea census techniques in connection with environmental impact assessments for offshore wind farms in the U.K. COWRIE – BAM- 02-2002.

Maclean I.M.D, Wright L.J., Showler D.A. & Rehfisch M.M. (2009). A Review of Assessment Methodologies for Offshore Windfarms. BTO Report commissioned by Cowrie Ltd. COWRIE METH-08-08. Reports available at: http://www.offshorewind.co.uk/Pages/Publications/Archive/Birds/

3 Garthe, S. & Huppop, O. (2004). Scaling possible adverse effects of marine wind farms on seabirds: developing and applying a vulnerability index. *Journal of Applied Ecology,* 41**,** 724-734.

4 King S., Prior A., Maclean I. and Norman T. (2009). Developing guidance on ornithological cumulative impact assessment for offshore windfarm developers. COWRIE.

differing sensitivity to offshore windfarm development, compared to the over-wintering populations that occur in the southern North Sea.

1.9 We encourage collaboration between ourselves (JNCC and SNH), other nature conservation agencies and other seabird experts (including the RSPB) in determining the appropriate sensitivity of species assessed through this EIA.

Analysis

1.10 We strongly recommend that the data collection (i.e. survey methodologies) is driven by the data needed to answer the questions being posed through EIA and HRA (i.e. how many birds, which species, where and why are they using the site?). If DISTANCE software is to be used in analysing the survey results then we recommend that staff are either experienced in its use or receive appropriate training.

1.11 We emphasise the importance of reporting associated confidence intervals with any density and abundance estimates calculated using distance sampling techniques. It may be appropriate to utilise confidence intervals in the assessment of sensitive species (i.e. calculating the range of impacted population, as opposed to a mean %).

1.12 Additionally, it is necessary to consider how the baseline survey data will be used in future monitoring, as this will require an increased power to detect change. In this regard, it is advisable that a power analysis is conducted on the collated data from boat-based surveys – ideally from the Round 3 zone and Beatrice combined. This will help determine whether the chosen survey methods and analyses will be able to measure any effects on bird populations. This will require consultation between the developer(s) and ourselves (SNH & JNCC) in order to agree the required magnitude of effect to detect (for example, % change in bird numbers). In respect of this issue, we note that the reports below are helpful.[5]

Impacts (Section 5.2.5.3)

1.13 It should be recognised that the assessment of impacts needs to framed within the context of the consequence to the relevant (e.g. SPA, regional etc) population, and not simply the number of individuals affected.

1.14 *Displacement* - Disturbance leading to displacement of birds can and may occur during the operational period of the wind farm (in addition to construction and decommissioning)

1.15 *Collision Risk* - We highlight that flight height (and therefore survey techniques capable of gathering this information) is a key requirement to calculate collision risk (not explicitly stated in the scoping report).

1.16 With respect to avoidance rates, a critical parameter in assessing the risk of mortality to birds through collision, it is imperative that further research is undertaken to produce evidence-based values. At present there is insufficient evidence available for the confident recommendation of avoidance rates, hence a precautionary approach will be advised until better evidence has been provided.

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[5] Maclean I.M.D., Skov H., Rehfisch M.M. & Piper W. (2006). Use of aerial surveys to detect bird displacement by offshore windfarms. COWRIE DISP-03-2006. BTO Research Report No. 446

Maclean I.M.D., Skov H. & Rehfisch M.M. (2007). Further use of aerial surveys to detect bird displacement by offshore windfarms. COWRIE EXTDISP-06-07.

1.17 We highlight that the Crown Estate Strategic Ornithological Support Services (SOSS) will be reviewing the existing knowledge on collision risk and avoidance rates for offshore windfarms and we recommend that this work is referred to once published as it will likely provide a peer reviewed reference. Where suggestions are to change current methodologies, then it will be important to ensure that this is carried out consistently at the various wind farm development sites, and collaboration with for example, the Forth and Tay Offshore Wind Development Group is encouraged in this regard.

1.18 *Barrier Effects* - The description of 'Method of Impact Assessment' is unclear for this impact. We recommend considering the energetic impacts of barrier effects on migratory birds (particularly waterfowl and waders) and breeding seabirds. The references listed in the footnote may be helpful in this regard[6].

1.19 We caution that assessment of collision risk and barrier effect impacts to migratory species may not be possible using the proposed survey methodologies (but we note that the developer is open to additional complementary methodologies to ensure sufficient data collection).

1.20 *Operational Impacts* - We recommend that an assessment is made of the potential for O&M boat and/or helicopter traffic to cause disturbance to birds using the site and their possible displacement as a result. Remote condition monitoring systems may help to reduce the number of turbine visits and could therefore help to mitigate the impacts of this type of disturbance.

Cumulative Impacts

1.21 Cumulative impacts on bird species are a key issue for EIA and HRA in respect of this Round 3 windfarm proposal together with Beatrice, and it would therefore be helpful for MORL and BOWL to collaborate in respect of their bird survey work and its analysis. The scope of cumulative impact assessment should be based on a consideration of the range of bird species that may be affected, their ecology and the types of impacts which may affect them. We support the use of the King, et al (2009) framework, and highlight that this should be used fully (i.e. to include the tables clarifying the audit trail of discussions with key stakeholders). Further, as the use of these tables is still in their infancy, the approach may require adaptation as work progresses on EIA and HRA.

1.22 In preparation of the EIA, we would welcome further discussion with the developer over which other projects / industries may need to be considered in relation to cumulative and in-combination effects on bird interests. We advise that not all cumulative / in-combination impacts are unique to wind farms, (i.e. disturbance / displacement and indirect effects) and as such it is necessary to include other industries (e.g. aggregates, shipping traffic) in this assessment.

[6] Masden, E.A., Haydon, D.T., Fox, A.D. & Furness, R.W. (2010). Barriers to movement: Modelling energetic costs of avoiding marine wind farms amongst breeding seabirds. Marine Pollution Bulletin, 60, 1085-1091.

Masden, E.A., Haydon, D.T., Fox, A.D., Furness, R.W., Bullman, R. & Desholm, M. (2009). Barriers to movement: impacts of wind farms on migrating birds. ICES Journal of Marine Science, 66, 746-753.

Speakman, J., Gray, H. & Furness, L. (2009). University of Aberdeen report on effects of offshore wind farms on the energy demands on seabirds. DECC Report URN 09D/800.

1.23 We consider it would be beneficial to arrange a joint meeting between the applicants, Marine Scotland and ourselves (JNCC and SNH) in order to discuss and agree the scope of HRA for these proposals.

1.24 Favourable Conservation Status (FCS) – we note that there are references to the evaluation of effects on FCS (e.g. p.78) and clarify that the developer should assess the effects of their activities in the context of potential adverse effects on the site integrity of identified SPAs (i.e. using the conservation objectives). As a network, site integrity will contribute to the FCS of individual species or habitats, but the assessment of effects on FCS is the responsibility of the regulator/s at a national level and is a separate assessment from that to be undertaken at the project stage.

2. MARINE MAMMALS

2.1 Please see Annex C for the detail of the legislative requirements that apply to SAC interests, and those relating to cetaceans – whales, dolphins and porpoises – which are European Protected Species (EPS). Annex E provides our advice on HRA, tailored to the Moray Firth Round 3 zone, for marine mammals which are an SAC qualifying interest. The Regulation 33 package and management scheme for the Moray Firth SAC may be a helpful reference in this regard.[7] We highlight that cumulative impacts to marine mammals are a key concern, in particular the impacts of windfarm development in the Round 3 zone in combination with the Beatrice proposal.

Survey Methods and Data Analysis

2.2 We support the proposal to build on the regional approach to understanding marine mammal distribution in the Moray Firth which is underway in that area, to facilitate better understanding of potential effects. While we welcome the range of survey methods that MORL are considering with regard to marine mammals, we seek further information on how they will collaborate with BOWL to address potential cumulative impacts.

2.3 We also recommend that the developer also considers their surveys in relation to the Joint Cetacean Protocol (JCP) work. The Joint Cetacean Protocol (JCP; http://www.seawatch foundation.org.uk/sightings.php?uid=245) holds data at a UK level, and can therefore provide improved measures of cetacean abundance and distribution at a regional level. It is largely based on SCANS and other wide scale data, and also supplemented with finer scale data. It would therefore be useful for MORL (and BOWL) to consider their data collection methodologies in light of the JCP methods, both to evaluate data which is already present, and to ascertain whether it is appropriate to enter their data into the JCP database to enable analysis of data at a more appropriate population-level scale. JNCC are happy to discuss this in more detail.

2.4 Regarding cumulative impact assessment, the King, et al (2009) framework was developed for ornithology, but it is reasonable to utilise a similar auditable framework for other mobile species (although noting that cetaceans are protected whether they are associated with a protected site or not).

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[7] For management of the Moray Firth SAC, see: http://www.morayfirth-partnership.org/work-2-sac.html
And for the regulation 33 package, please see:
http://www.snh.org.uk/pdfs/about/directives/Moray_Firth.pdf

2.5 We welcome ongoing liaison with the developer with regard to marine mammal surveys, the applicability of the data gathered and the subsequent approach to EIA.

Potential Impacts to Marine Mammals

2.6 The potential impacts are well outlined in the document, along with the data gathering which will inform impact assessment. Through the EIA it would be appropriate to define more clearly how the information gathered will enable conclusions on the identified impacts to be reached, and additionally how they will be evaluated through monitoring (if deemed necessary).

2.7 The applicant plans to undertake a background noise assessment and then apply modelling to assess impacts (as indicated in section 5.2.4.4 of the scoping report). We consider it would be helpful if we could see an early version of this proposal and if the predicted noise impact could be estimated soon. Doing so may allow species monitoring to be adapted to reflect the likely zone of impacts, for example, making sure C-Pods are in the right place to pick up any changes in porpoise numbers/behaviour.

2.8 We note that p.65 refers to the 'regional marine mammal community;' it would be appropriate to consider the effects at population levels of marine mammal species (which is the approach necessary through EPS), as these will vary in extent and therefore require individual consideration of the range of activities to be included in cumulative impact assessment.

2.9 Regarding the guidance produced by JNCC, this is still being amended by Defra, and we will make Marine Scotland and the Applicant aware when this has been finalised. Please refer to Annex C for detail on the approach to EPS assessment and licensing.

Potential Mitigation and Monitoring

2.10 Recognising the clear risks to marine mammals from construction activities in this area, it is advisable that the applicant proactively ensures that the early stages of project design are influenced to minimise the risk to marine mammals; this will likely to reduce the need for management strategies which could affect construction programmes.

2.11 Within the EIA, we recommend that the applicant considers and discusses the full range of mitigation techniques for noise impacts during construction; including alternative installation methods, seasonal restrictions, bubble curtains, jackets and vibro-piling. The choice of mitigation should be determined by review of the zone of potential impacts based on noise modelling for the range of construction activities, and evidence gathered in support of the EIA. If sufficient evidence is not forthcoming, then it is necessary to use appropriate precaution, to ensure that the predicted risk to marine mammals is at an acceptable level.

2.12 It would be helpful for MORL and BOWL to collaborate on this issue in order to address strategically, e.g. co-ordinate their construction time-tabling (if appropriate) and other proposed mitigation.

2.13 We also consider it would be beneficial to arrange a joint meeting between the applicants, Marine Scotland and ourselves (JNCC and SNH) in order to discuss and agree the scope of HRA in respect of SAC interests.

3. HYDRODYNAMIC PROCESSES AND COASTAL GEOMORPHOLOGY

3.1 The Moray Round 3 zone and the Beatrice offshore windfarm proposal together cover a substantial proportion of the Smith Bank, and may potentially lead to effects on hydrodynamic processes. We agree with the outlined potential impacts (p.33-34), and with the scoping out of effects on geology and the tidal regime. We strongly recommend that MORL and BOWL collaborate on their coastal processes modelling in order to consider these aspects. We are uncertain of the scale of potential effects, but there could be implications for the marine and coastal habitats that are supported by these hydrodynamic processes. We discuss this issue further in Annex E where we present advice in respect of the Moray Firth SAC and others in the area.

Cabling

3.2 The scoping report does not provide details on the cable routes and potential landfall points being considered – or indeed, whether an onshore or offshore grid connection point is being considered. While we recognise that a large amount of oil and gas infrastructure has been built in this area, we do still recommend that an experienced coastal geomorphologist is employed to assess cabling options if an onshore connection is being considered. 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 landing point itself. Considered appropriately, the geomorphology of an area can often be used as protection for a cable.

4. BENTHIC ECOLOGY

General Points

4.1 The outlined impacts to the benthic ecology are largely conclusive, although we recommend that when considering loss of habitat due to infrastructure, the applicant will also need to consider the extent of stabilisation materials, e.g. rock dumping and concrete mattressing which could change the local habitat in a permanent way (e.g. if soft to hard substrate).

4.2 We do not consider that there is a risk to the benthos from the accidental release of pollutants (p.45), if the applicant considers the characteristics of the materials which could be released, the maximum volume of a possible release, along with the hydrodynamic movement within the area, and would therefore recommend that this is described briefly as such within the ES, or scoped out.

Baseline Data

4.3 We consider that the applicant's proposed surveys for benthic ecology are well thought out and we welcome the intended liaison with ourselves (JNCC and SNH) and Marine Scotland. We note, however, that it may be still be beneficial for the applicant to undertake an early analysis of their survey data in case this indicates that survey methods need to be revised and / or that further detailed surveys are required.

4.4 As development progresses we consider it would be helpful if applicants provided ourselves and Marine Scotland with a summary, or report, of their geophysical survey data prior to commencement of their geotechnical surveys. We would also welcome further co-ordination of benthic survey work and consent submissions between MORL (for the Round 3 zone) and BOWL (for Beatrice).

4.5 Finally, we note that any submitted ES will need to present clear information on, and identification of, the main biotopes found on-site. It will be helpful for this biotopes/habitat map to also be marked with the finalised windfarm layout (i.e. to display how the finalised layout has accounted for benthic interests).

Marine Protected Areas (MPAs) and Priority Marine Features (PMFs)

4.6 With reference to Marine Protected Areas (see section 5.2.6 of the scoping report, p83), please note that Scottish Government have published guidance[8] that includes a draft list of Priority Marine Features within territorial waters for which MPAs may be an appropriate mechanism. SNH and JNCC are currently reviewing the lists of marine biodiversity and geodiversity features in order to help identify habitats and species for which MPAs could make a contribution to their conservation.

4.7 The MPA process is likely to be running on a parallel timescale to the applicant's project development and its formal consenting. We will seek to keep them updated on our input to the progress of MPAs, where relevant, and we also welcome their intention to engage in this process.

Cumulative Impacts

4.8 We highlight cumulative impacts between the Round 3 zone and the Beatrice proposal as a key concern with regard to benthic ecology. We hope that MORL and BOWL will co-ordinate over their survey work, analysis and proposed locations for infrastructure including cabling and grid.

5. FISH OF CONSERVATION CONCERN & FISHERIES

5.1 We have reviewed sections 5.2.3 and 5.3.2 of the applicant's scoping report and have the following comments to make about fish of conservation concern and fisheries. We note that Marine Scotland Science are the primary source for information on commercial fish and shellfish in Scottish waters, and the applicant should contact them directly for information on all aspects associated with commercial fisheries.

Species to Consider

5.2 In Annex E we provide our advice on migratory fish species which are a qualifying interest of freshwater Special Areas of Conservation (SACs) – Atlantic salmon, sea lamprey and river lamprey. The Appendix also includes consideration of freshwater pearl mussel.

5.3 In respect of section 5.2.3.1 of the scoping report, we note that other elasmobranchs may need consideration including those listed by OSPAR and under the Wildlife & Countryside Act.

5.4 Skates and rays are often associated with sandier substrates and may need to be considered. We recommend that impact assessment for elasmobranchs includes consideration of the impacts of electro-magnetic fields (EMF) – see further discussion of EMF below.

[8] Marine Protected Areas in the Seas around Scotland: Guidelines on the selection of MPAs and development of the MPA Network, draft March 2010. Available at: http://www.scotland.gov.uk/Topics/marine/marine-environment/mpanetwork/draftmpaguidelines

5.5 European eel which is a conservation priority due to a 95% drop in its population over the last 20 years; it is considered by ICES to merit emergency action and is listed as 'critically endangered' on the IUCN Red list. Very little is known about their migration pathways – either as juveniles or adults. A draft report from Marine Scotland Science reviews the data available in relation to European eel migration routes and behaviour[9].

5.6 Allis and Twaite shad which are listed on Annex II of the Habitats Directive and on the UKBAP Priority List. Allis shad are also protected under Schedule 5 of the Wildlife & Countryside Act. Shad are found in shallow coastal waters and estuaries, although they migrate up rivers to spawn. In Scotland, they are found all around the coast, although the only known (Scottish) spawning site is located in the River Cree, which flows into the Solway Firth.

5.7 Sea trout which support a number of fisheries in Scotland. Many of these fisheries have undergone significant declines in the last 25 years and this was a primary reason for the addition of the species to the UKBAP priority list. The draft report from Marine Scotland Science reviews the data available in relation to sea trout migration routes and behaviour.

5.8 In respect of fisheries the following information may be helpful. We note that it does not cover all commercial species but it may help to focus liaison with the fishing industry:

5.9 Muddy sediments are the favoured habitat of Scottish langoustine (*Nephrops norvegicus*), also known as prawns or Norway lobster, inhabiting burrows in the mud. The *Nephrops* fishery is the most valuable inshore fishery in Scotland being exploited using trawlers (all coasts) and static gear (mostly west coast).

5.10 Sand and gravel substrates are often fished for scallops (*Pecten maximus* and *Aquepecten opercularis*). Other commercial bivalves such as cockles, razors (*Ensis* spp.) and surf clams also favour sandy substrates, but are mostly exploited very close to shore. Skates and rays are also often associated with sandier substrates and some are of conservation concern (see above).

5.11 Sandeel populations also occur in the sandier substrates of the Moray Firth, such as Smith Bank, and may potentially be impacted by windfarm development (with resulting effects on trophic links to seabirds, mammals and other fish). We strongly recommend that advice is sought from Peter Wright and Simon Greenstreet at Marine Scotland Science who are amongst the most knowledgeable on sandeel stocks and dynamics in this area.

Fishing industry liaison / consultation

5.12 In respect of consultation (see section 5.3.2.6 of the scoping report), we note that the Round 3 zone is technically beyond the geographical remit of the local Moray Firth Inshore Fisheries Group (IFG). However, the development and its associated fisheries impacts will be relevant to some of the IFG members who should be kept informed/consulted accordingly. It is not the role of the IFG to represent fishermen,

[9] Malcolm, I., Godfrey, J. & Youngson, A. In prep. Review of migratory routes and behaviour of Atlantic salmon, sea trout and European eel in Scotland's coastal environment: implications for the development of marine renewables. Marine Scotland Science draft report.

however, this body can be used as means of communicating information to the various groups that are not represented though the Fishermens' Associations.

Data sources & survey design for fish and shellfish

5.13 The data used in the scoping report to describe the baseline for spawning and nursery grounds is from Coull et al 1998 (see section 5.2.3.1 of the report). We highlight that the Defra Data Layers project will update this information and should be publicly available soon. Marine Scotland Science are also updating the information on fishery sensitivities and should be contacted for further information.

5.14 In section 5.2.3.1, we note that the grouped UKBAP plan for commercial species is dated and we advise that it will be more relevant to refer to current fisheries management measures.

Fishing effort

5.15 In respect of the discussion and baseline description in section 5.3.2.1 of the report, we note that fishing statistics may not show activity from <10m vessels as the requirements for submitting data are limited for this size class are limited. Nevertheless, we would agree that <10 m vessels and indeed <15m vessels are unlikely to frequently operate this far offshore.

Impacts

5.16 *Construction / decommissioning impacts:* The EIA should include discussion of the impacts of underwater noise on fish (produced from various sources, including ships' engines, piling hammers and augering operations), especially during spawning, in respect of construction and decommissioning work. The levels of noise production that can be expected should be set-out and, using published literature, the impact, if any, this will have on fish life stages, movements and behaviour should be considered.

5.17 *Operational noise:* The levels of noise that are expected to be generated should be set-out, and the impact this may have on fish should be considered. The recent review[10] commissioned by SNH may be helpful in assessing the impacts of construction and operational noise.

5.18 *Rock Armouring:* as discussed in sections 5.2.3.3 and 5.2.3.4, the ecological impact of rock armouring (or other materials around the base of turbines) should be considered. We note that the scoping report correctly states that, while likely to act as a fish aggregation device, such structures do not necessarily boost productivity (see p.59).

5.19 *Electromagnetic fields (EMF):* The potential for some fish species, including Atlantic salmon and European eels to be affected by EMFs emitted by subsea cables should be considered. The EIA should review the current state of knowledge, what the specific risks are in the Moray Firth, what the uncertainties are, how this proposed development will learn from current studies elsewhere and whether there are any opportunities to contribute to a wider understanding of EMF impacts.

[10] Gill, A.B. & Bartless, M. In prep. Literature review on the potential effects of electromagnetic fields and subsea noise from marine renewable energy developments on Atlantic salmon, sea trout and European eel. Scottish Natural Heritage draft report.

6. SEASCAPE, LANDSCAPE AND VISUAL IMPACT ASSESSMENT

6.1 SNH are reviewing existing guidance in order to draw up a list of recommendations for carrying out seascape, landscape and visual assessment in Scotland, in relation to marine renewables. In advance of the finalisation of this work (which will be discussed with MORL when available), SNH provide the following advice on section 5.3.10 of the scoping report.

Method of Assessment

6.2 The approach described in the '*Guidelines for Landscape and Visual Impact Assessment'* (LI-IEMA, 2002) should be used. The assessment process for coastline, landscape and seascape is essentially the same, although each area has its own specific characteristics, as well as other shared characteristics. It is important to consider the key elements that are specific to each environment, whether land-based or marine. It is these that differ, not the method of character assessment.

6.3 Although the techniques and methods developed to evaluate seascapes are helpful, (such as SNH's seascapes work[11] and the GSA[12] commissioned by CCW) they need to be critically assessed before they are generally applied in Scotland. This is due to Scotland's specific coastal conditions and qualities, and the limited installation of offshore windfarms in Scotland, therefore knowledge of their likely impacts is limited.

6.4 Essentially, what is required is a coastal landscape assessment, clearly related both 'seawards' and 'landwards'. Once the baseline is established, judgements on sensitivity and impacts can then be made. Duplication of assessment, potential confusion and complexity must be avoided by recognising that landscape character contributes to seascape character and vice versa. Hence, establishing how these relationships are to be addressed is fundamental to the assessment. Important elements to consider include the contrast of form, pattern, texture and colours between the landscape and sea. In particular, the horizontal extent of the sea is a strong compositional attribute in views looking out offshore, from land.

6.5 We note that SNH guidance on *Siting and Designing Windfarms in the Landscape* [13] has recently been published and some aspects may be relevant to consider in respect of offshore proposals.

Baseline

6.6 Within the study area, the seascape character types applied are as identified in the SNH '*Seascapes*' report (as cited above, reference 4). This study is a strategic assessment, a 'nationwide' look at the coast, with general descriptions of seascape character types. These were tested against a specific, set theoretical windfarm

[11] *An assessment of the sensitivity and capacity of the Scottish seascape in relation to windfarms*. SNH (2005). Available at: http://www.snh.org.uk/pdfs/publications/commissioned_reports/F03AA06.pdf

[12] *Guide to Best Practice in Seascape Assessment*. CCW (2001). Available at: http://www.ccw.gov.uk/pdf/Guide-to-best-practice-in-seascape-assessment.pdf

[13] *Siting and Designing Windfarms in the Landscape.* SNH (2010). http://www.snh.gov.uk/docs/A317537.pdf

scenario (not the current proposal) to explore issues of sensitivity and visibility. The study was limited to a strategic desk-based approach where fieldwork was not a major part of the assessment process. Thus, these seascape units are of only limited use in appraising real development proposals, and can only be applied to proposals at the strategic level.

6.7 The seascape character areas at the strategic scale (as defined in the *Seascapes* report) need refinement in order to examine the impacts of specific windfarm proposals. Field work is required to do so, and we recommend that the applicant uses the coastal character methodology developed for aquaculture capacity studies.[14] This approach identifies areas of consistent seascape character with strong integrity, like a specific bay or stretch of coast. We recommend that these local coastal character areas are defined at a scale comparable to the existing Landscape Character Assessments. *The Beaches of Scotland* series may also be helpful in this work – these regional reports offer a quantified description of many aspects of Scotland's coastline and are available from SNH publications[15].

Visibility and Zones of Theoretical Visibility

6.8 We recommend that, in assessing visibility, reference is made to SNH's good practice guidance on visual representation of windfarms[16] which includes practical guidelines on the preparation, presentation and application of visibility maps, viewpoints and visualisations. While the principles of this guidance hold, they need to be tailored for offshore windfarms due to their larger scale (numbers of turbines and turbine size) and the wider spacing between turbines. Please also be aware that the visualisations and other illustrative material should be viewed in hard copy only.

6.9 A large windfarm is more noticeable than a single turbine, as the eye is attracted to groups or patterns. Correspondingly, as the eye picks out patterns and groups, this highlights the importance of compatibility between adjacent windfarm designs within a 'wider view', or panorama (see the section below on Cumulative Impacts).

6.10 We recommend an initial study area for the Round 3 zone based on a 60km radius ZTV, as the applicant for Beatrice (Beatrice Offshore Windfarm Limited: BOWL) indicated they would be this using for cumulative study, and also to encompass the range of turbine heights that MORL is intending to consider using a 'Rochdale envelope' approach; from 158.5 m to an upper limit of 182 m (see Section 2.5.2 of the scoping report, p13). This initial study area can be refined as the development progresses and the applicant identifies the key issues for LVIA.

6.11 In respect of this, we highlight the current pressure for further onshore windfarm development in both Caithness and East Highland. The study area should be of an appropriate extent to allow adequate assessment of development in the Round 3 zone including its cumulative impact.

[14] *Guidance on Landscape/Seascape Capacity for Aquaculture. Natural Heritage Management,* SNH (2008). Available at: http://www.snh.org.uk/pdfs/publications/heritagemanagement/aquaculture.pdf

[15] SNH publications: http://www.snh.gov.uk/publications-data-and-research/publications/search-the-catalogue/

[16] *Visual Representation of Windfarms - Good Practice Guidance*: http://www.snh.gov.uk/docs/A305436.pdf

Viewpoint Selection and Assessment

6.12 Viewpoints should be selected in consultation with statutory consultees – for the Moray Round 3 zone this includes the Highland Council, Moray Council and SNH – and we recommend that a public consultation is also held.

6.13 Viewpoint selection is based on the identification of potentially sensitive receptors (people, places and activities) and potentially significant views, locations or landscapes, taking into account the likely impacts of the windfarm. Initially lengthy, the viewpoint list should shorten as visual impact assessment (VIA) progresses, focusing on the viewpoints which best illustrate the most significant impacts, or which best aid windfarm design. However, the applicant should remain aware that further or alternative viewpoints may need to be considered throughout the assessment process.

6.14 The choice of all viewpoints should be informed by the cumulative ZTV. Although it is possible to add supplementary viewpoints as part of a cumulative VIA, it is preferable to use all or some of the same viewpoints for both the individual and cumulative VIA.

6.15 Viewpoints should be selected in order to show:

- A full representation of views from a range of distances, elevations, aspects, landscape character types and visual receptors; to include coastal views looking out to the coast and back, as well as across water to opposing shores.
- All aspects of the proposed development, to illustrate it "in the round" and help with design and assessment processes, including assessment of the proposal in a range of light conditions (such as side-lit, back-lit and front-lit).
- Visual composition; for example, focussed or panoramic views, simple or complex.
- The variety of images that the windfarm will present from coastal areas as well as important coastal hilltops and, in the case of firths and straits, landmarks including, for example, where all the turbines are visible as well as places where partial views of turbines occur.
- Sequential views along specific routes.
- The full range of different types of views, for example from popular hilltops, footpaths and other recreational routes, key transport routes (on and offshore where relevant), minor roads where the windfarm will be the focus of the view, settlements, cultural and recreational foci, and so on.
- Views of other windfarms in respect of cumulative impacts.

6.16 Viewer Type: Viewpoints will need to address:

- The full range of receptor groups; for example, residential, work, road users and other travellers, walkers and other recreational users.
- Various modes of movement. For example, those moving through the landscape, across ferry and popular recreational sailing routes, or stationary.

6.17 All viewpoint information should be presented in a table and cross-referred to a ZTV map on which all of the numbered viewpoints are plotted. We recommend that the following details are included in the ES to be able to reference each visualisation: the precise location of the viewpoint (including 12 figure OS grid reference and a brief description), its orientation to and distance from the proposed development, the viewpoint height, nature of view (width of view in degrees and bearing of key foci within view) and conditions of assessment – including date, time of day, weather conditions and visual range. It is helpful if this information is presented alongside each visualisation including a small insert map (based on a 1:50,000 OS base map) to show the viewpoint's detailed location and direction.

6.18 The characteristics visible from each viewpoint that are sensitive to windfarm development should be described and assessed, particularly in relation to the changes the development would cause. Factors such as season, weather, air clarity, movement, orientation to prevailing winds, elevation of the windfarm in relation to the viewer, and any screening elements may be relevant. The design and layout of the turbines and other components of the windfarm, as it would appear from each viewpoint, should also be described and assessed. Any lighting or other markings on the turbines (required for navigational / defence purposes) should be considered (with reference to section 2.7.2 of the scoping report).

Cumulative Impacts

6.19 We recommend that MORL collaborate with BOWL on an assessment of the cumulative landscape and visual impacts of their proposals in the Moray Firth, and refer to SNH guidance in so doing[17]. We would expect such assessment to include a baseline of existing and consented onshore windfarms as well as considering any proposals in planning.

Potential Mitigation and Monitoring

6.20 The applicant should clearly articulate their design process in the ES – a summary and analysis of the iterations leading to the final choice of windfarm layout, and why this is the optimal design in respect of landscape, balancing the various other constraints.

6.21 We welcome further liaison with MORL and the other Beatrice developers over SLVIA for their individual proposals, as well as in respect of a cumulative study. An important aspect that requires discussion is the viewpoint (VP) selection. We need to be clear on the reasoning behind the VPs that have so far been suggested and to make sure that these have been informed by the cumulative ZTV. As noted above, we strongly recommend that Marine Scotland and the relevant planning authorities are involved in this discussion, and in any meeting to select the VPs to be used for cumulative visual impact assessment as well as for individual proposals.

[17] *Cumulative Effect of Windfarms*. Available at: http://www.snh.gov.uk/docs/A305440.pdf

ANNEX C – LEGISLATION: EUROPEAN PROTECTED SPECIES AND HABITATS REGULATION APPRAISAL

EUROPEAN PROTECTED SPECIES

Certain species are listed on Annex IV of the Habitats Directive as species of European Community interest and in need of strict protection. The protective measures required are outlined in Articles 12 to 16 of the Directive. The species listed on Annex IV whose natural range includes any area in the UK are called 'European protected species'.

JNCC is the statutory nature conservation body who provides advice on EPS in respect of the Habitats Regulations for UK waters, outside of 12nm (territorial waters). A summary of the legal requirements for EPS in offshore waters (also found here[18]) is as follows:

In England, Wales and UK offshore waters (outside 12nm), Regulations 41(1) and 39(1) of the Habitats Regulations and the Offshore Marine Regulations, respectively, provide that a person is guilty of an offence (and would therefore need to be considered for licence) if he:

(a) deliberately captures, injures, or kills any wild animal of a European protected species;
(b) deliberately disturbs wild animals of any such species

For the purposes of paragraph (1)(b), disturbance of animals includes in particular any disturbance which is likely—

(a) to impair their ability—
(i) to survive, to breed or reproduce, or to rear or nurture their young; or
(ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate; or
(b) to affect significantly the local distribution or abundance of the species to which they belong.

JNCC (with Countryside Council for Wales and Natural England) have produced guidance (The protection of marine European Protected Species from injury and disturbance: Guidance for the marine area in England and Wales and the UK offshore marine area, JNCC, CCW and Natural England, 2010) which is currently in draft form awaiting approval, and outlines how developers, regulators and courts assess: a) the likelihood of an offence being committed; b) how this can be avoided; and c) if it can't be avoided, the conditions under which the activity could go ahead under licence**.**

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

Within 12nm there is a different interpretation of an offence under the Regulations, the applicant should ensure that they are also aware of the definition of disturbance and the legal provisions for EPS that are set out in The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended in Scotland). Please see their website[19] for advice on the legal provisions which apply under the Regulations. The text below refers to the approach to EPS licensing for waters outside 12nm and further discussions are needed with Marine Scotland and the developer on how to address activities which could affect territorial waters.

[18] JNCC advice on EPS under the Offshore Marine Regulations 2007 (as amended) at: http://www.jncc.gov.uk/page-4550
[19] http://www.snh.gov.uk/protecting-scotlands-nature/species-licensing/mammal-licensing/marine/

EPS Licences outside of 12nm

If there is a risk of injury or disturbance of EPS that cannot be removed or sufficiently reduced by using alternatives and/or mitigation measures, then the activity may still be able to go ahead under licence, but this should be a last resort. A licence should only be granted if the activity fits certain purposes, if there is no satisfactory alternative and where the activity will not be detrimental to the maintenance of the populations of the species concerned at a FCS in their natural range.

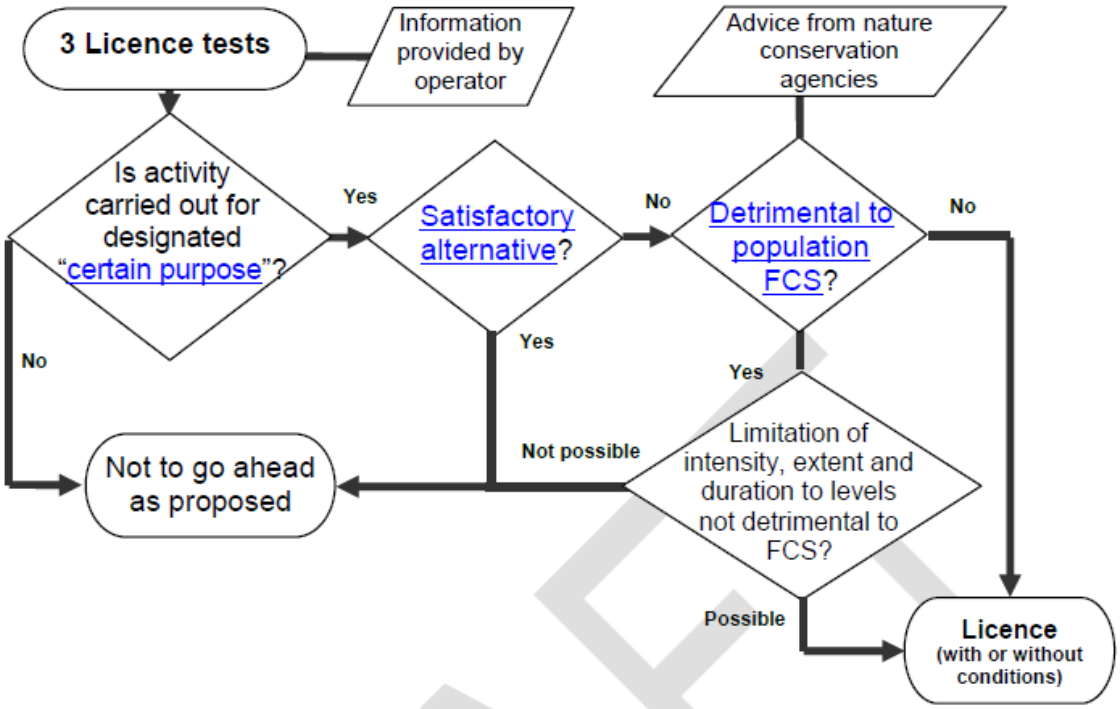
The likelihood of an activity resulting in injury or disturbance offence to a marine EPS will very much depend on the characteristics of the activity, of the environment and the species concerned, hence the need for a case-by-case approach when assessing the risk of it occurring. Pursuing mitigation measures, alternative methods, locations and/or times for carrying out proposed activities might in some cases be sufficient to reduce the risk of causing offence to negligible levels. This would then negate the requirement for a licence.

It is expected that many activities at sea will not require a licence to exempt them from regulations 41(1)(a) and (b) and 39(1)(a) and (b) of the HR and OMR, respectively, since their potential for injury and/or disturbance can be effectively mitigated or because the characteristics of the disturbance will fall below the threshold of an offence.

Any licence application (under regulation 53(1) of the HR and 49(6) of the OMR) will necessitate a detailed assessment of whether the licence should be granted. The licence assessment will be comprised of three tests to ascertain:

1) whether the activity fits one of the purposes specified in the Regulations;
2) whether there are no satisfactory alternatives to the activity proposed (that would not incur the risk of offence); and
3) that the licensing of the activity will not result in a negative impact on the species'/population's Favourable Conservation Status. The licence assessment will be carried out by the appropriate authority with the information provided by the developer and advice from nature conservation agencies.

A flowchart is included below describing the process which the licensing authority will undertake for areas outside 12nm:



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

HABITATS & BIRDS DIRECTIVES, & HABITATS REGULATIONS

The two most influential pieces of European legislation relating to nature conservation are the Habitats and Birds Directives. The 'Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora' was adopted in 1992 and is commonly known as the Habitats Directive. It complements and amends (for classified SPAs) Directive 2009/147/EC of the European Parliament and of the Council on the conservation of wild birds (this is the codified version of Directive 79/409/EEC as amended), commonly known as the Birds Directive[20].

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

The Habitats Directive builds on the Birds Directive by protecting natural habitats and other species of wild plants and animals. Together with the Birds Directive, it underpins a

[20] A copy of the updated Birds Directive is available from:
http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:020:0007:0025:EN:PDF

European network of protected areas known as Natura 2000 comprising SPAs classified under the Birds Directive and Special Areas of Conservation (SACs) designated under the Habitats Directive.

The Habitats Directive is transposed into domestic law in Scotland by the 'Conservation (Natural Habitats, &c.) Regulations 1994' which came into force on 30 October 1994 – usually called simply the **Habitats Regulations**. Several amendments have been made to the Habitats Regulations since they came into force.

The Habitats Regulations apply to the Scottish territorial waters, and the rules for the protection of marine Natura sites and marine European protected species (EPS) apply here exactly as they do on land. Beyond inshore waters, between 12 and 200 nautical miles, the Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 as amended apply (the Offshore Habitats Regulations). These differ from the Habitats Regulations mainly in respect of the provisions for EPS – please see above for further discussion.

Habitats Regulations Appraisal

Where a plan or project could affect a Natura site, the Habitats Regulations require the competent authority – the authority with the power to undertake or grant consent, permission or other authorisation for the plan or project in question – to consider the provisions of regulation 48. This means that the competent authority has a duty to:

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

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

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

Further Information and Advice on HRA

For further advice on the HRA process the SNH leaflet on "Natura sites and the Habitats Regulations"[21] provides a helpful summary. Some of the key concepts are explained in the European Commission's guidance on Article 6 of the Habitats Directive.[22] Revised guidance updating the Scottish Office Circular 6/1995[23] on the implementation of the Habitats and

[21] http://www.snh.gov.uk/docs/C204761.pdf

[22] http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/provision_of_art6_en.pdf

[23] http://www.scotland.gov.uk/library3/nature/habd-00.asp

Birds Directive in Scotland was produced in June 2000. This sets out current Government policy relating to Natura sites.

Annex D provides our for tailored advice on HRA for offshore windfarm development in the eastern section of the Round 3 zone in respect of birds that are qualifying interests of SPAs. Annex E provides our tailored advice for the proposal in respect of the qualifying interests of SACs such as marine mammals and fish.

SNH's Sitelink database[24] provides information on the qualifying interests and the conservation objectives for each Natura site that it may be relevant to consider in respect of the Round 3 zone.

[24] http://www.snh.org.uk/snhi/

ANNEX D: MORAY FIRTH ROUND 3 ZONE: HABITATS REGULATIONS APPRAISAL FOR SPECIAL PROTECTION AREAS

In the following advice for HRA we set out the three steps that need to be considered in order to determine whether or not proposed windfarm development in the eastern section of the Round 3 zone in the Moray Firth is likely to have a significant effect on the qualifying interests of SPAs, and any possible adverse impact on site integrity. It is the competent authority (most likely Marine Scotland) who will carry out the HRA, based on advice from ourselves (JNCC and SNH) and using information and data collated by the developer (MORL). We note that the HRA should become more focused over time through an iterative process, as information arises which justifies that the risk to certain features is at an acceptable level.

Under HRA, the potential impacts of this proposal will need to be considered alone and in combination with other plans and projects. It needs to be considered in combination with the proposed Beatrice windfarm and other activities that may be relevant. We therefore recommend that MORL and BOWL (the developer for the Beatrice proposal) collaborate on the assessment of cumulative impacts. We would welcome discussion of this with, preferably, a joint meeting between the applicants, Marine Scotland and ourselves.

We also note that HRA should address all elements of the windfarm proposal – onshore works as well as offshore elements. However, at this early stage in the process we do not have full details in this regard, therefore our advice focuses on turbine location / construction within the eastern section of the Round 3 zone.

Special Protection Areas for inclusion in HRA

We recommend that the following SPAs are considered for individual and also for cumulative assessments:
Cromarty Firth SPA
Dornoch Firth SPA
East Caithness Cliffs SPA
Inner Moray Firth SPA
Loch of Strathbeg SPA
Moray and Nairn Coast SPA
Troup, Pennan and Lion's Heads SPA

We would welcome the opportunity to discuss the scope of HRA with both windfarm developers in the Moray Firth (as noted above). There may be other SPAs that need consideration, depending on the bird species that have been recorded in the Smith Bank area, and taking account of the large foraging ranges of some SPA qualifying species such as gannet and fulmar. We note that the scope of HRA should be based on a consideration of the range of bird species that may be affected, their ecology and the types of impacts which may affect them.

Further information on SPAs, including their conservation objectives, is available from:
http://www.snh.org.uk/snhi/
We also recommend that the developer consults the current JNCC areas of search for potential inshore and offshore SPAs. Please see:
http://www.jncc.gov.uk/page-4563 and http://www.jncc.gov.uk/page-4564 respectively.

Advice for HRA in respect of SPA qualifying interests

We provide advice on the legislative requirement for HRA in Annex C. The steps of the process are as follows;

<u>Step 1</u>: Is the proposal directly connected with or necessary for the conservation management of the SPAs?

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

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

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

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

SPA bird interests being considered in respect of offshore windfarms are wide-ranging, considering foraging ranges and migratory species. This presents challenges in determining from which SPA species on the site have arisen, and may necessitate novel approaches in assessing effects on key populations which we are keen to discuss with Marine Scotland and the developer.

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

Determination of 'likely significant effect' is not just a record of presence or absence of bird species at an offshore windfarm site, but also involves a judgement as to whether any of the SPA conservation objectives might be undermined. Such judgement is based on a simple consideration of the importance of the area in question for the relevant species. Complex data analysis should not be required at this stage. For example; How many birds have been recorded? What are they using the area for? Is this the only area that they can use for this particular activity? Understanding the behavioural ecology of the species, and the characteristics and context of the proposed windfarm site, will help in determining whether there are likely significant effects. There are three possible conclusions for this step of HRA:

a) The likely impacts are such that there is clear potential for the conservation objectives to be undermined – conclude likely significant effect.
b) The likely impacts are so minimal (either because the affected area is not of sufficient value for the birds concerned or because the risk to them is so small) that the conservation objectives will not be undermined – conclude no likely significant effect.
c) There is doubt about the scale of the likely impacts in terms of the conservation objectives – conclude likely significant effect.

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

This stage of HRA is termed **appropriate assessment**, and it is undertaken by the competent authority based on information supplied by the developer, with advice provided by ourselves (JNCC & SNH). Appropriate assessment considers the implications of the proposed development for the conservation objectives of the qualifying interests for which a likely significant effect has been determined. These conservation objectives follow a standard format requiring protection of the qualifying bird interests and protection of the habitat in the SPA which supports them.

Conservation objectives for SPA bird species

To ensure that site integrity is maintained by:
(i) Avoiding deterioration of the habitats of the qualifying species.
(ii) Avoiding significant disturbance to the qualifying species.
To ensure for the qualifying species that the following are maintained in the long term:
(iii) Population of the bird species as a viable component of the SPA.
(iv) Distribution of the bird species within the SPA.
(v) Distribution and extent of habitats supporting the species.
(vi) Structure, function and supporting processes of habitats supporting the species.
repeat of (ii) No significant disturbance of the species.

It is important to recognise that the conservation objectives primarily offer site-based protection and that some of them will not directly apply to species when they are outwith the boundaries of the SPA. This is particularly true of objectives **(i)**, **(v)** and **(vi)** which relate to the supporting habitats within the SPA.
Objective **(iii)** however – maintenance of the population of the bird species as a viable component of the SPA – will be relevant in most cases because:

- It encompasses direct impacts to the species, such as significant disturbance to qualifying bird interests when they're outwith the SPA.
- It addresses indirect impacts such as the degradation or loss of supporting habitats which are outwith the SPA but which help to maintain the population of the bird species of the SPA in the long-term.

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

Issues to consider under appropriate assessment

The key question in any appropriate assessment for windfarm development in the Moray Firth Round 3 zone is whether it can be ascertained that this proposal, alone or in combination, will not adversely affect the population of any qualifying bird species as a viable component of the SPAs under consideration.

In considering this matter, we refer to the helpful summary of the main risks of offshore windfarm development to birds provided in Langston 2010.[25] In addition, there may be further issues to consider – as set out below – if the proposal is likely to affect the conservation objectives that relate to bird species while they're in an SPA or to the habitats in the SPA that support them.

- Will the proposal(s) cause a deterioration in the habitats of any of the SPAs?

[25] Langston (2010). Offshore wind farms and birds: Round 3 zones, extensions to Round 1 & Round 2 sites & Scottish Territorial Waters. RSPB Research Report No. 39.

NB. This question relates specifically to the habitats in the SPAs that support the bird interests.

- Will the offshore wind proposal(s) cause any significant disturbance to bird interests while they're in any of the SPAs? N.B. *See the previous discussion in respect of disturbance outside an SPA.*
- Will the offshore wind proposal(s) alter the distribution of the birds within any of the SPAs?
- Will the offshore wind proposal(s) affect the distribution and extent of the habitats (that support the bird species) in any of the SPAs?
- Will the offshore wind proposal(s) in any way affect the structure, function and supporting processes of habitats in any of the SPAs? NB. *Those habitats which support the bird species.*

We highlight that these questions – and the underpinning conservation objectives – will be applicable to the habitats which support bird interests in any new SPAs designated for inshore and / or offshore aggregations of seabirds – please see JNCC's website for potential areas of search, including the Moray Firth.[26]

Ongoing Liaison

As noted above, we hope to further discuss these various aspects with MORL and BOWL both with regard to their individual sites and to cumulative impacts. Agreeing the scope of, and information required for, HRA will be an iterative process which will be refined throughout the EIA process.

[26] Information on potential new marine SPAs is available at: http://www.jncc.gov.uk/page-4184

ANNEX E: MORAY FIRTH ROUND 3 ZONE: HABITATS REGULATIONS APPRAISAL SPECIAL AREAS OF CONSERVATION

Introduction

In the following advice for HRA we set out the three steps that need to be considered in order to determine whether or not the proposed windfarm is likely to have a significant effect on the qualifying interests of SACs, and any possible adverse impact on site integrity. The competent authority (Marine Scotland) will carry out the HRA, based on advice from ourselves (JNCC and SNH), using information and data collated by the developer (MORL).

Under HRA, the potential impacts of this proposal will need to be considered alone and in combination with other plans and projects, including other windfarms and different activities. Collaboration between MORL and BOWL on the assessment of cumulative impacts is therefore beneficial, and we welcome discussion of this with a joint meeting between the applicants, Marine Scotland and ourselves.

We recognise that the HRA is set wide initially, but will become more focused as information is collected and we will continue to review our advice as each windfarm development progresses. We also note that HRA should address all elements of the windfarm proposal – onshore works as well as offshore elements.

Special Areas of Conservation for Inclusion in HRA

We advise that the applicant will need to consider the following SACs, initially, due to potential connectivity between the development and the site. Further information, including their conservation objectives, is available from http://www.snh.org.uk/snhi/.

SACs designated for marine mammals and for marine and coastal habitats:

- **Culbin Bar SAC** - designated for its coastal habitats including sand dunes, vegetated shingle and salt meadows.
- **Dornoch Firth & Morrich More SAC** - designated for its population of common (harbour) seals (*Phoca vitulina*) and for coastal and marine habitats including sand dune habitats, intertidal mudflats and sandflats; subtidal sandbanks and reefs.
- **Moray Firth SAC** - designated for bottlenose dolphin (*Tursiops truncatus*) and for subtidal sandbank habitat.

SACs designated for fish of conservation concern:

- **Berriedale & Langwell Waters SAC** - designated for Atlantic salmon (*Salmo salar*).
- **River Evelix SAC** - designated for freshwater pearl mussel (*Margaritifera margaritifera*).
- **River Moriston SAC** - designated for Atlantic salmon and for freshwater pearl mussel.
- **River Oykel SAC** - designated for Atlantic salmon and for freshwater pearl mussel.
- **River Spey SAC** - designated for Atlantic salmon, sea lamprey (*Petromyzon marinus*), freshwater pearl mussel and otter (*Lutra lutra*).
- **River Thurso SAC** - designated for Atlantic salmon.

We provide advice on the legislative requirement for HRA in Annex C. The steps of the process are as follows; our advice is tailored to consideration of windfarm development in the eastern section of the Moray Firth Round 3 zone.

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

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

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

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

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

There are three possible conclusions to this step of HRA:

a) The likely impacts are such that there is clear potential for the conservation objectives to be undermined – conclude likely significant effect.
b) The likely impacts are so minimal that the conservation objectives will not be undermined – conclude no likely significant effect.
c) There is doubt about the scale of the likely impacts in terms of the conservation objectives – conclude likely significant effect.

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

- **Marine and coastal habitats** of the Moray Firth, the Dornoch Firth and Culbin Bar SACs.
  There are potential cumulative impacts on coastal processes arising from proposed windfarm development in the Round 3 zone in combination with the Beatrice proposal. It is possible that disruption of, or changes to, coastal processes and sediment movements may lead to significant effects on the coastal and marine habitats of these SACs.

  Therefore as a precaution, and because we are uncertain about the scale of potential impacts, we advise that this issue is scoped into HRA. We discuss below (under step 3) what we think needs to be considered. The proposed cable routes and onshore infrastructure (when detailed) could also potentially have effects on coastal and marine SACs dependant on their proposed location.

  Summary of our current advice: possible likely significant effects in relation to offshore infrastructure; further discussion needed to determine whether impacts (incl. cumulative) will need to be considered in appropriate assessment (see step 3). Consideration of cable routes and onshore infrastructure may also be required.

- **Bottlenose dolphins** of the Moray Firth SAC.
  The dolphins are not confined to this SAC and will range more widely within the Firth and beyond. Construction (and other) noise arising from development in the Round 3 zone is likely to extend beyond the windfarm footprint and may overlap with dolphin use of the surrounding environment. Boat movements, cable-laying and other construction activity may give rise to disturbance. There may also be impacts to the prey species of dolphin – either from the placement of infrastructure or due to noise. We therefore advise that there is potential for the proposal to have likely significant effects on bottlenose dolphins and discuss below (under step 3) the issues that we think need to be considered.

It would be beneficial for MORL and BOWL to collaborate on this issue as appropriate assessment of the cumulative impacts on bottlenose dolphins is likely to be required. Joint discussion and co-ordination of survey work, mitigation proposals and construction time-tabling would be helpful.

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

- **Common (Harbour) seals** of the Dornoch Firth SAC.
  The seals are not confined to the SAC itself and will range more widely in the Firth. Construction (and other) noise arising from the proposal is likely to extend beyond the windfarm footprint and may overlap with seal use of the surrounding environment. Boat movements, cable-laying and other construction activity may give rise to disturbance. There may also be impacts to the prey species of seals – either from the placement of infrastructure or due to noise. We advise that there is potential for the proposal to have likely significant effects on common (harbour) seals and we discuss below (under step 3) the issues that we think need to be considered.

  We highlight that it would be beneficial for MORL and BOWL to collaborate on this issue as appropriate assessment of the cumulative impacts on common (harbour) seals is likely to be required for the two proposals in combination. Joint discussion and co-ordination of survey work, mitigation proposals and construction time-tabling would be helpful.

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

- **Atlantic salmon** as a qualifying interest of the various freshwater SACs noted above.
  We have listed a wide range of SACs due to the current uncertainty about the migratory movements of Atlantic salmon. We recognise that there is a significant data / research gap on this issue, and that very little is known about salmon movements – adults and post-smolts – around the Scottish coastline. Marine Scotland have analysed historic tagging data and should be issuing a report soon, however, it is likely that this report will highlight further research requirements[27].

  While we know that Atlantic salmon are recorded in the Moray Firth, we understand that it will not be possible for the applicant to conclusively identify from/to which SAC watercourses any particular individuals (post smolts, or adults) are coming or going. We recommend that the applicant assumes all individuals are SAC salmon, and considers the effects on these fish from construction and operational noise / vibration, as well as any other types of disturbance. Mitigation could include timing restrictions on construction work / noisy activities in order to avoid any significant disturbance to migrating salmon, or disruption of their (as yet unknown) migratory routes.

  We advise that the cumulative impacts of the Round 3 and Beatrice proposals in combination are a key concern, and would benefit from the applicants taking a joint approach to the assessment and to the co-ordination of mitigation proposals and construction time-tabling. Onshore infrastructure and / or any required upgrades to roads or bridges may need to be considered under HRA if the work is likely to affect any of these freshwater SACs.

[27] Malcolm, I., Godfrey, J. & Youngson, A. In prep. Review of migratory routes and behaviour of Atlantic salmon, sea trout and European eel in Scotland's coastal environment: implications for the development of marine renewables. Marine Scotland Science draft report.

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

- **Sea lamprey** of the River Spey SAC.
  There is little available information on the movements of sea lamprey in general, and within the Moray Firth in particular. It appears that this species does not undertake large migrations and probably stays within coastal areas. We advise that there is potential for the proposal to have likely significant effects on this species and we request further assessment of available information to determine whether appropriate assessment is required for this feature.

  It would be beneficial for MORL and BOWL to collaborate on this issue. Joint discussion and co-ordination of mitigation proposals / construction time-tabling may be helpful. We consider that effects on sea lamprey from onshore infrastructure are unlikely, presuming this is not proposed in proximity to the River Spey SAC.

  Summary of our current advice: possible likely significant effect in relation to offshore infrastructure, so impacts (including cumulative) may need to be considered in appropriate assessment (see step 3). No likely significant effect in respect of onshore infrastructure, dependent on its location.

- **Freshwater pearl mussels** of the River Evelix SAC and other freshwater SACs as noted above.

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

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

  Summary of our current advice: possible likely significant effect, and we request further discussion of information available as to whether indirect impacts will need to be considered in appropriate assessment as part of the assessment of any direct impacts on Atlantic salmon (see step 3).

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

  Effects on otters of the River Spey are unlikely, presuming that no onshore infrastructure is proposed in proximity to this SAC.

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

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

This stage of HRA is termed **appropriate assessment**, and it is undertaken by the competent authority based on information supplied by the developer, with advice provided by ourselves (JNCC and SNH). We **highlight** that cumulative impacts are a key concern for many of the SAC qualifying interests discussed, and therefore the two agencies will liaise closely over the provision of advice for HRA.

Appropriate assessment considers the implications of the proposed development for the **conservation objectives** of the qualifying interests for which a likely significant effect has been determined. We discuss this below for each of the qualifying interests listed above.

We note that the scope of appropriate assessment will need to be refined and agreed following discussion of further information; when baseline data has been collected, and when construction methods, location of infrastructure, choice of port, and other aspects of the proposal have been finalised.

Advice for appropriate assessment in respect of the qualifying habitat interests of SACs

The **conservation objectives** for the habitat interests of the Moray Firth, the Dornoch Firth and Culbin Bar SACs are: **(i)** to avoid deterioration of the qualifying habitats thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features.
And to ensure for each qualifying habitat that the following are maintained in the long term:
(ii) Extent of the habitat on site.
(iii) Distribution of the habitat within site.
(iv) Structure and function of the habitat.
(v) Processes supporting the habitat.
(vi) Distribution of typical species of the habitat.
(vii) Viability of typical species as components of the habitat.
(viii) No significant disturbance of typical species of the habitat.

Based on these conservation objectives, the following questions may need to be addressed for the marine habitats in these SACs such as subtidal sandbanks and reefs; and for coastal habitats such as sand dunes, salt meadows and intertidal mudflats and sandflats.

- Will the proposal cause any deterioration to the qualifying habitats within each SAC?
- Will it affect the extent or distribution of the qualifying habitats within each SAC?
- Will it affect the structure and function of these habitats or of their supporting processes?
- Will it affect, or cause disturbance, to any of the typical species of these habitats – including their distribution and viability within each SAC?

Our concern is that any changes to wave dynamics and sediment movements in the Moray Firth may result in effects on these SAC habitats, although we are uncertain of the potential scale of such effects. We recommend that MORL and BOWL collaborate and jointly commission work on coastal processes modelling in order to assess the potential effects to SAC habitats arising from their windfarm developments in combination.

We also note that the effects of cable laying, and other impacts from onshore works may be a concern, dependent on location.

Advice for appropriate assessment in respect of bottlenose dolphin of the Moray Firth SAC

The **conservation objectives** for bottlenose dolphin are: **(i)** to avoid deterioration of the habitats of bottlenose dolphin or **(ii)** significant disturbance to bottlenose dolphin, thus ensuring that the integrity of the Moray Firth SAC is maintained and that the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features.

And to ensure for bottlenose dolphin that the following are established then maintained in the long term:
(iii) Population of bottlenose dolphin as a viable component of the site.
(iv) Distribution of bottlenose dolphin within site.

(v) Distribution and extent of habitats supporting bottlenose dolphin.
(vi) Structure, function and supporting processes of habitats supporting bottlenose dolphin.
repeat of (ii) No significant disturbance of bottlenose dolphin.

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

- Will the proposal cause any deterioration to habitats within the Moray Firth SAC which support bottlenose dolphin?
- Will it affect the extent or distribution of any of these habitats in the SAC?
- Will it affect the structure and function of these habitats or of any of their supporting processes?
- Will the proposal cause significant disturbance to bottlenose dolphin while they are in the SAC, and will it cause any change to their distribution within the site?
- Will the proposal cause significant disturbance to bottlenose dolphin while they are outwith the SAC such that the viability of this SAC population is affected?
- Will the proposal in any way affect the population viability of the bottlenose dolphins of the Moray Firth SAC?

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

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

We highlight that cumulative impacts are a key concern and we consider that collaboration between MORL and BOWL on noise impact assessment is likely to be helpful, along with discussion / co-ordination of mitigation proposals and construction time-tabling.

Finally, it is possible that there may be impacts to habitats within the SAC that support the dolphins, such as discussed above in the section relating to qualifying habitat interests. The potential for such impacts will become clearer once coastal processes modelling has been undertaken. Impacts from onshore works may also need consideration, dependent on location.

Advice for appropriate assessment in respect of common seals of the Dornoch Firth SAC

The conservation objectives for common (harbour) seals of the Dornoch Firth & Morrich More SAC are the same as given above for bottlenose dolphin. The same questions may need answering in respect of direct impacts to common seals and indirect impacts relating to their supporting habitats.

For common seals, conservation objective **(iii)** probably has most relevance – population of the species as a viable component of the SAC. The offshore elements of the proposed windfarm are far enough away from the SAC for there not to be direct impacts, or disturbance, to the seals within it. However, there may be occasions when the seals forage

far enough from the SAC to come into contact with the proposed windfarm. And the proposal may have impacts on the prey species of seals, an issue which will also need to be considered.

As discussed for bottlenose dolphin, noise impact assessment will be important as well as consideration of the cumulative impacts of Round 3 and Beatrice in combination. There may also be issues to consider in respect to any impacts to habitats within the SAC that support the seals – this will become clearer once coastal processes modelling has been undertaken. The impacts of onshore works may also need consideration, dependent on location.

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

The SAC conservation objectives for Atlantic salmon and freshwater pearl mussel (where appropriate) are: **(i)** to avoid deterioration of the habitats of the qualifying species or **(ii)** significant disturbance to them, thus ensuring that the integrity of the SACs are maintained and that they make an appropriate contribution to achieving favourable conservation status for each species.

And to ensure for each species that the following are maintained in the long term:
(iii) Population of the species, including range of genetic types for salmon, as a viable component of the SACs.
(iv) Distribution of the species within sites.
(v) Distribution and extent of habitats supporting each species.
(vi) Structure, function and supporting processes of habitats supporting each species.
repeat of (ii) No significant disturbance of the species.
And for freshwater pearl mussel in particular, to ensure that the following are maintained in the long term:
(vii) Distribution and viability of freshwater pearl mussel host species
(viii) Structure, function and supporting processes of habitats supporting freshwater pearl mussel host species

In respect of the offshore elements of infrastructure, appropriate assessment will focus on conservation objective **(iii)** – the population viability of Atlantic salmon – considered across the range of SACs previously listed as it may not be possible to determine the 'home' river of individual fish (post smolts and adults) recorded in the Moray Firth.

There would not be any impacts to supporting habitats in any freshwater SACs arising from offshore infrastructure, however, the placement of onshore infrastructure – including any road / bridge upgrades – may need further consideration depending on proximity to the following SACs: Berriedale & Langwell Waters, the Rivers Oykel, Moriston and potentially the Spey. We will be able to give further advice when MORL presents more information on this aspect.

So the main impacts to Atlantic salmon would arise when the fish are outwith the freshwater SACs, on migration. An adverse impact on site integrity could arise if individuals are significantly disturbed / displaced from their migratory routes such that it affects the population viability of the species. MORL may also need to consider whether the proposal could in any way act as a barrier to salmon movements, whether it might prevent any salmon from accessing the freshwater SACs that drain into the Moray Firth, in particular, the Berriedale & Langwell Waters.

Noise impact assessment is likely to be a key part of any overall appropriate assessment, and all phases of the development should be considered – construction, operation, repowering and decommissioning. Cumulative impacts are a major concern and we consider that collaboration between MORL and BOWL on noise impact assessment is likely to be

helpful, along with discussion / co-ordination of mitigation proposals and construction time-tabling.

As discussed above, MORL may also need to consider the potential (indirect) impacts to freshwater pearl mussel (FWPM) arising from offshore infrastructure. This will be a desk-based appraisal following on from the assessment of impacts to Atlantic salmon. We note that direct impacts to FWPM could arise from the placement of onshore infrastructure if this work takes place close to, or is likely to affect, freshwater SACs in the area where FWPM are a qualifying interest: the Rivers Evelix, Oykel, Moriston, and potentially the Spey.

Advice for appropriate assessment in respect of sea lamprey of the River Spey SAC

As above, appropriate assessment for sea lamprey will focus on conservation objective **(iii)** – considering whether the windfarm proposal will have any effect on the population as a viable component of the River Spey SAC. This is likely to require noise impact assessment as a key aspect – to identify whether lamprey could be significantly disturbed or displaced from the proposed windfarm site such that the SAC population is affected. It would be beneficial for the MORL and BOWL to collaborate as cumulative impacts are a key concern.

Unless any onshore infrastructure is to be located in proximity to the Spey (including any necessry road / bridge upgrades) then it would not have any effects on sea lamprey.

Ongoing Liaison

As noted above, SNH and JNCC will continue to liaise with MORL and BOWL in respect of this HRA process. We consider it will be very important for the applicants to collaborate on a number of issues in order to address cumulative impacts and their mitigation. We will continue to review our advice on HRA as each proposal progresses, and as survey work, modelling and other analyses are undertaken. We will discuss any strategic research needs with Marine Scotland and the Crown Estate, particularly those in respect of Atlantic salmon.

Alan Keir
Scottish Government
Marine Laboratory
PO Box 101
375 Victoria Road
Aberdeen
AB11 9DB

29th October 2010

Dear Mr Keir

ELECTRICITY ACT 1989

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

SCOPING OPINION FOR THE PROPOSED SECTION 36 APPLICATION FOR THE MORAY FIRTH ROUND 3 OFFSHORE WINDFARM

Thank you for requesting RSPB comments for a scoping opinion on Moray Offshore Renewables Ltd's proposal to develop a 200T, 1-1.14GW windfarm on the Smith Bank in the Moray Firth.

Boat and Aerial Surveys
A comprehensive baseline data set on bird usage of the area is required and we are content that the proposed programme of boat surveys, coupled with the use of aerial survey data and existing data e.g. from Beatrice bird surveys, meets currently-accepted standards. This view is offered without prejudice to a considered opinion on the adequacy of information once we have had sight of full datasets.

We anticipate that there may be practical difficulties in recording birds by species, every minute, in five distance bands and six height bands with direction of flight and additional information, especially if significant aggregations of birds are encountered and seek reassurance either that our fears are unfounded or that contingency arrangements are in place.

For understandable reasons, no boat-based bird observations will be made in sea state five or more. There will be a requirement to assess whether bird distribution, numbers, behaviour and species present is likely to differ significantly under more extreme conditions.

Assessing Impacts on SPAs

A key test of the proposals will be whether or not they are likely to have an adverse effect on the integrity on any Special Protection Area (SPA). Simply knowing which species are present on the development site, the abundance and temporal distribution of birds and how they may be impacted by the proposals will be insufficient. It will also be necessary to determine the origin of these birds, in terms of breeding colonies, and how populations, especially SPA populations, may be impacted in terms of number and breeding success. Collaboration and data-sharing with other offshore developers will be essential if a sufficiently detailed picture of the relationships between seabirds at sea and at their breeding colonies is to be obtained.

Direct observation of the directions in which birds move to or from the development site – and to and from the nearest seabird breeding colonies on the East Caithness Cliffs SPA – will undoubtedly give relevant data although this is unlikely to be sufficient. For more distant seabird colonies, direct observation is likely to be almost worthless. It will be necessary, therefore, to obtain information by use of tracking devices attached to birds.

The use of radar should also be considered. Radar studies should be targeted and cover relevant time periods to allow assessment of impacts on passage seabirds and migratory waders, ducks and geese etc. Boat and aerial techniques do not sufficiently assess such movements on their own and radar is able to gather data in periods of darkness and poor weather. There is a potential role for Doppler radar which might possibly give an indication of size and wing beat frequency, thus perhaps enabling more specific identification to families/ even species.

Best practice is clearly that prospective developers should carry out such studies and we 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 in embarking on such work may cause proposed developments to be held up in the planning process.

Bird activity on the development site should be judged against breeding performance of the birds at the relevant colonies in the relevant year: in years of breeding seabird failure such as have been experienced recently, especially if adults do not breed at all or fail early, then feeding activity is likely to be less as they are not provisioning chicks.

We also note that there are no plans to determine the effect of the scheme on migrant birds (other than seabirds), although there will be a need to carry out a Habitats Regulations Assessment to determine the proposal's impact on SPA populations of geese and swans (and perhaps other species) which are likely to fly through the area.

Cumulative and in-combination effects

We are pleased with the commitment to consider cumulative and in-combination impacts as part of the EIA process. However, we believe that the potential for cumulative impacts also arises from other proposals - and to additional sites - not listed in the scoping report. In terms of

foraging seabirds we suggest that it would be prudent to consider a much wider search area. For example, cumulative impacts could accrue from other developments, in the Moray Firth and elsewhere, for species such as Manx shearwaters from Rum SPA or gannets from Forth Islands SPA.

"*Disruption to habitat function"* is identified as an impact on birds on the table in paragraph 5.2.5.3 but is omitted in paragraph 5.2.5.4 and we seek clarification on how this is to be considered.

Mitigation

Mitigation should be considered to reduce any significant impacts to an acceptable level: this could include design of the wind farm layout, turbine height and/or operational limitations such as shut-down periods, for example. Since many birds may transit the area during periods of reduced visibility or at night, the potential draw of any lighted structures to birds should be considered. Although these lights have relatively low intensities, their location within an area of very little light pollution means that attraction could be an issue. The EIA should consider whether turbine colouration (potentially including use of ultraviolet markings) may make the turbine structures more visible to passage bird species, especially during conditions of reduced visibility. Consideration should be given to the outputs of any research that may help to identify other suitable mitigation, which may become available during preparation of the ES.

Carbon balance

RSPB Scotland would wish to see details of the full carbon balance budget for the proposed development detailed in the ES. This may include, for example, the amount of carbon required for equipment manufacturing and any CO_2 which may leak from the seabed.

We trust you find our comments helpful and would like to refer you in the first instance to the RSPB Research Report No.39 for further information.
http://intranet.rspb.org.uk/essential/conservation_work/protecting_areas_casework/research_and_support/windfarms/offshore.asp

Should you have any further queries please do not hesitate to contact us at the address below.

Yours sincerely,

Peter Gordon

Conservation Planning Officer

Cc Craig Milroy, MORL

Moray Firth Inshore Fisheries Group

Chairman: John B. Cox

PO Box 9
Fortrose
Black Isle
Ross-shire
IV10 8WY

26th November 2010

APPENDIX 1.3 B

Craig Milroy
Stakeholder Manager
Moray Offshore Renewables Ltd.
EDPR UK
40 Princes Street
Edinburgh
EH2 2BY

Dear Craig,

Re: MORL Developing Wind Energy in the Outer Moray Firth – Environmental Impact Assessment Scoping Report – Consultation

Thank you for the opportunity to comment on the above.

It is noted that the scoping report focuses on the Eastern development area and associated offshore wind farm infrastructure namely the wind turbines, substations and inter array cables. It is stated that the issue of the export cable route and associated infrastructure will be the subject of a separate EIA. I would like to request that the Moray Firth Inshore Fisheries Group is kept informed of any developments with this.

The following comments are on the basis of the "*notation*" used in the scoping report and primarily relate to potential implications for commercial fishing activity or fish stocks in the Moray Firth.

"3 Cumulative and In-combination Impacts"

It is noted that together with BOWL and the Crown Estate that MORL have formed the Moray Firth Offshore Wind Developers Group (MFOWDG). The intention of MFOWDG to identify potential cumulative effects of developments is welcomed and the MFIFG would wish to be kept informed of the work of MFOWDG.

In the above context a copy of the MFIFG response (of the 9th April 2010) to the BOWL EIA scoping report consultation accompanies this letter. Many of the issues raised for the BOWL developments are equally applicable to MORL especially with respect to fish and

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shellfish stocks present in the area. Possible cumulative and in combination effects relating to the BOWL and MORL sites were raised at the time without the benefit of MFOWDG being in existence and it is hoped that the points raised will be able to be taken forward by the MFOWDG. Consequently the relevant points will not be raised again here but reference should be made to the response of 9th April 2010.

"5.2.3.4 Site-specific Impact Assessment Methodology"
"Potential Impact – Behavioural response to electromagnetic fields associated with cabling"

It is important to consider the potential impact of EMFs produced by both AC and DC currents as within the site both types of transmission currents are likely to exist.

"5.2.3.6 Summary of Methodology"
"Otter Trawls"
"It is anticipated that a local fishing vessel will be used to carry out the otter trawl survey. The net used will be similar to nets used by commercial vessels in the area and will be …… with an 80mm mesh"

It is important to recognise that the squid fishery which is prosecuted in the area uses a mesh size of 45mm.

"5.3.2 Commercial Fisheries"
"5.3.2.1" Baseline Environment"
"Table 5-11: Averaged Annual Landings Values (2000 – 2008) by Species (top 10) from ICES Rectangle 45E7"

The use of averaged annual landings values over extended periods should be treated with caution due to the nature of the fisheries concerned. In recent years the squid and scallop fisheries have assumed a leading economic importance from the Smith Bank area including the Eastern area of the MORL site. It should be noted in this context that all squid taken in the area is with mobile gear and not through squid jigging.

"There are relatively very low recorded landings values of pelagic species in the Moray Firth."

For Herring and Sprat this is true while for Mackerel this is likely to be an artefact of the method used to compile fisheries landings statistics. For hand lining of Mackerel the quota system is administered by the local MS-Compliance officers with all records in the form of sales notes and not through log book records. All such sales notes are compiled and submitted through Aberdeen Fisheries Office and as such landings are allocated to this one area and not the catch location.

"5.3.2.2 Data Gaps
Sufficient data is available to make assessment for the potential impact to fisheries on a site basis"
"5.3.2.4 Site Specific Impact Assessment Methodology"

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"Adverse impacts on commercially exploited species. Increased steaming times to fishing grounds. Complete loss or restricted access to traditional fishing grounds. Interference with fishing activities"
"To determine the potential for impacts as listed above, the following studies will be undertaken: ….Assessment of landings data. Assessment of effort data."

Specifically in the context of the highly economically important squid fishery it is considered that there will be significant data gaps based on official data. It is important to recognise that the squid fishery is not the subject of quota restrictions or days at sea reporting and as such alternative methods of gaining an accurate assessment of the fishery in the area will be required.

In summary it is hoped that the above comments in addition to those contained in the BOWL EIA scoping report response of 9th April 2010 will be taken into account in the detailed EIA for the MORL site.

I would like to re-iterate that the MFIFG have specific interests with regard to the OFTO process and export cable considerations for the MORL site and as such would wish to be kept informed of any developments.

If you require any further information regarding any of the above please do not hesitate to contact me.

Yours Sincerely

Dr Nick Lake
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MORAY OFFSHORE RENEWABLES LTD: EASTERN DEVELOPMENT AREA

Scoping Opinion

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Contents

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

SCOPING OPINION FOR THE PROPOSED SECTION 36 APPLICATION FOR THE MORAY OFFSHORE RENEWABLES LTD: EASTERN DEVELOPMENT AREA

1. Introduction

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

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

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

Under the Electricity Works (Environmental Impact Assessment)(Scotland)(EIA) Regulations 2000, Scottish Ministers are required to consider whether any proposal for an offshore device is likely to have a significant effect on the environment. Scottish Ministers have considered your request for an opinion on the proposed content of the 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

Moray Offshore Renewables Limited (MORL) is proposing to construct and operate an offshore windfarm in the outer Moray Firth. MORL was awarded zone 1 of the nine UK Offshore Round 3 zones, due to the size of the site, MORL has identified two potential development areas - Eastern development area & Western development area. The Eastern development area is considered to have the higher potential for development and will be progressed first. The site is located to the east of the Scottish coast and covers an area of approximately 296 km^2. The current assumption is that the area will have approximately 200 wind turbines of 5-8 MW with a potential generation capacity of 1-1.14GW.

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/scenario's 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/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. 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 Ordinance 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

APPENDIX 1.3 B

14. Annex 1

Consultee Comments Relating To MORL Offshore Windfarm, Aberdeen

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

Statutory Consultees

SNH & JNCC
The Highland Council
Aberdeenshire Council
SEPA

Non Statutory Consultees

RSPB
Civil Aviation Authority
NERL Safeguarding
Maritime & Coastguard Agency
Northern Lighthouse Board
RYA Scotland
Ports and Harbours
Marine Scotland
The Joint Radio Company Ltd
Historic Scotland
Transport Scotland
Ministry of Defence
Scottish Canoe Association
Health and Safety Executive

SNH & JNCC Comments

We strongly recommend that MORL discusses their approach 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 below). In order to consider the environmental impacts of this project in its entirety, through EIA and HRA, we highlight that information on onshore and offshore elements is required. The developer identifies that they intend to include within the offshore wind farm EIA, any in-combination effects resulting from the onshore and offshore activities, and we support the collation of information within 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.

General Approach to EIA

EIA is a statutory process which should highlight the potential positive and negative impacts of a project, and identify how effects can be prevented, offset or reduced through mitigation, enabling the regulator to make a decision on whether to consent. Overall, MORL have undertaken a useful scoping exercise and present a comprehensive understanding of the EIA process. The key objectives of scoping are well presented, including recognition of the need to determine the range of factors that need to be considered within the EIA, and also ensuring that environmental studies are planned appropriately to gather sufficient environmental information.

For complex and large-scale development proposals, the EIA process is not straightforward, and we highlight that there may be opportunities to improve its practice as knowledge is improved. In respect of offshore wind development, it is important to highlight the much larger scale and geographic spread of Round 3 compared to Rounds 1 and 2. Therefore, while lessons are being learned from Rounds 1 and 2 sites, there is the potential for a different range and / or a greater level of impacts to arise from Round 3 development. Consequently, there is a need to work more confidently with the levels of uncertainty apparent in the EIA process and we advise that EIA is undertaken in the context of risk management; and identify the need to consider what level of confidence in the data it will be realistically possible to achieve, and how this will be presented to enable conclusions to be reached.

We particularly welcome the proposal by MORL to consider ecological links and assess the projects holistically (p.23), as although adding complexity to the EIA process, this is likely to improve the ability to reach conclusions regarding the effects of the development, and can be built on through the assessment of subsequent development plans.

Zonal Assessment

We note for Marine Scotland that MORL have not presented this scoping report within the wider context of zonal characterisation and assessment (other than the siting of development within the Eastern area). The Scoping Report adequately addresses the issues to be considered and we consider it to be sufficient for the purpose of scoping for the EIA for the Eastern Development Area, however it may be relevant to discuss data gathered at a zonal level for better understanding of individual receptors, e.g. birds. It would be key to identify how zonal assessment will be managed to inform later development, as it is planned.

Habitats Regulations Appraisal

As part of our scoping advice we include the range of interests and potential impacts that may need to be considered in relation to the Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (applying to the offshore zone beyond 12 nautical miles) and to the Conservation (Natural Habitats, &c.) Regulations 1994 as amended (applying to Scottish territorial waters). These regulations protect Natura (European) sites – a network of designated sites across Europe which are internationally important for threatened habitats and species – encompassing Special Protection Areas (SPAs) designated for a range of important bird species, and Special Areas of Conservation (SACs) which include a variety of sensitive or rare marine habitats.

Under the above regulations, Habitats Regulations Appraisal (HRA) is the process whereby potential impacts to Natura sites – SPAs and SACs – are considered. We provide more detail on the process of HRA in Annex E. We provide our advice on HRA tailored to the potential impacts of the Eastern Development Area in Annex C for SPAs and Annex D for SACs.

Further Liaison and Advice

This Round 3 zone lies close to the Beatrice Offshore Wind Farm proposal within Scottish territorial waters of the Moray Firth, and we welcome and encourage collaborative working between the developers in the area, through the Moray Firth Offshore Wind Developer's Group. This will be of particular use in the assessment of cumulative impacts and we will continue to liaise with the group over collaborative work. It may also be appropriate to collaborate at a wider level, i.e. with developers in the Forth and Tay regions for certain aspects.

ANNEX A – ADVICE RELATING TO THE DEVELOPMENT IN GENERAL

Site selection within Zone

1.1 MORL have produced a zone development strategy determining the phasing by which the zone will be developed, which has resulted in prioritisation of the eastern section for development. We recognise the value of constraints mapping in the planning of development, however from an environmental perspective, we note that there are limitations in the ability to map environmental risks with sufficient confidence to influence decisions on the location of development (as apparent from p.11 of the scoping report, where environmental considerations have not resulted in preference of east over west development areas). We encourage on-going communication on the approach taken and how this might be further refined and reflected within the EIA process.

1.2 In particular, it is relevant to consider:

- How environmental data is expressed within the mapping tool in GIS; e.g. has aerial survey data been incorporated into the tool?
- How has uncertainty / lack of data been incorporated into decision making?
- How has weighting been applied to each layer, including environmental information? It would be extremely useful to see a map of the environmental constraints only, and presentation of a range of outputs would help to understand how the changing of „weightings. and other scoring can affect the range of outcomes.

1.3 We note that the applicant states that scoping will assist in identifying wind farm sites within the development area – how influential will the process be, and what is the flexibility within the plans to accommodate new recommendations following scoping? While we welcome MORL.s proposal to amend site selection based on the results of scoping, we highlight that it is unlikely to be possible to understand in sufficient detail at the scoping stage (i.e. prior to survey results being analysed), the potential environmental constraints. It is therefore important to acknowledge that constraints mapping at this stage is likely to be focussed on those constraints which are more easily mapped (e.g. navigation).

Approach to EIA

1.4 We note that MORL intend to use „standard EIA methodologies. for the assessment of significance of impacts. It is important to note that there is a need to discuss and agree what this approach will be for each receptor. As far as possible, impacts should be quantified and assessed against relevant thresholds; however there is currently uncertainty in defining thresholds of significance for some sensitive receptors which will necessitate a qualitative appraisal of results in these cases. Guidance applied in wind farm development thus far has been weak and sometimes arbitrary, and as the information base is lacking to enable a statement of quantified thresholds, we strongly encourage appropriate consideration of the information collected pertaining to this specific area and development, and close consultation with relevant experts to ensure that there is on-going agreement between the developer, SNCAs and Marine Scotland as to what is deemed to be significant, in proportion to the anticipated effects.

1.5 We note that MORL recognise the importance of developing understanding of the ecological links between different receptors, in order to better assess the impacts on different receptors, including the potential for indirect impacts. It may be useful to consider whether there is a way to „map. effects? This would be complex but could

highlight where the EIA effectively overlaps (e.g. effects on fish on their own merit, as prey species for marine mammals and birds).

1.6 The developer intends to follow the „Rochdale envelope. principle for the turbine parameters (p.13) which is necessary in order to assess the possible impacts of the range of various design options, include the worst-case scenarios (which may be different for individual receptors). We recognise that this will be complex for developments such as these which are developed over a number of years, and which therefore need to remain flexible to enable amendments in response to particular investigations. It would be useful if the potential for mitigation is considered during the early stages of design consideration, e.g. the selection of turbine installation technique to minimise the risk of impacts of noise on marine wildlife.

1.7 We note that jacket structures are being considered (p.13), including braced monopods, tripod structures and four legged jacket structures. An important aspect of EIA will be modelling of noise emitted during the installation of these structures, in order to assess which is the best option. How will this be undertaken – are there existing studies of the noise from different installation methods? Beatrice demonstrator experience with jacket installation – are there sound studies from this and monitoring undertaken during construction?

1.8 We note the proposal to assess rock dumping and mattresses and emphasise that this in itself, will exert an effect on the benthic habitat (i.e. altering the substrate and therefore the communities which live therein), and we therefore advocate minimisation of stabilisation material (within the limits of safe installation) and consideration of using mattresses instead of rock as this offers the possibility of removal during decommissioning.

1.9 Regarding the transmission plans – is there a possibility that the project will connect with other planned connections e.g. the Moray Firth Hub? From an environmental perspective, strategic planning will overall reduce impact, and potentially consenting risk.

1.10 Regarding the phases of development, we welcome the proposal to detail the decommissioning phase within the ES. We also request that MORL clarify whether there is any „repowering. planned for the development during the lifetime of the project, to ensure that the effects of this are also considered and do not hinder operations through consenting at a later stage. It is important to be clear on what repowering entails and whether there is likely to be any relocation of subsea infrastructure or alteration of the wind farm layout. This includes whether further scour protection is required for foundations in the same, or in new, locations across the wind farm site. Any alterations to the locations of offshore elements for repowering may require an update to the benthic survey work and assessments that have previously been carried out.

Baseline Data

1.11 JNCC and SNH have thus far had useful engagement with MORL regarding data collection, however it is important to note that at this stage it is not currently possible to conclude whether the data being gathered will be sufficient to answer all of the consenting questions identified. It is therefore appropriate to discuss the outputs of surveys at relevant intervals (e.g. 1 year), evaluate the occurrence of receptors and then to adapt / improve assessment strategies as appropriate.

1.12 As identified, it would be relevant to refer to the SEA for Offshore Wind in STW, and the on-going Offshore Energy 2 SEA which will cover the area of proposed development. Both will be informative for the project and should be used in analyses of baseline and cumulative impact assessment.

1.13 We note that MORL recognise the potential impacts of climate change on certain receptors which may act in-combination with the wind farm, and we also highlight the need to consider the impacts on environmental baselines, and how this should be accounted for in the prediction of effects on certain parameters.

Cumulative Impact Assessment

1.14 We note the definitions here are not in line with those used in Habitats Regulations Appraisal, where in-combination is used to refer to the potential effects of multiple projects of the same type, in this case multiple wind farm projects. We are aware that these terms are used interchangeably and are content that MORL understand the need to present the effects of both multiple wind projects, as well as with other types of activities and environmental pressures.

1.15 In particular we note and welcome the approach of forming the Moray Firth Offshore Wind Developer's Group (MFOWDG), in line with those being undertaken within the Firth of Forth (and also that there will be discussion between these groups). Could we request that the planned activities of this group be clearly outlined, so that JNCC and SNH understand when it is appropriate to feed into the discussions. Has a cumulative impact document been produced, in which the activities of both BOWL and MORL are identified, showing how they are consistent and outlining what can be undertaken strategically to inform the consenting of both projects?

ANNEX B – RECEPTOR-SPECIFIC ADVICE FOR EIA

This Appendix provides our advice on the environmental interests which need to be considered for the Eastern Development Area of the Moray Firth Zone. This will cover the topics below, with reference to the scoping report and zonal appraisal and planning document:

1. Ornithology
2. Marine Mammals
3. Hydrodynamics and Coastal Geomorphology
4. Marine Ecology
5. Fish
6. Seascape, Landscape and Visual Impact Assessment

1 ORNITHOLOGY

In Annex C we provide overall advice on the Habitats & Birds Directives and Special Protection Areas (SPA) for birds, and the process of Habitats Regulations Appraisal (HRA) that considers impacts to these interests. In Annex D we provide advice on HRA, tailored to consider the potential impacts of the proposal on those bird species which are qualifying interests of SPAs, and which may be affected by the development of offshore wind in the Moray Firth Round 3 zone.

Species to Consider

Table 5.5 (p.72) provides a useful overview, however we advise caution in the general statement that the majority of seabirds are in coastal areas (Table 5-5; p.72), which may not be borne out by the survey data. We recommend that the EIA fully discusses (with references) similar statements (such as “most breeding guillemots do not feed further than 30km from their breeding site”). It is also important to consider seasonal changes in foraging distances; a range of studies have shown that many breeding seabirds will forage further and further from the colony as the breeding season progresses due to prey depletion in closer areas. This effect on seabird distribution (Ashmole’s Halo.) is greater for larger colonies and is also likely to be variable from year to year. References are also requested for the review of the distribution of seaducks and diving ducks within the Moray Firth.

Survey Work

In respect of the boat-based survey methodology (as discussed in section 5.2.5.5) we seek to clarify whether both sides of the ship are to be surveyed simultaneously or only one side? Regarding survey methodology, the developer should justify that the survey particulars are sufficient to adequately gather information at the development area. We recommend that there is a minimum of three bird surveyors and one marine mammal observer (dedicated to that task) and that observers are suitably trained and experienced (at least one ESAS trained observer with at least 50 hours, preferably more, of survey experience). It may be appropriate to use a higher number of observers, for example if there are high densities of birds being encountered. It is important that observers are rotated at regular, predefined intervals in order to prevent fatigue.

In regards to the number of observers, if distance analysis techniques are to be employed (please see Analysis below), we note that the precision and robustness of the estimates derived will be greatly improved by ensuring that the assumption of 100% detectability at 0m from the transect is met. One method of achieving this is to employ a forward-scanning observer (in addition to the recorder surveying the 90o arc, and the

scribe). It is also beneficial when conducting one-sided surveys (i.e. 90o arc), to include an „out-of-transect. band adjacent to Band A (this decreases the tendency for inclusion of birds in the A band that are, in reality, just out of transect).

In respect of our ongoing liaison with MORL, we support the approach to discuss interim outputs of on-going survey work, to inform discussion as to whether methodologies are suitably informative.

Regarding data gaps (section 5.2.5.2), we understand that in addition to the listed methods, radar is also under consideration to assess the frequency and height of migratory flights through the development area. (We also note that PVA is not a method for further data collection, but agree that it may be appropriate for assessing the long term effects on populations).

Habitat Modelling

Camphuysen et. al. (2005) and Maclean et. al. (2009)2 recommend that oceanographic and fish data is collected during boat-based seabird surveys as this may allow habitat modelling to be undertaken. Such modelling will help us to better understand the reasons for bird numbers in the Round 3 zone – their spatial distribution and use of the site. We recommend that this issue is carefully considered; such habitat modelling is likely to benefit from a collaborative approach with the Beatrice developer (BOWL).

Species Sensitivity

We urge caution in applying the species sensitivity ratings described in Garthe and Hüppop (2004) and in COWRIE guidance (King et al. 2009), which were based on seabirds occurring in the southern portion of the North Sea, as this may not always be applicable for other areas (even if the species are the same). Bird behaviour is dependent on the season / lifecycle stage and thus there will be differences in sensitivity to windfarm development between breeding and wintering populations. The breeding seabird populations found in the Moray Firth are therefore likely to have a differing sensitivity to offshore windfarm development, compared to the over-wintering populations that occur in the southern North Sea.

We encourage collaboration between ourselves (JNCC and SNH), other nature conservation agencies and other seabird experts (including the RSPB) in determining the appropriate sensitivity of species assessed through this EIA.

Analysis

We strongly recommend that the data collection (i.e. survey methodologies) is driven by the data needed to answer the questions being posed through EIA and HRA (i.e. how many birds, which species, where and why are they using the site?). If DISTANCE software is to be used in analysing the survey results then we recommend that staff are either experienced in its use or receive appropriate training.

We emphasise the importance of reporting associated confidence intervals with any density and abundance estimates calculated using distance sampling techniques. It may be appropriate to utilise confidence intervals in the assessment of sensitive species (i.e. calculating the range of impacted population, as opposed to a mean %).

Additionally, it is necessary to consider how the baseline survey data will be used in future monitoring, as this will require an increased power to detect change. In this regard, it is advisable that a power analysis is conducted on the collated data from boat-based surveys – ideally from the Round 3 zone and Beatrice combined. This will help

determine whether the chosen survey methods and analyses will be able to measure any effects on bird populations. This will require consultation between the developer(s) and ourselves (SNH & JNCC) in order to agree the required magnitude of effect to detect (for example, % change in bird numbers). In respect of this issue, we note that the reports below are helpful.

Impacts (Section 5.2.5.3)

It should be recognised that the assessment of impacts needs to framed within the context of the consequence to the relevant (e.g. SPA, regional etc) population, and not simply the number of individuals affected.

Displacement - Disturbance leading to displacement of birds can and may occur during the operational period of the wind farm (in addition to construction and decommissioning)

Collision Risk - We highlight that flight height (and therefore survey techniques capable of gathering this information) is a key requirement to calculate collision risk (not explicitly stated in the scoping report).

With respect to avoidance rates, a critical parameter in assessing the risk of mortality to birds through collision, it is imperative that further research is undertaken to produce evidence-based values. At present there is insufficient evidence available for the confident recommendation of avoidance rates, hence a precautionary approach will be advised until better evidence has been provided.

We highlight that the Crown Estate Strategic Ornithological Support Services (SOSS) will be reviewing the existing knowledge on collision risk and avoidance rates for offshore windfarms and we recommend that this work is referred to once published as it will likely provide a peer reviewed reference. Where suggestions are to change current methodologies, then it will be important to ensure that this is carried out consistently at the various wind farm development sites, and collaboration with for example, the Forth and Tay Offshore Wind Development Group is encouraged in this regard.

Barrier Effects - The description of „Method of Impact Assessment. is unclear for this impact. We recommend considering the energetic impacts of barrier effects on migratory birds (particularly waterfowl and waders) and breeding seabirds. The references listed in the footnote may be helpful in this regard.

We caution that assessment of collision risk and barrier effect impacts to migratory species may not be possible using the proposed survey methodologies (but we note that the developer is open to additional complementary methodologies to ensure sufficient data collection).

Operational Impacts - We recommend that an assessment is made of the potential for O&M boat and/or helicopter traffic to cause disturbance to birds using the site and their possible displacement as a result. Remote condition monitoring systems may help to reduce the number of turbine visits and could therefore help to mitigate the impacts of this type of disturbance.

Cumulative Impacts

Cumulative impacts on bird species are a key issue for EIA and HRA in respect of this Round 3 windfarm proposal together with Beatrice, and it would therefore be helpful for MORL and BOWL to collaborate in respect of their bird survey work and its analysis. The scope of cumulative impact assessment should be based on a consideration of the

range of bird species that may be affected, their ecology and the types of impacts which may affect them. We support the use of the King, et al (2009) framework, and highlight that this should be used fully (i.e. to include the tables clarifying the audit trail of discussions with key stakeholders). Further, as the use of these tables is still in their infancy, the approach may require adaptation as work progresses on EIA and HRA.

In preparation of the EIA, we would welcome further discussion with the developer over which other projects / industries may need to be considered in relation to cumulative and in-combination effects on bird interests. We advise that not all cumulative / in-combination impacts are unique to wind farms, (i.e. disturbance / displacement and indirect effects) and as such it is necessary to include other industries (e.g. aggregates, shipping traffic) in this assessment.

We consider it would be beneficial to arrange a joint meeting between the applicants, Marine Scotland and ourselves (JNCC and SNH) in order to discuss and agree the scope of HRA for these proposals.

Favourable Conservation Status (FCS) – we note that there are references to the evaluation of effects on FCS (e.g. p.78) and clarify that the developer should assess the effects of their activities in the context of potential adverse effects on the site integrity of identified SPAs (i.e. using the conservation objectives). As a network, site integrity will contribute to the FCS of individual species or habitats, but the assessment of effects on FCS is the responsibility of the regulator/s at a national level and is a separate assessment from that to be undertaken at the project stage.

2 MARINE MAMMALS

Please see Annex C for the detail of the legislative requirements that apply to SAC interests, and those relating to cetaceans – whales, dolphins and porpoises – which are European Protected Species (EPS). Annex E provides our advice on HRA, tailored to the Moray Firth Round 3 zone, for marine mammals which are an SAC qualifying interest. The Regulation 33 package and management scheme for the Moray Firth SAC may be a helpful reference in this regard.7 We highlight that cumulative impacts to marine mammals are a key concern, in particular the impacts of windfarm development in the Round 3 zone in combination with the Beatrice proposal.

Survey Methods and Data Analysis

We support the proposal to build on the regional approach to understanding marine mammal distribution in the Moray Firth which is underway in that area, to facilitate better understanding of potential effects. While we welcome the range of survey methods that MORL are considering with regard to marine mammals, we seek further information on how they will collaborate with BOWL to address potential cumulative impacts.

We also recommend that the developer also considers their surveys in relation to the Joint Cetacean Protocol (JCP) work. The Joint Cetacean Protocol (JCP; http://www.seawatch foundation.org.uk/sightings.php?uid=245) holds data at a UK level, and can therefore provide improved measures of cetacean abundance and distribution at a regional level. It is largely based on SCANS and other wide scale data, and also supplemented with finer scale data. It would therefore be useful for MORL (and BOWL) to consider their data collection methodologies in light of the JCP methods, both to evaluate data which is already present, and to ascertain whether it is appropriate to enter their data into the JCP database to enable analysis of data at a more appropriate population-level scale. JNCC are happy to discuss this in more detail.

Regarding cumulative impact assessment, the King, et al (2009) framework was developed for ornithology, but it is reasonable to utilise a similar auditable framework for other mobile species (although noting that cetaceans are protected whether they are associated with a protected site or not).

We welcome ongoing liaison with the developer with regard to marine mammal surveys, the applicability of the data gathered and the subsequent approach to EIA.

Potential Impacts to Marine Mammals

The potential impacts are well outlined in the document, along with the data gathering which will inform impact assessment. Through the EIA it would be appropriate to define more clearly how the information gathered will enable conclusions on the identified impacts to be reached, and additionally how they will be evaluated through monitoring (if deemed necessary).

The applicant plans to undertake a background noise assessment and then apply modelling to assess impacts (as indicated in section 5.2.4.4 of the scoping report). We consider it would be helpful if we could see an early version of this proposal and if the predicted noise impact could be estimated soon. Doing so may allow species monitoring to be adapted to reflect the likely zone of impacts, for example, making sure C-Pods are in the right place to pick up any changes in porpoise numbers/behaviour.

We note that p.65 refers to the „regional marine mammal community;. it would be appropriate to consider the effects at population levels of marine mammal species (which is the approach necessary through EPS), as these will vary in extent and therefore require individual consideration of the range of activities to be included in cumulative impact assessment.

Regarding the guidance produced by JNCC, this is still being amended by Defra, and we will make Marine Scotland and the Applicant aware when this has been finalised. Please refer to Annex C for detail on the approach to EPS assessment and licensing.

Potential Mitigation and Monitoring

Recognising the clear risks to marine mammals from construction activities in this area, it is advisable that the applicant proactively ensures that the early stages of project design are influenced to minimise the risk to marine mammals; this will likely to reduce the need for management strategies which could affect construction programmes.

Within the EIA, we recommend that the applicant considers and discusses the full range of mitigation techniques for noise impacts during construction; including alternative installation methods, seasonal restrictions, bubble curtains, jackets and vibro-piling. The choice of mitigation should be determined by review of the zone of potential impacts based on noise modelling for the range of construction activities, and evidence gathered in support of the EIA. If sufficient evidence is not forthcoming, then it is necessary to use appropriate precaution, to ensure that the predicted risk to marine mammals is at an acceptable level.

It would be helpful for MORL and BOWL to collaborate on this issue in order to address strategically, e.g. co-ordinate their construction time-tabling (if appropriate) and other proposed mitigation.

We also consider it would be beneficial to arrange a joint meeting between the applicants, Marine Scotland and ourselves (JNCC and SNH) in order to discuss and agree the scope of HRA in respect of SAC interests.

3 HYDRODYNAMIC PROCESSES AND COASTAL GEOMORPHOLOGY

The Moray Round 3 zone and the Beatrice offshore windfarm proposal together cover a substantial proportion of the Smith Bank, and may potentially lead to effects on hydrodynamic processes. We agree with the outlined potential impacts (p.33-34), and with the scoping out of effects on geology and the tidal regime. We strongly recommend that MORL and BOWL collaborate on their coastal processes modelling in order to consider these aspects. We are uncertain of the scale of potential effects, but there could be implications for the marine and coastal habitats that are supported by these hydrodynamic processes. We discuss this issue further in Annex E where we present advice in respect of the Moray Firth SAC and others in the area.

Cabling

The scoping report does not provide details on the cable routes and potential landfall points being considered – or indeed, whether an onshore or offshore grid connection point is being considered. While we recognise that a large amount of oil and gas infrastructure has been built in this area, we do still recommend that an experienced coastal geomorphologist is employed to assess cabling options if an onshore connection is being considered. 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 landing point itself. Considered appropriately, the geomorphology of an area can often be used as protection for a cable.

4 BENTHIC ECOLOGY

General Points

The outlined impacts to the benthic ecology are largely conclusive, although we recommend that when considering loss of habitat due to infrastructure, the applicant will also need to consider the extent of stabilisation materials, e.g. rock dumping and concrete mattressing which could change the local habitat in a permanent way (e.g. if soft to hard substrate).

We do not consider that there is a risk to the benthos from the accidental release of pollutants (p.45), if the applicant considers the characteristics of the materials which could be released, the maximum volume of a possible release, along with the hydrodynamic movement within the area, and would therefore recommend that this is described briefly as such within the ES, or scoped out.

Baseline Data

We consider that the applicant.s proposed surveys for benthic ecology are well thought out and we welcome the intended liaison with ourselves (JNCC and SNH) and Marine Scotland. We note, however, that it may be still be beneficial for the applicant to undertake an early analysis of their survey data in case this indicates that survey methods need to be revised and / or that further detailed surveys are required.

As development progresses we consider it would be helpful if applicants provided ourselves and Marine Scotland with a summary, or report, of their geophysical survey data prior to commencement of their geotechnical surveys. We would also welcome further co-ordination of benthic survey work and consent submissions between MORL (for the Round 3 zone) and BOWL (for Beatrice).

Finally, we note that any submitted ES will need to present clear information on, and identification of, the main biotopes found on-site. It will be helpful for this

biotopes/habitat map to also be marked with the finalised windfarm layout (i.e. to display how the finalised layout has accounted for benthic interests).

Marine Protected Areas (MPAs) and Priority Marine Features (PMFs)

With reference to Marine Protected Areas (see section 5.2.6 of the scoping report, p83), please note that Scottish Government have published guidance that includes a draft list of Priority Marine Features within territorial waters for which MPAs may be an appropriate mechanism. SNH and JNCC are currently reviewing the lists of marine biodiversity and geodiversity features in order to help identify habitats and species for which MPAs could make a contribution to their conservation.

The MPA process is likely to be running on a parallel timescale to the applicant.s project development and its formal consenting. We will seek to keep them updated on our input to the progress of MPAs, where relevant, and we also welcome their intention to engage in this process.

Cumulative Impacts

We highlight cumulative impacts between the Round 3 zone and the Beatrice proposal as a key concern with regard to benthic ecology. We hope that MORL and BOWL will co-ordinate over their survey work, analysis and proposed locations for infrastructure including cabling and grid.

5 FISH OF CONSERVATION CONCERN & FISHERIES

We have reviewed sections 5.2.3 and 5.3.2 of the applicant.s scoping report and have the following comments to make about fish of conservation concern and fisheries. We note that Marine Scotland Science are the primary source for information on commercial fish and shellfish in Scottish waters, and the applicant should contact them directly for information on all aspects associated with commercial fisheries.

Species to Consider

In Annex E we provide our advice on migratory fish species which are a qualifying interest of freshwater Special Areas of Conservation (SACs) – Atlantic salmon, sea lamprey and river lamprey. The Appendix also includes consideration of freshwater pearl mussel.

In respect of section 5.2.3.1 of the scoping report, we note that other elasmobranchs may need consideration including those listed by OSPAR and under the Wildlife & Countryside Act.

Skates and rays are often associated with sandier substrates and may need to be considered. We recommend that impact assessment for elasmobranchs includes consideration of the impacts of electro-magnetic fields (EMF) – see further discussion of EMF below.

European eel which is a conservation priority due to a 95% drop in its population over the last 20 years; it is considered by ICES to merit emergency action and is listed as critically endangered. on the IUCN Red list. Very little is known about their migration pathways – either as juveniles or adults. A draft report from Marine Scotland Science reviews the data available in relation to European eel migration routes and behaviour9.

Allis and Twaite shad which are listed on Annex II of the Habitats Directive and on the UKBAP Priority List. Allis shad are also protected under Schedule 5 of the Wildlife &

Countryside Act. Shad are found in shallow coastal waters and estuaries, although they migrate up rivers to spawn. In Scotland, they are found all around the coast, although the only known (Scottish) spawning site is located in the River Cree, which flows into the Solway Firth.

Sea trout which support a number of fisheries in Scotland. Many of these fisheries have undergone significant declines in the last 25 years and this was a primary reason for the addition of the species to the UKBAP priority list. The draft report from Marine Scotland Science reviews the data available in relation to sea trout migration routes and behaviour.

In respect of fisheries the following information may be helpful. We note that it does not cover all commercial species but it may help to focus liaison with the fishing industry:

Muddy sediments are the favoured habitat of Scottish langoustine (Nephrops norvegicus), also known as prawns or Norway lobster, inhabiting burrows in the mud. The Nephrops fishery is the most valuable inshore fishery in Scotland being exploited using trawlers (all coasts) and static gear (mostly west coast).

Sand and gravel substrates are often fished for scallops (Pecten maximus and Aquepecten opercularis). Other commercial bivalves such as cockles, razors (Ensis spp.) and surf clams also favour sandy substrates, but are mostly exploited very close to shore. Skates and rays are also often associated with sandier substrates and some are of conservation concern (see above).

Sandeel populations also occur in the sandier substrates of the Moray Firth, such as Smith Bank, and may potentially be impacted by windfarm development (with resulting effects on trophic links to seabirds, mammals and other fish). We strongly recommend that advice is sought from Peter Wright and Simon Greenstreet at Marine Scotland Science who are amongst the most knowledgeable on sandeel stocks and dynamics in this area.

Fishing industry liaison / consultation

In respect of consultation (see section 5.3.2.6 of the scoping report), we note that the Round 3 zone is technically beyond the geographical remit of the local Moray Firth Inshore Fisheries Group (IFG). However, the development and its associated fisheries impacts will be relevant to some of the IFG members who should be kept informed/consulted accordingly. It is not the role of the IFG to represent fishermen, however, this body can be used as means of communicating information to the various groups that are not represented though the Fishermens. Associations.

Data sources & survey design for fish and shellfish

The data used in the scoping report to describe the baseline for spawning and nursery grounds is from Coull et al 1998 (see section 5.2.3.1 of the report). We highlight that the Defra Data Layers project will update this information and should be publicly available soon. Marine Scotland Science are also updating the information on fishery sensitivities and should be contacted for further information.

In section 5.2.3.1, we note that the grouped UKBAP plan for commercial species is dated and we advise that it will be more relevant to refer to current fisheries management measures.

Fishing effort

In respect of the discussion and baseline description in section 5.3.2.1 of the report, we note that fishing statistics may not show activity from <10m vessels as the requirements for submitting data are limited for this size class are limited. Nevertheless, we would agree that <10 m vessels and indeed <15m vessels are unlikely to frequently operate this far offshore.

Impacts

Construction / decommissioning impacts: The EIA should include discussion of the impacts of underwater noise on fish (produced from various sources, including ships. engines, piling hammers and augering operations), especially during spawning, in respect of construction and decommissioning work. The levels of noise production that can be expected should be set-out and, using published literature, the impact, if any, this will have on fish life stages, movements and behaviour should be considered.

Operational noise: The levels of noise that are expected to be generated should be set-out, and the impact this may have on fish should be considered. The recent review10 commissioned by SNH may be helpful in assessing the impacts of construction and operational noise.

Rock Armouring: as discussed in sections 5.2.3.3 and 5.2.3.4, the ecological impact of rock armouring (or other materials around the base of turbines) should be considered. We note that the scoping report correctly states that, while likely to act as a fish aggregation device, such structures do not necessarily boost productivity (see p.59).

Electromagnetic fields (EMF): The potential for some fish species, including Atlantic salmon and European eels to be affected by EMFs emitted by subsea cables should be considered. The EIA should review the current state of knowledge, what the specific risks are in the Moray Firth, what the uncertainties are, how this proposed development will learn from current studies elsewhere and whether there are any opportunities to contribute to a wider understanding of EMF impacts.

6 SEASCAPE, LANDSCAPE AND VISUAL IMPACT ASSESSMENT

SNH are reviewing existing guidance in order to draw up a list of recommendations for carrying out seascape, landscape and visual assessment in Scotland, in relation to marine renewables. In advance of the finalisation of this work (which will be discussed with MORL when available), SNH provide the following advice on section 5.3.10 of the scoping report.

Method of Assessment

The approach described in the „Guidelines for Landscape and Visual Impact Assessment' (LI-IEMA, 2002) should be used. The assessment process for coastline, landscape and seascape is essentially the same, although each area has its own specific characteristics, as well as other shared characteristics. It is important to consider the key elements that are specific to each environment, whether land-based or marine. It is these that differ, not the method of character assessment.

Although the techniques and methods developed to evaluate seascapes are helpful, (such as SNH.s seascapes work11 and the GSA12 commissioned by CCW) they need to be critically assessed before they are generally applied in Scotland. This is due to Scotland.s specific coastal conditions and qualities, and the limited installation of offshore windfarms in Scotland, therefore knowledge of their likely impacts is limited.

Essentially, what is required is a coastal landscape assessment, clearly related both „seawards. and „landwards.. Once the baseline is established, judgements on sensitivity and impacts can then be made. Duplication of assessment, potential confusion and complexity must be avoided by recognising that landscape character contributes to seascape character and vice versa. Hence, establishing how these relationships are to be addressed is fundamental to the assessment. Important elements to consider include the contrast of form, pattern, texture and colours between the landscape and sea. In particular, the horizontal extent of the sea is a strong compositional attribute in views looking out offshore, from land.

We note that SNH guidance on Siting and Designing Windfarms in the Landscape has recently been published and some aspects may be relevant to consider in respect of offshore proposals.

Baseline

Within the study area, the seascape character types applied are as identified in the SNH „Seascapes. report (as cited above, reference 4). This study is a strategic assessment, a „nationwide. look at the coast, with general descriptions of seascape character types. These were tested against a specific, set theoretical windfarm scenario (not the current proposal) to explore issues of sensitivity and visibility. The study was limited to a strategic desk-based approach where fieldwork was not a major part of the assessment process. Thus, these seascape units are of only limited use in appraising real development proposals, and can only be applied to proposals at the strategic level.

The seascape character areas at the strategic scale (as defined in the Seascapes report) need refinement in order to examine the impacts of specific windfarm proposals. Field work is required to do so, and we recommend that the applicant uses the coastal character methodology developed for aquaculture capacity studies. This approach identifies areas of consistent seascape character with strong integrity, like a specific bay or stretch of coast. We recommend that these local coastal character areas are defined at a scale comparable to the existing Landscape Character Assessments. The Beaches of Scotland series may also be helpful in this work – these regional reports offer a quantified description of many aspects of Scotland.s coastline and are available from SNH publications.

Visibility and Zones of Theoretical Visibility

We recommend that, in assessing visibility, reference is made to SNH.s good practice guidance on visual representation of windfarms16 which includes practical guidelines on the preparation, presentation and application of visibility maps, viewpoints and visualisations. While the principles of this guidance hold, they need to be tailored for offshore windfarms due to their larger scale (numbers of turbines and turbine size) and the wider spacing between turbines. Please also be aware that the visualisations and other illustrative material should be viewed in hard copy only.

A large windfarm is more noticeable than a single turbine, as the eye is attracted to groups or patterns. Correspondingly, as the eye picks out patterns and groups, this highlights the importance of compatibility between adjacent windfarm designs within a „wider view, or panorama (see the section below on Cumulative Impacts).

We recommend an initial study area for the Round 3 zone based on a 60km radius ZTV, as the applicant for Beatrice (Beatrice Offshore Windfarm Limited: BOWL) indicated they would be this using for cumulative study, and also to encompass the range of turbine heights that MORL is intending to consider using a „Rochdale envelope. approach; from 158.5 m to an upper limit of 182 m (see Section 2.5.2 of the

scoping report, p13). This initial study area can be refined as the development progresses and the applicant identifies the key issues for LVIA.

In respect of this, we highlight the current pressure for further onshore windfarm development in both Caithness and East Highland. The study area should be of an appropriate extent to allow adequate assessment of development in the Round 3 zone including its cumulative impact.

Viewpoint Selection and Assessment

Viewpoints should be selected in consultation with statutory consultees – for the Moray Round 3 zone this includes the Highland Council, Moray Council and SNH – and we recommend that a public consultation is also held.

Viewpoint selection is based on the identification of potentially sensitive receptors (people, places and activities) and potentially significant views, locations or landscapes, taking into account the likely impacts of the windfarm. Initially lengthy, the viewpoint list should shorten as visual impact assessment (VIA) progresses, focusing on the viewpoints which best illustrate the most significant impacts, or which best aid windfarm design. However, the applicant should remain aware that further or alternative viewpoints may need to be considered throughout the assessment process.

The choice of all viewpoints should be informed by the cumulative ZTV. Although it is possible to add supplementary viewpoints as part of a cumulative VIA, it is preferable to use all or some of the same viewpoints for both the individual and cumulative VIA.

Viewpoints should be selected in order to show:

- A full representation of views from a range of distances, elevations, aspects, landscape character types and visual receptors; to include coastal views looking out to the coast and back, as well as across water to opposing shores.
- All aspects of the proposed development, to illustrate it “in the round” and help with design and assessment processes, including assessment of the proposal in a range of light conditions (such as side-lit, back-lit and front-lit).
- Visual composition; for example, focussed or panoramic views, simple or complex.
- The variety of images that the windfarm will present from coastal areas as well as important coastal hilltops and, in the case of firths and straits, landmarks including, for example, where all the turbines are visible as well as places where partial views of turbines occur.
- Sequential views along specific routes.
- The full range of different types of views, for example from popular hilltops, footpaths and other recreational routes, key transport routes (on and offshore where relevant), minor roads where the windfarm will be the focus of the view, settlements, cultural and recreational foci, and so on.
- Views of other windfarms in respect of cumulative impacts.

Viewer Type: Viewpoints will need to address:

- The full range of receptor groups; for example, residential, work, road users and other travellers, walkers and other recreational users.
- Various modes of movement. For example, those moving through the landscape, across ferry and popular recreational sailing routes, or stationary.

All viewpoint information should be presented in a table and cross-referred to a ZTV map on which all of the numbered viewpoints are plotted. We recommend that the following details are included in the ES to be able to reference each visualisation: the

precise location of the viewpoint (including 12 figure OS grid reference and a brief description), its orientation to and distance from the proposed development, the viewpoint height, nature of view (width of view in degrees and bearing of key foci within view) and conditions of assessment – including date, time of day, weather conditions and visual range. It is helpful if this information is presented alongside each visualisation including a small insert map (based on a 1:50,000 OS base map) to show the viewpoint.s detailed location and direction.

The characteristics visible from each viewpoint that are sensitive to windfarm development should be described and assessed, particularly in relation to the changes the development would cause. Factors such as season, weather, air clarity, movement, orientation to prevailing winds, elevation of the windfarm in relation to the viewer, and any screening elements may be relevant. The design and layout of the turbines and other components of the windfarm, as it would appear from each viewpoint, should also be described and assessed. Any lighting or other markings on the turbines (required for navigational / defence purposes) should be considered (with reference to section 2.7.2 of the scoping report).

Cumulative Impacts

We recommend that MORL collaborate with BOWL on an assessment of the cumulative landscape and visual impacts of their proposals in the Moray Firth, and refer to SNH guidance in so doing17. We would expect such assessment to include a baseline of existing and consented onshore windfarms as well as considering any proposals in planning.

Potential Mitigation and Monitoring

The applicant should clearly articulate their design process in the ES – a summary and analysis of the iterations leading to the final choice of windfarm layout, and why this is the optimal design in respect of landscape, balancing the various other constraints.

We welcome further liaison with MORL and the other Beatrice developers over SLVIA for their individual proposals, as well as in respect of a cumulative study. An important aspect that requires discussion is the viewpoint (VP) selection. We need to be clear on the reasoning behind the VPs that have so far been suggested and to make sure that these have been informed by the cumulative ZTV. As noted above, we strongly recommend that Marine Scotland and the relevant planning authorities are involved in this discussion, and in any meeting to select the VPs to be used for cumulative visual impact assessment as well as for individual proposals.

ANNEX C – LEGISLATION: EUROPEAN PROTECTED SPECIES AND HABITATS REGULATION APPRAISAL

EUROPEAN PROTECTED SPECIES

Certain species are listed on Annex IV of the Habitats Directive as species of European Community interest and in need of strict protection. The protective measures required are outlined in Articles 12 to 16 of the Directive. The species listed on Annex IV whose natural range includes any area in the UK are called „European protected species..

JNCC is the statutory nature conservation body who provides advice on EPS in respect of the Habitats Regulations for UK waters, outside of 12nm (territorial waters). A summary of the legal requirements for EPS in offshore waters (also found here) is as follows:

In England, Wales and UK offshore waters (outside 12nm), Regulations 41(1) and 39(1) of the Habitats Regulations and the Offshore Marine Regulations, respectively, provide that a person is guilty of an offence (and would therefore need to be considered for licence) if he:

(a) deliberately captures, injures, or kills any wild animal of a European protected species;
(b) deliberately disturbs wild animals of any such species

For the purposes of paragraph (1)(b), disturbance of animals includes in particular any disturbance which is likely—

(a) to impair their ability—
(i) to survive, to breed or reproduce, or to rear or nurture their young; or
(ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate; or
(b) to affect significantly the local distribution or abundance of the species to which they belong.

JNCC (with Countryside Council for Wales and Natural England) have produced guidance (The protection of marine European Protected Species from injury and disturbance: Guidance for the marine area in England and Wales and the UK offshore marine area, JNCC, CCW and Natural England, 2010) which is currently in draft form awaiting approval, and outlines how developers, regulators and courts assess: a) the likelihood of an offence being committed; b) how this can be avoided; and c) if it can't be avoided, the conditions under which the activity could go ahead under licence.

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

Within 12nm there is a different interpretation of an offence under the Regulations, the applicant should ensure that they are also aware of the definition of disturbance and the legal provisions for EPS that are set out in The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended in Scotland). Please see their website19 for advice on the legal provisions which apply under the Regulations. The text below refers to the approach to EPS licensing for waters outside 12nm and further discussions are needed with Marine Scotland and the developer on how to address activities which could affect territorial waters.

EPS Licences outside of 12nm

If there is a risk of injury or disturbance of EPS that cannot be removed or sufficiently reduced by using alternatives and/or mitigation measures, then the activity may still be able to go ahead under licence, but this should be a last resort. A licence should only be granted if the activity fits certain purposes, if there is no satisfactory alternative and where the activity will not be detrimental to the maintenance of the populations of the species concerned at a FCS in their natural range.

The likelihood of an activity resulting in injury or disturbance offence to a marine EPS will very much depend on the characteristics of the activity, of the environment and the species concerned, hence the need for a case-by-case approach when assessing the risk of it occurring. Pursuing mitigation measures, alternative methods, locations and/or times for carrying out proposed activities might in some cases be sufficient to reduce the risk of causing offence to negligible levels. This would then negate the requirement for a licence.

It is expected that many activities at sea will not require a licence to exempt them from regulations 41(1)(a) and (b) and 39(1)(a) and (b) of the HR and OMR, respectively, since their potential for injury and/or disturbance can be effectively mitigated or because the characteristics of the disturbance will fall below the threshold of an offence.

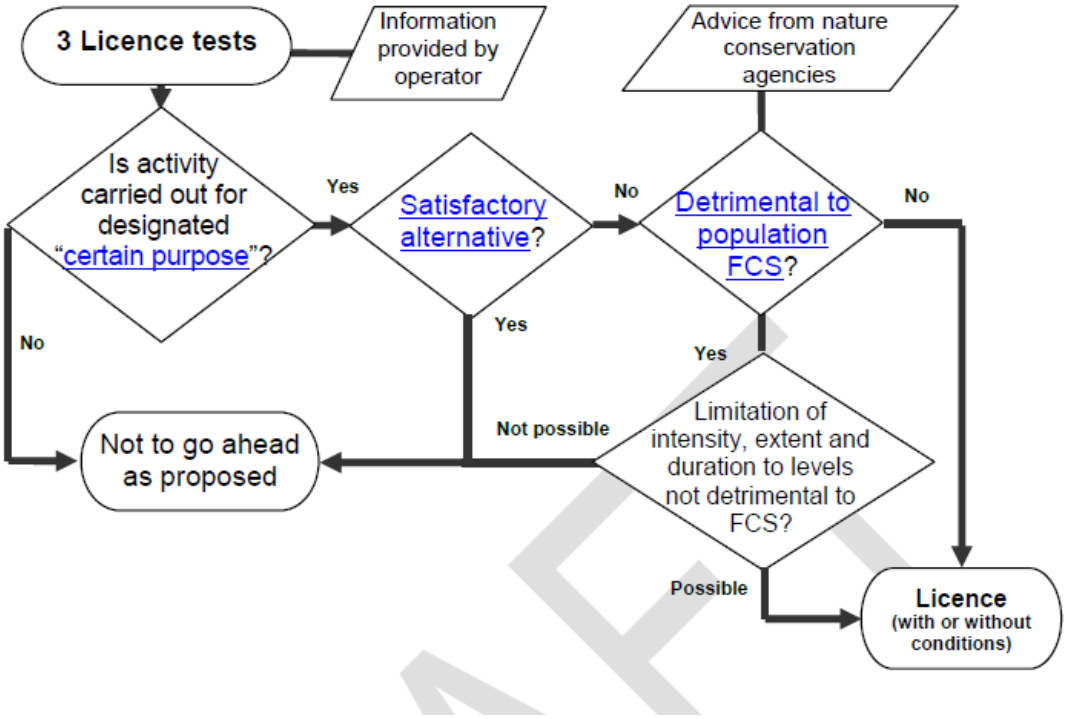
Any licence application (under regulation 53(1) of the HR and 49(6) of the OMR) will necessitate a detailed assessment of whether the licence should be granted. The licence assessment will be comprised of three tests to ascertain:

1) whether the activity fits one of the purposes specified in the Regulations;

2) whether there are no satisfactory alternatives to the activity proposed (that would not incur the risk of offence); and

3) that the licensing of the activity will not result in a negative impact on the species„/population„s Favourable Conservation Status. The licence assessment will be carried out by the appropriate authority with the information provided by the developer and advice from nature conservation agencies.

A flowchart is included below describing the process which the licensing authority will undertake for areas outside 12nm:



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

HABITATS & BIRDS DIRECTIVES, & HABITATS REGULATIONS

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

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

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

The Habitats Directive is transposed into domestic law in Scotland by the „Conservation (Natural Habitats, &c.) Regulations 1994. which came into force on 30 October 1994 – usually called simply the **Habitats Regulations**. Several amendments have been made to the Habitats Regulations since they came into force.

The Habitats Regulations apply to the Scottish territorial waters, and the rules for the protection of marine Natura sites and marine European protected species (EPS) apply here exactly as they do on land. Beyond inshore waters, between 12 and 200 nautical miles, the Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 as amended apply (the Offshore Habitats Regulations). These differ from the Habitats Regulations mainly in respect of the provisions for EPS – please see above for further discussion.

Habitats Regulations Appraisal

Where a plan or project could affect a Natura site, the Habitats Regulations require the competent authority – the authority with the power to undertake or grant consent, permission or other authorisation for the plan or project in question – to consider the provisions of regulation 48. This means that the competent authority has a duty to:

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

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

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

Further Information and Advice on HRA

For further advice on the HRA process the SNH leaflet on “Natura sites and the Habitats Regulations” provides a helpful summary. Some of the key concepts are explained in the European Commission's guidance on Article 6 of the Habitats Directive. Revised guidance updating the Scottish Office Circular 6/199523 on the implementation of the Habitats and

Birds Directive in Scotland was produced in June 2000. This sets out current Government policy relating to Natura sites.

Annex D provides our for tailored advice on HRA for offshore windfarm development in the eastern section of the Round 3 zone in respect of birds that are qualifying interests of SPAs. Annex E provides our tailored advice for the proposal in respect of the qualifying interests of SACs such as marine mammals and fish.

SNH.s Sitelink database provides information on the qualifying interests and the conservation objectives for each Natura site that it may be relevant to consider in respect of the Round 3 zone.

ANNEX D: MORAY FIRTH ROUND 3 ZONE: HABITATS REGULATIONS APPRAISAL FOR SPECIAL PROTECTION AREAS

In the following advice for HRA we set out the three steps that need to be considered in order to determine whether or not proposed windfarm development in the eastern section of the Round 3 zone in the Moray Firth is likely to have a significant effect on the qualifying interests of SPAs, and any possible adverse impact on site integrity. It is the competent authority (most likely Marine Scotland) who will carry out the HRA, based on advice from ourselves (JNCC and SNH) and using information and data collated by the developer (MORL). We note that the HRA should become more focused over time through an iterative process, as information arises which justifies that the risk to certain features is at an acceptable level.

Under HRA, the potential impacts of this proposal will need to be considered alone and in combination with other plans and projects. It needs to be considered in combination with the proposed Beatrice windfarm and other activities that may be relevant. We therefore recommend that MORL and BOWL (the developer for the Beatrice proposal) collaborate on the assessment of cumulative impacts. We would welcome discussion of this with, preferably, a joint meeting between the applicants, Marine Scotland and ourselves.

We also note that HRA should address all elements of the windfarm proposal – onshore works as well as offshore elements. However, at this early stage in the process we do not have full details in this regard, therefore our advice focuses on turbine location / construction within the eastern section of the Round 3 zone.

Special Protection Areas for inclusion in HRA

We recommend that the following SPAs are considered for individual and also for cumulative assessments:
Cromarty Firth SPA
Dornoch Firth SPA
East Caithness Cliffs SPA
Inner Moray Firth SPA
Loch of Strathbeg SPA
Moray and Nairn Coast SPA
Troup, Pennan and Lion.s Heads SPA

We would welcome the opportunity to discuss the scope of HRA with both windfarm developers in the Moray Firth (as noted above). There may be other SPAs that need consideration, depending on the bird species that have been recorded in the Smith Bank area, and taking account of the large foraging ranges of some SPA qualifying species such as gannet and fulmar. We note that the scope of HRA should be based on a consideration of the range of bird species that may be affected, their ecology and the types of impacts which may affect them.

Further information on SPAs, including their conservation objectives, is available from:

http://www.snh.org.uk/snhi/

We also recommend that the developer consults the current JNCC areas of search for potential inshore and offshore SPAs. Please see:

http://www.jncc.gov.uk/page-4563 and http://www.jncc.gov.uk/page-4564 respectively.

Advice for HRA in respect of SPA qualifying interests
We provide advice on the legislative requirement for HRA in Annex C. The steps of the process are as follows;

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

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

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

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

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

SPA bird interests being considered in respect of offshore windfarms are wide-ranging, considering foraging ranges and migratory species. This presents challenges in determining from which SPA species on the site have arisen, and may necessitate novel approaches in assessing effects on key populations which we are keen to discuss with Marine Scotland and the developer.

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

Determination of „likely significant effect. is not just a record of presence or absence of bird species at an offshore windfarm site, but also involves a judgement as to whether any of the SPA conservation objectives might be undermined. Such judgement is based on a simple consideration of the importance of the area in question for the relevant species. Complex data analysis should not be required at this stage. For example; How many birds have been recorded? What are they using the area for? Is this the only area that they can use for this particular activity? Understanding the behavioural ecology of the species, and the characteristics and context of the proposed windfarm site, will help in determining whether there are likely significant effects. There are three possible conclusions for this step of HRA:

a) The likely impacts are such that there is clear potential for the conservation objectives to be undermined – conclude likely significant effect.
b) The likely impacts are so minimal (either because the affected area is not of sufficient value for the birds concerned or because the risk to them is so small) that the conservation objectives will not be undermined – conclude no likely significant effect.
c) There is doubt about the scale of the likely impacts in terms of the conservation objectives – conclude likely significant effect.

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

This stage of HRA is termed appropriate assessment, and it is undertaken by the competent authority based on information supplied by the developer, with advice provided by ourselves (JNCC & SNH). Appropriate assessment considers the implications of the proposed development for the conservation objectives of the qualifying interests for which a likely significant effect has been determined. These conservation objectives follow a standard format requiring protection of the qualifying bird interests and protection of the habitat in the SPA which supports them.

Conservation objectives for SPA bird species

To ensure that site integrity is maintained by:
(i) Avoiding deterioration of the habitats of the qualifying species.
(ii) Avoiding significant disturbance to the qualifying species.
To ensure for the qualifying species that the following are maintained in the long term:
(iii) Population of the bird species as a viable component of the SPA.
(iv) Distribution of the bird species within the SPA.
(v) Distribution and extent of habitats supporting the species.
(vi) Structure, function and supporting processes of habitats supporting the species.
repeat of (ii) No significant disturbance of the species.

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

Objective **(iii)** however – maintenance of the population of the bird species as a viable component of the SPA – will be relevant in most cases because:
- It encompasses direct impacts to the species, such as significant disturbance to qualifying bird interests when they.re outwith the SPA.
- It addresses indirect impacts such as the degradation or loss of supporting habitats which are outwith the SPA but which help to maintain the population of the bird species of the SPA in the long-term.

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

Issues to consider under appropriate assessment

The key question in any appropriate assessment for windfarm development in the Moray Firth Round 3 zone is whether it can be ascertained that this proposal, alone or in combination, will not adversely affect the population of any qualifying bird species as a viable component of the SPAs under consideration.

In considering this matter, we refer to the helpful summary of the main risks of offshore windfarm development to birds provided in Langston 2010.25 In addition, there may be further issues to consider – as set out below – if the proposal is likely to affect the

conservation objectives that relate to bird species while they.re in an SPA or to the habitats in the SPA that support them.

- Will the proposal(s) cause a deterioration in the habitats of any of the SPAs? *NB. This question relates specifically to the habitats in the SPAs that support the bird interests*.

.

- Will the offshore wind proposal(s) cause any significant disturbance to bird interests while they.re in any of the SPAs? *N.B. See the previous discussion in respect of disturbance outside an SPA.*

- Will the offshore wind proposal(s) alter the distribution of the birds within any of the SPAs?

- Will the offshore wind proposal(s) affect the distribution and extent of the habitats (that support the bird species) in any of the SPAs?

- Will the offshore wind proposal(s) in any way affect the structure, function and supporting processes of habitats in any of the SPAs? NB. Those habitats which support the bird species.

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

Ongoing Liaison

As noted above, we hope to further discuss these various aspects with MORL and BOWL both with regard to their individual sites and to cumulative impacts. Agreeing the scope of, and information required for, HRA will be an iterative process which will be refined throughout the EIA process.

ANNEX E: MORAY FIRTH ROUND 3 ZONE: HABITATS REGULATIONS APPRAISAL SPECIAL AREAS OF CONSERVATION

Introduction

In the following advice for HRA we set out the three steps that need to be considered in order to determine whether or not the proposed windfarm is likely to have a significant effect on the qualifying interests of SACs, and any possible adverse impact on site integrity. The competent authority (Marine Scotland) will carry out the HRA, based on advice from ourselves (JNCC and SNH), using information and data collated by the developer (MORL).

Under HRA, the potential impacts of this proposal will need to be considered alone and in combination with other plans and projects, including other windfarms and different activities. Collaboration between MORL and BOWL on the assessment of cumulative impacts is therefore beneficial, and we welcome discussion of this with a joint meeting between the applicants, Marine Scotland and ourselves.

We recognise that the HRA is set wide initially, but will become more focused as information is collected and we will continue to review our advice as each windfarm development progresses. We also note that HRA should address all elements of the windfarm proposal – onshore works as well as offshore elements.

Special Areas of Conservation for Inclusion in HRA

We advise that the applicant will need to consider the following SACs, initially, due to potential connectivity between the development and the site. Further information, including their conservation objectives, is available from http://www.snh.org.uk/snhi/.

SACs designated for marine mammals and for marine and coastal habitats:

- **Culbin Bar SAC** - designated for its coastal habitats including sand dunes, vegetated shingle and salt meadows.

- **Dornoch Firth & Morrich More SAC** - designated for its population of common (harbour) seals (Phoca vitulina) and for coastal and marine habitats including sand dune habitats, intertidal mudflats and sandflats; subtidal sandbanks and reefs.

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

SACs designated for fish of conservation concern:

- **Berriedale & Langwell Waters SAC** - designated for Atlantic salmon (Salmo salar).

- **River Evelix SAC** - designated for freshwater pearl mussel (Margaritifera margaritifera).

- **River Moriston SAC** - designated for Atlantic salmon and for freshwater pearl mussel.

- **River Oykel SAC** - designated for Atlantic salmon and for freshwater pearl mussel.

- **River Spey SAC** - designated for Atlantic salmon, sea lamprey (Petromyzon marinus), freshwater pearl mussel and otter (Lutra lutra).

- **River Thurso SAC** - designated for Atlantic salmon.

We provide advice on the legislative requirement for HRA in Annex C. The steps of the process are as follows; our advice is tailored to consideration of windfarm development in the eastern section of the Moray Firth Round 3 zone.

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

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

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

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

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

There are three possible conclusions to this step of HRA:

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

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

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

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

- **Marine and coastal habitats** of the Moray Firth, the Dornoch Firth and Culbin Bar SACs.
  There are potential cumulative impacts on coastal processes arising from proposed windfarm development in the Round 3 zone in combination with the Beatrice proposal. It is possible that disruption of, or changes to, coastal processes and sediment movements may lead to significant effects on the coastal and marine habitats of these SACs.

  Therefore as a precaution, and because we are uncertain about the scale of potential impacts, we advise that this issue is scoped into HRA. We discuss below (under step 3) what we think needs to be considered. The proposed cable routes and onshore infrastructure (when detailed) could also potentially have effects on coastal and marine SACs dependant on their proposed location.

Summary of our current advice: possible likely significant effects in relation to offshore infrastructure; further discussion needed to determine whether impacts (incl. cumulative) will need to be considered in appropriate assessment (see step 3). Consideration of cable routes and onshore infrastructure may also be required.

- **Bottlenose dolphins** of the Moray Firth SAC.
  The dolphins are not confined to this SAC and will range more widely within the Firth and beyond. Construction (and other) noise arising from development in the Round 3 zone is likely to extend beyond the windfarm footprint and may overlap with dolphin use of the surrounding environment. Boat movements, cable-laying and other construction activity may give rise to disturbance. There may also be impacts to the prey species of dolphin – either from the placement of infrastructure or due to noise. We therefore advise that there is potential for the proposal to have likely significant effects on bottlenose dolphins and discuss below (under step 3) the issues that we think need to be considered.

  It would be beneficial for MORL and BOWL to collaborate on this issue as appropriate assessment of the cumulative impacts on bottlenose dolphins is likely to be required. Joint discussion and co-ordination of survey work, mitigation proposals and construction time-tabling would be helpful.

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

- **Common (Harbour) seals** of the Dornoch Firth SAC.
  The seals are not confined to the SAC itself and will range more widely in the Firth. Construction (and other) noise arising from the proposal is likely to extend beyond the windfarm footprint and may overlap with seal use of the surrounding environment. Boat movements, cable-laying and other construction activity may give rise to disturbance. There may also be impacts to the prey species of seals – either from the placement of infrastructure or due to noise. We advise that there is potential for the proposal to have likely significant effects on common (harbour) seals and we discuss below (under step 3) the issues that we think need to be considered.

  We highlight that it would be beneficial for MORL and BOWL to collaborate on this issue as appropriate assessment of the cumulative impacts on common (harbour) seals is likely to be required for the two proposals in combination. Joint discussion and co-ordination of survey work, mitigation proposals and construction time-tabling would be helpful.

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

- **Atlantic salmon** as a qualifying interest of the various freshwater SACs noted above.
  We have listed a wide range of SACs due to the current uncertainty about the migratory movements of Atlantic salmon. We recognise that there is a significant data / research gap on this issue, and that very little is known about salmon movements – adults and post-smolts – around the Scottish coastline. Marine Scotland have analysed historic tagging data and should be issuing a report soon, however, it is likely that this report will highlight further research requirements27.
  27 Malcolm, I., Godfrey, J. & Youngson, A. In prep. Review of migratory routes and behaviour of Atlantic salmon, sea trout and European eel in Scotland.s coastal

environment: implications for the development of marine renewables. Marine Scotland Science draft report.

While we know that Atlantic salmon are recorded in the Moray Firth, we understand that it will not be possible for the applicant to conclusively identify from/to which SAC watercourses any particular individuals (post smolts, or adults) are coming or going. We recommend that the applicant assumes all individuals are SAC salmon, and considers the effects on these fish from construction and operational noise / vibration, as well as any other types of disturbance. Mitigation could include timing restrictions on construction work / noisy activities in order to avoid any significant disturbance to migrating salmon, or disruption of their (as yet unknown) migratory routes.

We advise that the cumulative impacts of the Round 3 and Beatrice proposals in combination are a key concern, and would benefit from the applicants taking a joint approach to the assessment and to the co-ordination of mitigation proposals and construction time-tabling. Onshore infrastructure and / or any required upgrades to roads or bridges may need to be considered under HRA if the work is likely to affect any of these freshwater SACs.

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

- **Sea lamprey** of the River Spey SAC.
  There is little available information on the movements of sea lamprey in general, and within the Moray Firth in particular. It appears that this species does not undertake large migrations and probably stays within coastal areas. We advise that there is potential for the proposal to have likely significant effects on this species and we request further assessment of available information to determine whether appropriate assessment is required for this feature.

  It would be beneficial for MORL and BOWL to collaborate on this issue. Joint discussion and co-ordination of mitigation proposals / construction time-tabling may be helpful. We consider that effects on sea lamprey from onshore infrastructure are unlikely, presuming this is not proposed in proximity to the River Spey SAC.

  Summary of our current advice: possible likely significant effect in relation to offshore infrastructure, so impacts (including cumulative) may need to be considered in appropriate assessment (see step 3). No likely significant effect in respect of onshore infrastructure, dependent on its location.

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

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

Summary of our current advice: possible likely significant effect, and we request further discussion of information available as to whether indirect impacts will need to be considered in appropriate assessment as part of the assessment of any direct impacts on Atlantic salmon (see step 3).

- **Otters** of the River Spey SAC.
  Effects on otters of the River Spey are unlikely, presuming that no onshore infrastructure is proposed in proximity to this SAC.

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

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

This stage of HRA is termed **appropriate assessment**, and it is undertaken by the competent authority based on information supplied by the developer, with advice provided by ourselves (JNCC and SNH). We highlight that cumulative impacts are a key concern for many of the SAC qualifying interests discussed, and therefore the two agencies will liaise closely over the provision of advice for HRA.

Appropriate assessment considers the implications of the proposed development for the **conservation objectives** of the qualifying interests for which a likely significant effect has been determined. We discuss this below for each of the qualifying interests listed above.

We note that the scope of appropriate assessment will need to be refined and agreed following discussion of further information; when baseline data has been collected, and when construction methods, location of infrastructure, choice of port, and other aspects of the proposal have been finalised.

Advice for appropriate assessment in respect of the qualifying habitat interests of SACs

The **conservation objectives** for the habitat interests of the Moray Firth, the Dornoch Firth and Culbin Bar SACs are: **(i)** to avoid deterioration of the qualifying habitats thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features.
And to ensure for each qualifying habitat that the following are maintained in the long term:
(ii) Extent of the habitat on site.
(iii) Distribution of the habitat within site.
(iv) Structure and function of the habitat.
(v) Processes supporting the habitat.
(vi) Distribution of typical species of the habitat.
(vii) Viability of typical species as components of the habitat.
(viii) No significant disturbance of typical species of the habitat.

Based on these conservation objectives, the following questions may need to be addressed for the marine habitats in these SACs such as subtidal sandbanks and reefs; and for coastal habitats such as sand dunes, salt meadows and intertidal mudflats and sandflats.

- Will the proposal cause any deterioration to the qualifying habitats within each SAC?

- Will it affect the extent or distribution of the qualifying habitats within each SAC?

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

- Will it affect, or cause disturbance, to any of the typical species of these habitats – including their distribution and viability within each SAC?

Our concern is that any changes to wave dynamics and sediment movements in the Moray Firth may result in effects on these SAC habitats, although we are uncertain of the potential scale of such effects. We recommend that MORL and BOWL collaborate and jointly commission work on coastal processes modelling in order to assess the potential effects to SAC habitats arising from their windfarm developments in combination.

We also note that the effects of cable laying, and other impacts from onshore works may be a concern, dependent on location.

Advice for appropriate assessment in respect of bottlenose dolphin of the Moray Firth SAC

The conservation objectives for bottlenose dolphin are: **(i)** to avoid deterioration of the habitats of bottlenose dolphin or **(ii)** significant disturbance to bottlenose dolphin, thus ensuring that the integrity of the Moray Firth SAC is maintained and that the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features.

And to ensure for bottlenose dolphin that the following are established then maintained in the long term:
(iii) Population of bottlenose dolphin as a viable component of the site.
(iv) Distribution of bottlenose dolphin within site.
(v) Distribution and extent of habitats supporting bottlenose dolphin.
(vi) Structure, function and supporting processes of habitats supporting bottlenose dolphin.

repeat of (ii) No significant disturbance of bottlenose dolphin.

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

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

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

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

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

- Will the proposal cause significant disturbance to bottlenose dolphin while they are outwith the SAC such that the viability of this SAC population is affected?

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

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

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

We highlight that cumulative impacts are a key concern and we consider that collaboration between MORL and BOWL on noise impact assessment is likely to be helpful, along with discussion / co-ordination of mitigation proposals and construction time-tabling.

Finally, it is possible that there may be impacts to habitats within the SAC that support the dolphins, such as discussed above in the section relating to qualifying habitat interests. The potential for such impacts will become clearer once coastal processes modelling has been undertaken. Impacts from onshore works may also need consideration, dependent on location.

Advice for appropriate assessment in respect of common seals of the Dornoch Firth SAC

The conservation objectives for common (harbour) seals of the Dornoch Firth & Morrich More SAC are the same as given above for bottlenose dolphin. The same questions may need answering in respect of direct impacts to common seals and indirect impacts relating to their supporting habitats.

For common seals, conservation objective **(iii)** probably has most relevance – population of the species as a viable component of the SAC. The offshore elements of the proposed windfarm are far enough away from the SAC for there not to be direct impacts, or disturbance, to the seals within it. However, there may be occasions when the seals forage
far enough from the SAC to come into contact with the proposed windfarm. And the proposal may have impacts on the prey species of seals, an issue which will also need to be considered.

As discussed for bottlenose dolphin, noise impact assessment will be important as well as consideration of the cumulative impacts of Round 3 and Beatrice in combination.

There may also be issues to consider in respect to any impacts to habitats within the SAC that support the seals – this will become clearer once coastal processes modelling has been undertaken. The impacts of onshore works may also need consideration, dependent on location.

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

The SAC conservation objectives for Atlantic salmon and freshwater pearl mussel (where appropriate) are: **(i)** to avoid deterioration of the habitats of the qualifying species or **(ii)** significant disturbance to them, thus ensuring that the integrity of the SACs are maintained and that they make an appropriate contribution to achieving favourable conservation status for each species.

And to ensure for each species that the following are maintained in the long term:
(iii) Population of the species, including range of genetic types for salmon, as a viable component of the SACs.
(iv) Distribution of the species within sites.
(v) Distribution and extent of habitats supporting each species.
(vi) Structure, function and supporting processes of habitats supporting each species.
repeat of **(ii)** No significant disturbance of the species.

And for freshwater pearl mussel in particular, to ensure that the following are maintained in the long term:
(vii) Distribution and viability of freshwater pearl mussel host species
(viii) Structure, function and supporting processes of habitats supporting freshwater pearl mussel host species

In respect of the offshore elements of infrastructure, appropriate assessment will focus on conservation objective **(iii)** – the population viability of Atlantic salmon – considered across the range of SACs previously listed as it may not be possible to determine the home. river of individual fish (post smolts and adults) recorded in the Moray Firth.

There would not be any impacts to supporting habitats in any freshwater SACs arising from offshore infrastructure, however, the placement of onshore infrastructure – including any road / bridge upgrades – may need further consideration depending on proximity to the following SACs: Berriedale & Langwell Waters, the Rivers Oykel, Moriston and potentially the Spey. We will be able to give further advice when MORL presents more information on this aspect.

So the main impacts to Atlantic salmon would arise when the fish are outwith the freshwater SACs, on migration. An adverse impact on site integrity could arise if individuals are significantly disturbed / displaced from their migratory routes such that it affects the population viability of the species. MORL may also need to consider whether the proposal could in any way act as a barrier to salmon movements, whether it might prevent any salmon from accessing the freshwater SACs that drain into the Moray Firth, in particular, the Berriedale & Langwell Waters.

Noise impact assessment is likely to be a key part of any overall appropriate assessment, and all phases of the development should be considered – construction, operation, repowering and decommissioning. Cumulative impacts are a major concern and we consider that collaboration between MORL and BOWL on noise impact assessment is likely to be helpful, along with discussion / co-ordination of mitigation proposals and construction time-tabling.

As discussed above, MORL may also need to consider the potential (indirect) impacts to freshwater pearl mussel (FWPM) arising from offshore infrastructure. This will be a desk-based appraisal following on from the assessment of impacts to Atlantic salmon. We note that direct impacts to FWPM could arise from the placement of onshore infrastructure if this work takes place close to, or is likely to affect, freshwater SACs in the area where FWPM are a qualifying interest: the Rivers Evelix, Oykel, Moriston, and potentially the Spey.

Advice for appropriate assessment in respect of sea lamprey of the River Spey SAC

As above, appropriate assessment for sea lamprey will focus on conservation objective **(iii) -** considering whether the windfarm proposal will have any effect on the population as a viable component of the River Spey SAC. This is likely to require noise impact assessment as a key aspect – to identify whether lamprey could be significantly disturbed or displaced from the proposed windfarm site such that the SAC population is affected. It would be beneficial for the MORL and BOWL to collaborate as cumulative impacts are a key concern. Unless any onshore infrastructure is to be located in proximity to the Spey (including any necessry road / bridge upgrades) then it would not have any effects on sea lamprey.

Ongoing Liaison

As noted above, SNH and JNCC will continue to liaise with MORL and BOWL in respect of this HRA process. We consider it will be very important for the applicants to collaborate on a number of issues in order to address cumulative impacts and their mitigation. We will continue to review our advice on HRA as each proposal progresses, and as survey work, modelling and other analyses are undertaken. We will discuss any strategic research needs with Marine Scotland and the Crown Estate, particularly those in respect of Atlantic salmon.

The Highland Council

The scoping report produced for Sea Energy Renewables appears to be comprehensive. Issues of high importance to the Council and the public will be the visibility and visual impacts of the development from the coast. The Council has recently produced standards for visualisation of wind energy developments and these should be used when producing visualisations for the use of the public and decision makers.

Also of high importance to the Council will be assessment of the impacts and means of transportation/transhipment/assembly of components of the wind farm. The Council is keen to have existing port and assembly/laydown facilities in the Highlands utilised and developed for the off-shore wind energy industry and the ES should examine these options in detail. The Council would welcome early discussion with the developer to facilitate the use of existing assets in Highland.

Aberdeenshire Council

Aberdeenshire council have spoken to Mr Craig Milroy, Stakeholder Manager, and we are satisfied that the proposal for the offshore windfarm will not have any direct or indirect affects on the interests of Aberdeenshire Council.

Clearly as time progresses there may be proposals which involve "on land" development and these will have an impact on the Councils interests and Mr Milroy and I have suggested that, at that time, it will be appropriate to scope these works.

SEPA

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

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

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

1. Scope of the ES for marine developments

1.1 This project will be developed during a period of fast development of marine policy at national and international levels and this should be addressed with respect to the Marine (Scotland) Act 2010 and Marine Strategy Framework Directive. More information can be found on the Marine Science website at http://www.scotland.gov.uk/Topics/marine/seamanagement.

1.2 From the information submitted we understand the overall project will include both onshore and offshore components including 200 turbines, foundations, cabling, substation platforms and onshore works including landfall and substation. As such, the development will be subject to a range of different consenting regimes. We would encourage you to consider producing a single ES which covers all aspects of the proposed development. This will enable a full assessment of the potential effects of the development as a whole, rather than assessing certain details of the development individually.

2. Site layout and nature of construction for marine developments

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

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

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

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

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

3. River Basin Management Planning

3.1 Under the Water Environment and Water Services (Scotland) Act 2003, SEPA is responsible for producing and implementing River Basin Management Plans for the Scotland and the Solway Tweed River Basin Districts. River basins comprise all surface waters (including transitional (estuaries) and coastal waters) extending to 3 nautical miles seaward from the Scottish territorial baseline. Although the turbines themselves will be located way beyond this limit, the onshore elements will fall within the river basin boundary. The windfarm development area lies close to a number of coastal and estuarine water bodies, all of which are currently at good or high ecological status. Any proposed development within these waters must have regard to the requirements of the Water Framework Directive to ensure that all surface water bodies achieve 'Good Ecological Status' and that there is no deterioration in status. The Water Framework Directive requires the consideration of chemical, ecological and hydromorpholgical status. Further information on River Basin Management planning can be found on the SEPA website at www.sepa.org.uk/water/river_basin_planning.aspx. Information on the current status of Scotland's surface waters can be found on the water body data sheets on the the River Basin Management Planning Web Mapping Application available on SEPA's website at (http://213.120.228.231/rbmp/).

3.2 The cumulative assessments should consider the proposals alongside any existing coastal development already present within the water bodies in which landfall locations are being considered. EC guidance defines cumulative impacts as "impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project" (http://ec.europa.eu/environment/eia/eia-studies-and-reports/guidel.pdf).

3.3 Maps should be included in the ES showing the areas of seabed likely to be affected by the footprint of the turbine bases and cabling, and the area of intertidal zone that is likely to be affected by shoreline infrastructure development. To allow for the RBMP classification to be updated and the assessment of cumulative impacts within these water bodies footprint data for the turbines and cabling components of the development should be provided in the ES.

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

4.1 The main activity would be carried out off-shore and would therefore not be regulated by SEPA under The Water Environment (Controlled Activities) (Scotland) Regulations 2005 (as amended) (CAR). However, steps should be taken where applicable to minimise pollution of the shoreline and on-shore water environment to barest minimum levels. The following information may therefore be of use. One of our key interests in relation to major developments is pollution prevention measures during the periods of construction, operation, maintenance, demolition and restoration. The construction phase includes construction of access roads and any other site infrastructure.

4.2 We advise that the applicant, through the EIA process or planning submission, should systematically identify all aspects of site work that might impact upon the environment, potential pollution risks associated with the proposals and identify the

principles of preventative measures and mitigation. This will establish a robust Project Environmental Management Process (PEMP) for large scale (eg Major and Environmental Impact Assessment Projects (EIA). A draft Schedule of Mitigation should be produced as part of this process. This should cover all the mitigation measures identified to avoid or minimise environmental effects. Details of the specific issues that we expect to be addressed are available on the Pollution Prevention and Environmental Management section of our website.

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

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

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

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

5. Waste management

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

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

5.2 To do this effectively all waste streams and proposals for their management should be identified. Accordingly, we recommend that a site specific site waste management

plan is developed to address these points. This is in accordance with the objectives of Scottish Planning Policy and the National Waste Plan which aim to minimise waste production and reduce reliance on landfill for environmental and economic reasons.

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

6. Flood risk

6.1 The onshore components of the development such as the substation may be at risk from coastal flooding. The location of the substation should therefore be assessed for flood risk from all sources in line with Scottish Planning Policy (Paragraphs 196-211). Further information and advice can be sought from the Local Authority technical or engineering services department, Scottish Water and from our website. Our Indicative River & Coastal Flood Map (Scotland) is also available to view online. If a flood risk is identified then a flood

risk assessment (FRA) should be carried out following the guidance set out in the Annex to the SEPA Planning Authority flood risk protocol. Our *Technical flood risk guidance for stakeholders* outlines the information we require to be submitted as part of a FRA, and methodologies that may be appropriate for hydrological and hydraulic modelling. Further guidance on assessing flood risk and planning advice can be found at our website.

7. Onshore drainage strategy

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

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

8. Marine ecological interests

8.1 We also recommend information be submitted detailing how the development will contribute to sustainable development. Opportunities to enhance marine habitats in line with Water Framework Directive and The Nature Conservation (Scotland) Act

2004 objectives and Scottish Planning Policy guidance should be explored. Examples may include coastal realignment, the incorporation of naturalistic features in the design of shoreline works, or planting with salt tolerant species. These could be used as examples of best practice and demonstration sites under SEPA's Habitat Enhancement Initiative (HEI).

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

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

9. Marine Processes

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

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

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

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

9.4 The magnitude and significance of any changes to the natural processes identified in the baseline assessment should be demonstrated in the ES. It would be helpful to see a series of contour plots showing the magnitude and spatial extent of +(ve) and –(ve) changes in current velocities between the 'pre development' and 'post development' scenarios. The assessment should also identify and quantify the relative importance of high energy low frequency events e.g. storm events, versus low energy high frequency processes. Any changes to the existing processes can then be used to infer the extent of any changes to sediment transport processes and potential impacts on the marine ecology.

10. Regulatory advice

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

RSPB

Boat and Aerial Surveys

A comprehensive baseline data set on bird usage of the area is required and we are content that the proposed programme of boat surveys, coupled with the use of aerial survey data and existing data e.g. from Beatrice bird surveys, meets currently-accepted standards. This view is offered without prejudice to a considered opinion on the adequacy of information once we have had sight of full datasets.

We anticipate that there may be practical difficulties in recording birds by species, every minute, in five distance bands and six height bands with direction of flight and additional information, especially if significant aggregations of birds are encountered and seek reassurance either that our fears are unfounded or that contingency arrangements are in place.

For understandable reasons, no boat-based bird observations will be made in sea state five or more. There will be a requirement to assess whether bird distribution, numbers, behaviour and species present is likely to differ significantly under more extreme conditions.

Assessing Impacts on SPAs

A key test of the proposals will be whether or not they are likely to have an adverse effect on the integrity on any Special Protection Area (SPA). Simply knowing which species are present on the development site, the abundance and temporal distribution of birds and how they may be impacted by the proposals will be insufficient. It will also be necessary to determine the origin of these birds, in terms of breeding colonies, and how populations, especially SPA populations, may be impacted in terms of number and breeding success. Collaboration and data-sharing with other offshore developers will be essential if a sufficiently detailed picture of the relationships between seabirds at sea and at their breeding colonies is to be obtained.

Direct observation of the directions in which birds move to or from the development site – and to and from the nearest seabird breeding colonies on the East Caithness Cliffs SPA – will undoubtedly give relevant data although this is unlikely to be sufficient. For more distant seabird colonies, direct observation is likely to be almost worthless. It will be necessary, therefore, to obtain information by use of tracking devices attached to birds.

The use of radar should also be considered. Radar studies should be targeted and cover relevant time periods to allow assessment of impacts on passage seabirds and migratory waders, ducks and geese etc. Boat and aerial techniques do not sufficiently assess such movements on their own and radar is able to gather data in periods of darkness and poor weather. There is a potential role for Doppler radar which might possibly give an indication of size and wing beat frequency, thus perhaps enabling more specific identification to families/ even species.

Best practice is clearly that prospective developers should carry out such studies and we 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 in embarking on such work may cause proposed developments to be held up in the planning process.

Bird activity on the development site should be judged against breeding performance of the birds at the relevant colonies in the relevant year: in years of breeding seabird failure such as have been experienced recently, especially if adults do not breed at all or fail early, then feeding activity is likely to be less as they are not provisioning chicks.

We also note that there are no plans to determine the effect of the scheme on migrant birds (other than seabirds), although there will be a need to carry out a Habitats Regulations Assessment to determine the proposal's impact on SPA populations of geese and swans (and perhaps other species) which are likely to fly through the area.

Cumulative and in-combination effects

We are pleased with the commitment to consider cumulative and in-combination impacts as part of the EIA process. However, we believe that the potential for cumulative impacts also arises from other proposals - and to additional sites - not listed in the scoping report. In terms of foraging seabirds we suggest that it would be prudent to consider a much wider search area. For example, cumulative impacts could accrue from other developments, in the Moray Firth and elsewhere, for species such as Manx shearwaters from Rum SPA or gannets from Forth Islands SPA. "Disruption to habitat function" is identified as an impact on birds on the table in paragraph 5.2.5.3 but is omitted in paragraph 5.2.5.4 and we seek clarification on how this is to be considered.

Mitigation

Mitigation should be considered to reduce any significant impacts to an acceptable level: this could include design of the wind farm layout, turbine height and/or operational limitations such as shut-down periods, for example. Since many birds may transit the area during periods of reduced visibility or at night, the potential draw of any lighted structures to birds should be considered. Although these lights have relatively low intensities, their location within an area of very little light pollution means that attraction could be an issue. The EIA should consider whether turbine colouration (potentially including use of ultraviolet markings) may make the turbine structures more visible to passage bird species, especially during conditions of reduced visibility. Consideration should be given to the outputs of any research that may help to identify other suitable mitigation, which may become available during preparation of the ES.

Carbon balance

RSPB Scotland would wish to see details of the full carbon balance budget for the proposed development detailed in the ES. This may include, for example, the amount of carbon required for equipment manufacturing and any CO2 which may leak from the seabed.

We trust you find our comments helpful and would like to refer you in the first instance to the RSPB Research Report No.39 for further information.
http://intranet.rspb.org.uk/essential/conservation_work/protecting_areas_casework/research_and_support/windfarms/offshore.asp

CIVIL AVIATION AUTHORITY (CAA)

As alluded to with the documentation provided, like any wind turbine development, the proposed subject development has the potential to impact upon aviation-related operations; the Department for Trade and Industry (DTI – now the Department for Energy and Climate Change)-sponsored document 'Wind Energy and Aviation Interests' and Civil Air Publication 764 refer1. The related need to establish the scale of the potential impact of the Moray development is evident. Having reviewed the SR and in particular the site in question, I can advise that we have previously recommended discussion with Wick airport and with helicopter operators based at Aberdeen airport (Bond Offshore Helicopters and Bristow Eastern Hemisphere).

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

With respect to Aviation Warning Lighting, the subject wind farm will fall under the requirements of Air Navigation Order 2009 Article 220 and this will need to be addressed in the Environmental Statement.

With respect to Landfall, the Environmental Statement may need to address the impact on aviation of power line routeing between Landfall and the onshore substation(s) if the power lines are a significant height above ground. However, it is acknowledged that this aspect may fall under the management of the Offshore Transmission Operator rather than the applicant.

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

• International aviation regulatory documentation requires that the rotor blades, nacelle and upper 2/3 of the supporting mast of wind turbines that are deemed to be an aviation obstruction should be painted white, unless otherwise indicated by an aeronautical study. It follows that the CAA advice on the colour of wind turbines would align with these international criteria.

• There is a civil aviation requirement in the UK for all structures over 300 feet high to be charted on aviation maps. Should this development progress and the 300 feet height be breached the developers will need to provide details of the development to the Defence Geographic Agency. We would also be interested in any proposed schedule of promulgation of the construction of the turbines.

• Consideration should be given to the lighting and marking of meteorological masts particularly during any survey phase as these are particularly difficult to acquire visually.

• It is possible that the proliferation of wind turbines in any particular area might potentially result in difficulties for aviation that a single development would not have generated. There is a CAA perceived requirement for a co-ordinated regional wind turbine development plan, aimed at meeting renewable energy priorities, whilst addressing aviation concerns and minimising such proliferation issues. Given the concentration of wind farm developments in the Forth and Tay area, a co-operative 'regional solution' between the developers in the area is seen as a desirable approach.

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

NERL SAFEGUARDING

NATS is comprised of two separate companies – NATS En-Route Plc (NERL) and NATS Services (NSL). NERL's business deals with the en-route aspect of Air Traffic Control and I am responding to the scoping report from a NERL perspective.

Wind turbines have the potential to affect NERL's Communications, Navigation and Surveillance (CNS) infrastructure. The impact on Primary Surveillance Radar (PSR) is caused by the spinning blades of a wind turbine creating false plots on the radar system which can be displayed as "clutter" on the air traffic controller's radar display. This "clutter" can appear as though it is an aircraft which has the potential of creating a serious safety occurrence. Wind turbines can also impact on voice communication and navigation aid systems. It should also be noted that voice communications systems are NERL's highest safety category system – without voice communications NERL would be unable to perform its Air Traffic Service functions.

For the development in question, and based on the information available to us, there is predicted to be an impact on our CNS infrastructure and thus our operations. NERL offer a technical and operational assessment service which could be commissioned by the developer which would explore the extent of this impact. In order to complete these assessments, NERL would require further details of the proposed development. In order for NERL to accurately calculate the potentially impact that the proposed turbines may have on our communications, navigation and surveillance (CNS) infrastructure, we would require the dimensions of the largest possible turbines which may be installed so we can calculate the worst case impact on our CNS infrastructure.

NERL wish to engage with the developer to ascertain the extent of the potential impact of the proposed wind farm. NERL are able to offer a service which can be tailored to meet the developer's needs. For example, if the developer would like NERL to assess the zone as a whole, this can be done. If the developer would like NERL to assess individual phases of development, this could also be tailored for.

NERL recently held a workshop with all Offshore Round 3 developers to explain the potential impact to our systems and operations. As a follow up to this workshop, NERL will engage with the developer to progress the assessment of potential impact that this development may have on our infrastructure and the steps which need to be taken to allow the development to coexist with our CNS infrastructure and operations.

Maritime & Coastguard Agency

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

Collision Risk
Navigational Safety
Visual intrusion and noise
Risk Management and Emergency response
Marking and lighting of site and information to mariners Effect on small craft navigational and communication equipment The risk to drifting recreational craft in adverse weather or tidal conditions The likely squeeze of small craft into the routes of larger commercial vessels.

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

Particular attention should be paid to cabling routes and burial depth and, subject to the traffic volumes, an anchor penetration study or burial protection index may be necessary.

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

The reference to the Marine & Coastguard Agency should be amended to Maritime & Coastguard Agency and the reference to Pilotage Association should be amended to the UK Marine Pilots Association (UKMPA)

Any application for construction safety zones will need careful consideration as will any proposal to extend their use into the operational phases.

The cumulative and in combination effects, particularly with respect to the Beatrice Offshore Wind Farm (BOWF) development, require serious consideration and we welcome the engagement of the Moray Firth Offshore Wind Developers Group to collectively address these issues.

We do not necessarily agree that the potential for impacts on oil and gas infrastructure should be scoped out of this proposal. A holistic approach, including the western area of the zone and the BOWF should be undertaken.

Given the volume of traffic accessing the Beatrice development area consideration may need to be given to proving a NW/SE route.
Consideration also needs to be taken of the arrival and departure points of the marine traffic beyond the 10 mile snapshot to ensure appropriate marine users are included in any HAZID workshops.

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

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

Particular consideration will need to be given to the implications of the site size and location on SAR resources and Emergency Response & Co-operation Plans (ERCOP) and Guard Vessel provisions.

Developers need to be aware that the radar effects of OWF on ship's radars are an important issue and subject to further discussion within the radar sub group of NOREL The radar effects will need to be assessed on a site specific basis taking into consideration previous reports on the subject available on the MCA website at:

http://www.mcga.gov.uk/c4mca/mcga07-home/shipsandcargoes/mcga-shipsregsandguidance/mcga-windfarms/offshore-renewable_energy_installations.htm

Northern Lighthouse Board

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

We would advise that any marking and lighting recommendations referred to in your section 2.7.2 will be made in a formal response through the Coast Protection Act 1949: Section 34 consultation process, and will be based on IALA Recommendation O-139. It may also 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 require the Navigational Risk Assessment to be in accordance with the information given at section 5.3.3, and in line with the requirement of MCA Marine Guidance Notice 371. We note that to date most of the vessel traffic analysis has been conducted through the use of AIS radar information, and that it is intended to provide further validation of statistics by gathering data regarding small craft (<15m) and leisure users at a local level, thereby enabling a more complete Navigational Risk Assessment. We would encourage the Risk Assessment to include a workshop approach to hazard identification and mitigation.

We would also welcome and encourage engagement with the Moray Firth Offshore Wind Developers Group to work together to minimise the cumulative impact of site development, including any developers within the Scottish Territorial Waters awards.

RYA Scotland

The RYA is the national body for all forms of recreational and competitive boating. It represents dinghy and yacht racing, motor and sail cruising, RIBs and sportsboats, powerboat racing, windsurfing, inland cruising and personal watercraft. The RYA manages the British sailing team and Great Britain was the top sailing nation at the 2000, 2004 and 2008 Olympic Games.

The RYA is recognised by all government offices as being the negotiating body for the activities it represents. The RYA currently has over 100,000 personal members, the majority of whom choose to go afloat for purely recreational non-competitive pleasure on coastal and inland waters. There are an estimated further 500,000 boat owners nationally who are members of over 1,500 RYA affiliated clubs and class associations.

The RYA also sets and maintains an international standard for recreational boat training through a network of over 2,200 RYA Recognised Training Centres in 20 countries. On average, approximately 160,000 people per year complete RYA training courses. RYA

training courses form the basis for the small craft training of lifeboat crews, police officers and the Royal Navy and are also adopted as a template for training in many other countries throughout the world.

Regarding the list of parameters considered within the scoping document, our interest at the RYA is obviously recreational navigation and our concern is to secure the safety of such interests. As a result, the RYA are pleased to see that recreational boating is considered under section 5.3.3, titled *'Navigation and Shipping'* as well as in section 5.3.12, titled *'Socio-Economics'* under the title *'Tourism.'* The RYA welcomes the comments made in section 5.3.12.3 which states **'In addition, the minimum safe (air) clearances between sea level conditions at mean high water springs (MHWS) and wind turbine rotors should be suitable for the vessels types identified in a traffic survey but generally should not be less than 22 metres (RYA, 2005; MGN 371),** as this rotor tip height is of great importance to the navigational safety of recreational vessels.

The RYA welcomes the inclusion of Figure 5.10 titled *'Overview of navigation related recreational activity relative to Moray Firth Round 3 Zone'* which shows a detailed picture of recreational boating throughout the Moray Firth Offshore Wind Farm area as well as the detailed description of the cruising routes that transect the wind farm area, seen under the title '*Recreational Vessels'*. The RYA is encouraged that the data from the UK Coastal Atlas of Recreational Boating is being utilised and considered at this early stage. We therefore expect this information to also be taken into account and represented within the Environmental Statement.

The RYA welcomes the statement under section 5.3.3.2, titled *'Data Gaps'* which states **that 'Additional data is being collated using radar tracking for non-AIS vessels...'.** The RYA consider this very important as recreational craft do not tend to carry AIS and therefore are not represented in such surveys and are often under represented.

The RYA welcomes the paragraph in section 5.3.3.4 titled '*Site Specific Impact Assessment Methodology' which* clearly states **'The Marine Navigational Risk Assessment which will be carried out as per the recommended methodology outlined in the DTI (now DECC) publication Guidance on the *Assessment of the Impact of Offshore Wind Farms: Methodology for Assessing the Marine Navigational Safety Risks of Offshore Wind Farms* (the 'DTI Methodology').'**

With this in mind, the RYA would expect to see that recreational craft are to be included in the Navigational Risk Assessment and that the RYA will be part of the **'consultation with key navigational stakeholders'** before the NRA is begun

In section 5.3.3.6, titled *'Cumulative and in-combination impact assessment and survey methodologies'* the RYA welcomes the comments which state **'Cumulative and in-combination issues associated with the offshore oil and gas activities as well as the adjacent offshore wind farm activities in the area will be evaluated',** but expect that the issue of commercial and recreational navigation to also be included as one of those major activities. The cumulative impact of all marine developments is becoming increasingly important, especially when considering the issue of 'squeeze' for vessels of all shapes and sizes navigating around development sites.

The RYA notes that under section 5.3.3.7, titled '*Potential Mitigation Methods'*, there is mention the use of safety zones if appropriate. The RYA would like to take this opportunity to clarify that as far as recreational vessels are concerned it is the RYA's opinion that that the creation of safety zones around the individual operational wind turbines that exclude small craft are unlikely to increase their navigational safety and would therefore be unnecessary, impracticable and disproportionate.

We recognise the increased level of risk to vessels and personnel working during the construction, major maintenance and decommissioning phases of wind farm development where jack up vessels and other engineering works and vessels are required. In these situations we do not object to a temporary safety zones being established around the turbine foundation structures while installation activities are on-going. We would expect this to be supported by regular Notices to Mariners informing all sea users of the location and type of works being undertaken.

The RYA has put together a position statement regarding the development of offshore wind farms and I have attached a copy of this for your information. All our concerns regarding recreational boating and offshore wind farm developments are included in this statement and the RYA expects these to be addressed in the future development of this project.

In summary the RYA's concerns with offshore energy developments and recreational boating relate to:

1. Navigational safety
    - Collision risk
    - Risk management and emergency response
    - Marking and lighting
    - Effect on small craft navigational and communication equipment
    - Weather
2. Location
    - Loss of cruising routes
    - Squeeze into commercial routes
    - Effect on sailing and racing areas
    - Cumulative effects
    - Visual intrusion and noise
3. End of life
    - Dereliction
    - Decommissioning
4. Consultation

Essentially with correct siting taking into account all navigational interests, both commercial and recreational, as well as the suitable design of turbine towers, there is scope for all users of the sea to be mutually compatible.

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 are currently being reviewed by Marine Scotland and we will be the subject of future correspondence.

The definition of the 'Rochdale envelope' approach described is consistent with all large offshore wind developments. This allows developers to describe their projects in a hypothetical manner by fully assessing any impacts associated with all technology that may be considered on the site.

Indicative turbine layouts should be presented within the EIA.

2.5 Construction timelines

A phased installation process will begin in 2015 and the operational wind farm is anticipated for completion in 2019. Once more finalised information becomes available MS-LOT would appreciate further updates on the construction timeline

Inter array cabling & Scour Protection

The Installation methodologies for both the inter array cabling and the scour protection must be detailed within the EIA as the Marine licence applications require a list of deposits.

2.6.1 Environmental Management

MS-LOT welcomes the developers approach to the comprehensive Environmental Management Plan (EMP). The EMP is required to be a live document that can be reviewed and updated as the project evolves.

Appropriate Assessment (AA)

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

Marine Scotland Science (MSS)

The following comments have been received from MSS colleagues.

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

Section 5.1.2.4 Wind Climate

The first part of paragraph 4 should be re-written to clearly state that the summer months experience <12m/s and the winter months are from 12 to 25m/s. The paragraph is describing the most common wind speeds on an annual basis and it states wrongly "with wind speeds up to 12 m/s" but then the next two sentences contradict this "Stronger winds (12 to 25m/s)" in winter months.

Tidal Regime

Paragraph 1, 2, & 3; require references to be added for tidal range & tidal currents.

Wave Climate

Table 5-2: it should be (2) instead of (1) in the second line.

Section 5.1.3 Data Gaps

Once the metocean survey data has been analysed a report should be submitted to MS-LOT for review.

5.2 Benthic Ecology

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

Naming of species

A.irregularis should be presented as *Astropecten irregularis* not 'Asterias' as printed.
T. flexuosa should be presented as *Thyasira flexuosa*

Minor changes

Paragraph 3 should read that "the infaunal community is relatively uniform across the region" not "the infaunal taxa is relatively uniform across the region".

Paragraph 5 should read "whilst two stations contained a high proportion of gravel and pebbles it was dominated by epifauna" deleting "and the fauna was dominated by epifauna"

Paragraph 6 should read "to show similar benthic faunal characteristics" and "with a high species diversity dominated by polychaetes, crustaceans and echinoderms".

5.2.2.4 Impact assessment Methodology

Paragraph 2 Method of impact assessment box should read "EIA based on a review of scientific literature"

5.2.4.3 Environmental Impacts Scoping

The potential impacts described in the scoping document should not include "Barrier to movement" as a separate effect. The barrier is caused by the presence of vessels, presence of foundations etc; it is not a different effect. The study that is proposed investigates the potential longer term avoidance of the development area by marine mammals using baseline data this will be incorporated into the post construction monitoring. Potential impacts associated to disturbance and collision should be primary direct impacts and lines 5 and 6 which relate specifically to prey species will be extremely hard to assess and should be treated as secondary impacts.

The scoping document has identified a need to conduct fish surveys within the 'potential reduction of the feeding resource due to effects on prey of noise and vibration, and habitat disturbance' section, MS would recommend that the developers review existing background data surrounding fish species density and distribution rather than conducting a survey.

MS suggests that the potential for interaction between changes in commercial fishing activity and biofouling can be scoped out of the assessment.

5.2.4.5 Site specific survey methodology

MORL should consult with MS-LOT when requiring information about data collection to support an Appropriate Assessment, and not consult directly with SNH/JNCC. The reference to the impacts on SACs where salmon is a designated feature has to be removed from this section and inserted into 5.2.6.4.

When assessing the connectivity of marine mammals SAC species, MS-LOT would like to review the survey and data collection strategy.

5.2.5.2 Data Gaps

Marine Scotland should be included in the Moray Firth Offshore Wind Developers Group (MFOWDG) conversations in order to address any gaps in the ornithological data.

5.2.5.3 Environmental Impact Scoping

Within the table the impact description "Disruption to habitat function" has not been included in the subsequent tables of proposed actions. The impacts should also be arranged in order of priority. Fish surveys have been identified within the site specific impact assessment methodology 5.2.5.4 as an action, fish distribution varies from year to year, unless the fish species are closely linked to particular benthic habitats, in which case the benthic habitat map should be used to predict fish distribution.

Figure 5.7

Illustrates the boat survey transects and buffer zone, will this design be adequate to use gradient based approaches to impact assessment.

5.3.2. Commercial Fisheries

We agree, with the conclusion presented that the development could have potentially significant effects on commercial fisheries and that these should be addressed in the EIA. Effects could arise from both direct impact on the species targeted by fishermen and restricted access to fishing grounds during construction and from restricted access to, or complete loss of fishing ground, during operation. Effects, either short or long term, could be manifest in both the development area and the export cable route.

The sources of fisheries information identified in the scoping report; combined with a consultative approach as suggested seems appropriate to the EIA. Shellfish fisheries are currently the most valuable fisheries in the area and a large proportion of the landings are taken by smaller boats.

Given the number and extent of the developments proposed to date and plans for others, cumulative and in combination effects on commercial fishing appear highly probable. We suggest that these are addressed by the MFOWDG. We suggest that this assessment

should address the extent of temporary or permanent loss of access to fishing grounds and possible effects of displaced fishing effort.

Displaced effort may have direct economic effects, associated with increased steaming time, vessel costs and reduced catches if vessels have to compete with others in limited space (although in this case it would seem alternative fishing opportunities for small, locally based boats to displace elsewhere are likely to be limited). In addition, increased fishing pressure on fish and shellfish stocks in areas which remain fishable may degrade stocks. The possible adverse effects on local and more distant stocks subject to increased fishing pressure are not generally identified in guidance documents but should form part of the EIA, particularly the assessment of cumulative and in combination effects.

Cumulative Effects

Marine Scotland welcomes the collaborative approach that is being undertaken by MFOWDG on cumulative effects, Cumulative and in combination effects should make the link between impacts on natural fish ecology and consequences for commercial fisheries. As indicated above, cumulative impacts could be considerable and the possible effects on coastal (fishing) communities should be addressed in the socio-economic section.

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 European designated sites will be an important consideration within the EIA process.

As mentioned, Marine Scotland are currently considering a possible strategy for assessing cumulative and in combination effects and will return to this matter as soon as possible.

Construction

Details of any noise pollution resulting from any construction activity and any associated potential effects on cetaceans/pinnipeds/fish will be required. Noise assessments should take into consideration background noise, including vibration produced from ships' engines, piling hammers and auguring operations during the construction of turbine foundations. Considerable studies have already been conducted on cetaceans in the Moray Firth area, but the particular cause for concern is the cumulative impact from all additional wind farm sites on the North East of Scotland.

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

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

Cumulative and in combination effects

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

Cable route and layout

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

References

We note that these references are missing from the scoping report

Wave Climate

UKHO – United Kingdom Hydrographic Office
ABPmer (2004)
Admiralty Charts
Health & Safety Executive (2002)
British Isles and Adjacent Waters Co-Tidal and Co-Range Lines Chart (1996)
Admiralty Tide Tables (2009)

Section Climate Change

Include references in this section

Section Data Gaps

Include Marine Guidance Notes MGN 371 in reference list

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 is now available on the Marine Scotland website. This will assist the developers in identifying what pre-existing information is available and what supplementary site specific data will be required.

The Joint Radio Company Limited

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.

Historic Scotland

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

Marine Assets - Potential Impacts

In relation to the submitted search area of the proposed offshore wind farm, I can confirm that there are no designations within our statutory remit located within this identified area. As indicated within the scoping report, HMS Exmouth is located to the north-east of the proposed development area, which is a controlled site under the Protection of Military Remains Act 1986.

I note that the scoping report identifies that there are certain undesignated wrecks within the north section of the proposed development site. We recommend that the potential impact on these be assessed with appropriate involvement of archaeological expertise as these could be subject to potential direct impacts, depending on the location of the sub-sea works. The relevant Council Archaeology Services may also wish to comment. In addition, indirect impacts to historic assets on the seabed within the proposed development area and possibly beyond which may be caused by alteration to tidal currents and sedimentary regimes, and by changes to the chemical balance of the water and seabed sediments, should be assessed.

As part of this assessment, I note that archaeological analysis of geophysics will be undertaken, which is consistent with guidelines set down in 'Historic Environment Guidance for the Offshore Renewable Energy Sector' (Cowrie 2007)[1]. Beyond this, I note the scoping document's reference to the low potential for submerged prehistoric remains within the study area. Flemming (2004: 35) suggests that 'prehistoric artefacts could (admittedly with low probability) be present in almost any sediment recovered form the seabed in SEA 5'. I note that, archaeological analysis of grab and core samples shall be undertaken if these are available and I would encourage this to be undertaken. It would be very helpful if the results of all archaeological assessments could be archived through the Royal Commission on the Ancient and Historical Monuments of Scotland.

Terrestrial Assets - Potential Direct Impacts

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

Terrestrial Assets - Impact on Setting

In relation to the search area of the proposed offshore wind farm, I can confirm that there are terrestrial assets with a seascape setting, which maybe subject to an indirect impact as a result of the proposed offshore turbines. However, due to the separation distance, we consider it unlikely that the proposed development shall have a significant adverse impact on the setting of terrestrial assets within our statutory remit.

Cumulative Impact

In terms of cumulative impact on terrestrial / coastal assets, I note that the Scoping Report commits to assessing potential cumulative and / or in-combination impacts in relation to the change in the setting of terrestrial historic environment features. We welcome that potential cumulative impacts shall be assessed. The Scoping Report also makes reference to the appropriate industry guidance on this matter; Cowrie 2008, 'Guidance for assessment of Cumulative Impacts on the Historic Environment from Offshore Renewable Energy'.

Our Views on the Principle of this Proposal

On the basis of the information supplied, we are content with the principle of the proposal. In our view, it is considered unlikely that there shall be significant adverse impacts on marine assets within our statutory remit. Although it is considered that there shall likely be impacts on the setting of terrestrial assets within our statutory remit, the level of impact on the setting of these assets is also unlikely to be significantly adverse due to the separation distances involved. I look forward to providing further comments upon receipt of the full Environmental Statement (ES).

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

In terms of assessing the impact of the offshore elements of the proposal on terrestrial assets, I acknowledge that the Scoping Report commits to undertaking an assessment of the impact on the setting of historic sites and assets.

The relevant Council archaeological and conservation service will be able to provide information and advice on unscheduled archaeology and category B and C(S) listed buildings. The relevant Council's archaeological and conservation service will also be able to advise on the historic environment and of the likely impacts for any sites of regional and local importance.

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

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

Transport Scotland

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

Ministry of Defence

The scheme outlined involves the construction of approximately 200 free standing wind turbines with associated infra-structure. The turbines are expected to be 182 metres to blade tip above ground level. The principal safeguarding concern of the MOD with respect to the development of wind turbines relates to their potential to create a physical obstruction to air traffic movements and cause interference to Air Traffic Control and Air Defence radar installations. Consultation by the developer at the pre-planning stage has identified the following concerns:

Air Traffic Control (ATC) radar

The turbines will be between 33.6 and 76.8 km from; in line of sight to; and will cause unacceptable interference to the ATC radar at RAF Lossiemouth. Wind Turbines have been shown to have a detrimental affect on the performance of the MOD's Air Traffic Control (ATC) Watchman radars. These affects include the desensitisation of radar in the vicinity of the turbines, and the creation of "false" aircraft returns which Air Traffic Controllers must treat as real. The desensitisation of radar could result in aircraft not being detected by the radar and therefore not presented to Air Traffic Controllers.

Controllers use the radar to separate and sequence both military and civilian aircraft; in busy uncontrolled airspace radar is the only sure way to do this safely, maintaining situational awareness of all aircraft movements within the airspace is crucial in achieving a safe and efficient Air Traffic Service; and the integrity of radar data is central to this process. The creation of "false" aircraft displayed on the radar leads to increased workload for both controllers and aircrews, and may have a significant operational impact. Furthermore, real aircraft returns can be obscured by the turbine's radar returns making the tracking of conflicting unknown aircraft, the controllers own traffic, much more difficult. In considering its response to this development proposal the MOD has taken account of these issues, and has concluded that the development poses a significant risk to current ATC operations.

The MOD is willing to enter discussions with the developer with the aim of finding suitable mitigation; however, research and financial responsibility rests with the developer.

Low Flying

The turbines will be within EGD (UK Danger Area) 807 and will unacceptably affect military activities. Our advisor has stated that no low flying concerns exist for those turbines that fall outside EGD (UK Danger Area) 807.

If the developer is able to overcome the issues stated above, the MOD will request the turbines be fitted with aviation lighting.

Our assessment was based on 264 turbines at 183.71 m to blade tip that would fall within the following grid references:

1	ND	46215	08884
2	ND	51782	28146
3	ND	53687	30590
4	ND	55256	33320
5	ND	56796	37463
6	ND	66549	25737
7	ND	66549	16334
8	ND	49841	25944
9	ND	47909	24223
10	ND	45345	21027
11	ND	41961	18001
12	ND	37494	15386
13	ND	33075	13663
14	ND	30818	10145
15	ND	28205	06765
16	ND	28205	02286

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

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

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

Scottish Canoe Association

We do not have any concerns with this proposal. From our point of view this is a good location for such a large scale renewable energy development, in that it is off the east coast & a good distance out to sea.

Given the distance out to sea this is not an area where sea kayakers would venture into & the development should not have any significant impact on tidal flows & sediment deposition close to shore where small recreational boats such as kayaks could be affected by any potential changes to tidal flows & sandbanks.

Health and Safety Executive

Hazardous Installations Directorate

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HM Principal Inspector of Health & Safety
Dr G. A. Cook

The Scottish Government
Marine Laboratory
375 Victoria Road
Aberdeen
AB11 9DB

Date: 22 September 2010

Our ref: GC/SO/Moray Firth/4.2.1.405

Dear Sirs

ENVIRONMENTAL ASSESSMENT FOR THE MORAY FIRTH ROUND 3 OFFSHORE WIND FARM, EASTERN DEVELOPMENT AREA.

Thank you for your email of 21 September 2010 asking what information should be provided in the environmental statement for the proposed development at The Moray Firth.

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.

Yours faithfully

Kirsten Laidlaw
Admin Support

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.

Moray Firth Inshore Fisheries Group

Chairman: John B. Cox

PO Box 9
Fortrose
Black Isle
Ross-shire
IV10 8WY

9th April 2010

Stuart Szylak
Environmental Consultant
Environmental Resource Management Ltd.

Dear Stuart,

Beatrice Offshore Windfarm Ltd, Beatrice Offshore Wind Farm: Environmental Impact Assessment (EIA) – Scoping Exercise Consultation

Thank you for your letter of the 18th March 2010 and the invitation to comment on the EIA Scoping Exercise Consultation document.

Given the timing of your correspondence and the stated deadline of 12th April for comments, the Executive Committee of the Moray Firth IFG will not collectively have an opportunity to consider the issues raised by the consultation. However, the points identified below will be the subject of discussion at a future MFIFG Executive Committee meeting. If clarification of (or further) issues arise from discussions I will confirm these with you as part of the ongoing consultation process regarding the Beatrice development.

Comments are based on the ***notation*** used in the Consultation document.

1.4 OBJECTIVE OF THE SCOPING REPORT

It is noted that *"It is not anticipated that the sub-sea grid connection cable requirements….would form part of the application. It is anticipated that they would be subject to separate consideration under the new OFTO process which is discussed further in section 1.5.2. The environmental impacts of any sub-sea or onshore works are not considered within this Scoping Report. However, it is anticipated that the likely environmental impacts of these elements are discussed and considered at a high level within the Beatrice Offshore Wind Farm Environmental Statement."*

It appears completely counter intuitive that the EIA Scoping Report will not be considering sea bed cabling requirements outwith the site but that the environmental impacts of such activities will be considered within the BOWL Environmental Statement?

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The environmental impact of the sub-sea cabling will be one of the key issues relating to the operations of the fishing industry within the area and while it is appreciated that it will not be developed by BOWL it clearly is directly linked to the operation of the Beatrice Offshore Wind Farm. The EIA Scoping Report should clearly recognise the sub sea cabling issue as one of the main *"potential cumulative and in-combination effects"* of the transmission of electrical energy within and from the BOWL site to the shore.

This issue appears to clearly fall within ***3.5 CUMULATIVE IMPACT ASSESSMENT*** in terms of the implications of the wider environmental effects on the marine ecosystem. It is noted under this section that *"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."* The issues surrounding sub-sea cabling and potential impacts on the distribution and migration of fish stocks within the Moray Firth are further addressed below.

There is a clear need for the (***1.5.2 Consenting Framework***) ***Offshore Transmission Owners (OFTO)*** arrangements to be reconciled to those for the development of the Beatrice site especially with respect to EIA implications. It is noted that *"Considering grid connection issues the Government's new OFTO arrangements will apply to the Beatrice Offshore Wind Farm development. Under the proposed new OFTO process the sub-sea grid connection cable and transmission equipment cannot be owned by the wind farm developer. The OFTO process is at an early stage and some aspects remain under development and formal consultation. Accordingly, BOWL will monitor and keep under review the approach to the timely delivery of a transmission connection for Beatrice Offshore Wind Farm."*

It is accepted that BOWL will not be the owner of the sub-sea grid connection cable but that development of this and the wind farm site must be evaluated in tandem if the true environmental impacts are to be considered. In this respect due recognition of this must appear within the Beatrice Environmental Statement as it is a key consideration for the future activities of the fishing industry in the area.

2.3 KEY WIND FARM COMPONENTS
2.3.1 Description
Turbines, Figure 2.2

Whilst it is appreciated that the location of turbines and sub stations in the figure is for illustrative purposes only, the numbers of units involved does indicate that the entire site will be utilised.

It was stated in early discussions with BOWL that navigation channels would be able to be accommodated within the site layout especially to accommodate fishing vessel access on an East/West basis. Given that illustrative spacing's are 1km or less and blade diameters are 132m, for aerodynamic purposes with indicative spacing's of around 6 times the blade diameter it is difficult to conceive tighter spacing of individual turbines. Given standard industry safety exclusion zones during construction of 500m diameter

from each tower the potential for fishing vessel passage through the site seems extremely limited.

While this issue relates to ***3.4.5 Shipping and Navigation*** it is important at the outset to clearly define the footprint of the wind farm on the overall environment. During various stages of development the entire 131.5 sq km site, being a significant part of the Smith Bank fishing grounds, will be utilised and potentially out of bounds to fishing vessel activities or impacting on commercial fish stocks. This is considered to be the overall context under which the EIA assessment should be progressed.

Meteorological Masts

It is noted that one or two meteorological masts rising 80m above sea level will be erected on the site but subject to a separate licensing and consenting process through Marine Scotland.

No indication is given as to whether the current EIA scoping consultation covers these features or whether a further EIA exercise will be undertaken specifically for these features? In either instance these structures should be considered within this EIA scoping consultation under the heading of a potential cumulative impact.

3 PROPOSED SCOPE OF THE EIA
3.2 PHYSICAL ENVIRONMENT
3.2.1 Coastal Processes
Suspended Sediment Concentrations

It is noted that "*there is no evidence at this stage for significant quantities of fine sediment to exist in the surficial seabed sediments of the Outer Moray Firth"*. Such an observation can be useful in assessing the likely general biological features of any such site and it would be useful to determine any clear linkage between physical and biological processes in the EIA.

In the current context of commercial shellfish stocks it is subsequently noted in the scoping consultation the importance of the site for a King Scallop fishery. Recruitment to the largely sessile adult scallop beds is through settlement of planktonic larvae onto fine filamentous materials such as seaweeds or similar biogenic materials and growth to form spat which at a predetermined stage will be detached and settle on the seabed. Characteristic settlement areas are low in fine sediment materials and are typically comprised of course sand, gravel and small stones. Movement is limited during these juvenile stages and as such spat can be susceptible to smothering by highly mobile sediments.

Given the clearly successful recruitment to King scallop stocks on the Smith Bank it is extremely important that sediment loading issues are taken into account during the EIA process. Two issues are immediately obvious the first concerns sediment loading during the construction stage for both tower foundations and cable installation. The second is the physical process of structures placed on the seabed impacting water flow rates through the site and reducing overall current speeds. Any such reduction typically facilitates the settlement of suspended sediment.

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3.3 BIOLOGICAL ENVIRONMENT

3.3.3 Seabed Marine Life
Potential Impacts – Construction / Operation / Decommissioning

It is noted that *"Potential impacts during construction may include the following;*

- *Seabed disturbance and habitat loss from the installation of the seabed cables, turbine and substation foundations.*

Following the laying of cables in trenches (if this technique is utilised) it is anticipated that the seabed would quickly restore and marine communities would re-colonise and recover within a few years".

While this may be the case for a range of species the implications for important commercial species such as the King Scallop is far less clear given natural recruitment processes (see above with regard to sediment loading and spat survival). In the case where widespread disturbance of the seabed is likely to occur it is extremely important that the EIA considers the impact on recruitment to adult stocks.

It is noted that "*Potential impacts during the operational phase may include the following;*

- *The permanent physical habitat loss at each turbine and substation foundation.*
- *Localised impacts on tidal flows and sediment transport.*
- *Small changes in the make up of benthic communities."*

In the context of King Scallop stocks the points made above with regard to sediment loading and survival of juvenile scallop stages (spat) are relevant. It would be accepted that habitat loss for adult stages would occur but the impact on recruitment of juveniles to the adult fishery is far less clear and should be a specific subject of the EIA.

There appear to be two major factors that have been completely overlooked with regard to potential impacts of the operational phase and these both need to be clearly identified within the EIA.

The first is the Electro-Magnetic Field (EMF) generated when electricity is passed through the cabling network on the site and equally through the sub-sea connection cable network. Sufficient evidence already exists to indicate that EMFs have the capability to influence the behaviour of a range of marine species and in this context important commercial fish and shellfish species including crustaceans.

The impact on elasmobranchs (sharks, skates and rays etc.) is well documented as EMFs are typically used in prey detection. The implications of a large area (131.5 sq km) of EMF activity must be taken into account within the EIA process. In the context of OFTO arrangements it is clear that the sub-sea connector cable from the shore to the BOWL site is a constituent part of the EMF issue for the wider Moray Firth as it will transect almost the entire outer Moray Firth.

Any potential impact on marine organisms needs to be considered in the context that the existing Beatrice demonstrator project has a sub-sea connector cable running to the

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Caithness coastline and so with the development of the BOWL site and sub-sea connector cable to the Moray coastline the entire outer Moray Firth will be transected by high voltage power cables.

The issue of burying cables is important in the context of the overall need for EMFs to be considered in the EIA process. There appears to be compelling evidence that even when buried to a depth of 5 metres the EMF from power cables can be detected by some marine organisms and as such the EIA should assess the suitability for such a technique to be used as a mitigation measure.

Given the potential for EMFs to impact the distribution and behaviour of demersal marine species there is a clear need to consider any potential impacts on commercially important species. In the context of crustacea there are important fisheries for both Brown Crab and Lobster throughout both the Inner and Outer Firth. Both species show a strong seasonal migration pattern and have spawning strategies which support the recruitment to the existing fisheries. Given the scale and layout of the cabling and associated EMF across the Firth the EIA process should specifically evaluate any potential impacts on these species and the fisheries which they support. There is a clear case that such impacts should be considered in terms of potential cumulative and in-combination effects and in tandem with OFTO arrangements.

The second issue missing from the EIA scoping report is the cabling transmission power loss in the form of thermal energy. The heating effects of high tension power cables are well documented for the terrestrial environment. Mitigation measures such as oil cooling of buried cables is obviously a technique with considerably less application for the marine environment due to the inherent pollution risks. However, any heating effect from the BOWL sub-sea cabling network and the OFTO arrangements for the sub-sea connection cable should form part of the EIA process.

It is accepted that even with the levels of power transmission proposed from the BOWL and MORL sites, that impacts on the water column and associated marine species seems likely to be limited. However, in the context of demersal marine organisms the thermal effects have the potential to be significant.

There is general evidence of marine organisms being attracted to areas of thermal activity within the marine environment and typical species assemblages being altered by the impact of the energy source. In this context it has been noted that starfish aggregations can occur aligned with sub-sea cabling on the basis of altered seabed conditions. While this may be a relatively localised change to the makeup of the benthic community it could impact commercially exploited shellfish species. In the context of the King Scallop, starfish are one of the two main predator groups both for the adult and juvenile stages. Any disturbance of predator / prey ratios has the potential to significantly impact the commercial fishery for the species. Given that the Smith Bank is one of the most important King Scallop areas and the entire area will be subject to sub-sea cabling from the BOWL and MORL sites it is important that this is considered as part of the EIA process. It should equally be appreciated that the Dornoch Firth has the largest mussel fishery in Scotland and together with surrounding areas the shellfish resources in the intertidal areas support considerable wild bird populations. Any alteration of starfish abundance on the Smith Bank may have the potential to aid recruitment of these

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predators in other areas of the Firth with a resultant impact on bivalve mollusc populations. Hence there is a clear need to fully evaluate the potential impact of thermal pollution within the EIA process. In line with previous comments this issue equally affects the OFTO process and the issue of thermal power loss from the sub-sea connector cable and as such should be considered in tandem.

3.3.4 Fish Ecology

It is noted that "*The Smith Bank area is identified, in full or in part, as a spawning and nursery area for a variety of fish species"*. It should be recognised that the Outer Moray Firth has become increasingly important for the squid fishery and in this context the Smith Bank area needs to be assessed within the EIA process as to its importance as a squid spawning area. Further comments on the commercial squid fishery are contained under 3.4.6.

In terms of general fisheries ecology the sampling and assessment of the squid population will present specific challenges in the context of the EIA process and this should be recognised at this stage. Both the impact of sediment loading and noise associated with construction and sub-sea cabling systems, needs to be evaluated for this cephalopod mollusc as buoyancy, visual detection and swimming/orientation systems are highly specialised in this short lived, shoaling and mobile species of shellfish. The unique ecology of the squid populations will require specialised sampling equipment and an understanding of spatial and temporal distributions if a meaningful EIA is to be undertaken.

Potential Impacts – Construction / Operation / Decommissioning

It is noted that *"During construction and decommissioning the impact on the demersal and pelagic fish populations in the Moray Firth is likely to be limited. During operation there are considered to be no significant impacts on fish."*

For the range of issues identified above for fish and shellfish species there is a need that the EIA process is fully engaged with. The presumption that the operation of the BOWL site and cumulative and in-combination effects of the MORL site and OFTO process for sub-sea cabling connection will not impact the fisheries ecology of the Moray Firth is potentially misplaced. The area to be developed is greater than any attempted to date, the cumulative power output is far higher than in other developments and the fish community (and the recruitment processes) within the Moray Firth are diverse and complex with key species such as squid not routinely found in other areas currently developed for renewable energy generation. It is extremely important that the EIA process recognises the combined unique features of the development in the Moray Firth and that the cumulative impacts are taken into account.

3.4 HUMAN ENVIRONMENT
3.4.5 Shipping and Navigation

Reference to the potential overall footprint of the BOWL site has already been made above with regard to navigation routes and access for fishing vessel activities. It is recognised that during the construction stage specific exclusion zones may need to be

implemented for safety reasons. However, the EIA process should consider how interactions with the fishing industry could be minimised and maximum access maintained both on a temporal and spatial basis.

Potential Impacts – Construction / Operation / Decommissioning

It is noted that *"During construction, operation and decommissioning there is potential for the safe navigation of all vessel types to be affected. Such impacts may include….*

- *Increased risk of fishing gear interactions with cable.*
- *Re-routing of existing cruising or shipping routes."*

Potential Mitigation

It is noted that *"Typical measures that will be considered within this assessment are listed below.*

- *Lights and markings*
- *Safety zones*
- *Routeing measures*
- *Information to Mariners*
- *Guard vessel during construction*
- *AIS/VHS and/or radar monitoring during operation"*

It has been noted above the requirement for fishing vessels to have a clear navigation route East/West across the site at all stages of development in order to avoid excessive steaming distances to fishing areas. In addition it is considered that the EIA process should identify ways in which the BOWL development could be undertaken to minimise the impact on the movements of vessels actively fishing.

The typical potential mitigation measures identified appear limited in scope and should be broadened out at this stage. Examples include the increased risk of fishing gear interaction with cables which could be mitigated against through a range of measures including trenching, burying under matting or sediment accretion etc. From a temporal and spatial planning context the installation of cabling may best be undertaken outwith of peak mobile gear fisheries for squid and scallop. Equally during the construction and installation of cabling stages the possibility of phased development of the site should be considered where it allowed greater access to fishing vessels. In this context it will be extremely important to adequately consider the cumulative and in-combination impacts of the related MORL developments.

It is extremely important that operational exclusion zones are evaluated within the EIA process in order to accurately indicate the restrictions the fishing industry will be faced with during routine operations.

3.4.6 Commercial Fisheries
Commercial Species

It is noted that *"Table 3.3 below gives the averaged annual landings by species from ICES Rectangle 45E7."*

While averaging landings over a nine year period is useful for indicative purposes it does run the risk of undervaluing the importance of certain fisheries which may be cyclical in prosecution. The best example of this is for squid where the fishery can be extremely variable between years both in terms of distribution and availability of stock. Equally where fisheries are developing the averaging of landings over extended time periods can devalue the relative importance in the more recent years. It is important that the EIA process takes such factors into account.

In the above context it should also be recognised that both the King Scallop and Squid fisheries are the only 2 species from the top 10 identified that are not subject to quota restrictions through Total Allowable Catch (TAC) European fisheries legislation. Equally they are not subject to days at sea restrictions and as such their overall importance in sustaining the activities of certain sectors of the fishing fleet is far greater than the indicative value given by average landings statistics, and this importance is likely to increase in the coming years. In this respect the EIA process needs to recognise the wider economic impact of such fisheries within the context of the development of the BOWL site.

It is noted that *"Landings of Nephrops (15% in 45E7) are recorded within the rectangle where the Beatrice Offshore Wind Farm is located. Landings for this species are however proportionately higher in the southern portion of the Moray Firth, with the most important grounds located further offshore towards Fladen ground."*

The importance of the landings of Nephrops from 45E7 needs to be considered in the context that it is the only crustacean species managed through European quota and a TAC. It also should be recognised that ICES recommend that such stocks are managed on a functional unit basis and accordingly key discrete stocks of Nephrops have been identified. While the Fladen ground may show a higher landed value it is far further offshore which has implications for the size of fishing vessel able to safely operate in such an environment. Equally those prosecuting Nephrops are subject to days at sea restrictions and accordingly steaming time to fishing grounds are an important consideration. It is extremely important that the EIA process is able to fully evaluate such factors when determining the overall impact on fisheries in the Moray Firth through the development of the BOWL site.

In the above context of fisheries interactions it should be noted that any displacement of effort from the scallop or squid fisheries currently prosecuted on the Smith Bank is likely to negatively impact other areas within the Moray Firth. There is currently a gear interaction issue between static and mobile gear on both the North and South coastlines of the Moray Firth and displacement of mobile gear from an area which is currently solely used by mobile gear has the potential to cause additional problems. Consequently within the EIA assessment process such issues need to be viewed as both cumulative and in-combination impacts.

It is noted that *"The Moray Firth does not contain important fishing grounds for mid-water or pelagic species such as mackerel, herring or sprat."*

This broad generalisation is not supported. There is an important high value hand-line fishery for mackerel managed as part of the North Sea stock through a quota allocation of

around 300 tonnes per annum. This is a good example of where the use of fisheries statistics needs to be critically evaluated within any EIA process. Due to the size of the vessels prosecuting the fishery, landings data are collected through sales notes as log books are not required and the exact location of catch is not recorded. All sales notes data are reported as originating from statistical rectangle 44E8 to ease the administrative burden. It is extremely important within the EIA process that detailed engagement with the fishing industry is pursued to ensure a realistic impact assessment is achieved.

Potential Impacts – Construction / Operation / Decommissioning

It is noted that *"Potential impacts during operation may include the following.*

- *If fish are displaced from the area as a result of construction of the Beatrice Offshore Wind Farm, the fishermen may need to travel to different areas to catch fish and shellfish or to set their gear."*

This is a far too simplistic a statement even for the EIA Scoping report. It would not be just a case of fishermen travelling to different areas to catch fish or set their gear. The reasons why fisheries have developed on the Smith Bank are many and varied but two of the key factors amongst a range of biological factors are the depth of water on the site and the nature of the seabed. These features are also equally important for the development of the wind farm. It is extremely important to recognise that fishermen generally cannot relocate to other areas for a range of reasons including that fish stocks may not naturally be present, physical seabed characteristics will not allow gear deployment or the most likely case that other areas are already fully exploited by other fishermen.

- *"Any impacts to recruitment of juveniles into the adult population due to impacts to spawning or nursery activity may result in a decrease in fish and shellfish populations which will increase the effort needed to record the same level of catch."*

This again is far too simplistic. It has been previously noted that for the species under quota management and TAC restrictions (which 80% of the key economic species from the Smith Bank are) the amount of effort that can be deployed by the fishing fleet is strictly controlled.

- *"There may be a need to restrict certain types of commercial fishing activity within proximity to Wind Farm structures."*

It must be appreciated throughout the EIA process that restricting access to productive fishing grounds is likely to lead to one of the greatest impacts on the commercial fishing industry that the Wind Farm development could impose. Based on a range of factors some of which are noted above, the presence of sustainable fish stocks in an area is not likely to be easily replicated and most alternative fishing grounds are considered to be fully exploited. Consequently mitigation measures to allow continued access to stocks on a wind farm site are likely to be the best route to minimise the impact on the commercial fishing industry. Other than the physical navigation risk of the turbine towers and the need for a limited exclusion zone around each structure the ability to maintain access rights for the fishing industry should be a key consideration of the EIA.

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In the context of potential cumulative impacts of the BOWL, MORL and sub-sea cable connection dealt with under the OFTO process it is considered to be extremely important that the EIA process can take these into account for the above reasons and the potential cumulative impacts on the commercial fishing industry evaluated and minimised.

3.5 CUMULATIVE IMPACT ASSESSMENT

It is noted that *"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."*

The point has been made at various stages above that in the context of overall impacts on the commercial fishing industry it is highly important that the agreed measures under the OFTO process for the establishment of the sub-sea cable connection is also part of the cumulative effects considerations of the EIA and the ES for the Beatrice Offshore Wind Farm.

3.6 STRUCTURE OF THE ENVIRONMENTAL STATEMENT (ES)

It is noted that *"Based on the content of this Scoping Report the following topics are proposed to be assessed in detail during the EIA and reported in the ES.*

Physical Environment
1. Coastal Processes
2. Seabed (physical)
3. Noise (underwater)"

In order for the EIA to be complete and consider all relevant issues with respect to the physical environment and associated impacts on biological processes it is important that the following two processes are included for the reasons given above.

- Impact of Electro-Magnetic Fields caused by transmission of generated electricity
- Impact of thermal pollution arising from transmission of generated electricity

The above comments are relevant based on the degree of information currently available relating to the development of the BOWL site. However, as the project and EIA progresses the Moray Firth Inshore Fisheries Group would wish to be informed and submit comments as appropriate.

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I look forward to hearing from you regarding this matter. Should you require any further clarification of any of the points made above please do not hesitate to contact me.

Yours sincerely,

Dr Nick Lake
Co-ordinator.

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moray offshore renewables ltd

Environmental Statement

Technical Appendix 1.3 B - Scoping Opinion (TI)

Telford, Stevenson, MacColl Wind Farms and associated Transmission Infrastructure Environmental Statement

edp renewables
powered by nature

REPSOL

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Moray Offshore Renewables Limited Transmission Works – Moray Firth

Scoping Opinion

Contents

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

SCOPING OPINION FOR THE PROPOSED SECTION 36 APPLICATION FOR MORAY OFFSHORE RENEWABLES LIMITED TRANSMISSION WORKS – MORAY FIRTH

1. Introduction

I refer to your letter of 18th October 2011 requesting a scoping opinion under the Electricity Works (Environmental Impact Assessment) (Scotland) (EIA) Regulations 2000 enclosing a scoping report. Although the transmission works are a part of the larger MORL windfarm development, they will not be consented under S36 of the Electricity Act (1989). They will only require a Marine Licence. It is the responsibility of MORL to ensure their Environmental Statement will cover both the Electricity Works (Environmental Impact Assessment) (Scotland) (EIA) Regulations 2000 and the Marine Works (Environmental Impact Assessment) (Amendment) Regulations 2011.

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 collated from expert consultees selected by the Scottish Government. It provides clear advice enabling developers to address issues identified with the proposed project. The advice steers the developer as to the content required in the Environmental Impact Assessment (EIA) and the Environmental Statement (ES) associated with the application for section 36 consent.

3. Description of development

Moray Offshore Renewables Ltd. (MORL) proposes to connect the electricity generated by the Moray Offshore Wind Farm (Zone 1) into the existing National Grid infrastructure at Peterhead Power Station (up to 1.5 GW) approximately 88km southeast of the development area. The proposed offshore transmission infrastructure consists of between three to six HVAC platforms housing substations, potentially two HVDC platforms and export cables coming onshore at either Fraserburgh Beach or Rattray. The position and route of the associated onshore substation and onshore export cables are still to be determined. 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:

- Planning Advice Note (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

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.gov.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

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
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. Historic Scotland is 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
- Visual intrusion and noise
- Risk Management and Emergency response
- Marking and lighting of Tidal Site and information to mariners
- Effect on small craft navigational and communication equipment
- Weather and risk to recreational craft which lose power and are drifting in adverse conditions
- Evaluation of likely squeeze of small craft into routes of larger commercial vessels.

10. Ecology, Biodiversity and Nature Conservation

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

Species

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

- Marine (Scotland) Act 2010
- Council Directives on The Conservation of Natural Habitats and of Wild Flora and Fauna
- Conservation of Wild Birds (commonly known as the Habitats and Birds Directives)
- Wildlife & Countryside Act 1981
- Nature Conservation (Scotland) Act 2004
- Wildlife and Natural Environment (Scotland) Act 2011
- Protection of Badgers Act 1992
- 1994 Conservation Regulations
- Conservation of Habitats and Species Regulations 2010
- Offshore Marine Conservation (Natural Habitats, &c) Regulations 2007
- Scottish Government Interim Guidance on European Protected Species

- Development Sites and the Planning System and the Scottish Biodiversity Strategy and associated Implementation Plans

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

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

11. Water Environment

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 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 Construction Industry Research and Information (CIRIA) guidance on the control of water pollution from construction sites and environmental good practice (www.ciria.org). Design guidance is also available on river crossings and migratory fish (The Scottish Executive 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 The Scottish Government website. Developers are asked to issue ES directly to consultees. Consultee address lists can be obtained from Marine Scotland. Marine Scotland 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. Licensing 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 Section 36 applications are located in areas where Gaelic is spoken, developers are encouraged to adopt best practice by publicising the project details in both English and Gaelic.

Ordinance Survey (OS) Mapping Records

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

Difficulties in Compiling Additional Information

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

Application and ES

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

Consent Timescale and Application Quality

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

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

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

Judicial review

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

Signed

Roger May

22 December 2011

Authorised by the Scottish Ministers to sign in that behalf

Enclosed - Developer Application Checklist

Annex 1

Consultee Comments Relating to Moray Offshore Renewables Limited Transmission Infrastructure – Moray Firth

The following organisations provided a scoping opinion in relation to the Moray Offshore Renewables Limited Transmission Infrastructure – Moray Firth

Marine Scotland (MS)

Statutory Consultees

Local Authority (LA)
Scottish Environmental Protection Agency (SEPA)
Scottish Natural Heritage (SNH) and Joint Nature Conservation Committee (JNCC)

Non Statutory Consultees

British Telecom (Radio Network Protection Team)
Civil Aviation Authority (CAA)
Chamber of Shipping (COS)
Health and Safety Executive (HSE)
Historic Scotland (HS)
Inshore Fisheries Group (IFG)
Joint Radio Company (JRC)
Maritime & Coastguard Agency (MCA)
Ministry of Defence (MOD)
Moray Firth Sea Trout Project (MFSTP)
NERL Safeguarding (National Air Traffic Services)
Northern Lighthouse Board (NLB)
Ports and Harbours (PH)
Royal Society for the Protection of Birds (RSPB)
Royal Yachting Association (RYA) Scotland
Scottish Government Planning (SGP)
Scottish Wildlife Trust (SWT)
Surfers Against Sewage (SAS)
Whale and Dolphin Conservation Society (WDCS)

Marine Scotland

Marine Scotland Licensing and Operations Team (MS-LOT) feels that there are several challenges to overcome as the exact nature of the cabling is unknown. MS-LOT suggests that there should be some calculations to demonstrate the degree of alteration of natural electromagnetic fields (EMF) that would be caused by the cables. MS-LOT require MORL to model EMF under operational and shutdown conditions and relate this to fauna. This may have an affect on marine species directly (impact on species itself) or indirectly (impact on prey). Modelling the EMF 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 and fish to EMF. A cumulative consideration of other cables in the Moray Firth should be completed.

MS-LOT would comment on the use of a Rochdale Envelope for flexibility both in the Environmental impact Assessment (EIA) process and in the final Environmental Statement (ES). It is the developers responsibility to give due consideration to what changes might be necessary and to provide details as to what might be required. The developer must also be able to justify whether or not a change is material to the EIA process. Where flexibility is required the developer should define either the alternatives or ranges within which parameters might fall. In the EIA process the various effects should be quantified and consideration given to effects on potential receptors. The ES should clearly state the reasoning for requiring such flexibility, the criteria for selecting the "worst case scenario" and the impacts which would arise from such a scenario.

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

Deemed Planning is not available as no part of the generating station is on land. All onshore aspects should be applied for through Town and Country Planning via the relevant Local Authority. Only the “generating station” i.e. wind turbines, foundations and their inner array cables will be granted under S36 of The Electricity Act 1989. Single or multiple Marine Licence(s) will be issued for all other offshore components. The cable from the AC/DC hub(s) will be consented under the Marine Works (Environmental Impact Assessment) Regulations 2007 as amended. Although the offshore and onshore aspects of the development are to be licensed separately the two consents should be sought under one EIA and ES ensuring this meets all legislative requirements.

The applicant should be made aware of the definition of disturbance and the legal provisions on European Protected Species (EPS) and that an EPS Licence may be required. Therefore MS recommends that an EPS risk assessment is submitted to the Licensing Operations Team well in advance of planned surveys. Basking sharks are now subject to similar considerations through the Wildlife and Natural Environment (Scotland) Act 2011, with licensing requirements now applicable. MS is responsible for issuing these if required.

This project will require capital dredging. The dredged material will require to be chemically analysed to ensure that it is suitable for sea disposal. Guidance on pre-dredge sampling,

along with the Action Levels Marine Scotland use to determine suitability for sea disposal can be obtained upon request from MS-LOT.

Physical Environment

OFTO Offshore Platform Infrastructure numbers and locations are unknown at this stage of the development making it difficult to assess the potential consequences of the installation method and operation of the structure (Section 2.3.2). More details are required on the scale of the bundled submarine export cable and how the proposed cable will be buried.

Preliminary environmental considerations (offshore) have been reviewed. The methodology presented within Section 5 is generally appropriate and the potential impacts on the physical offshore environment have been identified. MS seek clarification on whether the proposed methodology is also considered appropriate for construction and decommissioning, or solely for the operational phase of the project. There does not seem to be a clear distinction between these phases. A distinction would make sense since in the case of the cabling, the scope of impact during construction, for example, is potentially a lot larger than that of operation. The spatial extent of changes to the levels of suspended sediment caused by construction and decommissioning need to be considered. Marine Scotland Science (MSS) have two issues related to the early scoping out of changes to regional bathymetry and changes to coastlines and sediment transport pathways (page 49). The first is a small issue of wording and the second is a more fundamental concern over the scoping out of these issues:

(1) There seems to be some overlap between the potential impacts identified and those that have been scoped out. Specifically, it is proposed that potential changes to regional bathymetry, coastlines and sediment transport pathways be scoped out, and yet there is a section on potential changes to the sedimentary regime and sedimentary structure. If is it decided to scope out these potential changes, then those sedimentary related issues identified earlier in the section still need to be considered.

(2) On Smith Bank the scoping out of changes to the Holocene sediments, underlying geology or regional bathymetry as a result of the cabling and transmission infrastructure is reasonable. This is because the cabling is really at the fringes of the bank and will mainly be over gravel. At other locations along the cable route, where it is proposed that the cable be buried, MSS recommends that the issue of changing sediment transport pathways and the impact on coastlines should be included in the EIA. This is especially true for the last 10km before landfall where the proposed cable route is in relatively shallow water and overlies sediments that are likely to be relatively active. The tidal currents are also stronger at the Fraserburgh headland. There is also little information within the scoping document regarding bedforms along the cable route, especially near the landfall site. An assessment of bedforms should be included in the EIA.

Recent bathymetric survey work undertaken by SNH to identify potential MPA's covered the Southern Trench. This would help guide the developer on additional survey work and the potential cable route depending on the species/habitat of interest for the MPA. The bathymetry work is being processed by the British Geological Survey, who will also create additional layers of information such as seabed gradient, aspect, rugosity and backscatter. Some ground truthing may also have been undertaken.

MSS agree with the areas scoped out under section 5.1.4.1. The scale of the cable bundle will be smaller than oil and gas pipelines installed in the North Sea. Based on the information provided in the scoping document the potential for significant impact on the marine physical

environment from a buried cable bundle seems unlikely and will be restricted to a short-lived localised disturbance. Also the scale of the substations (6 HVAC and 2 HVDC), using similar foundations to the proposed wind turbines, are unlikely to have any more impact on the marine physical environment beyond the installation of the proposed several hundred wind turbines.

MSS suggest a discrepancy in the data shown in Figure5-3 (Page 43 Wind Climate Paragraph 3). The sentence that reads: "…with wind speeds of up to 12m/s." Should this be 21m/s?

Benthic Habitat

MS requires that the entire cable route is towed using a standard sled capable of catching video and still images. All gathered data to be analysed by a qualified benthic specialist. This is to ensure that quantitative data is gathered on protected habitats, species and priority marine features. MSS require clarification as to what is meant by "epibenthic community assessment" (p80).

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. MSS advises that sediment samples be collected for both particle size and chemical analysis. MSS advises the less than 63 micron sediment particles will also need to be quantified to give a silt content figure. Please also include sediment parameters such as skewness and kurtosis data.

With regard to contaminant status of sediments (p79), MSS advise that comparison is made against Scottish Interim Sediment Quality Guidelines (available from MS-LOT).

All mapping data should be provided to MS-LOT/MSS in an ESRI shape file format for GIS.

Provide further information on the proposed data analysis (p99)

Flustra foliacea is a Bryozoan, not a Hydroid (p76).

Fish and Shellfish Ecology

Sandeels
Sandeel populations tend to be patchy in nature due to the reliance on a specific range of sediment. There are patches of sandeels present in and around the site and there is a strong possibility that there may be patches of sandeels along the cable route. Providing a patch is not completely within the cable route, there should be the opportunity for re-colonisation post disturbance. There may be some localised disturbance and suspended sedimentation but this should be limited due to the sediments involved.

Herring
It would be preferable to avoid works during the herring spawning period if possible (Aug-Sep). This becomes more of an issue towards the land fall end of the route where sediments become more suitable for herring spawning and this area is known to be important North East spawning ground. Not only are herring sensitive to disturbance from noise but their eggs and larvae may also be sensitive to noise.

Cod
The Moray Firth has a genetically distinct population of Cod. Little is known of the precise location of spawning grounds within the Firth but it is known that cod vocalize in spawning

aggregations (key period is between Feb-Mar). The frequency range of these vocalisations is between 30-250 Hz and can travel 200-500m from the source.

The reference to Coull *et al* should be assigned to UKOOA Ltd., not to CEFAS (p83 Figure 5-11 and p84 Figure 5-12).

Commercial Fisheries

There are substantial locally important shellfish fisheries for brown crab and lobster. These predominantly consist of small vessels (<15m in length) that do not have VMS aboard. These vessels work mainly between 0-6 nm from the shore. There is a very active small boat fleet working out of Fraserburgh mainly potting, but also an active summer Handline fishery for mackerel.

VMS vessel fishery data indicates the key target species as Nephrops, scallops and some demersal whitefish species further offshore. There is an increasing importance of squid in the Moray Firth as there are fewer restrictions on vessels targeting this species. As a result more vessels have been moving to target squid seasonally to alleviate pressure on other stocks and save days at sea for other TAC species.

It would be worth ensuring good contact is made and consultation maintained with fisheries representatives in the area. This is especially important for the non-VMS vessels which are not represented by the VMS data plots. Points of contact other than the Scottish Fishermans Federation (SFF) may include local fishery offices and the inshore fisheries group coordinator for the Moray Firth (Nick Lake).

MS advises to include vessels <15m in the survey of shipping movements. Possible Marine Planning from The Pentland Firth is to be expanded around Scotland to show clearer activities from vessels <15m. Interviews in the Fraserburgh and Peterhead area are likely to be carried out by the end of 2012.

Aquaculture

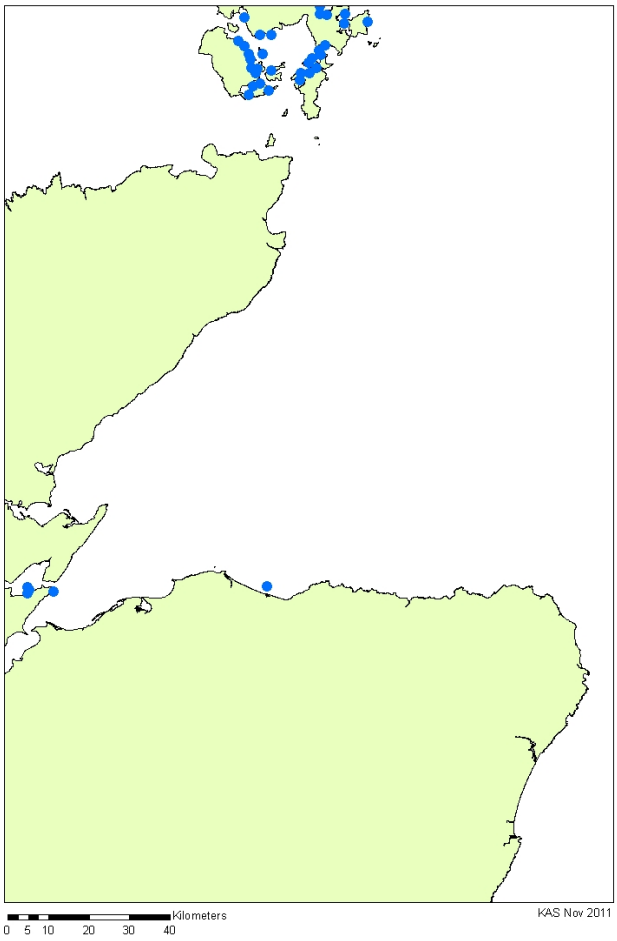
There are no aquaculture sites within the proposed boundaries of the Moray Offshore Wind Farm. There is however, an active mussel site close to where one of the initial options for the cable route corridor joins the land between Lossiemouth Forest and Portgordon (see map over). This site is operated by Spey Bay Mussel Farm. This site is situated ~5km from the cable route corridor.

There are also another two active shellfish sites within the Moray Firth area, one is a mussel farm operated by Cromarty Mussels and the other is a pacific oyster farm operated by Black Isle Seafood Ltd. The closest site is ~30km from the boundaries of the Moray Offshore Wind Farm.

There are also 2 inactive finfish sites within the Moray Firth area. One is a rainbow trout and salmon site and the other a salmon site. Both owned by Northern Isles Salmon and have been inactive since 2003.

There are no other seawater aquaculture sites on the east coast of Scotland, to the south of the proposed development. To the north the next closest sites would be around Orkney.

The attached map illustrates the position of active and inactive aquaculture sites in relation to the proposed development.



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 in addition to 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 recently completed a review of migratory routes and behaviour 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.

SNH recently commissioned a review of the potential impacts of EMF and noise on migratory fish and this is available at:
www.**snh**.org.uk/pdfs/publications/commissioned_reports/401.pdf

Together these reports will assist the developers in identifying what pre-existing information is available and what supplementary site specific data may be required.

Marine Mammals and Birds

MS have no adverse comments for birds and mammals as the scope seems thorough. It builds on the information gathered from the main site.

Marine Scotland Compliance

Page 121 paragraph 5.3.2. Data Gaps.
From 1 January 2012 fishing vessels between 12-15m will be required to use satellite monitoring. As many of the inshore vessels working the southern shores of the Moray Firth are in this category data may become available for 'Data Gaps'. Although this would be outside dates of the current scoping document and dependant on vessels releasing data. This data would be available as and when vessels have the VMS fitted.

Page 121 Paragraph 4
Although landings for pelagic species are not large from inshore grounds. The seasonal hand line fishery does attract upwards of 110 under 10m vessels along the Moray Firth Coast. Fishing from June through to August dependant on availability of quota. Around 7 additional vessels fish mackerel inshore close to Fraserburgh and along west to Buckie during the same period but are able to target mackerel for longer due to having additional Producer Organization quota. The 7 vessels operate with several mackerel lines at a time.

Page 121 Paragraph 2
Mention is given to squid fishing and the use of 'jiggers'. As far as MSC are aware the majority of squid caught in the Moray Firth are caught by modified Nephrop Trawlers targeting squid and not by 'jiggers'. This year 2011 in particular also saw a number of the Nephrop Trawler (modified) squid vessels able to fish for mackerel due to their gear and availability of mackerel in the Moray Firth.

Local Authority

Banff and Buchan can advise that having checked the scoping information lodged, it has no further comments to add at this stage.

Scottish Environmental Protection Agency

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

- Carbon balance and peat management
- River Basin Planning
- Pollution Prevention and Environmental Management
- Marine and coastal Processes
- Wetland ecology

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

1. Site layout and nature of construction for marine developments

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

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

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

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

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

2. Carbon balance and peat management

2.1 Scottish Planning Policy (SPP) recognises that “the disturbance of some soils, particularly peat, may lead to the release of stored carbon, contributing to carbon emissions” (Paragraph 133). In line with SPP and government guidance, we

recommend that the ES contains a section systematically assessing carbon balance. This assessment should quantify the gains over the life of the project against the release of carbon dioxide during construction. It should include all elements of the proposal, including any borrow pits, construction of roads/tracks, excavation of trenches and other infrastructure such as the substations, and loss of any peat bog. Please refer to the Scottish Government guidance "Calculating carbon savings from windfarms on Scottish peat lands – A New Approach", which provides a revised methodology for estimating the impacts of this type of development on carbon dynamics of peat lands: www.scotland.gov.uk/Topics/Business-Industry/Energy/Energy-sources/19185/17852-1/CSavings. We will validate carbon balance assessments for Section 36 wind farm applications that use this revised version of the tool.

2.2 We note and welcome that the Scoping Report has identified the peat as a potentially sensitive receptor and that the ES will include a peat depth survey. Once this has been undertaken the ES should include preventative/mitigation measures to avoid significant drying or oxidation of peat through, for example, the construction of access tracks, drainage channels, cable trenches, or the storage and re-use of excavated peat. A detailed peat management scheme setting out these measures may be required through a planning condition, to ensure that the carbon balance benefits of the scheme are maximised. In addition to validating any carbon balance appraisals for Section 36 windfarms (based upon the revised guidance) we will provide comment on drainage and waste management aspects of the peat management scheme.

3. Disruption to peatlands

3.1 The ES must 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.

3.2 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.

4. Disposal of waste peat to borrow pits

4.1 The disposal of surplus peat waste to borrow pits is not encouraged as experience has shown that peat used as cover can suffer from significant drying and oxidation, and that peat re-deposited at depth can lose structure and create a hazard when the stability of the material deteriorates. This creates a risk to people who may enter such areas or through the possibility of peat slide and we are aware that barbed-wire fencing has been erected around some sites in response to such risks.

4.2 There are important waste management implications of measures to deal with surplus peat. Peat disposed at depth must be considered in the context of waste being landfilled, and may not be consentable under our regulatory regimes. It is therefore essential that the scope for minimising the extraction of peat is explored and alternative options identified that minimise risk in terms of carbon release, human health and environmental impact. It is also important to discuss options with us at an early stage.

5. River Basin Management Planning

5.1 Under the Water Environment and Water Services (Scotland) Act 2003, SEPA is responsible for producing and implementing River Basin Management Plans for the Scotland and the Solway Tweed River Basin Districts. River basins comprise all surface waters (including transitional (estuaries) and coastal waters) extending to 3 nautical miles seaward from the Scottish territorial baseline. Although the turbines themselves will be located way beyond this limit, the onshore elements will fall within the river basin boundary. The windfarm development area lies close to a number of coastal and estuarine water bodies, all of which are currently at good or high ecological status. Any proposed development within these waters must have regard to the requirements of the Water Framework Directive to ensure that all surface water bodies achieve 'Good Ecological Status' and that there is no deterioration in status. The Water Framework Directive requires the consideration of chemical, ecological and hydromorpholgical status.

5.2 River Basin Management Planning (RBMP) and WEWS seem to be mentioned in the best practice guidance section, section 5.1.6.6 on page 66 but are not described any further in the report. The ES should describe these and identify if the impacts of the proposal are likely to lead to deterioration of the surface water environment or present opportunities for improving the water environment. It should be recognised that RBMP applies to all surface waters including transitional (estuarine) and coastal waters out to 3 nautical miles offshore which requires them to be considered in terms of their chemical, ecological and hydromorphological status.

5.3 The cumulative assessments should consider the proposals alongside any existing coastal development already present within the water bodies in which landfall locations are being considered. EC guidance defines cumulative impacts as "impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project" (http://ec.europa.eu/environment/eia/eia-studies-and-reports/guidel.pdf).

5.4 Maps should be included in the ES showing the areas of seabed likely to be affected by the footprint of the turbine bases and cabling, and the area of intertidal zone that is likely to be affected by shoreline infrastructure development. To allow for the RBMP classification to be updated and the assessment of cumulative impacts within these water bodies a site plan showing the location and extents of the cabling footprints, rock dumping etc., shoreline infrastructure and any temporary works, in the marine environment should be provided along with the locations of any sensitive habitats along the cable route.

5.5 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) on the River Basin Management Plan section of our website

(http://www.sepa.org.uk/water/river_basin_planning.aspx), should be used in assessing any development proposal. Information on the current status of the Rosehearty to Cairnbulg Point (WB ID 200500) and Cairnbulg Point to the Ugie Estuary (WB ID 200142) water bodies can be found on the website and can form part of the baseline assessment in the ES.

6. Construction Environmental Management Document (CEMD) and pollution prevention

6.1 The main activity would be carried out off-shore and would therefore not be regulated by SEPA under The Water Environment (Controlled Activities) (Scotland) Regulations 2005 (as amended) (CAR). However, steps should be taken where applicable to minimise pollution of the shoreline and on-shore water environment to barest minimum levels. The following information may therefore be of use. 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, other site infrastructure and cable laying particularly across watercourses.

6.2 We advise that the applicant, through the EIA process, 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 SEPA's website. In addition, reference to CIRIA C584 entitled "Coastal and marine environmental site guide" should also be made. The principles included in the Pollution Prevention Guidelines (www.sepa.org.uk/customer_information/construction.aspx) and CIRIA C584 should be considered during the formulation of the application.

6.3 A key issue for SEPA 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. SEPA can provide useful information such as rainfall and hydrological data through Access to Information Team.

6.4 A Construction Environmental Management Document (CEMD) is a key management tool to implement the Schedule of Mitigation. SEPA 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.

6.5 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).

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

7. Marine Processes

7.1 Marine processes should be assessed as part of the ES. This should include a baseline assessment to identify the marine 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.

7.2 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.

7.3 The hydrodynamic modelling should be robust and should represent reality as best as possible. Model performance should be checked in order to demonstrate accuracy and should include sensitivity analysis or estimate of errors in order to enable confidence levels to be applied to model results.

7.4 The magnitude and significance of any changes to the natural processes identified in the baseline assessment should be demonstrated in the ES. It would be helpful to see a series of contour plots showing the magnitude and spatial extent of +(ve) and –(ve) changes in current velocities between the 'pre development' and 'post development' scenarios. The assessment should also identify and quantify the relative importance of high energy low frequency events e.g. storm events, versus low energy high frequency processes. Any changes to the existing processes can then be used to infer the extent of any changes to sediment transport processes and potential impacts on the marine ecology.

8. Marine ecological interests

8.1 SEPA also recommend information be submitted detailing how the development will contribute to sustainable development. Opportunities to enhance marine habitats in line with Water Framework Directive and The Nature Conservation (Scotland) Act 2004 objectives and Scottish Planning Policy guidance should be explored. Example may include coastal realignment, the incorporation of naturalistic features in the design of shoreline works, or planting with salt tolerant species. These could be used

as examples of best practice and demonstration sites under SEPA's Habitat Enhancement Initiative (HEI).

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

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

8.4 The accidental introduction of Marine Non-Native Species has been highlighted as a risk for water body degradation. SEPA recommends that, in line with WFD and MSFD objectives, the developers draw up and adopt a protocol to minimise risks of introducing marine invasive species to the area via attachment on marine plant and specialised equipment transported to the area before the constructional phase begins. Guidance that maybe drawn on to inform the development of the protocol is listed below:-

Marine Non-Native Species guidance produced by the Oil & Gas Industries can be found here: (http://www.ogp.org.uk/pubs/436.pdf);

Marine Non-Native Species guidance from The Green Blue (recreation advice): http://www.thegreenblue.org.uk/clubs_and_training_centres/antifoul_and_invasive_species/best_practice_invasive_species.aspx;

SNH advice:
http://www.snh.gov.uk/land-and-sea/managing-coasts-and-sea/marine-nonnatives/.

9. Wetland ecology (including groundwater dependent terrestrial ecosystems)

9.1 SEPA notes the identification of alteration/modification of the hydrological/hydrogeological regime of the region as a potential impact of the development and welcomes the proposal to carry out a Phase 1 habitat survey. The guidance 'A Functional Wetland Typology for Scotland' (currently available for free download on the SNIFFER website) should be 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.

9.2 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

9.3 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 wind farm 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 micrositing 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

9.4 Roads, tracks or trenches or other excavation work within 100m, or borrow pits within 250m, of groundwater dependent terrestrial ecosystems identified as highly sensitive (in Appendix 2 of SEPA Planning Guidance on wind farm developments) should be reconsidered. Further detailed studies will be required if infrastructure remains within the buffer zones.

10. Groundwater

10.1 Roads, trenches and other construction works associated with wind farms can disrupt groundwater flow and impact on groundwater abstractions and SEPA are pleased to note that this potential impact has been included within the Scoping Report. To address this risk a list of groundwater abstractions sources both within and outwith the site boundary, within a radius of (i)100m from roads, tracks and trenches and (ii) 250m from borrow pits and foundations, should be provided. Further details can be found in SEPA Planning guidance on wind farm developments.

10.2 If groundwater abstractions are identified within the 100m and 250m 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.

11. Waste management

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

a) Construction practices minimise the use of raw materials and maximise the use of secondary aggregates and recycled or renewable materials;

b) Waste material generated by the proposal is reduced and re-used or recycled where appropriate on site

c) To do this effectively all waste streams and proposals for their management should be identified. Accordingly, SEPA 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.

d) 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 SEPA's website. Information on waste prevention and waste minimisation is available on SEPA's waste minimisation web page at www.sepa.org.uk/waste/resource_efficiency.aspx.

11.2 SEPA note and welcome the scoping report identifies the possible generation of potentially contaminated waste and that the ES will address this issue.

12. Flood risk

12.1 The onshore components of the development such as the substation may be at risk from coastal flooding. The location of the substation should therefore be assessed for flood risk from all sources in line with Scottish Planning Policy (Paragraphs 196-211). Further information and advice can be sought from the Local Authority technical or engineering services department, Scottish Water and from SEPA's website. Our Indicative River & Coastal Flood Map (Scotland) is also available to view online.

12.2 If a flood risk is identified then a flood risk assessment (FRA) should be carried out following the guidance set out in the Annex to the SEPA Planning Authority flood risk protocol. SEPA's *Technical flood risk guidance for stakeholders* outlines the information SEPA requires to be submitted as part of a FRA, and methodologies that may be appropriate for hydrological and hydraulic modelling. Further guidance on assessing flood risk and planning advice can be found at SEPA website.

13. Onshore drainage strategy

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

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

14. Regulatory advice

14.1 Details of regulatory requirements and good practice advice for the applicant can be found on website www.sepa.org.uk/planning.aspx.

Scottish Natural Heritage and Joint Nature Conservation Committee

Thank you for consulting JNCC and SNH on the above application. This is a joint response from JNCC and SNH as the proposed works are planned for areas within both our jurisdictions. In addition to the advice provided below, we recommend that MORL also refer to our response to the scoping report for the MORL Eastern Development area.

MORL TRANSMISSION WORKS: ADVICE IN RESPECT OF OFFSHORE CABLE WORKS

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

We provide advice relating to:
- Hydrodynamic Processes & Coastal Geomorphology
- Benthic Ecology
- Fish and Shellfish of Conservation Concern
- Marine Mammals
- Ornithology
- Landscape, Seascape and Visual Impact Assessment:

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

There are a number of cables being proposed in the Moray Firth, including the SHETL HVDC link, export cables for the Beatrice offshore wind proposal as well as these the export cable(s) for the Round 3 offshore windfarm zone. We recommend liaison between the various parties involved, to take a more strategic approach to planning these routes, including the cable landfall points. On Figure 2.1 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 MORL 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, it would be helpful to know how the Rochdale envelope principle will be applied to this part of the project. 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 an 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 MORL Phase 1 windfarm:

- Type of cable (DC or AC);
- Method of cable-laying and burial (jetting or ploughing);
- Footprint of area affected by cable laying;
- Method of cable protection if required (e.g. rock armouring or concrete mattresses);
- Footprint of area affected by cable protection;
- Duration and rate of cable-laying (how long will it take?);
- Direction of cable-laying (offshore in or inshore out etc.);
- 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 both at exterior of cables and at surface of seabed above buried cables;
- Estimation of noise emissions from cable-laying works;
- Anticipated lifespan of cable in this location (using any proposed method(s) of protection);

Specific 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 MORL and BOWL through the Moray Firth Offshore Wind Developers' Group (MFOWDG). We highlight below the studies and modelling work, jointly commissioned by MORL and BOWL, which may be relevant to the offshore cable works for each proposal.

We have included reference to where we think HRA will be needed within our advice set out below. It may be appropriate for Marine Scotland to seek more specific definition of the scope of HRA with a view to ensuring that sufficient information is presented to adequately inform any Appropriate Assessment to be undertaken.

The following sections address the specific receptors for inclusion within the EIA.

Hydrodynamic Processes & Coastal Geomorphology

We are aware that the applicant, MORL, along with BOWL – the developer for the Beatrice offshore windfarm zone – has 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.

As we previously advised (please see the SNH 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.

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 Beatrice and discussion with SHETL. 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.

Benthic Ecology

We recommend that the applicant checks for Annex 1 habitats and Priority Marine Features[1] (PMF) during survey work as well as any Biodiversity Action Plan (BAP) habitats and species. They may find it helpful to undertake early analysis of their survey data in case this indicates that survey methods need to be revised and / or that further detailed surveys are required. Also, please note that the list of relevant PMFs has omitted fish PMFs.

With reference to section 5.2.2.1, *Palinurus elephas* would be better represented under 'fish and shellfish'.

It is not clear from the scoping report whether the cabling route will pass through the Southern Trench, in that the text within the Benthic section differs from that of 5.1.2; consideration of the potential impacts to cold water reef species i.e. *Lophelia pertusa* will be required should the route cross the Southern Trench.

Cumulative Impacts

Indirect effects on key prey species could result from changes to benthic and pelagic ecology as a result of construction noise, reef effects from foundation structures and reef effects from scour protection. While these effects may be small from any one structure, the in-combination effects from all of the MORL proposed OFTO structures, MORL proposed turbines and all of the proposed BOWL structures (and Aberdeen Bay EOWDC) could be significant. The proposed desk-based studies may be sufficient to assess the potential impacts. Suitable mitigation for some aspects can be achieved using mattress scour protection which would maintain surface level soft substrates as well as minimising the amount of scour protection applied, to only that which is strictly necessary. The use of floating moored structures would also provide a level of mitigation as it would introduce fewer hard structures into habitats dominated by soft substrates. Consideration of indirect

[1] Draft PMF list for Scottish Territorial Waters: http://www.snh.gov.uk/docs/B874876.pdf

effects will be required for natural heritage aspects such as ornithology and marine mammals.

Fish & Shellfish

We advise that table 5.1 in the scoping report has included the relevant SAC rivers with diadromous fish interests and welcome the recognition that potential impacts on freshwater pearl mussel will need to be considered in the EIA.

Section 5.1.4.1 of the scoping report refers to impacts and receptors specifically in relation to changes in suspended sediment concentrations; we highlight that diadromous fish species may be sensitive to increased sediment concentrations, but it is unclear whether they are included as a receptor within habitats and ecosystems.

The paragraph in section 5.2.3 (Fish and Shellfish Ecology) on diadromous species has omitted a number of aspects in relation to the conservation status of each species.

Additional Sources of Information

Coull et al (1998)[2] and Ellis et al (2010)[3] provide indicative maps of spawning and nursery grounds for most of the key marine fish species. However, these provide only a broad indication of likely potential spawning areas, much of which is based on relatively old data. Primary and grey scientific literature should be searched for further sources of more recent and detailed information.

Data from the International Herring Larval Survey (IHLS) may provide further indication of areas important for spawning herring. MSS could advise further, including on the adequacy of existing data to inform an impact assessment and on the adequacy of existing data for impact assessment for sandeels, or whether a targeted survey is required.

MS-S should advise whether the benthic studies completed/proposed are sufficient to provide supplementary data regarding fish and shellfish, particularly regarding habitats with which herring and sandeels are associated.

The EIA should draw appropriate links between sections in the assessment, identifying trophic links (e.g. sandeels as prey for seabirds and mammals) that may affect assessment outcomes.

Potential Impacts

In addition to those impacts outlined in section 5.2.3.3, the applicant should also consider the potential for less mobile fish and shellfish species as well as 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.

With reference to Section 5.1.4.1, fish and shellfish species should be included as potentially sensitive receptors to suspended sediment. Evaluating suspended sediment impacts will likely involve comparison with background levels, including storm events. In doing this,

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

[3] http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=2&ProjectID=16843

seasonality of storm events and any species-specific seasonality of sensitivities should be considered alongside potential construction periods.

We provided comment on the proposed methodology commissioned jointly by MORL and BOWL for underwater noise modelling in respect of Beatrice and the Moray Firth Round 3 windfarm proposals (SNH 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.

The installation of transmission infrastructure may result in both the loss and creation of habitat. Matters regarding benthic habitats are discussed in above, but the ES should also consider the extent of habitat loss or creation for fish and shellfish.

The response of fish and shellfish to electromagnetic fields (EMF) is poorly understood and as outlined in the scoping report 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 and whether more advanced cable casing might 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 MORL 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 effect 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 response to the MORL Round 3 windfarm (response dated 28th August 2010).

Marine Mammals

In addition to the advice outlined in our scoping response to the MORL Round 3 windfarm on which SAC's should be scoped into the HRA, we recommend that the following grey seal SAC's should also be included in light of recent commissioned work which shows that seals from these SACs are using this area: Faray & Holm of Faray SAC, Isle of May SAC and Berwickshire and North Northumberland SAC) [4].

Detailed Marine Mammal Comments

Some of the information in section 5.2.4.1 with reference grey seals in particular, is inaccurate and out of date. Table 5.2 notes that grey seals in the area are seasonal visitors; we do not agree with this statement as recent telemetry studies and the fact that there are haul-outs throughout the region indicates that grey seals are present all year round.

We highlight the sharp fall in the UK population of harbour (common) seals and that the applicant will need to consider this in their EIA. The harbour seal Potential Biological

[4] http://www.snh.gov.uk/publications-data-and-research/publications/search-the-catalogue/publication-detail/?id=1761

Removal (PBR) for the East Coast Moray Firth management area has recently been revised and is now just 3. PBR refers to the number of individuals that may safely be taken from a population without adversely effecting overall numbers in addition to normal mortality. The PBR value for the East Coast Moray Firth management area should be confirmed at the time of future licence applications for this proposal and taken into account in relation to such applications.

Potential Impacts to Marine Mammals

Potential impacts on terrestrial sites for seals also need to be considered. The scoping report identifies a number of haul-out sites within the Moray Firth. Further to these sites, and as well as the various SAC's for which seals are a qualifying feature, there are also sites in the wider area recently consulted upon for protection under Section 117 of the Marine (Scotland) Act 2010[5]. Under the Marine (Scotland) Act 2010 it is an offence to harass seals at designated haul-out sites, and we recommend that any development (i.e. cable landfall) or works (i.e. boat transit; noise from installation / operation activities,) that may cause potential disturbance to seal haulouts is considered in the EIA as is the presence of the Moray Firth Seal Conservation Area.

The impact description in section 5.2.4.3 in relation to noise should also include death/injury as well as disturbance. We welcome the proposal to align the underwater noise modelling to the approach taken by the MORL windfarm and similarly in relation to the MFOWDG approach to cumulative impacts and HRA assessment. In doing so we recommend that the applicant is clear in their definition of a 'regional marine mammal community' as referred to in section 5.2.4.4. Furthermore, how will this compare to assessments others are making? What is the 'region' and how does it compare with Favourable Conservation Status?

The scoping report refers to the JNCC disturbance guidance on EPS[6] which while a helpful reference for general good practice regarding mitigation, we highlight that its legal interpretation of disturbance solely applies beyond 12 nautical miles i.e. under the Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007. As the transmission infrastructure includes cabling within Scottish territorial waters, the applicant should ensure that they are also aware of the definition of disturbance and the legal provisions for EPS that are set out in The Conservation (Natural Habitats, &c.) Regulations 1994.

Cumulative Impacts

In assessing cumulative impacts, the applicant will need to consider proposals outwith the Moray Firth in relation to the timing and method of construction and potential impacts on wide-ranging species such as Bottlenose dolphins and grey seals in particular.

Ornithology

As agreed at our initial meeting with BOWL and MORL over their transmission works, held on 28 February 2011, we consider that ornithological interests can be addressed through desk-based appraisal.

We feel the scoping report is relatively complete and covers potential ornithology (offshore) issues quite well. Of the four favoured cable landing points the preference outlined in the document largely follows the ornithological sensitivities too. Fraserburgh beach would be preferred as it is further from the Loch of Strathbeg SPA, Ramsar and SSSI complex than

[5] http://jncc.defra.gov.uk/pdf/seismic_survey_guidelines_200404.pdf

[6] A final version of this guidance should be available soon and will be located on JNCC's website.

the Rattray Head land-fall site and so would present fewer issues from a marine ornithology perspective. Micro-siting would likely provide suitable mitigation to marine bird populations at either of these sites. In addition suitable timing could help provide mitigation, particularly for the Rattray Head site, where breeding terns could be a key sensitive species during May to July.

For marine birds at sea, we consider there are likely to be few significant impacts from construction as these are at a small spatial scale for a relatively short period. Potential impacts could occur if there was significant boat-based disturbance from cable laying and associated vessel activity close to (within 500m) breeding seabird colonies, having said that the four potential cable routes do seem to avoid this potential impact. Either way, we're confident suitable timing could provide adequate mitigation if necessary.

We consider the likely important sources of impact to marine birds at sea are from indirect effects on key prey species such as those discussed in the Benthic Ecology section above and from lighting on hubs and substations. Lighting has the potential to attract large numbers of migrant birds which has been shown to result in large mortality events at onshore windfarms[7]. The reason for these attractions has recently been discovered (Poot *et al.* 2008)[8] with projects already looking at a commercial solution such as Philips and Nederlandse Aardolie Maatschappij in the Dutch part of the North Sea. We recommend that appropriate mitigation is considered so that the likelihood of lighting causing attractions of migrant birds to the OFTO structures at MORL is reduced.

Landscape, Seascape and Visual Impact Assessment

As agreed at our initial meeting with MORL and BOWL over their transmission works, held on 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. Advice in relation to the onshore Landscape and Visual follows.

MORL TRANSMISSION WORKS: ADVICE IN RESPECT OF ONSHORE CABLE WORKS

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

The following comments relate to individual sections within the Scoping Report:

5.2 Biological Environment

In general we are content with the approach outlined in the scoping report although we highlight the importance of providing adequate detail of the cable laying technique (s), including timing, rate and duration of work so that we may fully assess the potential impacts to sensitive species and habitats during the construction phase.

[7] http://www.abcbirds.org/newsandreports/releases/111028.html

[8] Poot, H., Ens, B.J., Vries, H.d., Donners, M.A.H., Wernand, M.R. & Marquenie, J.M. (2008) Green light for nocturnally migrating birds. Ecology and Society, 13, [online]

Desk Based Assessment

In addition to the data sources indicated in section 5.1.1, we recommend that you also contact the following organisations, individuals and databases:

- NBN Gateway
- North East Scotland Biological Records Centre
- RSPB Scotland
- County Bird Recorder
- The BTO in relation the Wetland Bird Surveys
- The North Sea Bird Club
- The local Raptor Study Group
- Saving Scotland's Red Squirrels
- District Salmon Fishery Boards
- Aberdeenshire Council Planning Authority (in relation to Sites of Interests to Natural Science)

5.2.6 Terrestrial Ecology

Terrestrial Species

We are content with the proposed list of protected species surveys as outlined in section 5.2.6.5 of the scoping report. We advise however, that the applicant consults with the relevant District Salmon Fishery Board regarding potential impacts to salmonids and other fish species at river crossings and in particular whether any electro-fishing surveys are required to proceed with the assessment of impacts.

In addition, the scoping report outlines that a habitat scoping study will assess the river's potential to support freshwater pearl mussel (FWPM), and this would be followed by intensive survey in specific circumstances. We suggest however, that it may be more efficient to use an experienced FWPM surveyor to carry out the initial survey, as this could remove the need for subsequent surveys.

The EIA should include details of the proposed locations and methods to be used for the crossing of water courses including any relevant mitigation measures.

We support the proposal to carry out breeding bird surveys and a desk-based targeted winter bird assessment.

Natural and Semi-natural Habitats

We support the proposal to undertake Phase I methodology along the cable corridor routes and buffer with the understanding that follow up National Vegetation Classification work for important areas may be required. As set out in the scoping report we advise that this is also used to identify where protected species survey work is appropriate.

We advise that any areas of carbon rich soils are identified in the EIA and would refer the applicant to SEPA to provide further advice on this matter.

5.2.8 Designated sites

We agree with the list of sites as outlined in table 5-3. Assessment of impacts to designated sites needs to consider all of the qualifying interest features for which the site is designated; as this process proceeds it may then be appropriate to scope-out certain features, should a

conclusion of no Likely Significant Effect be reached. Comprehensive information about Special Protection Area (SPAs) and their qualifying interests as well as Sites of Special Scientific Interest (SSSIs) and their notified interests is available from our website[9] with information on specific sites available on Sitelink[10]. Although the process for considering impacts to national interest features designated as SSSIs differs, the ethos remains the same. We refer you to the Appendices as provided within our scoping response to the MORL Round 3 windfarm for further details of the legislative requirements that apply to SPA interests and advice with regard to the HRA process and the proposals potential impacts on SPAs and SACs.

Coastal Geomorphology and Geology

While section 5.1.6 of the scoping report correctly identifies Kirkhill and Loch of Strathbeg SSSIs as having geomorphology and geological interest features, we highlight that Philorth Valley SSSI, designated for its subsurface sediments also appears to lie within the OFTO study area.

In particular, we highlight the sand dune and coastal geomorphology features of the Loch of Strathbeg SSSI as this is a key geomorphological site for its extensive and varied dune topography. While section 5.2.5.1 suggests that the cable lay will go through sand dunes, it is mentioned elsewhere that micro-siting will be undertaken to avoid important habitats. The scoping report does not indicate whether impacts to the dune system can be avoided or what mitigation is proposed – all of which will need to be addressed in the EIA.

Ornithology

The scoping report correctly identifies that the protection afforded to SPA species, e.g. Loch of Strathbeg SPA wintering wildflowl assemblage feature, goes beyond the physical SPA boundary. Consideration of the potential impacts to these species is therefore required while they are outwith the SPA, and we suggest that foraging ranges are used to ascertain connectivity to the SPA. Mitigation, such as undertaking construction activities out with key periods, may be appropriate however this must balance the needs of all the bird species that are qualifying features for this site.

Habitats

Where there are water dependant features such as at Rora Moss SSSI which is notified for its peatland interest feature, effects upon hydrology and pollution should be considered.

5.3 Human Environment

5.3.8 Landscape and Visual

The proposed scope of landscape and visual assessment for the MORL Transmission infrastructure seems generally appropriate. In the assessment of baseline seascape character and sensitivity it is expected that this work would take due cognisance and sharing of the outputs of the Beatrice Offshore Windfarm and Transmission Works assessment information, to ensure continuity and agreement of information and assessment were practical and appropriate. This would also include choice of viewpoint locations and potentially photographic resources.

[9] SSSI info at: http://www.snh.gov.uk/protecting-scotlands-nature/protected-areas/national-designations/sssis/

[10] Sitelink available at: http://www.snh.org.uk/snhi/

The SNH Landscape Character Assessment dataset referred to in the scoping report was produced at a regional scale of assessment so it may be that a further more detailed level of landscape characterisation should be undertaken - in particular to inform any proposed mitigation in terms of location and siting of the substation with appropriate planting and mounding. Of note, mitigation by incorporating high mounds, whilst potentially screening visual impacts, can also constitute a landscape and visual impact in its own right. So the use of mounds and their subsequent location, size and detailed alignment and design should be carefully considered.

Choice of viewpoint locations and photomontages should not be constrained by the number of proposed locations as outlined in the scoping report - for the substation (proposed six viewpoint locations) and for the offshore substations (proposed three viewpoint locations). There should be flexibility in the number of viewpoint locations and subsequent photomontages produced, in relation to predicted patterns of development visibility (ZTVs) and in consultation with Statutory and community organisations.

As part of the embedded and additional mitigation proposals as outlined in the scoping report SNH are aware of on-going master-planning work in relation to the Energetica Corridor (the Eastern Aberdeen City and Shire coastal seaboard) and in particular the Peterhead Southern Gateway. SNH would expect due cognisance to be taken of this work as part of consultation with Aberdeenshire Council.

British Telecom (Radio Network Protection Team)

BT has studied this proposal with respect to EMC and related problems to BT point-to-point microwave radio links.

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

Civil Aviation Authority

CAA has reviewed the information in the Scoping Report and while CAA expects any civil aviation impact to be minimal the following points should be considered and discussed with aviation stakeholders.

As highlighted on page 34 there may be a requirement or recommendation to ensure that any offshore substation is appropriately marked and lit, particularly if helicopter operations are envisaged. The guidance in Civil Aviation Publication 437

If the onshore transmission cables are above ground there may be an impact on aviation operations, particularly those at Longside aerodrome near Peterhead which lies on the intersection of the preferred cable routes.

This statement does not negate any previous CAA comment relating to meteorological masts or the wind farm itself.

Chamber of Shipping

The Chamber of Shipping welcomes the opportunity to comment on Moray Offshore Wind Limited's (MORL) environmental impact assessment scoping report for the development of wind energy in the outer Moray Firth. The Chamber wish to highlight the following issues of high significance for the commercial shipping industry:

1) Although the developers do not consider the Moray Firth to be a particularly busy area for commercial shipping (see section 5.3.3.1), the Chamber feels that the traffic density illustrated in figure 5.17 is significant. The developers should ensure that any proposed wind farm development does not create unacceptable safety or commercial risks for shipping in the area. With this in mind, turbines should be located at least 2nm from the main traffic routes (based on 90% of vessel movements).

2) It should be noted that AIS and radar data traffic surveys may not necessarily pick up bad weather routing options. Local vessel operators, coastguards and ports should therefore be consulted in order to assess the potential impacts of wind farm development on vessels' options in adverse weather conditions.

3) Figure 5.17 indicates that a number of vessels transited the project area or passed within 2nm of it during the traffic survey period. The navigational risk assessment should provide clear details of the number and types of vessels transiting the zone and propose acceptable alternative routing options for them. These proposals should assess the extra voyage distances and times that vessels would incur as a result of any wind farm development.

4) The cumulative impacts of the Moray Firth and Beatrice wind farms are a key factor for consideration and the Chamber welcomes the effort demonstrated by MORL and Beatrice

Offshore Wind Farm Ltd (BOWL) to work together on this issue. The Chamber submitted a response to the joint MORL and BOWL cumulative impact assessment discussion document (noted in sections 3 and 5.3.3.6) on 28 April 2011. While this joint work will be important, cumulative impacts should also be given due consideration in the individual risk assessments for each project. With this in mind, COS would prefer to see the project boundaries for Beatrice included in traffic density maps such as Figure 5.17. This will provide a holistic view of the region and allow us to make a more accurate assessment of the overall impacts on navigation.

5) From a cumulative impact perspective, the impacts on traffic passing to the north west of the site are a particular area of concern. Although the Moray Firth site appears to be at least 2nm from the highest traffic density, the Beatrice wind farm will encroach further on this route, significantly reducing space available between turbines and the coast.

6) The Chamber is pleased to note that the anchoring of large vessels in the general area around the proposed cable route has been recognised by the developers. The navigational risk assessment should clearly identify those areas where anchoring takes place and the cable route should be planned in such a way that it avoids important anchoring locations, which may not necessarily be marked on charts. Alternatively, cables should be buried to depths where impairment is less likely, as suggested in section 5.3.3.7.

7) The Chamber has some concerns over the floating turbine solutions proposed in section 2.3.2. Floating turbines are yet to be demonstrated in UK waters and we believe that developers should avoid proposing such solutions until they have been successfully trialled at a test project scale. Some of the mooring system options available have the potential to significantly increase the footprint of individual turbines and we would also require detailed information on the degree to which turbines may swing on their moorings. In addition, the risk of the main turbine structure breaking free of its moorings must be assessed thoroughly before floating solutions become a viable option for developers. Such a situation would present significant safety risks to mariners and therefore must be discussed in detail with the MCA, which does not currently specifically cover floating turbines in MGN 371. Suitable lighting, marking and charting measures for floating turbines would also need to be agreed with the Northern Lighthouse Board and UKHO.

The Chamber is willing to provide input from a commercial shipping perspective throughout the planning process for this project.

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

The comments in this response relate to HS statutory remit for scheduled monuments and their settings, category A listed buildings and their settings, gardens and designed

landscapes appearing in the Inventory and designated wreck sites (Protection of Wrecks Act 1973).

The scoping comments below relate to the potential impacts of the transmission infrastructure, which includes; offshore substations, offshore export cables, onshore export cables and onshore substation/converter station. The Scoping Report identifies that MORL has been given a grid connection at Peterhead Power Station. The preferred landfall option is identified as Fraserburgh beach, with Rattray being the second preferred landfall location. The preferred offshore export cable route and onshore export cable route options are identified within the Scoping Report and we understand that an onshore substation and converter station will be required in the vicinity of the connection point at Peterhead.

Marine Assets - Potential Impacts

In relation to the submitted study areas, HS can confirm that there are no designations within our statutory remit located within these identified areas. HS can also confirm that there are no such designations within the immediate vicinity of these study areas.

HS note that the Scoping Report identifies that there are numerous charted wrecks along the offshore export cable route study area. In addition, HS note that there are five 'dangerous wrecks' within the shallow waters near Fraserburgh and Rattray, of which three are within the offshore export cable route study area and one of these is a protected wreck ('Victory').

HS recommend that the potential impact on these be assessed with appropriate involvement of archaeological expertise as these could be subject to potential direct impacts, depending on the specific location of works and the sub-sea cabling route. The relevant Council Archaeology Services may also wish to comment. In addition, indirect impacts to historic assets on the seabed or at the coast edge within the proposed development area and possibly beyond which may be caused by alteration to tidal currents and sedimentary regimes, and by changes to the chemical balance of the water and seabed sediments, should be assessed.

As part of the proposed assessment, HS note that archaeological analysis of geophysical surveys will be undertaken, which is consistent with guidelines set down in '*Historic Environment Guidance for the Offshore Renewable Energy Sector*' (Cowrie 2007). Beyond this, HS note the scoping document's reference to the low potential for submerged prehistoric remains within the study area. HS welcome that archaeological analysis shall be undertaken in relation to the geophysical survey data which HS understand is to be gathered for the study area. It would be very helpful if the results of all archaeological assessments could be archived through the Royal Commission on the Ancient and Historical Monuments of Scotland.

HS are content that the potential for cumulative and in-combination impacts on marine archaeology has been scoped out.

Terrestrial Assets - Potential Direct / Indirect Impacts

Fig. 5-22 of the Scoping Report identifies the assets within the proposed onshore study area. The following assets would appear to be either within the study area or within the immediate vicinity of it:

Scheduled Monuments

- Fraserburgh Cemetery, pill box 280m ENE of Kirkton Cottages (Index no. 8220)
- Knockmonean Cairn (Index no. 11138)
- Trefor Hill, motte (Index no. 11141)
- St Ethernan's,Rathen old parish church (Index no. 5810)

- Rattray Line, pill boxes (Index nos. 11307, 11308, 11309, 11310, 11311, 11312, 11313)
- Ravenscraig Castle (Index no. 2496)
- Mount Pleasant,enclosure (Index no. 3999)
- Boddam Castle (Index no. 3252)

Category A Listed Buildings
- Cairness House (HB no. 9263)
- Crimonmogate House (HB no. 9270)

Gardens and Designed Landscapes
- Cairness (newly designated)
- Crimonmogate (newly designated)

In particular, there is potential for an impact on the setting of the scheduled monument known as Boddam Castle Index no. 3252, as a result of the on-shore substation in the vicinity of Peterhead. HS shall provide further comments when more specific locational information is provided.

In addition, there are a number of scheduled monuments close to the proposed landfall at Rattray. Note that direct impacts to scheduled monuments should be avoided and this should be addressed within any Environmental Statement produced.

Historic Scotland Views on the Principle of this Proposal
On the basis of the information supplied, HS are content with the principle of the proposal; however, there are certain aspects of the proposal which will need to be assessed. This relates to the potential for direct and indirect impacts on both the marine and terrestrial historic environment. HS would expect the assessment to contain a full appreciation of the historic environment assets potentially affected and the likely impacts on their site and setting. HS shall of course provide further comments upon receipt of the full Environmental Statement.

In terms of assessing marine archaeology, in HS view the proposed methodology for baseline surveys and assessment of impacts is considered acceptable. The proposed sources and archives are also appropriate.

In terms of assessing the impact of the onshore elements of the proposal on terrestrial assets, HS acknowledge that the Scoping Report commits to assessing the impact on the site and setting of historic environment assets and we are content with the proposed methodology.

HS have attached the link to Historic Scotland's guidance note on 'Setting' which HS hope the applicant finds helpful: http://www.historic-scotland.gov.uk/setting-2.pdf . Please also refer to '*Offshore Geotechnical Investigations and Historic Environment Analysis*' (Cowrie 2011).

Inshore Fisheries Group

The following points are raised in relation to the offshore transmission infrastructure comprising substations and export cables as identified in the Scoping Report and with particular respect to impacts on commercial fisheries and associated fish stocks/marine ecology.

Notation is taken from the original report and original text is shown in italics.

Comments are submitted on behalf of the Moray Firth Inshore Fisheries Group. It is noted that under section "*5.3.1 Human Environment – Data Sources"* reference is made to additional sources of information being obtained from the *"North-east Inshore Fisheries Group"*. Such a body does not currently exist within the Marine Scotland IFG network and as such the Moray Firth IFG should be taken as the first point of contact for any such information.

"2.2 OFTO Assets Location

The OFTO infrastructure within the zones will comprise between three to six HVAC platforms and associated HVAC cabling. The offshore substation assets will mainly be located within the eastern development area, … In addition to the HVAC infrastructure referenced above there is the potential for a further two HVDC offshore platform structures to be located out with the development zone south of the zone's southern boundary somewhere along the OFTO cable route to Peterhead"

Reference to the "zones" presumably encompasses the eastern and western development zones of the MORL site? It is unclear as to whether the intended infrastructure and especially the HVDC infrastructure will in addition also be used for the western zone or if additional infrastructure will be required in the future? This consideration of cumulative environmental impact of MORL site development is further noted in;

"Offshore Export Cable Route – In addition to the routes described above, MORL also decided to include a route with the aim of a possible connection to the HVDC Hub. This HVDC Hub is proposed by SHETL for the outer Moray Firth, to the east of the Round 3 Zone 1 area, and could incorporate transmission from renewable energy projects across northern Scotland south to grid connection points at Blackhillock and Peterhead. This could include:
Caithness onshore renewable;
Shetland onshore renewable;
MORL; and
BOWL"

From a national perspective the option with the minimum environmental impact would appear to be the SHETL HVDC Hub. In the context of the marine environment this would appear to avoid duplication of infrastructure associated with separate OFTO arrangements for the eastern and western zones of the MORL site coupled with additional arrangements for the BOWL site. From a commercial fisheries perspective any minimisation of un-necessary infrastructure would be welcomed as each is likely to contribute to combined impacts with respect to access to fishing grounds. In addition the SHETL option also appears to minimise the number of export cables coming ashore at various locations along the coast and resultant disturbance of fishing activities, fish stocks and the wider marine environment.

5.1.5 Underwater Noise
5.1.5.4 Site Specific Impact Assessment Methodology
Potential Impact – Behavioural disturbance or physical injury to marine species as a result of increased levels of underwater noise.
Potentially sensitive receptors include: Marine mammals, fish.

It is considered that the general term "fish" should include mobile shellfish and specifically squid.

5.2 Biological Environment
5.2.2 Benthic Ecology
5.2.2.3 Environmental Impacts Scoping

Based on available literature, the following are perceived to be the potential impacts on benthic ecology as a result of the proposed OFTO infrastructure:

It is considered that thermal pollution of the seabed surrounding the export cables should be added to the list of possible impacts. The potential for an imbalance of predator prey communities with the additional energy input associated with the thermal load of the cable should be assessed. This is particularly important with respect to all life stages of high value shellfish species such as the King Scallop and the impact of predators such as starfish which have a relatively short reproductive cycle at elevated temperatures.

5.2.2.4 Impact Assessment Methodology
Potential Impact – Temporary increases in suspended sediment concentrations from trenching, augering, seabed preparation (plume effects) and resultant temporary increases in sediment deposition from plumes.
Potentially sensitive receptors include:

- *Filter/suspension feeding species*
- *Annex I and II and PMF features*

It is considered that the range of potentially sensitive receptors should be widened to sensitive life history stages of some fish and shellfish which have a direct linkage to the benthic environment. The "spat" settlement stage of the King Scallop is dependent typically on hydroid and bryozoan communities at a first stage of development before settling on a suitable sandy substrate. Any smothering of such communities at this stage has the potential to impact juvenile survival. Mitigation to prevent such an occurrence could involve appropriate timing of seabed disturbance to avoid the spat settlement period. Equally the depositing of squid eggs is likely to be dependent on suitable biogenic material being present and smothering by suspended sediment loads may be a significant factor in egg or juvenile survival at depth.

5.2.2.4 Impact Assessment Methodology
Potential Impact – Release of contaminants bound in sediments
Potentially sensitive receptors include:

- *Filter/suspension feeding species*
- *Annex I and II and PMF features*
- *Trophic web*

Additional commercially important species not covered by the above receptors would include the whelk (Buccinum spp.) which is a detritivore. Such links to the human food chain of commercially important species should also be considered.

5.2.2.6 Cumulative and In-combination Impact Assessment & Survey Methodologies
The principle considerations that must be contemplated include physical disruption directly due to the installation and construction of the cable infrastructure and indirectly through movement of sediment and changes in the hydrodynamic regime. Additional impacts from heat transfer from cabling are understood to cause little or no effect on benthic communities.

The last sentence (underlined) is surprising and seems difficult to substantiate without additional information being provided. It is considered that thermal load of cabling can have a significant impact on the predator/prey balance within seabed communities and that this should be recognised in any cumulative impact assessment. The issue of thermal load has been clearly made by SNH in the BOWL Transmission Works Scoping Opinion and without mitigation it is difficult to perceive how MORL could avoid any such environmental impact arising from its own developments or in combination with others.

5.2.3 Fish and Shellfish Ecology
5.2.3.1 Baseline Environment
Spawning and Nursery Areas
There are various spawning and nursery grounds in the vicinity of the proposed offshore transmission infrastructure. These include spawning grounds for herring, cod, plaice, whiting, lemon sole, sprat, sandeels and Nephrops and nursery grounds for herring, haddock, whiting, saithe, lemon sole, sprat, sandeels and Nephrops.

The mobile shellfish species should also be recognised in any baseline assessment of the environment. Squid eggs are deposited in the shallower regions within the area with juveniles progressively migrating towards the mouth of the Firth. In addition both brown crab and lobster are known to undertake spawning migrations of egg carrying females with subsequent release of larval stages into the water column. This process has not been adequately recorded in the Moray Firth however; various studies on the north east coast of England have indicated the importance of such processes to the recruitment of stock to established fishery areas. It is extremely important that any such migration and spawning processes are fully understood within the Moray Firth as the squid, lobster and brown crab fisheries are of considerable economic importance.

The proposed export cable route for the MORL development with cumulative impacts from BOWL and possible links to the Caithness coast, in combination with other power cable developments in the area would effectively enclose the outer Moray Firth. It is extremely important at this stage to determine the importance of spawning migrations and aggregations of mobile shellfish species in order to assess any potential environmental impact of the export cable laying and operational process. There is some evidence that crustacean species can be impacted by EMF from buried cables and any possible impact of this on spawning migrations would need to be established.

5.2.3.3 Environmental Impacts Scoping

In addition to the recognition of potential impacts of the effects of electromagnetic fields associated with cabling on a site specific or cumulative and in combination basis for fish and shellfish species, thermal load should also be scoped in. In terms of a primary effect the impact of thermal load on vulnerable life stages such as herring, sandeel and squid eggs with direct contact to the substrate should be assessed. In addition any secondary impact associated with increased predator species reproduction and predation on the egg or juvenile stages such as starfish predation on scallop spat should also be considered.

5.3.2 Commercial Fisheries
5.3.2.4 Site-specific Impact Assessment Methodology
Potential Impacts – Adverse impacts on commercially exploited species – Interference with fishing activities – Restricted or temporary loss of access to fishing grounds
Survey/Study Proposed to Assess Impact – Assessment of landings data – Assessment of effort data

There is a need to ensure that for fisheries with naturally highly variable landings such as the scallop and squid fisheries within the Moray Firth that any data analysis and the use of long term data averages does not mask the importance of such fisheries to the fishing community. Equally in the context of the hand line mackerel fishery the unit value of landings to niche markets far exceeds the national average landings unit value figures.

In addition to historic landing patterns and values it is also important to recognise the value of near shore fishing grounds and species in relation to national management measures of days at sea and quota restrictions placed on various fish stocks. The squid fishery has no such restrictions and is extremely economically important. In the context of days at sea the

near shore area is becoming increasingly important not just in terms of fishing opportunities in relatively sheltered waters, but also in terms of shorter trip durations, fuel economy, and use of fewer days at sea. Such considerations need to be factored into the overall impact on the fishing industry of renewables infrastructure development.

Joint Radio Company

This proposal cleared with respect to radio link infrastructure operated by Scottish and Southern Energy

JRC analyses proposals for wind farms on behalf of the UK Fuel & Power Industry. This is to assess their potential to interfere with radio systems operated by utility companies in support of their regulatory operational requirements.

In the case of this proposed wind energy development, JRC does not foresee any potential problems based on known interference scenarios and the data you have provided. However, if any details of the wind farm change, particularly the disposition or scale of any turbine(s), it will be necessary to re-evaluate the proposal.

In making this judgement, JRC has used its best endeavours with the available data, although we recognise that there may be effects which are as yet unknown or inadequately predicted. JRC cannot therefore be held liable if subsequently problems arise that we have not predicted.

It should be noted that this clearance pertains only to the date of its issue. As the use of the spectrum is dynamic, the use of the band is changing on an ongoing basis and consequently, developers are advised to seek re-coordination prior to considering any design changes.

Maritime Coastguard Agency

There is limited data on shipping activity contained within the document which is understandable in relation to transmission works and cable routes, however the ES should supply detail on the possible impact on navigational issues for both Commercial and Recreational craft, viz.

- Collision Risk
- Navigational Safety
- Visual intrusion and noise
- Risk Management and Emergency response
- Marking and lighting of site and information to mariners
- Effect on small craft navigational and communication equipment
- The risk to drifting recreational craft in adverse weather or tidal conditions
- The likely squeeze of small craft into the routes of larger commercial vessels.

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

The shipping and navigation study should include radar and manual observations in addition to AIS data to ensure vessels of less than 300gt are captured. Given the potential to displace current traffic routes, full consideration of the implications to all identified marine users will need to be assessed.

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

Particular attention should be paid to cabling routes and where appropriate 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. The developer must ensure that 'the works' do not encroach on any recognised anchorage, either charted or noted in nautical publications, within the proposed consent area.

Reference should be made to any Marine Conservation Zones (MCZs) both established and planned.

The cumulative and in combination effects require serious consideration, particularly the adjacent Scottish Territorial Waters wind farm projects, the positive interaction with MFOWDG is noted.

Given that a number of route options have been identified, the principles of the Rochdale envelope should be used in the EIA.

Any reference to IALA recommendations on the marking of tidal array should refer to O-139 Edition 1 December 2008 which replaced all previous versions.

The offshore human environment should also include recreational and other sport activities. Any application for operational safety zones will need to be carefully assessed.

Ministry of Defence

The MOD has no objections to the proposed routes and therefore we have no comments to make on the scoping opinion.

Moray Firth Sea Trout Project

General Comments
The large scale of the offshore wind developments that are planned for around our coastline amount to a significant cumulative impact on our marine environment and as such require the highest possible environmental standards. Furthermore, the relative youth of the industry and the unknown impact of these large scale developments in certain environments require that a precautionary approach is adopted at all levels.

MFSTP specific concern with the MORL outlined Transmission Works is the potential impact on sea trout in the Moray Firth. The Moray Firth is a common resource for sea trout from all the rivers that surround it. Sea trout migrate to sea primarily to feed and we are very conscious of ensuring that they are not directly threatened or that the resources they rely on are disrupted. Although not protected by SAC designations sea trout are recognised under the UK Salmon and Freshwater Fisheries Act (1975) and are a UK BAP Priority Species and support important local fisheries and tourism.

Electromagnetic Fields
Aside from the physical disturbance of the benthos our primary concern is with the potential impact of electromagnetic fields on migrating and feeding sea trout. Very little is known about the precise movements of sea trout within the Moray Firth but the various cabling routes outlined will all likely cross potential migration routes and feeding areas. If the trout

have an avoidance reaction to the electromagnetic fields then the transmission works could severely impact the movement and marine feeding of Moray Firth sea trout. This would have a hugely detrimental impact on the species and local populations. MFSTP seek assurances that appropriate mitigation will be required to limit the exposure of migrating fish to Electromagnetic Fields. By ensuring the cable is buried to an adequate depth and through insulation of the cabling the potential impact on sea trout and other migratory fish can be reduced to an acceptable level.

NERL Safeguarding (National Air Traffic Services)

Having considered the EIA Scoping report for the transmission infrastructure, NERL does not anticipate an impact on its infrastructure. However, NERL would like to make the following comments on the report:

Although Civil Aviation is mentioned in the Non-Technical Summary of the EIA Scoping report, there is no mention in the transmission Infrastructure report.

The impact of the transmission is not expected to be significant; however it should be taken into consideration. Looking at the proposals for the transmission lines/network from landfall to the Peterhead power station, the path is in close proximity to a number of assets that NERL safeguards.

The IPC should consult NERL should any possible obstructions (temporary or permanent) be constructed that have the potential to interfere with these sites (e.g. cranes, masts).

For information a map with the safeguarded zones for NERL sites highlighted (hatched circles) is shown below. From the detail in MORL map (Fig. 5-7) it would appear that some of the transmission infrastructure could come close to these. No doubt, when considering these locations closer in, it will probably become apparent that there is no impact.

However, for the avoidance of doubt, NERL believe that it would be worth having a section on Civil Aviation highlighting that these sites will be considered.

Northern Lighthouse Board

With regard to the consultation and the scope of the assessment, NLB would only comment on any part relating to Shipping and Navigational Safety contained within the consultation document.

NLB 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.

NLB would also advise that we have previously responded directly to the developer in connection with the proposed application (28th Sept 2011, Ref: AJ/OPS/CPA/O6_01_085).

Ports and Harbours

PH has no comments on this case.

Royal Society for the Protection of Birds

RSPB understand that the Scoping Report covers only offshore transmission infrastructure including offshore substations, offshore and onshore export cables and onshore substation but welcome the Applicant's intention to produce a single ES covering offshore generation and transmission infrastructure.

RSPB also understand that, although a separate Offshore Transmission Operator will manage the planned infrastructure, MORL is undecided about whether it will build it themselves or seek consents and then leave it to the OFTO to build. This transmission is to serve both the East and West parts of Zone 1 of Round 3 but it is not yet decided whether consent for the landward part is to be applied for under the Town & Country Planning (Scotland) Act 1997 or as deemed consent under the S36 Electricity Act application.

Paragraph 2.2

It should be made clear why there may be "potential for a further 2 HVDC offshore platform structures to be located outwith the development zone." In particular, the ES should indicate in what circumstances these may be necessary or desirable.

The ES should offer a rationale behind the eventual selection of a particular combination of offshore and onshore routes, making clear the economic, environmental, safety or other considerations. This would include consideration of linking, or not linking, to the proposed Moray HVDC Hub.

The preferred landfall has been identified as that at Fraserburgh, with Rattray, which involves a shorter land crossing, as second choice. It should be noted that the landfall zone south of Rattray Head crosses some intertidal land that RSPB leases from the Crown Estates as part of our Loch of Strathbeg reserve.

Paragraph 2.3.2

The arguments for scour allowance, or scour protection, need to be made in plainer language.

Paragraph 2.4.1

The Environmental Management Plan should have a component document specifically addressing Wildlife Management. It is unclear whether “collision risk” applies to wildlife colliding with turbines, vessels or other structures or to vessel collisions with each other or with structures.

Paragraph 2.5.2

Lighting should consider wildlife interactions and means of minimising adverse impacts.

Paragraph 3

Cumulative and In-combination Impacts.

Mention should also be made of proposed East Coast (offshore) transmission route from the Fraserburgh area to NE England.

Paragraph 5.1.6.1

Refers to localised pockets of peat yet on p40 it is stated that there is no evidence of chalk or peat deposits in the underlying geology that might be re-suspended as a result of drilling activities.

Page 61

Refers to the Loch of Strathbeg’s position downstream of the cable route: impacts on water quality must be assessed, although RSPB expect that these will not be significant after mitigation.

The map in Figure 5-14 does not include any locally designated Aberdeenshire Sites of Nature Conservation Interest (former SINS sites). Paragraph 5.2.6.1 should make reference to such sites whose presence may be a material planning consideration, depending on the route selected.

Table 5.3

Cable-laying on land may cause disturbance and temporary loss of feeding areas to birds associated with the following SPAs: Buchan Ness to Collieston Coast SPA (herring gull only), Loch of Strathbeg SPA (pink-footed goose, greylag goose, barnacle goose, and whooper swan), Troup, Pennan and Lion’s Head SPA (herring gull). Habitats Regulation assessments will be required.

Paragraph 5.2.6.4

The second table on p105 is effectively a copy of first. RSPB believe it should refer to the extent and duration of habitat loss, to be addressed by Phase 1 and NVC surveys.

Paragraph 5.2.6.5

If impacts on SPA qualifying interests cannot be ruled out, there may be a need to consider Scottish Government advice relating to designated sites too. See http://www.scotland.gov.uk/Topics/Built-Environment/planning/National-Planning-Policy/themes/enviro-assessment/a-a/Q/editmode/on/forceupdate/on

The proposed Breeding Bird Survey methodology involves surveyors recording birds within 250m on either side of a transect on three visits. This will undoubtedly lead to many birds being missed – especially small and non-vocal species - and, at best, will provide only an indicative picture of bird distribution across the surveyed area. This may be sufficient information for inputting into decision-making on route choice where non-designated sites are concerned. Impacts on breeding birds can mostly be avoided by avoiding the period April-July for cable-laying but more detailed bird survey of particular sections may be required once route selection has been made to influence micro-siting.

RSPB concur with the suggestion that a Winter Bird Survey is unnecessary unless the desk study shows that pink-footed geese – or whooper swans - are likely to be present. Whilst either route may cross land used for feeding by lapwings, golden plovers, starlings, skylarks etc, the act of cable burying will have minimal disturbance and, once in place, no lasting effect is anticipated beyond limited change to natural or semi-natural habitats (if such areas cannot be avoided altogether).

P110 paragraph 3

RSPB also hold bird data and the desktop survey should include consultation with *The Breeding Birds of North-East Scotland* (http://www.the-soc.org.uk/ne-scotland-atlas.htm)

Royal Yachting Association

The Royal Yachting Association Scotland (RYA Scotland) is established to promote the sport of sailing and power boating in Scotland and is recognised by **sport**scotland as the governing body for all forms of recreational and competitive boating in Scotland. RYA Scotland represents dinghy and yacht racing, motor and sail cruising, RIBs and sports boats, windsurfing, inland cruising and personal watercraft and for matters that have been devolved to Scotland is recognised by the Scottish Government, the Crown Estate, Local Authorities and other non-governmental organisations in Scotland as being the primary consultative body for the activities it represents. RYA Scotland was a founding member of the Scottish Boating Alliance.

RYA Scotland acts as the Royal Yachting Association (RYA) Council for Scotland and the two organisations work closely together on all aspects of their activities. The RYA is the UK and internationally recognised governing body for all forms of recreational and competitive boating in the UK. The RYA currently has more than 100,000 personal and family members across the UK, the majority of whom go afloat for purely recreational non-competitive pleasure on coastal and inland waters. There are an estimated further 500,000 boat owners nationally who are members of over 1,500 RYA affiliated clubs and class associations. The RYA sets and maintains a recognised standard for recreational boat training through a network of over 2,200 RYA Recognised Training Centres in 20 countries. On average, approximately 160,000 people a year complete RYA training courses.

Over 150 RYA affiliated clubs, 120 RYA Recognised Training Centres, 1,900 RYA qualified instructors and over 5,500 RYA individual and family members are based in Scotland.

The RYA and the British Marine Federation have also developed The Green Blue programme to minimise the environmental impact of recreational boating; a programme that is directly supported in Scotland.

The view of RYA Scotland is that these proposals will have little, if any, negative impact on recreational boating. RYA note that offshore platforms are no different from other fixed

structures at sea in terms of marking, lighting and representation on charts. Cable laying operations are normal activities covered by the International Regulations for Preventing Collisions at Sea, to which recreational sailors must conform. RYA know that modern installation techniques such as trenching and directional drilling can return the landfall site to its original condition so that beaches and adjacent shallow waters can still be used for landing and for temporary anchoring of small recreational craft. Section 2.7 notes that ports and harbours used for operation and maintenance are likely to be smaller than the ports used during the construction phase and this increased usage could have benefits for the recreational sector, e.g. by the increased income from harbour dues being invested in repairs and maintenance of these harbours to the benefit of all users.

RYA confirms that the information on recreational vessels in 5.3.3.1, and in Fig. 5-18 is correct. There are no RYA affiliated clubs between Peterhead Sailing Club and Banff Sailing Club. Recreational craft use Cairnbulg harbour (2 miles ESE of Fraserburgh) and Fraserburgh harbour itself as well as the marinas mentioned.

RYA Scotland will be pleased to provide any additional information that may be required.

Scottish Government Planning

SGP have reviewed the Scoping Report and in terms of national planning policy are content that reference has been made to the National Planning Framework and Scottish Planning Policy (SPP). In considering the onshore infrastructure requirements, the Environmental Statement should also make reference to the Proposed Aberdeenshire Local Development Plan.

Reference should also be made to the following Planning Advice Notes (PANs):

PAN 51:	Planning, Environmental Protection and Regulation
PAN 58:	Environmental Impact Assessment
PAN 3/2010:	Community Engagement
PAN 60:	Natural Heritage

Scottish Wildlife Trust

In general SWT would expect the EIA to consider the potential impact of the proposed development on protected sites and species on land and at sea. The EIA should make use of the most up to date sources of information and where necessary conduct specific surveys where data is lacking.

In particular, SWT would like to highlight the presence of the Scottish Wildlife Trust Reserve at Longhaven Cliffs. The reserve occupies a 1.5 mile stretch of the Buchan coastline south of Peterhead. A map of the reserve can be accessed at http://scottishwildlifetrust.org.uk/docs/027_117_maps_LOC_AccessFeatures_1300120443.pdf

SWT would be happy to provide a shapefile of the reserve boundary and any reserve wildlife data on request.

The SWT would like to be kept informed of the proposal as it progresses.

Surfers Against Sewage

Surfers Against Sewage (SAS) have been invited by Moray Offshore Ltd to comment on the Scoping Report prepared in relation to the proposed Moray Firth Wind farm Offshore Transmission Infrastructure. SAS have been effectively representing recreational water users in the UK since 1990. The campaign remit of SAS has expanded from safeguarding public health with the successful Sewage & Sickness campaigns, to encompassing surfing resource and recreation protection with the popular Protect Our Waves campaigns. SAS have been an integral stakeholder in several offshore renewable proposals over the last seven years.

SAS Offshore Renewable Energy Position Statement

SAS believe that climate change poses a major threat to recreational water users, the marine environment and the global environment as a whole, and agrees that action needs to be taken to combat it. SAS also believe that offshore renewable energy has the potential to help combat climate change, but are concerned that future development has the potential to cause negative impacts on surfing resources and recreation, and negative impacts on the social and economic benefits that surfing contributes to wider communities. SAS strive to protect surf spots from unacceptable levels of environmental impact and will work with, and where necessary against, governmental regulators and agencies, NGOs and developers, to ensure that surf spots get the protection they deserve.

SAS are fully in favour of offshore renewable energy development, but the priority must always be that such development takes place without significantly impacting on surfing resources and recreation.

A comprehensive guidance document aimed at developers of offshore renewable energy has been produced (Surfers Against Sewage, 2009). This document promotes the surfing community as an important stakeholder to offshore renewable energy development and promotes best practice within the EIA process. If used effectively, this guidance could expedite the consent process for the proposed development in relation to surfing resources and recreation. This document can be downloaded here: http://www.sas.org.uk/pr/2009/pdf09/eia-1.pdf

Concerns Related to Surfing Waves

Waves are naturally occurring features of the environment. Waves that are suitable for surfing only exist where the wave climate and seabed topography combine to form breaking waves of the right characteristics to be ridden. Although most of the coastline around the Scottish mainland and the Scottish isles has some kind of surfable waves and is surfed on a regular basis, the quality of the waves varies enormously.

Surfers Against Sewage (2010) estimate that there are approximately 300,000 recreational water users in Scotland while the Scottish Government (2011) estimate that there are approximately 53,000 surfers aged above 16 years in Scotland and the Borders. There are very few data about the socio-economic value of surfing. Based on 2007 data, the Scottish Government (2011) estimates that surfing contributes £16.4m per annum to the Scottish economy, noting "*high quality waves located in remote areas could bring economic benefits to a rural area through travel, accommodation and subsidence expenditure of visiting surfers*". It should be noted that, according to UK Marine Monitoring and Assessment Strategy (UKMMAS, 2010) "*the economic value of the UK surf industry…is growing each year with the increasing popularity of the sport*".

The Scottish Government has long recognised that the natural environment and publicly accessible open space contributes positively to recreational and sporting activities including surfing. Former Scottish Planning Policy (Scottish Government, 2007) states:

"*Scotland's outdoors presents outstanding opportunities to participate in a range of sport and recreation activities. Resources such as rivers, lochs, hills, crags and paths support activities as diverse as fishing, mountain biking, horse riding, surfing, canoeing, rock climbing and snowboarding…In assessing development proposals which may affect such facilities and resources, sport and recreation interests should be fully considered and planning authorities should consult with sport and recreation interests*."

Current Scottish Planning Policy (Scottish Government, 2010) states:

"*Rural areas provide a wide range of outdoor recreation opportunities, many of which are closely linked to the quality of the environment. Planning authorities should support, protect and enhance open space and opportunities for sport and recreation.*"

At this point it is worth noting that Section 69 (1) of the Marine and Coastal Access Act 2009 states:

"*In determining an application for a marine licence (including the terms on which it is to be granted and what conditions, if any, are to be attached to it), the appropriate licensing authority must have regard to -*
(a) the need to protect the environment,
(b) the need to protect human health,
(c) the need to prevent interference with legitimate uses of the sea, and such other matters as the authority thinks relevant."

And section 69 (3) states that:

"*The appropriate licensing authority must have regard to any representations which it receives from any person having an interest in the outcome of the application*."

Finally, it is important to note the recent high-level recognition by politicians of the importance of protecting Scotland's premium surfing resources, for example (Scottish Parliament, 2009):

"*Scotland has world-class surfing beaches …. I want surfers to continue to access beaches... Just as important is the need to look for opportunities to ensure that our wave resource is recognised, valued and promoted. Surfing has quickly grown into a well-established sport in Scotland, and a great number of Scots and visitors hugely enjoy our beaches and make a significant contribution to local economies*."

<u>Surfing conditions in the Moray Firth</u>

The north coast of Scotland to the south of the Moray Firth and the east coast from Fraserburgh to Peterhead contains at least 20 regularly surfed spots and a number of less-popular, unexplored areas. The coastal morphology is such that a range of beach, point and reefbreaks can be found. The coast receives long-period swells from the north and shorter-period windseas from the north and east. Prevailing winds are from a south-westerly quarter, which are offshore (the most favourable), at a number of spots and side-shore at others. Waves here can be surfed all the year round although the most consistent seasons are autumn and winter (e.g. Nelson and Taylor, 2008; Southerland, 2007).

Fraserburgh beach, which contains beachbreak waves along the length of the beach and a high-quality pointbreak to the northwest extreme, is one of the most popular surf spots in Scotland and is the home of the Broch Surf Club, one of the longest-established surf clubs in Scotland.

Summary of problems with the scoping report

Baseline information about the location and quality of surf spots in the area is non-existent or grossly inadequate. The importance of surfing and the potential interference of surfing waves by the offshore infrastructure, particularly by installation and subsequent existence of the cable landfall point(s), have been virtually ignored in the report. This has led to a decision by the developers that the best landfall point would be in the middle of one of the most popular surfing beaches in Scotland.

The developers should consult the literature, the Scottish Surfing Federation and the local surfing community for baseline information on the location and quality of surf spots in the area. They should then study the possible consequences of installing the landfall points close to surfing areas, for example, interference with the local hydrodynamics, changes in the local bathymetry and changes in the sediment transport, all of which could have serious negative effects on the surfing waves. All this should be done *before* the most suitable landfall point(s) are decided upon. It might turn out that moving the landfall point a suitable distance away from a surf spot will not alter any of the other considerations, such as cabling distance from the substations or access for the developers.

Specific problems with the scoping report

Section 2.2.1

P20: There is nothing in the report that states that the surfing community was consulted during the landfall point selection process. The existence of a landfall point near a surf spot could interfere with the waves and the installation process could restrict access. The report states that Fraserburgh Beach was considered the preferred option “with minimum impact on third parties and the environment”. However, Fraserburgh is one of the best surfing beaches in Scotland (Southerland, 2007) with one of the longest-standing surfing communities. Furthermore, Figure 2-4 (see also Figure 5-7, P62) shows the landfall point at the northwest end of the beach, near a high-quality surfing wave called The Broch.

The second choice of Rattray as a landfall point could also result in interference with surfing waves. This area is also known to contain very good surf (Southerland, 2007).

SAS consider the situation unsatisfactory unless the developers consult the Scottish Surfing Federation, the Broch Surf Club and the local surfing community before deciding on the exact position of the landfall point.

Section 2.4.2

P32: The report states that construction of the offshore transmission infrastructure is anticipated to occur over a period of two years. Even if the existence of the landfall point once constructed does not interfere with the waves, the movement of local sediment and rock material during the construction phase could still do so. In addition, access to the surf spot could also be affected during the construction phase.

SAS recommends that the developers consider these potential problems before deciding on the final landfall points. It is unsatisfactory if a surf spot is rendered unusable for a period of two years if the situation could have been avoided by moving the landfall point.

Section 5.1.4

P47: One of the sensitive receptors to changes to hydrodynamic conditions from the offshore substation platforms is listed as “surfing wave climate on the south coast of the Moray Firth”. It should be made clear that this refers to the *north coast* facing the Moray Firth, from Nairn to Fraserburgh, and the east coast from Fraserburgh around to Peterhead.

P48: The surf spots along the coasts mentioned above should also be listed as a sensitive receptor under changes to the sedimentary environment and changes to sedimentary structures. For example, if the cable landfall points are placed near any surf spots the changes in morphology could have negative effects on the quality of the surfing waves.

P54: Mitigation measures associated with changes the potential interference with surfing waves due to the construction and subsequent existence of landfall points should be outlined here. Mitigation should only be considered if impacts cannot be avoided completely, and acceptable mitigation measures should be determined through consultation with the surfing community (Surfers Against Sewage 2009).

Section 5.3

P119: The list under “The effects on the human environment are categorised as follows” should include a specific section on the possible interference with waves for surfing.

Section 5.3.1

P119: Under “data sources” there is nothing listed for sources of information regarding the location and quality of surf spots in the area. In addition to consulting the Scottish Surfing Federation and the local surfing community, there is a considerable amount of information in the literature (e.g. Nelson and Taylor, 2008; Southerland, 2007).

Section 5.3.10

P152: The list of sources should include literature which gives the necessary information to properly include surfing waves as part of the baseline environment.

P154: The way surfing is described here is totally unsatisfactory. Surfing is grossly under-represented and mistakenly described as one activity among many “offered” by the Moray Firth Water Sports Association, whereas, in fact surfing is practiced regularly at more than 20 spots along the Moray Firth coast. Even if surfing were not practiced regularly, the existence of good-quality surfing waves and/or coastlines that have the potential to contain surfable waves should still be considered valuable (e.g. Butt, 2009; Surfers Against Sewage, 2010). The developers should research properly into surf spots along this coast as part of the baseline information.

P154: The developers state that “It is considered that local, regional and national Government and other relevant stakeholder groups hold sufficient data for the region”. To obtain the above information the developers may have to look further than simply consulting stakeholder groups.

P155: The potential impacts on surfing waves have not been considered by the developers under “Environmental Impacts Scoping”.

Section 5.4

P164: The location and quality of surf spots in the area should be included Chapter 10 of the EIA.

P165: The potential interference with surfing waves due to the offshore transmission infrastructure should be included in section 13.3 of the EIA.

Conclusions

In summary, SAS believe that the scoping report is insufficient to inform the EIA process in accordance with the requirements of, for example, Regulation 7 (2) (b) of the Electricity Works (Environmental Impact Assessment, Scotland) Regulations 2000 (as amended), which states that a request for a scoping opinion shall be accompanied by "*a brief description of the nature and purpose of the proposed development and of its possible effects on the environment*".

Whale and Dolphin Conservation Society

WDCS believe that discussions regarding the scientific requirements should continue with Professor Paul Thompson, so that adequate scientific understanding of research requirements to ensure integrity of the bottlenose dolphin Special Area of Conservation (SAC) is maintained.

Whilst two years baseline surveys are now considered as standard, where zoning occurs and development is proposed in stages, consideration should be given to ensuring the collection of data is adequate to inform the development. This should be done in consultation with scientists in the region and logically this would be Professor Thompson.

Noise and cumulative impacts (including beyond the Moray Firth) are our primary concerns.

Whilst bottlenose dolphins are the only Natura species, minke whales, common and white-beaked dolphins harbour porpoises and, less frequently, others species are found in the region (as identified in Table 5.2). In particular, the work of the Cetacean Rescue and Research Unit (CRRU) identifies the value of the Southern Trench for cetaceans during the summer months. WDCS note that both preferred options for the cable route corridor to land-fall at Fraserburgh or Rattey are through the Southern Trench, which is important for foraging cetaceans.

Section 2.3.1

WDCS believe that generally two years of data should be gathered to inform decision making, however WDCS acknowledge that the Moray Firth is probably unique in that several years of data have already been gathered here to inform seismic surveys and, later, the wind farm developments.

Section 3

It may be necessary to include proposed wave and tidal devices in the Moray Firth into the in-combination assessments.

Section 5.1.4.5

It's not possible to provide comments on mitigation at this stage, as not enough details are provided. However, generally, mitigation should only be relied upon where it is known to be effective.

Section 5.1.5.3/4

WDCS agree that disturbance and injury as a result of noise should be included as potential impacts. WDCS note that where modelling is proposed, ground-truthing should be considered.

Section 5.2.4

WDCS note that both minke whales and white-beaked dolphins are Priority Marine Features that rely on this region, and minke whales especially are routinely found foraging in the Moray Firth, including in the Southern Trench.

The appropriateness and sufficiency of the surveys/studies proposed in Section 5.2.4.4 should be determined in consultation with cetacean scientists in the region.

Section 5.2.4.5

Whilst JNCC has produced some guidance on deliberate disturbance, WDCS note the regulations in Scotland are different, and subsequently, management and mitigation measures may be different as a result.

More generally, WDCS would be interested to meet with MFOWDG to discuss the work that is currently being undertaken.

Annex 2 – RYA Position Statement

THE RYA'S POSITION ON OFFSHORE ENERGY DEVELOPMENTS

DECEMBER 2009

The RYA has taken an active role in policy making that affects boat users and has been the voice of recreational boating for over a century. We represent our 100, 000 personal members and over 1500 affiliated clubs representing approximately 400, 000 boating enthusiasts and administer training standards at over 2000 recognised teaching establishments. Research conducted by the RYA, BMF, MCA, RNLI and Sunsail in 2006 showed there were approximately 3.5 million participants in boating-related watersports in the UK. The BMF estimates the total turnover of the UK leisure and small commercial marine industry in 2005/6 was £2.8 billion. Of this, the 'value added contribution' which is the principal measure of national economic benefit was £1.04 billion (37.6% turnover). The industry employs 35,000 people across 4300 different businesses.
RYA represents users of inland and coastal:

- Cruising and racing sailing and motor boats
- Sailing dinghies and day boats
- Windsurfers
- Personal watercraft

The RYA supports the UK Government's and evolved administrations' efforts to promote renewable energy[11]. We note that it is Government policy that wind farms should not be consented where they would pose unacceptable risks to navigational safety after mitigation measures have been adopted[12]. Our primary purpose in engaging in the consultation regarding the development of offshore energy developments is to secure navigational safety and to ensure that recreational boating interests are not adversely affected. The RYA has made objections to some of the proposed developments on grounds explained in this document. As more issues have come to light, we have reviewed our position on offshore energy development. We recognise that some marine renewable schemes may provide opportunities to benefit recreational sailors, e.g. active breakwater types of power generation can provide areas of sheltered water.

This position paper sets out our concerns from a general perspective and should enable developers to more accurately take account of recreational boating concerns in their environmental impact assessments.

In summary the concerns of recreational boating and offshore energy developments relate to:

1. Navigational safety
    a. Collision risk
    b. Risk management and emergency response
    c. Marking and lighting
    d. Effect on small craft navigational and communication equipment
    e. Weather

[11] The UK Renewable Energy Strategy 2009. HM Government
[12] Draft National Policy Statement for Renewable Energy Infrastructure (EN-3) DECC. November 2009. Note that this NPS will be a relevant planning consideration even though marine planning is a devolved issue in Scotland and Northern Ireland and in some cases Wales.

2. Location
    a. Loss of cruising routes
    b. Squeeze into commercial routes
    c. Effect on sailing and racing areas
    d. Cumulative effects
    e. Visual intrusion and noise
3. End of life
    a. Dereliction
    b. Decommissioning
4. Consultation

The MCA has developed guidance for assessing the navigational impact of offshore renewable energy installations, this should be utilised in addition to the information contained here[13].

1. Navigational Safety

Prior to leaving the shore, mariners make a passage plan and make assessments based on weather, tides and the environmental conditions. Offshore developments become an additional navigational hazard to the mariner. However, if sited sensitively, well designed and managed effectively these developments can satisfy the safety issues of concern to recreational boating.

Construction of the first offshore wind farm, North Hoyle, was completed in 2004. Since that time, Scroby Sands was completed in 2004, Kentish Flats in 2005, Barrow in 2006, Burbo Bank in 2007, Lynn in 2008 and Inner Dowsing in 2008. A further seven are currently under construction and seven more are consented and awaiting a start date. There have been no reported incidents involving recreational craft and offshore wind farms in these five years of operation around the UK coast.

Collision risk

The RYA believes that poorly designed wind farm developments could pose a risk of rotor blade collision with recreational craft. Wave and tidal developments and the sub-surface structures and scour protection associated with wind turbines could similarly pose a threat of underwater collision. The danger that moving rotor blades or other parts of the mechanisms pose is the reason for concern. Navigating around static hazards is part of sailing and only in rare situations, such as in narrow channels with strong tidal flows, do static installations pose a threat.

The RYA believes that the threat to recreational yachts can be minimised by specifying
1. a minimum rotor height clearance above mean high water springs of 22 metres
2. a minimum underwater clearance of 3.5 m below mean low water springs

The RYA has developed its position on clearance height and depth on the available data. Firstly an estimation of the air draught of the national fleet of yachts around the UK was established in the knowledge that these types of yachts may be found in all UK waters, these data are taken from the Royal Ocean Racing Club (RORC) Rating Office's database. For more detail see the final section on *Developing RYA policy on minimum clearance height and depth*.

[13] (MGN 371 *"**Offshore Renewable Energy Installations (OREIs) - Guidance on UK Navigational Practice, Safety and Emergency Response Issues.",*** MGN 372 *"**Offshore Renewable Energy Installations (OREIs): Guidance to Mariners Operating in the Vicinity of UK OREIs".***

Risk management and emergency response

Risk management provisions should be formulated from the results of a site specific risk assessment that accounts for recreational craft. Recreational craft can be generalised as 'small craft' which are defined by the MCA as those craft under 24m in length. This distinction is important when it comes to equipment and other requirements for small and large craft. Guidance was developed in 2005 to outline the requirements for assessing the navigation impacts of offshore wind farms[14] .

For recreational craft, such an assessment should take into account the following parameters:

- The number, size and type of local vessels
- The number, size and type of national vessels
- Annual events that are not covered in a short term monitoring
- Wave height and sea state conditions
- Monitoring should be carried out during the high season
- A range of possible incidences

Any risk assessment should recognise that it is a theoretical process and that utilising historical data on the number of incidents reported to HM Coastguard from the area with no hazards in place may not adequately represent the situation with 30-300 installations in situ. It should also be recognised that not all incidents are reported to the Coastguard; generally only those that represent life threatening situations are reported. However, since commercial offshore wind farms have now been deployed in UK waters for five years, this experience should be fed into any risk assessment to provide an accurate and realistic predicted level of risk and enable a proportionate and practical set of measures to be put in place to address any unacceptable risk.

In order to effectively manage the risk of a vessel in distress drifting towards an installation, there needs to be an effective *Emergency Response System* in place. This will require the ability to shut down the moving parts, such as the turbines, when an emergency call is reported. In some cases, where traffic is high, a stand-by safety vessel may be required.

Safety Zones

The RYA's opinion remains that the creation of safety zones around wind turbines or other installations that exclude small craft on a wholesale basis are likely to be unnecessary, impracticable and disproportionate. In our view, such a restriction on the small craft's right of navigation is not justifiable in terms of safety and there is little possibility of enforcing such zones. In some locations, it may actually increase risk of collision as small craft may be pushed into the lanes of larger vessels or may have to make extended voyages.

European standards are now being established where small craft, under 24m, are exempt from any operational safety zones. The German Government was the first to recognise the negative implications of imposing safety zones on small craft and has exempted small craft from such zones. In principle the RYA has no objection to the creation of *advisory or precautionary zones* but such zones must be designed and implemented on a case-by-case basis and with due respect to the right of navigation. The RYA believes that the purpose of any *advisory or precautionary zones* should be to warn vessels to navigate with particular caution but they should not permanently restrict navigation or exclude recreational vessels. Wave and tidal technology is varied and is now the unknown factor when considering navigational safety impact. Nevertheless when these do not have moving parts within keel depth, their status as a hazard is in principle no different from that of a reef or other natural obstruction.

[14] Guidance on the Assessment of the Impact of Offshore Wind Farms: Methodology for Assessing the Marine Navigational Safety Risks of Offshore Wind Farms. 2005. DTI.

The RYA does, however, foresee occasions when it may be prudent to impose short-term temporary restrictions, for example during engineering, maintenance or construction works. Such temporary restrictions should be promulgated through Notices to Mariners. Many vessels visit the UK from continental Europe and this should be taken account of in any communication.

Cables and anchoring
A further issue relating to risk management is that of cables and anchoring. In most cases, small craft will not anchor within an offshore energy 'farm'. However, in emergency situations this may be the only way of securing a drifting vessel to ensure no damage is done. To secure the safety of navigation, cables should be buried to a sufficient depth to avoid being uncovered. This should take into account shifting sediments on the seabed.

Marking and lighting
As offshore renewable energy installations become more common in UK waters, the requirements for marking and lighting the sites should be consistent. This has been achieved for offshore wind and should be replicated for wave and tidal devices. Much work has been done in this field and guidance supported by RYA is available from Trinity House or the Northern Lighthouse Board as appropriate. For wind farms, as a minimum each turbine should be clearly marked in high visibility yellow paint to a height of 12 m, low level lighting should allow the turbine number to be read from a 'safe' distance, corners of the wind farms should be marked and any other points or routes through the wind farm marked accordingly. Wave and tidal developments vary dramatically in their design and the marking and lighting of these installations will need to be developed carefully. Wave power units that lie low in the water and that may move within an area of water, such as Pelamis, will be particularly hazardous to small boats and effective marking and lighting will be essential.

The RYA supports the guidance issued by the relevant light house boards on these issues and works with them to identify site specific issues that may occur.

Effect on small craft navigational and communication equipment
All craft larger than a dinghy will have some form of navigational equipment on board. The most common will be a magnetic compass. Large quantities of steel, cabling and the transmission of electrical power may produce interference with the magnetic compass. Studies have shown that the effect on systems such as GPS, VHF and mobile phones from wind farms is negligible. However, there is a demonstrated effect on radar systems which reduces the visibility of small craft to search and rescue vessels as well as to each other and larger commercial vessels. This causes concern when large wind farm developments are sited close to commercial shipping lanes and obstruct small craft routes avoiding these commercial routes or at the confluence of routes.
Problems may be found with small craft navigational equipment, which is not as powerful as commercial varieties, when we start consider installations further offshore. Antennae are likely to be lower and less powerful than many larger commercial vessels.

Any proposed development should account for the effect on small craft navigation and communication equipment in detail

Weather
Local weather conditions should also be examined in the risk assessment and measures taken to reduce the effects of poor weather conditions, low visibility and fog should be included in the risk management plan. Installations may need to have fog horns attached for low visibility conditions.

2. Location

The location of offshore energy installations is going to be crucial to navigational safety as well as potential loss of amenity for recreational craft. It should also be noted that commercial routes and shipping lanes do not represent those routes taken by small recreational craft. Whilst these routes will vary, the RYA, has collated these routes into the *UK Coastal Atlas of Recreational Boating* which is available from the RYA and which details cruising routes, sailing areas and racing areas as well as the location of marinas, RYA affiliated clubs and recognised training centres. This document should be consulted when considering the location of offshore energy developments and when writing an environmental statement.

Recreational routes, general sailing and racing areas must be accounted for when examining the impacts of wind farm developments.

Loss of cruising routes

When examining the routes and location of turbines it is important to recognise that sailing boats behave differently to power driven craft in that their actual line of travel may zigzag across the ultimate direction of travel as they are dependant on the wind direction. The coastal atlas should be consulted as well as any other available information to inform the siting of the developments and individual installations and the potential provision of navigation routes through the larger sites.

Along many stretches of coast, recreational craft may need to seek shelter in poor weather. Sheltered harbours and anchorages and routes to these harbours of refuge should be protected. These are identified as essential routes in the Coastal Atlas.

The loss of routes will also lead to an increased distance of travel. This has environmental implications for powered craft and safety implications for all craft. Some routes, typically narrow channels or strong tidal flows, may already be hazardous at times to navigate through and adding hazards in these areas may seriously compromise navigational safety. There are also safety issues with the creation of turbulence and wind shadowing in confined areas where craft may be moving slowly and gusty turbulent conditions may create problems.

Squeeze into commercial routes

Recreational routes differ from commercial routes as recreational craft essentially aim to keep out of the major commercial navigation routes by travelling in the shallower adjacent waters or taking other routes entirely. As a result, examining commercial routes alone will not enable the safe positioning of OREIs, recreational boating must also be accounted for. This may require routes through large developments to be identified or inshore routes for smaller craft to be safeguarded. The cumulative impact of all marine developments is becoming increasingly important when assessing these issues of squeeze.

Effect on sailing and racing areas

Most of the general day sailing and racing areas are close to the shore and in the more sheltered waters. The Strategic Environmental Assessment for Round 3 offshore wind development[15] recognises the busy inshore areas and states that the majority of offshore wind development should be beyond 12nm. European standards are again being set by Netherlands and Germany who have excluded any development within 12nm from the shore in order to retain 'open space' for its amenity and recreational value. Recreational activity is important to the health and wellbeing of the community as well as economic support for the local coastal economies. Retaining the undisturbed remoteness of some waters will be important in terms of its wilderness and amenity value.

[15] Offshore Energy Strategic Environmental Assessment: Post consultation report. June 2009. DECC.

In certain confined areas and areas heavily used for sail racing, the effects of wind turbines in terms of turbulence and shadowing on craft should be taken into account.

Any interference in wind speed and/ or turbulence created by a wind farm in a racing area would create a significant negative impact on the event site and diminish its value.

Cumulative effects
Of increasing concern with the planned number of developments is the need to assess each development in its wider surroundings. The *cumulative effects* of offshore energy installations on navigation routes will be increasingly significant. Existing navigation routes affected by other proposed development sites will need to be accounted for, rather than only current routes.

3. End of Life

Dereliction
Whilst we would hope that these installations remain economically viable for the lifetime of the structures, the RYA would support measures taken by Government to secure the financial implications of removing the structures, prior to consents been given. This will ensure that after the installation ceases electricity production for whatever reason, derelict structures that are not marked or lit and remain a hazard to navigation and anchoring are not found in UK waters.

Decommissioning
Equally, any decommissioning plan needs to ensure that the structures are completely removed. Any parts of the structure remaining after the commercial operation of the installation may pose a hazard to navigation and should be avoided. However, we recognise that secondary uses may be identified for these structures once energy generation ceases. If structures are to remain in the water, navigational safety must be taken into account and structures should be appropriately marked and lit.

4. Consultation

Consultation with the RYA should be through the Headquarters in Hamble and the Scottish, Welsh and Northern Irish offices who can coordinate wider consultation with their regional environmental coordinators, the clubs and individual membership and if needed, help to coordinate stakeholder meetings.

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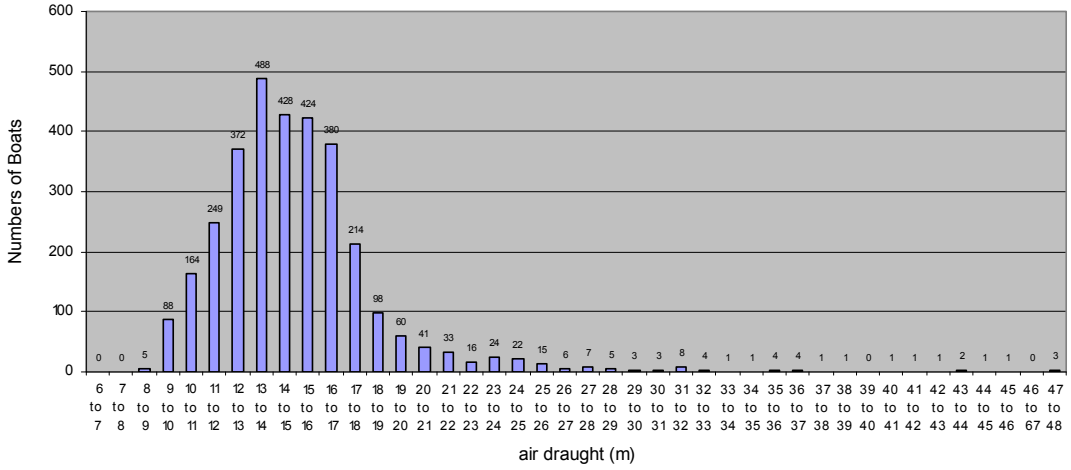
Development of the RYA policy on minimum clearance height and depth

The RYA has developed its position on clearance height and depth on the available data. Firstly an estimation of the air draught of the national fleet of yachts around the UK was established with the knowledge that these types of yachts may be found in all UK waters, this data is taken from the Royal Ocean Racing Club (RORC) Rating Office's database. Although there are other rating systems in use, the RORC system is widely accepted and applied worldwide. Rating is a technical handicapping process that enables adjustments to be made to yacht racing results so as to allow a wide range of different boats to be raced on equal terms. The boats contained in the database are mainly cruisers and yachts. Many yachts taking place in club races are registered with the RORC Rating Office. The RYA believes this data, containing 3179 records, is a good representation of the type of yacht to be found sailing around the shores of the UK. Although the total number of yachts around the UK has not been quantified, this database represents 6% of the total number of boats owned in the UK, estimated at 564,000 (BMF, 2003).

'Air draught' as presented here is the distance from the waterline to the top of the mast structure. This is based on the 'p' measurement, boom to top of mast, in the rating system (RORC, 2003). Two metres have been added for the distance from the boom to the water surface, which is a conservative estimate for the larger vessels. It should be noted that masthead equipment and instrumentation has not been included in the calculation of air draught, although it will also add a further half to one metre to the air draught of a yacht. Loss of this equipment may produce failure in communication from the yacht although not structural failure to the yacht.

Figure 1: Graph showing the air draught in metres of the boats within the IRC fleet (sample size=3179)



Looking at the above data in the form of percentage of the UK boating fleet, we can see the percentage of recreational yachts at risk from different rotor clearance heights. Figure 2, shows that a clearance height of 14 metres above sea level will put 57% of the national fleet at risk from rotor height collision. Reducing this to 18 metres above sea level, substantially reduces this percentage, however it still leaves 12% of the national fleet at risk from rotor height collision. This is still an unacceptable level of risk to the yachts found in UK waters. A clearance of 22 metres has been shown to be possible in engineering terms, which would put 4 % of the national fleet at risk, a more acceptable level of risk in the view of the RYA. As a matter of common observation, larger yachts over 18 metres in length (see Figure 3), representative of this 4% group are more likely to be run by highly experienced crews and skippers. The datum of mean high water springs (MHWS) is taken as the clearance datum

rather than mean sea level and then factoring in a site specific wave height parameter. However, wave height should be examined in the risk assessment at each site. It should be noted that 22 m above MHWS has already been specified as a minimum clearance height in several of the wind farms consented in the first round of consents and is therefore a feasible, cost-effective option for developers.

It should also be noted that while this is currently an acceptable level of clearance, yachts are increasing in size and future developments may require a greater clearance height.

Figure 2: Graph showing the percentage of boats in the IRC fleet with different air draught shown in metres (sample size = 3179**)**

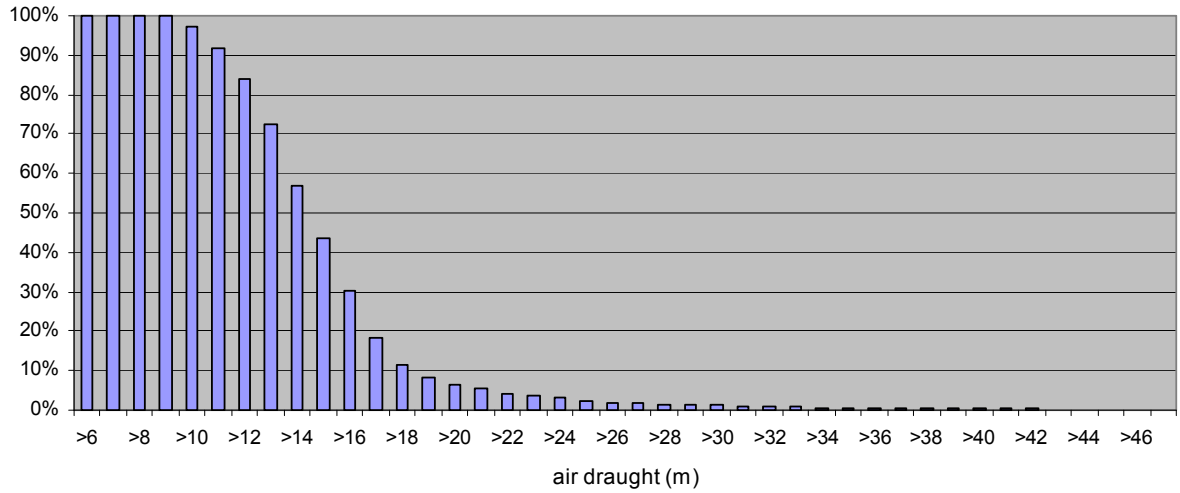
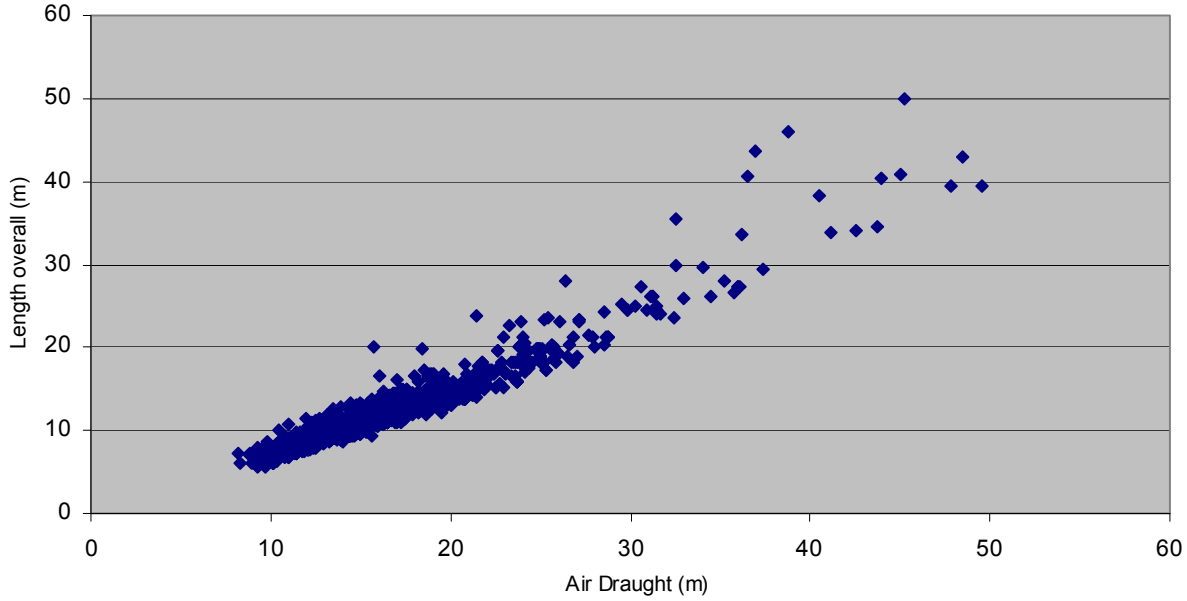
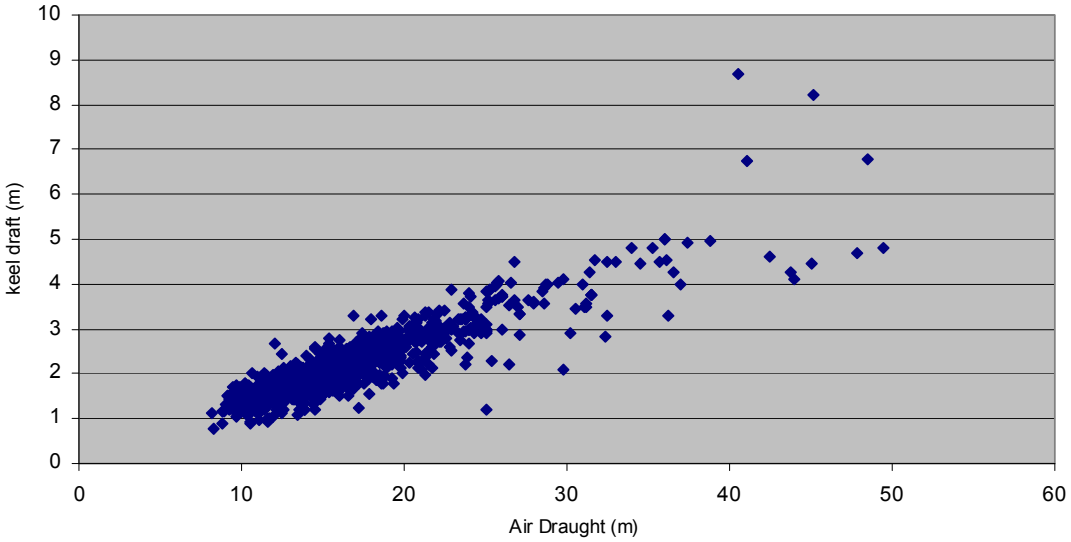


Figure 3: Graph showing the relationship of Length Over All (LOA) in metres and air draught in metres of the IRC fleet.



Additional data is provided showing the relationship between air draught and the depth of water required for clearance below the vessel's keel (Figure 4). Figure 4 shows that a depth of 3.5 metres corresponds to an air clearance of 22m above MHWS which is relevant for subsurface wave and tidal developments.

Figure 4: Graph showing the relationship of water draft in metres and air draught in metres of the IRC fleet.



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RORC (Royal Ocean Racing Club). 2003. IRC/IRM Yearbook. London

BMF (British Marine Federation). 2003. *Marine Leisure Industry European Overview*. Egham, Surrey.

Annex 3 – SCA Renewable Energy Policy

Introduction

In passing the Land Reform (Scotland) Act 2003 the Scottish Parliament has provided a statutory right of access to inland water and confirmed the customary freedoms of access that paddlers have always enjoyed in Scotland.

However, the quality of the resource that we take access to, Scotland's rivers, lochs and coastal areas, is coming under increasing threat from various types of development, most notably at the current time from renewable energy proposals. Whilst the Scottish Canoe Association (SCA) welcomes the passing of a statutory right of access, we are concerned that the canoeing resource in Scotland does not suffer from damage by inconsiderate or poorly planned renewable energy schemes.

With this in mind the SCA has developed a Renewable Energy Policy in order to express our concerns about the value of the places where canoeing takes place and to explain to developers, planners, government agencies, councillors and politicians the views that the SCA holds and the kind of sites that we would wish to see protected from development.

Throughout this document we will use the generic term canoeing to refer to the use of both canoes and kayaks.

Policy Context

The SCA believes that government should make the promotion of energy efficiency a much higher priority. There is a fundamental issue with causing damage to our natural heritage in order to generate energy that is then wasted on inefficient appliances, under insulated buildings and overly relaxed public attitudes to use of energy.

The SCA recognises the global problems associated with carbon emissions and climate change, and accepts there is a need to alter our sources of energy and societal attitudes towards use of energy.

The appendices to this policy statement describe the historical context to the SCA's involvement in the energy debate as well as the current relevance of national energy policy. The appendices then go on to review the trends in hydro and marine energy development.

The SCA's policy for dealing with Renewable Energy issues is set out below.

SCA Policy

1. The SCA wishes to be involved in the debate on the future of the nation's energy policy in order to play a proactive role in determining the impact on water that canoeists make recreational use of.

2. The SCA seeks to work with developers, agencies, consultants and planning authorities to help identify potential conflicts between canoeing and proposed renewable energy projects. The SCA believes that early consultation should lead to the avoidance of damaging conflicts between recreational interests and energy companies.

3. The SCA will form a view on each new renewable energy proposal taking into account a number of factors. These include: the likely impact on paddling interests; the importance of the water body involved in paddling terms; the protection of scenery and a judgment on any cumulative effect of a range of different renewable projects.

4. We are concerned that good rivers are being threatened for a very small power output in return. Therefore, in assessing any proposed energy scheme the SCA will perform a

power output to canoeing interest comparison. We believe this will enable us to consider and compare two important factors: what is being lost and what is being gained.

5. Where the canoeing value of a river is not so great that we would wish to see the proposed development stopped we will work with the developer to comment on the safety aspects of the inlet and outlet features, negotiate shut down days for the river to be paddled and in most cases request an online river level gauge.

6. The SCA will oppose renewable energy proposals when we consider the watercourse or coastal area that is under threat to be of national or international value to our sport.

7. The SCA is concerned that building barrages in estuaries could hinder navigation and introduce safety issues for paddlers. Any barrage should have continuously navigable channels near the coast to ensure safe passage for canoes, kayaks and other small craft. The possible ecological and silting problems caused by tidal barrages are also of concern.

8. The SCA seeks to protect our finest coastal scenery. Scotland's coastline is the most scenically attractive in Europe and should be offered special protection to recognise this. Major developments on our remoter and most scenically attractive stretches of coastline should be resisted and will be opposed by the SCA. The SCA would prefer to see offshore wind turbines located well out to sea; and tidal and wave power stations either out to sea or located entirely below the surface of the water.

9. The SCA is concerned about the safety implications of certain marine renewables and the consequences for sea navigation. For this reason we are opposed to developments on stretches of coast that would require small craft to go further out to sea to navigate around or stop paddlers from landing on the coast in an emergency.

10. The SCA is concerned about the access implications of marine renewables on the water close to the coast and in the coastal zone. We are opposed to developments on the sea and coastline that limit where small craft can navigate. Where it is necessary to have renewable energy installations or their shore facilities near the coast, existing launch sites should be preserved. Where it is necessary to use part of the coast for the installation, provision of car parking and access to the water for recreational users should be maintained or improved as part of the installation. The principle of multiple uses for coastal sites should apply.

11. Tidal energy represents the only form of renewable energy that could produce large amounts of new base load energy. For that reason we believe it is inevitable that tidal energy will eventually become widely utilised and will contribute to our nation's security of supply. We would like to see a locational strategy drawn up well in advance of Scotland's tidal energy being harnessed.

12. The SCA is concerned that starting up and shutting down turbines can cause rapid and artificial fluctuations in river levels. This could cause problems for canoeists, as well as anglers and other recreational visitors, especially in gorge sections of white water rivers. The artificial altering of water levels by hydro schemes switching on and off could lead to accidents or contribute to existing incidents turning into accidents. The SCA will assess the safety implications of any proposed scheme on paddlers. This will require information on the anticipated normal running regime for the turbine and the implications of an emergency shutdown. The anticipated number of controlled start ups and shut downs on a daily basis and the speed at which the water levels change will be required to carry out this assessment.

13. The SCA believes that water release information from existing hydro power stations should be more freely available to canoeists so that more recreational use can be made of the water.

14. The SCA seeks to work with developers and energy companies to secure good quality access facilities that will assist canoeing, such as passes navigable by canoe and footpaths round new obstructions on the river as well as car parks close to the access and egress points on controlled rivers.

15. The SCA believes the practice of cutting the capacity of existing hydro schemes in order to qualify for subsidies is indefensible and should be stopped.

16. The SCA believes in the principle of early consultation being used to identify problems with proposed plans at an early stage and as a way of avoiding protracted conflicts between developers and opponents of a proposed scheme as well as generally improving the public perception of renewable energy.

17. The SCA believes that government should provide a lead by developing a locational strategy for all forms of renewable energy.

18. The SCA would like to see renewable energy developed in such ways that the need for unsightly transmission systems is reduced and any environmental impact is minimised. As renewable energy projects eventually move offshore we would like to see more use of sub-sea cabling, albeit with due care taken to consider the natural heritage value of our underwater ecosystems.

Appendix A

Historical Context

A great deal of hydro development took place in the Scottish glens in the post-war years. These schemes had a major impact on our upland landscapes, but they did provide energy to remote parts of Scotland for the first time. These schemes are still operational and providing electricity to the national grid some 50 years after they were built. The dammed storage schemes that were built in those days still provide electricity as well as predictable water for canoeing via releases in the form of freshets, which are primarily aimed at helping fisheries management but are sometimes specifically for canoeing events.

With the exception of the massive Glendoe hydro scheme, the modern day renewable energy industry appears not to be looking to build anymore dammed storage schemes. Whilst storage schemes do provide opportunities for good canoeable water during releases, the landscape impacts caused by their highly visible draw-down scars can be significant, and are considered unacceptable to a wide range of recreationalists, and this is one reason why they are not currently being seen as a viable proposition in Scotland.

The building of nuclear power stations in Scotland during the 1950s and 1960s led to the need for pump storage hydro schemes and the Cruachan and Foyers power stations were constructed for this purpose. Should government commit to replacing our ageing nuclear power stations there could be a renewed interest in pump storage. Should this happen there could be implications for high mountain lochs and the burns and rivers that drain them. The decision about our future commitment to nuclear power will be based on the political direction Scotland chooses to follow, but it could also depend on future developments in the international quest for power from waste free nuclear fusion as opposed to nuclear fission with its associated problem of how to dispose of the waste nuclear material. A return to nuclear power in combination with pump storage hydro would be likely to impact on a small number of mountain burns and the main concern to canoeing would be whether these were canoeable.

Appendix B

National Energy Policy

The UK and Scotland are undergoing a change in energy policy, partly brought about by ageing power stations and partly because of our Kyoto and other commitments to reducing carbon emissions. As well as reviewing our energy mix in terms of power sources, we also have to review our network for electricity transmission. The Beauly to Denny powerline upgrade proposals are highlighting the problems of landscape impact, health concerns and affect on property prices associated with overland pylons. With renewable energy production set to move increasingly offshore the arguments for sub-sea transmission lines becomes a more viable option. Also, the greater the amount of power produced the more economically viable the higher investment in sub-sea cabling becomes. Onshore transmission lines have a scenic impact for a number of recreational activities, including canoe touring on open water, especially lochs. Sub-sea cabling, on the other hand, would usually be buried well out to sea and should not have any impact on kayakers who generally keep close in to shore. We would have concerns that the places where cabling leaves the land or comes back onto land should be well protected, but the high voltages concerned would require that in any case. Our other concern in this area is that access to the foreshore is not affected by the building of shore based structures for new developments.

The comment is often made that if energy efficiency were taken more seriously we would not have to destroy valuable parts of our countryside in order to power inefficient electrical appliances and allow householders to leave their appliances on standby overnight or workplaces their lights and computers on overnight. The threat to our countryside in general, and canoeing resource in particular, would be lowered if more effort were put into the promotion of energy efficiency.

We believe the public perception of renewable energy is being harmed by contentious planning applications that create critical opposition. Anti wind farm campaigns, protests against the proposed Beauly to Denny powerline and objections to hydro proposals are all on the increase and the combined effect is of a growing opposition to renewable energy. This may also be having a related impact of increasing support for nuclear power. Public opposition to renewable energy proposals may eventually influence government policy, and developers may begin to take this opposition more seriously. A way in which developers can react positively is to seek early consultation with interested communities and to work to avoid key recreational and landscape sites with the intention of trying to achieve greater public support for renewable energy.

The SCA is concerned that the drive to increase the proportion of our energy derived from renewable sources is leading to a loss of support for renewable energy. Much of this opposition to renewable energy is coming from previous supporters of such energy. The terms renewable energy and environment-friendly have become inter-changeable, but in many cases renewable energy proposals carry a massive cost to the environment and this leads to the levels of opposition that such proposals are encountering. We believe the quality of our environment and quality of our recreational enjoyment of our environment should be given higher priority.

The economic value of tourism, and of segments of tourism such as adventure sports tourism, should be given greater recognition for the revenue it creates for the national economy. The scenic quality of the countryside is the foundation for the majority of that tourism spending.

Appendix C

Hydro Power

The current trend in hydro development is for run-of-river schemes. With no facility for storing water, only for running the water down a pipe parallel to the river, a run-of-river scheme means that the water in the river is either at its natural level if the hydro is not operating, or at a lower than natural level if the hydro is operating. In this respect a run-of-river scheme can only be to the detriment of canoeing. Furthermore, run-of-river schemes can create dangers, especially on constricted gorge sections of rivers, when the hydro system is being switched on or off and the water level is being artificially altered. Recent trends in hydro power generation and canoe design have led to power companies and canoeists being interested in the same types of rivers.

Run-of-river hydro developers are looking for relatively small rivers with a steep gradient, usually with a waterfall to increase the overall gradient. The development of shorter playboats, made possible by the advances in roto-moulded plastic construction over the past 20 years, has opened up for canoeing the narrower and steeper creek-type rivers with steep drops. This interest in the same type of river by the two different groups is causing a significant problem, and with the lack of storage facility in a run-of-river scheme there is little space for compromise. Where the potential impact is too great we would wish to see the proposed scheme being dropped, but where the value of the river to canoeing is not that great we would wish to comment on the safety aspects of the intake and outlet features, as well as agreeing some kind of system of shut down days when the river can be paddled and requesting that an online river level gauge be made available.

The changing trends within canoeing, mainly brought about by the radical transformation in the size, strength and manoeuvrability of white water canoes, means that rivers that were considered impossible then are now increasing in popularity. This trend towards paddling narrow creek style rivers is certain to continue into the future and is likely to increase the potential for energy production and canoeing to come into conflict.

Canoeing guidebooks cannot keep up with this trend towards exploring steep narrow rivers, so energy companies referring to such guidebooks is not going to be sufficient to gather an accurate assessment of a river's interest for canoeing. Furthermore, whilst some rivers are going to be paddled by a few but never become popular, others are going to become increasingly popular and are likely to be amongst Scotland's most paddled rivers in a few years time. The SCA is going to be far more concerned about protecting the latter category of rivers than the former.

With the increase in leisure time and disposable income in modern society, canoeing has become increasingly popular and as some enthusiasts have moved on to creek rivers so the availability of conventional kayaks, sit-on-tops and open boats has also led to increased paddling on the less extreme rivers, some of which may be of interest to hydro developers.

The avoidance of conflict between canoeing and energy companies can be avoided through the use of early consultation. The SCA responds to a number of scoping study requests for initial reaction to hydro proposals on behalf of various developers. This provides the opportunity to flag up at a very early stage the SCA's interest in a particular river.

The SCA is willing to work with the Scottish Environment Protection Agency, Scottish Natural Heritage and hydro developers in order to devise ways of avoiding conflicts of interest on strategically important Scottish rivers. We would hope that this willingness to work proactively and discuss ways of helping the industry identify key paddling rivers would be recognised and respected by all the relevant companies in the hydro power sector and that we can find ways to achieve protection for our finest rivers and burns so that they can be kept in their current state. We would enter into any discussions on the basis that the SCA retains the right to oppose proposals on any river or burn, and that we would still have the right to take part in any consultation exercise.

The SCA would like to see more commitment to micro renewable energy schemes. Micro scale hydro power has the potential to harness power from burns that are too small for canoeing, but which could produce power for single houses or small communities without causing damage to scenically attractive and recreationally important watercourses.

Appendix D

Marine Energy

The greatest source of renewable energy is undoubtedly from the marine environment. The potential for harnessing power from sources such as tides, waves and wind at sea are enormous and we believe the power generating industry will eventually make much greater use of these marine based energy sources. One of the huge advantages of harnessing tidal energy is that it is entirely predictable and when several geographically spread stations are used in combination it is capable of generating large amounts of base load power. This element of predictability gives tidal power an advantage over all other forms of renewable energy.

As marine renewable energy schemes become more commercially viable and the civil engineering capability develops further, it is likely the government subsidy system will adapt to encourage a wider range of technologies. As this happens it is inevitable that developers' interests will turn increasingly to our estuaries, coastlines and the open sea.

The greatest resource enjoyed by sea kayakers in Scotland is our stunning coastal scenery. Our concern with marine renewables is therefore the impact on the scenery, especially close to the coastline. Man made developments close to shore also represent a significant safety concern as they can force small craft such as kayaks and dinghies to go out to sea in order to travel around them, which in times of bad weather or poor visibility can make them serious hazards to navigation. For these reasons it is preferable from a kayaking point of view if marine energy developments are located further out to sea or contained below the surface of the water.

The potential amount of renewable energy available in our estuaries is massive. However, renewable energy in estuaries can be harnessed with or without the need for tidal barrages. Barrages mean that greater amounts of energy can be produced, but experience from overseas suggests that they lead to enormous ecological problems with the silting up of the estuary and a gradual reduction in the amount of power produced. We believe the tidal flow can be harnessed in estuaries without the need for barrages, and with a predictable flow of water we see this as a form of renewable energy worth harnessing as long as it is developed with recreation and nature conservation firmly in mind. Scotland's estuaries are valuable areas for recreation and canoeists make great use of these vast expanses of water. Whereas a barrage would affect the ecological balance of an entire estuary, a non-barrage power plant would have a more localised ecological impact and could be designed so that it would not have a significant impact on recreational water craft.

There are certain locations around the Scottish coast that hold the potential for truly massive amounts of tidal power to be generated. The Pentland Firth is perhaps the most obvious example of a natural power source that could one-day produce sufficient power to replace a major fossil fuel power station, but there are several other locations around the Scottish coast that could be of interest to energy companies searching for tidal energy projects. The civil engineering capability entailed in such a proposal could be a significant hurdle to such schemes, but as that barrier is overcome we are likely to see a move towards more tidal power generation facilities being proposed. From a kayaking point of view the massive tidal races around Scotland are all of great interest to our activity and we would have concerns with any plans to develop within them any structures that would break the surface of the water. We are particularly concerned in this respect for the protection of Corryvreckan, which is one of a handful of tidal whirlpools in the world. Due to our concerns regarding safety and seascape already discussed in this policy document the SCA would wish to be consulted on any such planning proposals.

Structures on the surface of the water such as the Polaris wave machine and structures that break the surface of the water such as turbines mounted on vertical posts could present small boat users such as kayakers with serious safety issues. The risk of collision combined

with the navigational challenge of going around such structures could be quite significant, so we would always welcome the opportunity to comment on proposals for such developments.

Our final concern with marine renewable energy projects is the impact of any landfall facilities. Shore based infrastructure such as servicing facilities for sea based plant, wave machines and interface equipment between renewable energy generators and the grid have the potential to impact on the coastal landscape and restrict access to and along the foreshore. From a safety point of view, as well as aesthetic and access, we would wish to be consulted on proposals for such shore based facilities. The SCA's policy is that any shoreside infrastructure associated with renewable developments should be designed to minimise encroachment on the foreshore and that access to the foreshore from the land and water is preserved for kayakers and other recreational users. Any downside caused by the developer's shoreside infrastructure should be balanced by creating better pathways, car parking and access to the foreshore and water for recreational purposes.

17 December 2008

Annex 4.

DEVELOPER APPLICATION AND ENVIRONMENTAL STATEMENT CHECKLIST

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

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

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

HSE

Health and Safety Executive

Hazardous Installations Directorate

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Head of Unit
Ms. Anne Wilson

Moray Offshore Renewables Ltd
40 Princes Street
Edinburgh
EH2 2BY

05 OCT 2011

Date: 4th October 2011

Our Reference: eia/moray offshore
Your Reference:

Dear Sir/Madam,

ENVIRONMENTAL ASSESSMENT FOR PROPOSED TRANSMISSION INFRASTRUCTURE DEVELOPMENT FOR MORAY OFFSHORE WINDFARM

Thank you for your letter of 19th September 2011 asking what information should be provided in the environmental statement for the proposed development above.

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.

Yours faithfully,

Luke Frissung

pp **Mrs Jo Walker**
HM Principal Inspector of Health & Safety

1.3B78

Northern Lighthouse Board

CAPTAIN PHILLIP DAY
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Your Ref: Peter Moore - 190911
Our Ref: AJ/OPS/CPA/O6_01_085

Mr Peter Moore
OFTO Consents Manager
Moray Offshore Renewables
Moray Offshore Renewables Ltd
40 Princes Street
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EH2 2BY

28 Sept 2011

APPENDIX 1.3 B

Dear Peter

Scoping Opinion for the proposed S36 Application for the Outer Moray Firth Wind Farm Transmission works.

Thank you for your letter dated 19 September 2011 regarding the scoping opinion on the proposed Section 36 application for the Outer Moray Firth Offshore Wind Farm Transmission Infrastructure and proposed cable export routes within the Moray Firth.

With regard to the consultation and the scope of the assessment, we would only comment on any part relating to Shipping and Navigational Safety contained within section 5.3.3 of the supporting documentation. 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.

We would advise that the Northern Lighthouse Board has noted the information and data collected by means of AIS tracking, but would request that in addition to this data gathered as described in 5.3.3.1, radar and visual data collection should be carried out to ensure greater validation of information relating to the smaller fishing and leisure craft transiting or operating within the area of consideration. We therefore concur with your intentions stated in section 5.3.3.6. As detailed in section 5, a Navigational Risk Assessment is required making best use of all vessel data sources.

We would also advise that in regards to the various types of support structures presently being suggested and discussed for the offshore sub-stations, any recommendations for marking and lighting would be best delayed until we have received a final decision and selection on the preferred design option.

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. We would then require that Lit Cable Marker Boards should be positioned as near as possible to the shoreline so as to mark the points at which the cable comes ashore. The Cable Marker Boards shall be diamond shaped, with dimensions 2.5 metres long and 1.5 metres wide, background painted yellow with the inscription 'Cables' painted horizontally in black. The structures shall be mounted at least 4 metres above ground level, with a navigation light flashing yellow once every five seconds (Fl Y 5s) mounted on the upward apex of the board. The nominal range of these lights should be 3 nautical miles.

All navigational marking and lighting of the site or its associated marine infrastructure will require the Statutory Sanction of the Northern Lighthouse Board prior to deployment.

We would require that the cable routes, offshore sub-stations and cable landing points should be communicated to the United Kingdom Hydrographic Office in order that all relevant charts and publications can be correctly updated.

I would be obliged if any further communication to the Northern Lighthouse Board can be sent via fax on 0131 220 0235, e-mail to navigation@nlb.org.uk or our postal address as per the letterhead.