AOWLF may also look at increased monitoring of elements of the infrastructure (turbines, foundations, cables) but also the operating conditions (wind, wave and tidal forces) which would improve understanding of wind farm design and operation to ensure increased efficiency and operation.

Environmental Research and Development Opportunities

A key aspect of the proposed EOWDC is to encourage and enable environmental monitoring through ongoing research and development in advance of the larger build and operational experience of Scottish Territorial Water Developments and Round 3.

The agreed environmental monitoring programme would be in addition to the industry norm and would seek to answer outstanding questions on environmental impacts of offshore wind, which will be of benefit to all stakeholders. The programme would provide stakeholders with information on the environmental impacts of new technologies, processes and operations, and the Applicant hopes to encourage University level research especially that from University of Aberdeen and the Robert Gordon University.

There is potential for an Ocean Laboratory that could hold meteorological masts, environmental monitoring equipment and be used for access training. The inclusion of an Ocean Laboratory would allow environmental monitoring, both during and after deployments, but would be subject to a separate consenting application. Alternatively, if the R&D committee advise that alternative research options that do not rely on an offshore structure would yield better results and value for money, then these will be considered by AOWFL.

The environmental effects of the deployment centre could be closely monitored and data collected prior to Round 3 offshore wind farms being installed. Not only will the R&D further develop a baseline measured environmental position in Aberdeen Bay, but monitoring will continue through construction and operation and will remain in place during construction and early operation of the Round 3 developments in the Moray Firth and Forth Estuary in order to aid the assessment of potential cumulative impacts of eastern Scottish offshore wind farm developments and communicate these findings to stakeholders.

Via the EU grant, a proposal has been made to allocate in excess of £2.7 million, funded jointly by the Applicant and the EU to environmental studies until 2016 including the development of environmental research with external partners (this funding is over and above the costs of the met mast Ocean Lab). Details of exact activities, and confirmation of EU matched funding will be achieved as research proposals and requirements are received and selected.

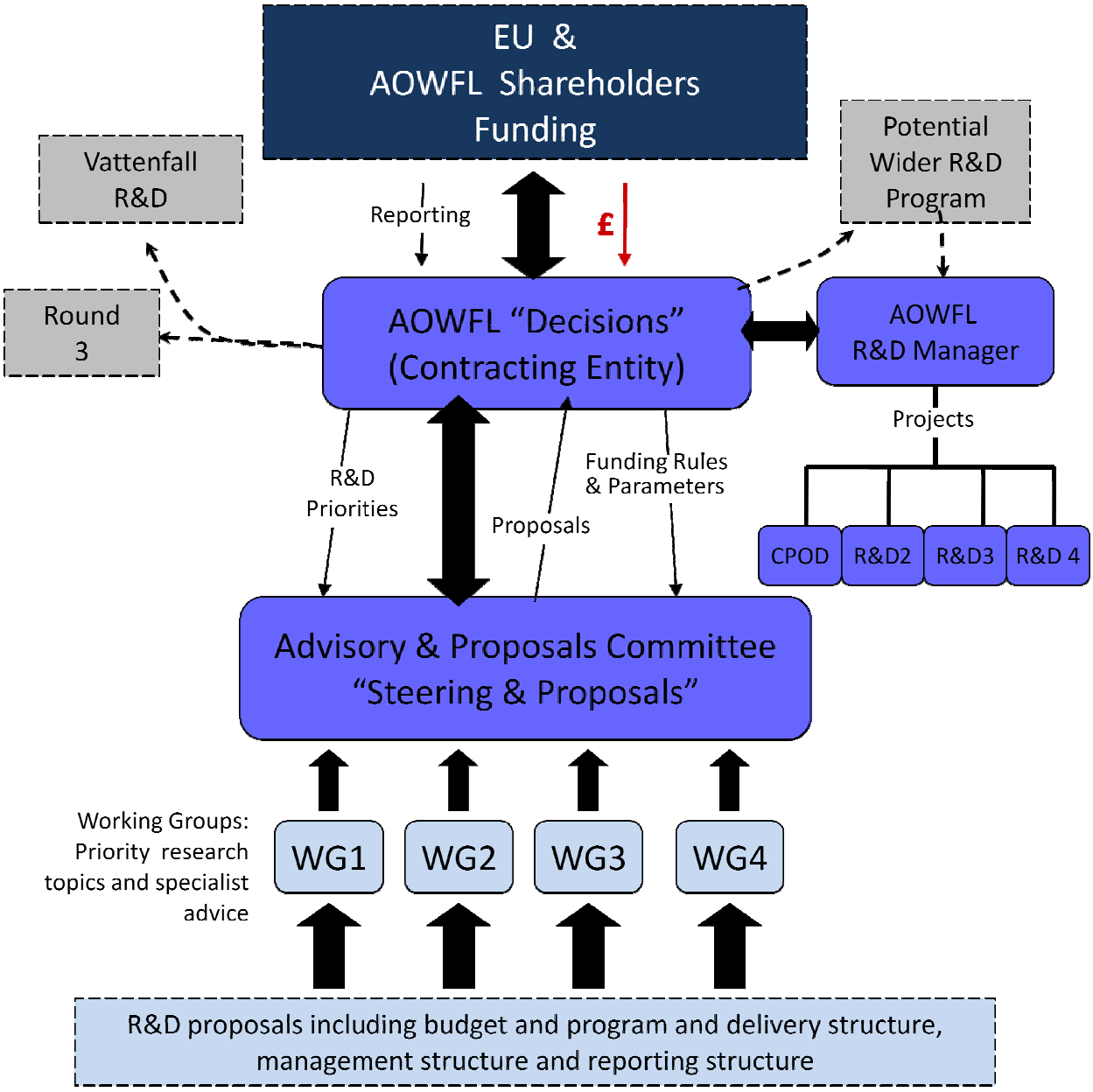
The EU funding package is intended to undertake on-going environmental research and sharing of knowledge with other EU organisations, communication with stakeholders and industry bodies.

AOWFL will undertake a programme of environmental monitoring of the impact of the wind farm development as part of the consenting process. The environmental programme offered seeks to answer outstanding questions on environmental impacts of offshore wind and especially cumulative impacts of multiple wind farm development, which will be of benefit to all stakeholders.

Deliverables include 1) Feasibility study on environmental research options and 2) Further deliverables determined as a result of the above.

A project part-funded by the European Union under the European Economic Plan for Recovery in the field of Energy

R&D: Ongoing Environmental Research



Key:-

£ Funding

Reporting Lines

Info / Advice / Regulatory issues

Please note that the ES contained an error which states that the EU funding extends for the lifetime of the wind farm project. This is not the case, and only extends for the lifetime of the EU grant i.e. until the end of 2016. Therefore, the £2.7M committed from project funds and EU funds will have to be expended by end of 2016. Subject to funding being available at the time, the environmental R&D programme may continue via the Vattenfall R&D program, and in principle this has been agreed already but will be subject to a proper justification and evaluation process.

In parallel it is hoped that the environmental monitoring work within the spinoff deployment centre business becomes successful and it is envisaged that support funding could be used to pursue further grants from the EU and wider sources to continue the R&D. It is also hoped that the spin off wider R&D 'hub' becomes self funding prior to the termination of the EU contract

Proposed High Level Management Structure for R&D Management

AOWFL is commencing a feasibility study to scope out the potential environmental research opportunities for the site and will encourage input from interested parties including statutory nature conservation agencies and research organisations and external Consultants working in the offshore wind sector. AOWFL has developed a project for the deployment of acoustic listening devices (Cpods) however progress has been affected by heritable fishing issues which require resolving ahead of the Cpods being deployed.

Proposed mechanisms for how to manage and deliver the environmental projects and how to handle environmental project proposals are shown below. This is a preliminary high level proposal as how to deliver the ongoing environmental research programme. The exact mechanics of how research proposals are funded or executed need to be finalised.

In preparing this proposal the following establishment principles were considered:

- The structure must enable statutory nature conservation bodies to identify preferred R&D priorities and the opportunity to steer meaningful research which will improve the information base or improve uncertainties around specific environmental impacts of wind farms, particularly associated with new technologies, and installation methods (such as innovative foundation types, new turbines etc).

- Meetings must be manageable and efficient and thus it is envisaged that topic working groups are established for instance, working groups for marine mammals, another for ornithology, another for fisheries etc. Suggestions associated with topics are welcome.

- Due to funding rules, any projects funded by the EU must be managed by AOWFL (Vattenfall and AREG being the defined co-beneficiaries) and the expenditure of EU monies is subject to strict controls and criteria associated with procurement, value for money and expenditure deadlines.

- An environmental R&D manager will be initially appointed by AOWFL to manage projects directly funded by the EU grant monies and any possible additional projects funded from Vattenfall R&D Programme.

- The Environmental R&D manager will be the delivery manager for projects funded directly via the EU and/or Vattenfall.

- In the future, there may be a wider R&D program through the spin-off deployment centre for which feasibility studies are about to commence. It is anticipated that linkages and joint R&D programs with universities and industry will be served through this route. AOWFL may chose to delegate all management of the R&D program to the spin off R&D hub if successful.

- The Environmental R&D manager will form the main linkage between wider RnD program, including linkages with external parties including but not limited to Renewable UK Consents and Licensing Group and Strategic Ornithological Support Services.

Draft terms of reference of Advisory & Proposals Steering Group:

Whilst detailed terms of reference will be developed following their establishment the suggested role of members includes the following:

- Provide a co-operative base from which to share environmental R&D information relating to offshore wind farms, including responsibility for canvassing within own organisations
- Provide a cooperative base for an identifying priorities for environmental R&D to shortlist critical areas of research and to evaluate R&D proposals
- Provide a co-operative base for steering the delivery of environmental R&D projects at the EOWDC
- Provide a collaborative route for information dissemination and publication of R&D results from the EOWDC
- To provide strategic advice on enhanced stakeholder engagement
- To co-ordinate and lead consultations with project working groups

NB Standing membership may be supplemented by *ad hoc* arrangements/participation in meetings as appropriate subject to majority agreement.

NB Marine Scotland will nominate up to 2 individuals for the Advisory committee, preferably individuals who have access to other strategic Marine Scotland Fora such as the Marine Strategy Forum.

It is anticipated that the Advisory and Proposals Committee will meet at least twice a year.

Draft Terms of reference for Working Groups Group:

Whilst detailed terms of reference will be developed following establishment of suggested working groups, the provisional TOR includes the following requirements:

- To identify critical priority issues to take forward through discussions with the Advisory & Proposals Steering Group.
- To develop scopes for research projects through discussions with the Advisory & Proposals Steering Group.
- To support the technical evaluation of R&D proposals and to disseminate environmental R&D results within their organisations

- Following acceptance of the initial set of members, the group will having voting rights as to additional members or replacements due to staff changes, if required.

NB Each statutory nature conservation body will have the option to nominate representatives to sit on the relevant work groups.

It is anticipated that the working groups will meet a minimum of twice a year, but up to quarterly.

Draft Terms of reference for the Environmental R&D Manager:

With respect to the Advisory and Proposals Committee (as opposed to full job description) the R&D manager terms of reference includes the following requirements

- To identify and propose projects
- To oversee the tendering process
- To provide project management for the research projects
- To be the main contact for statutory nature conservation bodies via the Advisory and proposals steering committee and working groups
- To report project results to AOWFL and the Advisory & Proposals committee.

Preliminary Tasks (march- September 2012):

The initial tasks to be carried out over the next 6 months include the following

1. Establish Members of the Advisory and Proposals Committee
2. Establish working groups and members
3. Finalise TOR for committee and working groups
4. Feed into feasibility study to scope out the potential environmental research opportunities for the site, including appropriate timescales

Initial work on marine mammals and ornithological R&D:

The consultants Genesis have provided some preliminary ideas for R&D based on their experience of the site and suitability for areas of research based on the species present and abundance levels present, and also following on from consultee comments.

These have been discussed with the Vattenfall R&D group with respect to Round 3 priorities for research and some initial ideas are presented for consideration below.

Description
Noise measurements of construction noise (including both piling and other construction sounds eg vessel movements).
Mitigation of piling sound levels
Scour investigations of turbine foundations.
Changes to benthic communities (eg studies examining colonisation of turbines and area in-between turbines)
Collision risk studies on birds.
Tagging studies to better understand use of the area by specific seabird species
Radar studies at seasonal periods e.g. to better understand geese migration. (could occur from land, or from a fixed platform if the Ocean Laboratory is able to accommodate this).

Appendix 1: Responses from Statutory Consultees

1. Joint Dee, Don and Ythan District Salmon Fishery Boards
2. Marine Scotland Science
3. The Royal Society for the Protection of Birds in Scotland (RSPB Scotland)
4. The Scottish Environment Protection Agency (SEPA)
5. Scottish Natural Heritage (SNH)
6. The Scottish Wildlife Trust (SWT)
7. The Whale and Dolphin Conservation Society (WDCS)

Dee District Salmon Fishery Board

Andrew Sutherland
Marine Renewables Licensing Advisor
Marine Scotland – Marine Planning & Policy Division
Scottish Government
Marine Laboratory,
PO Box 101
375 Victoria Road
Aberdeen
AB11 9DB

28th March 2012

Dear Mr Sutherland,

Proposals for Delivering Environmental R&D Programme for EOWDC

On behalf of the three District Salmon Fishery Boards, along with the associated River Trusts, which serve a large part of the North East of Scotland i.e. the Rivers Dee, Don and Ythan, we welcome the opportunity to respond to the above mentioned proposal.

The three Rivers welcome the concept of the environmental programme to be run alongside the proposed wind farm development as all three Boards recognise that this trial development provides an excellent opportunity to gain a greater understanding on the impacts that such marine renewable developments can have on migratory salmonids. It is noted however that none of the potential projects identified to date appear to have any relevance to this specific issue in that initial considerations have been made for R&D work on marine mammals and ornithological interests only. We would take this opportunity to remind the developers of their legal responsibilities to Atlantic salmon under the Habitats Directive for the River Dee (Special Area of Conservation under the EC Habitats Directive 92/43 EEC on the Conservation of Natural Habitats and of Wild Flora and Fauna for Atlantic salmon).

River Office, Mill of Dinnet, Dinnet, Aboyne, Aberdeenshire, AB34 5LA

Tel No: 013398 80411 e-mail: info@riverdee.org www.riverdee.org.uk

This was one of the main points raised in our response to the licence application for the wind farm, as per our correspondence of September 2011.

The three Rivers would reiterate their opinion that a suitable environmental R&D programme should be operational prior to the construction phase of the wind farm so that baseline data can be collected. We consider this to be vitally important so that the different techniques employed in the various innovative methods of installing turbines can be evaluated against an established robust baseline and acted upon as necessary.

In view of the importance of salmonids, as highlighted by statute, not only to the ecology of the three rivers but also the value to the local economy we would request that we are represented on the Advisory and Proposals Committee and also on the pertinent Working Groups so that we can ensure that research relevant to Atlantic salmon and sea trout is conducted alongside the other environmental interests in a positive manner.

To this end the three Rivers would ensure that they committed the necessary manpower resources to the programme.

We look forward to working with you in a close, proactive and co-operative manner.

Yours sincerely

[redacted]	[redacted]	[redacted]
Mark Bilsby	Mark Andrew	Jon Davison
Dee District Salmon Fishery Board	Ythan District Salmon Fishery Board	Don District Salmon Fishery Board

River Office, Mill of Dinnet, Dinnet, Aboyne, Aberdeenshire, AB34 5LA

Tel No: 013398 80411 e-mail: info@riverdee.org www.riverdee.org.uk

From: Gareth.Jones@scotland.gsi.gov.uk [mailto:Gareth.Jones@scotland.gsi.gov.uk]
Sent: 22 March 2012 14:05
To: MS.MarineLicensing@scotland.gsi.gov.uk
Subject: RE: 018/OW/AOWFL - 9: Request For Comments R & D Proposals EOWDC: 27 February 2012

Hi Andrew

I ran this past Colin Moffat, Derek M and Ian D. Ian sent some brief comments which are outlined below.

Cheers

Gareth

Labelling the above 1-7

1. This is useful
2. Very useful
3. This would be an engineering issue and less useful for us
4. Lesser interest
5. Very useful if these ideas are new and provide useful additional information
6. Site specific and so not very useful, unless there are some novel ideas involved
7. This could be very useful but radar studies of bird movements in general and not just geese

Other ideas

- Displacement is a useful research target. Mainly with regards to birds but possibly to marine mammals or even fish (depending on what's present).
- Some work on fish, mainly salmonids but perhaps other species depending on what is present. Also looking at reactions of fish to magnetic fields form cabling.
- With regards to MSS input, we could help encourage the useful projects. In some cases, joint funding or collaborative work could be considered. Noise would be a good example. Behaviour of fish might be another.

Gareth Jones
Marine Ecologist
Renewable Energy & Marine Spatial Planning
Marine Scotland – Science
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w: http://www.scotland.gov.uk/marinescotland

Proposals for Delivering Environmental R&D Programme for EOWDC

Comments by RSPB Scotland

March 2012

Introduction

Thank you for offering us the opportunity to comment on this developing issue. We believe strongly that a detailed monitoring and research programme is an integral part of the underlying philosophy of this test centre, and is clearly necessary to discharge elements of the European funding package. RSPB Scotland would be happy to become involved in discussions over how these aspects could be taken forward. We note the vision for this project, as set out in the R&D proposals document (page 2):

The vision of the AOWFL project is:

"To deploy new equipment, systems, processes and initiate R&D to improve the competitiveness of Offshore Wind Energy production, whilst generating environmentally sound marketable electricity and to increase the supply chain capabilities in Scotland, the wider UK and Europe"

At the heart of the project is the interaction between a research, test and training centre with a small, highly innovative, commercially operated and highly instrumented and monitored offshore wind farm. The technologies deployed on the wind farm will provide supporting income to the centre and will offer potential opportunities including commercial R&D, testing and dissemination including:

- *Long-term environmental monitoring and improvement.*
- *University level research.*
- *Community, regional, national and international education.*

We consider that there are substantial opportunities here to ensure that we learn much more about the environmental impacts of offshore wind turbines and their operation in advance of much larger STW and Round 3 developments. These opportunities should not be missed, especially since it is made clear that the £2.7M allocated for environmental monitoring needs to be used by end of 2016. The development of the research aspect of the test centre without doubt provides a very strong basis for understanding more about a wide range of environmental issues, and importantly should allow the results to be made widely available as quickly as possible.

High level management structure

We note the proposed structure and do not disagree with it. RSPB Scotland would be keen to provide input and comment to the 'Advisory & Proposals Committee" and/or the various working groups, especially that relating to ornithology. We would request greater clarity as to the breadth of involvement envisaged for these two levels of group – for example, would a nature conservation NGO such as RSPB at least potentially be a member? There is much mention of "statutory nature conservation bodies", which may themselves nominate

representatives, but the interest and indeed expertise necessary to make these groups work effectively is not confined to the statutory sector. If the test centre R&D structure is to work as effectively as possible, its membership and inputs should be as broad-based as possible, and it should have to capacity to adapt flexibly to policy and research developments and novel technological change. Ensuring good information flows within the various management structures is crucial to this.

Ornithological research and monitoring work

RSPB Scotland's main interest lies with ornithological R&D work, though clearly there are substantial and logical extensions to a range of marine habitat issues and their interactions with other organisms. A well-designed and comprehensive research and monitoring programme should be developed that is innovative and inclusive. We note the table on page 9 of suggested R&D ideas from Genesis. The subjects suggested there are valid but are general high level topics. We would suggest that appropriate ornithological work could include:

- Methods of detecting and monitoring bird collisions in a marine environment (with emphasis on electronic monitoring and instrumentation)
- Deterrent methods to prevent bird collisions designed into the turbines
- Methods of turbine shutdown at times of high bird movements
- Studies of behaviour of birds in relation to turbines, especially during periods of bad weather (observational and instrumentation studies)
- Impacts of turbines on benthic ecosystems and food chains, and especially the ecology of any 'reef effects' that might develop
- The use of the turbine envelope for feeding by birds, and research into their food supply and how it changes
- A facility for the accommodation of bird observers in the offshore laboratory should be considered
- Tracking of movements of birds from nearby colonies should be funded (the RSPB's 'FAME' project is rapidly gaining cutting edge expertise here which could help inform this)
- The design of turbines and associated technology that not only test parameters relevant to the turbines themselves but which also plan in advance to test their environmental impacts.

Impacts of wind turbine operation on key species

In addition to the known important species covered by the monitoring studies for the EOWDC proposal, long-tailed duck and velvet scoter have just been reclassified by BirdLife International as globally threatened species. This is an example of how the changing conservation status of species can suggest adaptation in research methods to address their needs and potential problems. The Aberdeen offshore area could be a good place to learn more about these species interactions with offshore wind farms.

At this stage, then, many details of the potential R&D programme remain to be determined, but establishing a group that can advise of issues and begin to plan project work would seem to be an urgent priority.

Dissemination of data and research results, and storage of biological records

We believe that at a very early stage, a commitment should be made to ensure that ongoing research results are made available to all legitimate users and that constraints that can potentially undermine projects such as this, such as commercial confidentiality, do not restrict the utility of this R&D facility. There should be a presumption, for example, of early posting of preliminary results to a public website, with appropriate caveats. A clear statement of an open, interactive approach to this issue would be very welcome, as this would be a strong hallmark for a partly publicly-funded project that must be transparent in its ongoing work in order to maximise the public benefits.

Ian Francis
On behalf of RSPB Scotland
30 March 2012

At this stage, then, many details of the potential R&D programme remain to be determined, but establishing a group that can advise of issues and begin to plan project work would seem to be an urgent priority.

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Ian Francis
On behalf of RSPB Scotland
30 March 2012

Scottish Environment Protection Agency

Our ref: PCS/118935
Your ref: European Offshore

Andrew Sutherland
Marine Scotland
Marine Laboratory
PO Box 101
375 Victoria Road
Aberdeen
AB11 9DB

If telephoning ask for:
Nicola Abrams

26 March 2012

By email only to: ms.marinelicensing@scotland.gsi.gov.uk

Dear Andrew

R&D Environmental Research Paper: European Offshore Wind Deployment Centre Aberdeen

Thank you for providing SEPA with the opportunity to comment on this draft discussion document. We consider that the installation of an Ocean Laboratory located offshore would provide an ideal platform to monitor wider environmental processes within Aberdeen Bay. It could provide very useful information to improve our understanding of cumulative impacts of offshore windfarm development on nearshore coastal processes and associated marine habitats. The collection of water level, current flow and meteorological data, with associated water quality parameters, would provide extremely useful information for hydrodynamic model calibration and validation. This information would also contribute to improving our understanding of climate change and storm surge events.

The project could also look into the colonisation of marine structures by native and non-native species, and the feasibility of deploying monitoring equipment on the turbine monopiles located in offshore windfarms.

We would welcome the opportunity to input further to this project in due course.

If you have any queries relating to this letter, please contact me by telephone on 01224 266698 or by e-mail to planning.aberdeen@sepa.org.uk

Yours faithfully

Nicola Abrams
Senior Planning Officer
Planning Service

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www.sepa.org.uk

Scottish Natural Heritage
Dualchas Nàdair na h-Alba
All of nature for all of Scotland
Nàdar air fad airson Alba air fad

Andrew Sutherland
Marine Scotland
Marine Laboratory
PO Box 101
375 Victoria Road
Aberdeen
AB11 9DB

Your ref:

Our ref: CNS/REN/Offshore Wind/EOWDC – Aberdeen Bay

Date: 1st June 2012

By email only.

Dear Andrew

European Offshore Wind Deployment Centre (EOWDC)
Proposals for Delivering Environmental Research and Development Programme

Thank you for providing SNH the opportunity to provide comments on the proposals put forward by Aberdeen Offshore Windfarm Ltd (AOWFL) in taking forward a Research and Development (R&D) programme.

General Comments
The document separates the R&D options between technical, environmental etc, however we would stress that aspects of technical design, deployment options including methods of construction and operational maintenance are all aspects which can be influenced by or influence environmental considerations. It will therefore be difficult at times to tease out issues relating to the deployment centre from that of the commercial windfarm aim.

We also have some concerns that the final R&D environmental monitoring programme incorporates environmental monitoring required as part of conditions to any consent. Whilst we recognise there may be funding opportunities associated with a R&D programme, conditions to any consent should be seen as an ongoing requirement, to be financed as part of the overall investment strategy.

SNH very much support the opportunity that this R&D programme could provide to promote and enable the deployment of first of run turbines or pre- production innovative foundations; energy storage and Flexible Alternating Current Transmission Systems (FACTS) devices. There may be other elements also worthy of consideration that have as yet not been identified, but may come forward if the project is consented. We would be happy to continue to remain involved in providing advice as this programme is developed.

Specific Comments

Environmental research and development opportunities

The proposal for an Ocean Laboratory will need careful consideration, and this consideration should include:

- identification of consenting conditions and how these may be delivered;
- identification of what monitoring may be being planned for and or seen as data gaps prior to or as part of the roll out of Round 3 / STW sites, and
- timing of any consent and the availability of EU funding and what issues are identified for monitoring that can be achieved leading up to 2016 and the outcomes of the feasibility study on environmental research.

Proposed High Level Structure for R&D Management

We would welcome the opportunity to be involved in informing and commenting on the potential environmental research opportunities for the site. However as stated in our comments above we would require assurances regarding the relationship between requirements of any consent and how such requirements would be delivered and this wider research programme. This may have implications on the proposed structure; in so much as the delivery of conditions will be a compliance / enforceable related activity. The diagram may need to be amended to reflect this aspect further.

- Establishment principles

In terms of establishment principles, we welcome the consideration already provided to how the Advisory and Proposal Steering Groups may be established and operate, some of these details may be too premature and / or detailed at this stage, but we can provide further comments as the plans are developed. We would also point out that there may be opportunities also to consider environmental issues not just related to nature conservation issues (although these are likely to be key).

- Terms of Reference / Initial work on Marine Mammals and Ornithological R&D

Please note we are not able to provide any comments on these proposal as part of a R&D programme until the determination of any application, as many of these issues are areas we have identified as part of our advice on the application.

One final comment is related to the public availability of any research collected and we would recommend that all such data (analysed) is made available though an agreed process with Marine Scotland.

I trust these comments are helpful, please do not hesitate to contact myself (Erica.knott@snh.gov.uk 01738 458674) or Sue Lawrence (sue.lawrence@snh.gov.uk 01224 266517), if we can be of any further assistance.

Yours sincerely

Erica Knott
Senior Casework Manager – Offshore Renewables

From: akinninmonth@swt.org.uk [mailto:akinninmonth@swt.org.uk]
Sent: 26 March 2012 18:22
To: Andrew.Sutherland@scotland.gsi.gov.uk; MS.MarineLicensing@scotland.gsi.gov.uk
Cc: mkeegan@swt.org.uk
Subject: RE: 018/OW/AOWFL - 9: Request For Comments R & D Proposals EOWDC: 27 February 2012

Hi Andrew, thanks for sending this through and apologies for leaving it until the last minute to respond. I hadn't come across this before and in principle am supportive of the vision of the project which seeks to answer the remaining questions on the environmental impacts of offshore wind development. The testing facility for new technology is in keeping with our policy on wind farm deployment which calls for a precautionary phased approach – underpinned by excellent data, monitoring and adaptive management. Although it should be acknowledged that small-scale deployment and monitoring does not necessarily provide the information need to regulate large-scale developments.

We also believe that all research, baseline data collection and monitoring should be accompanied by effective and accurate communication of results, so it's pleasing to see requirements on dissemination included in the draft terms of reference.

The table on page 9 seems to cover the main topics – namely noise impacts of pile driving and potential changes to benthic habitats and foraging areas. One key research priority that SWT would like to see explored further is the capacity of wind farm infrastructure to increase local biodiversity by acting as artificial reefs and fish aggregation devices, which where appropriate are established concepts in ecosystem restoration.

I'd be interested to see how these various groups develop and would welcome where appropriate for SWT to be represented in some way.
Regards,

Alex

Alex Kinninmonth

Policy Officer - Living Seas
T 0131 312 4749 | | **W** www.swt.org.uk

Harbourside House, 110 Commercial Street, Edinburgh EH6 6NF

Scottish Wildlife Trust
Protecting Scotland's wildlife for the future

From: sarah.dolman@wdcs.org [mailto:sarah.dolman@wdcs.org]
Sent: 15 March 2012 07:04
To: MS.MarineLicensing@scotland.gsi.gov.uk
Cc: sarah.dolman@wdcs.org
Subject: RE: 018/OW/AOWFL - 9: Request For Comments R & D Proposals EOWDC: 27 February 2012

Dear Andrew

Thanks for circulating the draft R&D proposal for EOWDC.

The R&D proposal looks to be ideas rather than plans at this stage and I have no comments on most of the detail.

I'm interested in the initial work that is identified in the final table called 'description'. With a view to achieving best practise at the site, some other ideas that we would be interested to pursue include:

1) Alternatives to pile driving - as Jim will remember this was raised as a required priority during a number of presentations at the recent Crown Estate Workshop on Marine Mammals and Noise and could be considered to be truly innovative;
2) Understanding impacts on marine mammals – including desk based studies to understand individual and population level impacts (including cumulative impacts), for bottlenose dolphins and seals, as well as other nationally important species, including harbour porpoises, minke whales and white-beaked dolphins;
3) Understanding impacts on marine mammals – field studies to investigate and ground-truth disturbance and habitat displacement, for those species listed above. Given the existing lack of data on potential impacts on species (perhaps other than porpoise studies in some parts of Europe, recognising that results at each site are variable);
4) Using appropriate noise measurements to understand disturbance impacts on marine mammals;
5) Understanding impacts on prey species – where marine mammals are feeding in the vicinity; and,
6) Effective mitigation is critical. We fully support efforts to develop innovative mitigation of pile driving noise, both in the vicinity of the source to limit injury and further afield in order to limit disturbance. Limitations in existing techniques and resulting lack of certainty surrounding effectiveness need to be explicitly stated.

WDCS would be happy to participate in discussions surrounding the development of a full research plan that includes marine mammals where appropriate.

Thanks,
Sarah

www.vattenfall.co.uk/en/aberdeen-bay.htm

VATTENFALL

Technip

areg
Aberdeen Renewable Energy Group

A project part-funded by the European Union under the European Economic Plan for Recovery in the field of Energy