

## Dinsdale R (Rosanne)

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**From:** Ove Vold <ovvo@statoil.com>  
**Sent:** 09 August 2016 14:43  
**To:** Dinsdale R (Rosanne); Steinar Eldøy  
**Cc:** Queiros J (Joao); Aires C (Catarina)  
**Subject:** RE: EPS application - Hywind Scotland geotechnical survey near FPS

Hi Rosanne,

I have provided some additional information below on justification and alternatives. Hope this information is sufficient.

### **EPS Application – Hywind Scotland UXO verification and clearance:**

#### **Justification (ref. section 6):**

The UK has committed to sourcing 15% of its total energy needs from renewable sources by 2020 under the 2009 Directive on Renewable Energy (2009/28/EC) including electricity, heat and transport. The UK and Scottish Governments have also made legally binding commitments through the Climate Change Act 2008 and the Climate Change (Scotland) Act 2009. The Hywind Scotland Pilot Park Project will contribute to these policy goals. Through this development Hywind (Scotland) Limited will be able to test and further develop the technology, including installation methods, WTG Unit design and design of the moorings and anchors. The project will represent a significant step towards developing a full commercial scale floating wind turbine development. The Project will contribute up to 30 MW installed capacity, which could power nearly 20,000 homes. The lessons learned in developing the Pilot Park can then be applied to developing a commercial scale project which will further contribute to achieving relevant International, European, UK and Scottish policy aims.

In order to protect property and personnel and ensure safe operations during construction works, all UXOs in the Hywind Scotland construction area needs to be cleared prior to commencement of work. If this activity is not carried out, it is not acceptable to carry out the works and this renewable energy project with its associated economic and environmental benefits, will not be able to go ahead. The Scottish government has also requested that an UXO survey takes place prior to any offshore construction works.

#### **Satisfactory alternatives (ref. section 7):**

Alternatives to detonating confirmed UXO's

- a. The «do nothing» alternative has been considered as a possible solution which may lead to less or none disturbance to the marine wild life and marine environment. However, it is in fact a huge power cable being installed from the offshore floating wind farm to shore, and this cable needs to be buried into the seabed to avoid damages to the cable from fishing activity in the area. In order to bury the cable, a trench must be made by use of a heavy and expensive subsea trencher. If this trencher runs into any Unexploded Ordnance, the risk of major damages to the equipment is high and may therefore result in both loss of time and equipment. Offshore work of this kind is typically performed during the “better” season with regards to weather, and even if such a damaged trencher could be replaced, it is not likely that this will be in time to complete the work before the winter season starts, and the whole project would be delayed a full year. Running into an UXO may also cause injury to personnel. None of these risks are acceptable risks for Statoil.
- b. Re-routing the power cable has also been considered. Based on the UXO survey performed in April/May 2016, there are no alternative routes with sufficient wide corridor to accommodate the space needed for the trencher, without having numerous potential UXOs inside the corridor.
- c. Re-locating UXOs has been considered. In theory it may be possible to relocate UXOs, potentially by wrapping a net around the UXO, lift it from the seabed and relocate it to an area outside the planned cable route. The risk of self-detonating the UXOs during such an operation is present, and the following risk of damages to both vessel, equipment and personnel by having an uncontrolled explosion direct underneath the vessel, is not acceptable for any offshore company, including Statoil.

The planned method of controlled detonation of UXOs is the preferred, and main method used in the offshore (and onshore) industry. This exact same method has been used in all known offshore wind farms in UK to date, there are nothing extraordinary with the method proposed by Hywind Scotland.

#### **EPS application - Hywind Scotland geotechnical survey near FPS:**

##### **Justification (ref. section 6):**

The UK has committed to sourcing 15% of its total energy needs from renewable sources by 2020 under the 2009 Directive on Renewable Energy (2009/28/EC) including electricity, heat and transport. The UK and Scottish Governments have also made legally binding commitments through the Climate Change Act 2008 and the Climate Change (Scotland) Act 2009. The Hywind Scotland Pilot Park Project will contribute to these policy goals. Through this development Hywind (Scotland) Limited will be able to test and further develop the technology, including installation methods, WTG Unit design and design of the moorings and anchors. The project will represent a significant step towards developing a full commercial scale floating wind turbine development. The Project will contribute up to 30 MW installed capacity, which could power nearly 20,000 homes. The lessons learned in developing the Pilot Park can then be applied to developing a commercial scale project which will further contribute to achieving relevant International, European, UK and Scottish policy aims.

BP has requested to rock dump the Forties Pipeline System in order to protect against potential damage from the Hywind Scotland project. The survey is therefore needed to determine relevant soil strength parameters for design of rock berms and to document soil strength in shallow water area. If this survey is not performed the project will not have enough information to design the rock berms required by BP to protect the Forties pipeline system and the project will not be able to go ahead. The Scottish government has also requested that the requested rock protection is place prior to commencement of works.

##### **Satisfactory alternatives (ref. section 7):**

Alternatives to use of Sub Bottom Profiler

The normal reason for using any means of acoustic sensor for mapping the upper layers of the seabed, is to get an idea of the soil conditions being soft, hard, consolidated with boulders or numerous layers of different soil conditions.

The use of an acoustic sensor gives this information as a 2D image of the upper layers of the seafloor. Although this method has been in use for the last 100 years, it still remains the only way of picturing this information in an efficient and cost effective manner.

- a. The “do nothing” alternative will imply that there will be not enough information for the project to design the rock berms required by BP to protect the Forties pipeline system. Thus the project will not be able to go ahead.
- b. There are a number of different systems like “Sparker”, “Boomer”, “Pinger”, “Chirp” and all are based on the same system, sending a sound pulse from the surface to the seabed and record the time for the echo to return. Any of these types are working within the same frequency range, but with various pulse length and therefore various resolution of the received echo. They are all similar to the normal navigation echo sounder found on most merchant ships and fishing vessels today.
- c. An alternative method to achieve similar type of information from the seabed can be to use a drillship and physically drill a high number of holes in the seabed, and then analyze the samples. Even if drilling will give an exact answer to what type of sand and gravel is in the seabed, this detailed information is not necessary for this particular project, and the method itself is way more expensive and time consuming compared with Sub Bottom Profiling, looking at 1000 times more vessel days compared with Sub Bottom Profiling.

Kind regards,  
Ove Vold

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**From:** Rosanne.Dinsdale@gov.scot [mailto:Rosanne.Dinsdale@gov.scot]

**Sent:** 26. juli 2016 18:06

**To:** Ove Vold; Steinar Eldøy  
**Cc:** Joao.Queiros@gov.scot; Catarina.Aires@gov.scot  
**Subject:** RE: EPS application - Hywind Scotland geotechnical survey near FPS

Hi Ove,

Thanks I have made a note of the details from the noise registry form for the consultees.

I have sent both applications to our consultees today. I have, however, been asked to request some further information from you regarding the justification and alternatives for both applications. This is to ensure that the application is robust.

As you are applying under Imperative reasons of overriding public interest you need to consider the following:

Is a specific need being addressed?

What benefit does the activity provide or what need does it address – social, economic, environmental, health and safety etc? (please provide some details)

Why is the activity essential?

What public interest is served?

Is the activity in relation to any government targets or policies?

Under the “satisfactory alternatives” section you need to demonstrate that a reasonable effort has been made to consider alternatives that would achieve the same result but with less / no impact on EPS. You should explain what alternatives were considered and the justification for why they are unsatisfactory. You should always consider the ‘do-nothing’ alternative. Possible alternatives may be equipment, methods, locations and timing. It’s not acceptable to say that there are no alternatives without further explanation- you must show that these have been considered.

Thanks,

Rosanne

Rosanne Dinsdale  
Marine Renewables Casework Officer  
**Marine Scotland** - Marine Planning & Policy

Scottish Government | Marine Laboratory | 375 Victoria Road | Aberdeen | AB11 9DB

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Website: <http://www.gov.scot/Topics/marine/Licensing/marine>

Frequently  
Asked  
Questions

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**From:** Ove Vold [<mailto:ovvo@statoil.com>]  
**Sent:** 26 July 2016 10:14  
**To:** Dinsdale R (Rosanne)  
**Subject:** RE: EPS application - Hywind Scotland geotechnical survey near FPS

Hi Rosanne,

This information should be in the noise registration form.

Ove

----- Original Message -----

Subject: RE: EPS application - Hywind Scotland geotechnical survey near FPS

From: [Rosanne.Dinsdale@gov.scot](mailto:Rosanne.Dinsdale@gov.scot)

Date: 26. juli 2016, 10:57

To: Ove Vold <[ovvo@statoil.com](mailto:ovvo@statoil.com)>

Hi Ove,

Thank you for sending in the EPS application forms.

For the sub bottom profiler application, I cannot see any details on the frequency or the sound output at source (in dB). Could you please provide this information in order that we can send the application to consultation.

Thanks,

Rosanne

Rosanne Dinsdale  
Marine Renewables Casework Officer  
**Marine Scotland** - Marine Planning & Policy

Scottish Government | Marine Laboratory | 375 Victoria Road | Aberdeen | AB11 9DB

Direct Dial: +44 (0)1224 295 331  
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Email: [rosanne.dinsdale@gov.scot](mailto:rosanne.dinsdale@gov.scot)  
Website: <http://www.gov.scot/Topics/marine/Licensing/marine>

Frequently  
Asked  
Questions

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**From:** Ove Vold [<mailto:ovvo@statoil.com>]

**Sent:** 25 July 2016 13:54

**To:** Dinsdale R (Rosanne); MS Marine Renewables

**Cc:** Queiros J (Joao); Aires C (Catarina); Steinar Eldøy

**Subject:** EPS application - Hywind Scotland geotechnical survey near FPS

Dear Rosanne

Please find enclosed an EPS application for the Hywind Scotland geotechnical survey near FPS just in case this is required.

The use of Sub bottom profiler is a standard method, frequently used in the offshore industry. It is very similar to the use of a Multi beam echo sounder which was used in the UXO survey in May. The main physical difference between a Multi beam echo sounders and a Sub bottom sounder, is that a Sub bottom sounder has a lower frequency.

A physical copy has also been sent by mail to:

Licensing Operations Team

Marine Scotland

EPS Division

375 Victoria Road

Aberdeen  
AB11 9DB

Best regards,

**Ove Vold**  
Consent and Stakeholder Manager  
Hywind Scotland Pilot Park Project

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gun fhiosd', bu choir cur às dhan phost-d agus lethbhreac sam bith air an t-siostam agaibh, leig fios chun neach a sgaoil am post-d gun dàil.

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