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SNH ref: CNS REN OSWF
DS HYWIND

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Dear Rosanne,

Hywind Scotland Pilot park – UXO Clearance
JNCC and SNH Advice on Licence Applications

Thank you for consulting JNCC and SNH on this proposal from Hywind (Scotland) Ltd to verify and clear potential unexploded ordnance (UXO) found within the Hywind Scotland Pilot Park and cable route. We provide advice on potential impacts to natural heritage interests arising from this work, in relation to the marine licence application and the associated licence for possible disturbance of European protected species (EPS).

Details of work

The proposed work is to be undertaken between 1 September and 15 October 2016. A 50m wide corridor along the export cable route will be surveyed between Peterhead and the wind farm site, Buchan Deep. Potential targets will be verified using a remotely operated vehicle (ROV) and those positively identified will be detonated. The works are anticipated to last approximately two weeks, depending on the number of targets identified.

Approximately 15 detonations are anticipated. A “donor” charge will be used to detonate any UXOs identified, varying in size between 2.5 and 10kg depending on the target. The resulting explosion will also vary in size but a typical worst case would result in a 3m deep by 6m wide crater. The applicant has undertaken a brief review of potential impacts associated with underwater explosions which suggests the range within which fatality or injury could occur will be less than 600m from the source.

JNCC & SNH advice

We have considered the proposed activity in relation to the key natural heritage interests potentially affected by this UXO survey and clearance, namely marine mammals, including EPS (all cetacean species), and benthic interests previously recorded in the area.

Marine mammals

A range of marine mammal species have been recorded in the area, which could potentially be affected by the proposed works. These include seal species (harbour seal and grey seal) and

several species of cetacean (i.e. bottlenose dolphin, harbour porpoise, minke whale). We consider potential disturbance for EPS licensing requirements below. We note that while relatively few UXO detonations (~15) are anticipated compared to the number of survey targets (292), these detonations carry a risk of injury and / or fatality to marine mammals and therefore must be mitigated for.

(a) Mitigation plan for UXO detonations: We advise a Marine Mammal Mitigation Plan (MMMP) should be required by the regulator as a condition of the marine licence which should be agreed prior to the commencement of the proposed works and prior to issue of any EPS licence. Our advice on the scope and content of the MMMP is presented in **Annex A**. Note that this mitigation specifically relates to the UXO detonations and applies to both cetaceans and seals. It only needs to be implemented at those target locations where UXOs are identified (estimated as ~15)

SNH advise that the MMMP can also be used to discharge other requirements in relation to bottlenose dolphin as a qualifying interest of the Moray Firth Special Area of Conservation (SAC). SNH confirm that with implementation of the agreed MMMP, there will be no adverse impact on site integrity of the Moray Firth SAC arising from the Hywind UXO survey and clearance work.

We note there is a very slight risk of basking shark being present in the area, however, the mitigation identified for cetacean EPS will be equally appropriate to avoid any impacts on basking shark.

(b) Close out report: we recommend that a final / close-out report is submitted for any detonations undertaken. **Annex B** provides supporting detail on what we anticipate this document should contain.

EPS licensing requirements

SNH advise that an EPS license is required for this work. As advised above, the MMMP should be submitted prior to issue of any EPS licence. Adoption of the agreed MMMP will mitigate against the risk of injury or fatality to any cetacean EPS from the UXO detonations, therefore it is only disturbance which needs to be considered and addressed under the EPS licensing requirements.

In this regard, the UXO detonations may also give rise to EPS disturbance, however, it will be infrequent and of limited duration. While there may be disturbance of EPS individuals SNH confirm that any such disturbance will not be detrimental to the maintenance of cetacean EPS populations at a favourable conservation status in their natural range.

The applicant states that, in instances where excavation is needed, the area will be surveyed using multi-beam echo sounder equipment which has the potential to cause disturbance to cetacean EPS. In such circumstances, SNH recommend the requirement for 30-minute pre-survey search for EPS is included as a condition of the EPS licence. Should a cetacean EPS be recorded within a 500m mitigation zone, there should be a delay in using the echo sounder equipment. In this circumstance, the marine mammal observer can be a member of the vessel crew as long as they have completed a JNCC approved course. This is only needed for objects that require the use of multi-beam echo sounders.

Benthic interests

We note that *Sabellaria spinulosa* reefs were recorded during pre-application benthic surveys. Should any reefs be recorded during the proposed UXO survey and clearance, we recommend details are included within the close-out report –see **Annex B**.

Further information

This is the first time the SNCBs have dealt with proposed UXO detonations at a Scottish offshore wind farm site (previously having only dealt with UXO survey proposals). We are happy to discuss mitigation proposals or any other aspects of this advice in person, or by teleconference, if needed. If you have any queries about this response, please contact myself, Sarah Canning, at JNCC or Catriona Gall at SNH.

Yours sincerely,

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Annex A: Marine Mammal Mitigation Plan (MMMP)

We advise a Marine Mammal Mitigation Plan (MMMP) should be required by the regulator as a condition of the marine licence which should be agreed prior to the commencement of the proposed works. The MMMP should take into account JNCC Guidelines for minimising the risk of disturbance and injury to marine mammals while using explosives¹. For avoidance of doubt, this MMMP does not need to address the survey work used to locate and / or verify the UXOs.

We suggest that the MMMP includes the following information:

- **Details of proposed works:** this should include (if possible) a map of the location of potential detonations and timings.
- **Marine mammals - context:** this doesn't need to be a detailed account of the ecology of each species, but should include relevant information specific to the work being proposed. For example, densities and distribution of each species likely to be encountered within the area and whether the works will coincide with species breeding seasons. This information is in the ES therefor only a brief summary will be required in the MMMP.
- **Assessment of potential impacts:** Hywind have undertaken a health & safety risk assessment of potential UXOs in the area, discussing the types of UXO which may be encountered (see the Ordek report provided as part of the environmental statement²). We advise that possible impacts from these UXOs should be considered in relation to marine mammals. This could be done by collating available information on injury or disturbance zones, and available noise modelling. We also recommend reviewing UXO survey and clearance work been undertaken at other UK wind farm sites.
- **Mitigation:** this is required for the UXO detonations and should broadly follow JNCC guidelines:
 - Establish a **mitigation zone of 1km radius** around each detonation location.
 - All detonations should take place during daylight hours.
 - In conditions of good visibility (sea state 3 or less) visual monitoring of the mitigation zone should be undertaken for 1 hour prior to detonation, during the detonation procedure and for 15 minutes' post-detonation.
 - Visual observations should be undertaken by dedicated MMOs (i.e. do not have a dual role on the vessel) who have attended an approved JNCC course. At least one MMO must be available for every search however consideration should be given as to whether this is sufficient to effectively search the 1km mitigation zone.
 - During periods of poor visibility, passive acoustic monitoring (PAM) should be used to complement visual survey. PAM should be undertaken by trained personnel.
 - Should marine mammals be detected (visually or acoustically) within the mitigation zone during the pre-detonation search, detonation should be delayed until the animal is not recorded within the zone for 20 minutes.
 - It may also be possible to consider use of pro-active measures to clear marine mammals from the area prior to detonations. For certain species, the use of acoustic deterrent devices (ADDs) may be considered effective and we are happy to discuss options for incorporating such mitigation into the proposed operational procedure.
- **Communications, health and safety:** details of how lines of communication will be established between the MMO and detonation personnel, corrective procedures should

¹ http://jncc.defra.gov.uk/pdf/JNCC_Guidelines_Explosives%20Guidelines_August%202010.pdf

² Hywind Scotland Pilot Park Environmental Statement. April 2015.

PAM equipment fail and relevant health and safety requirements specific for mitigation personnel;

- Reporting: details of what to include in the closing report are provided in Annex B.

Should the MMO/PAM operators be on a separate vessel patrolling the external perimeter of the mitigation zone, consideration should be given to the speed of the vessel to ensure the all areas of the mitigation zone are observed evenly while still providing appropriate monitoring conditions.

If there are multiple UXO in close proximity to be disposed of near simultaneously, the sequence of detonations should, where practicable, start with the smallest detonation and end with the larger detonations.

Annex B: Close-out Report

A close-out report detailing the UXO operations, marine mammal mitigation activities and any marine mammal encounters should be sent to Marine Scotland, SNH and JNCC. In relation to **marine mammals**, the report should include:

- Details of the operation, including information on the size of charges used, start times of explosive detonations and size of craters produced;
- Start and end times of MMO/PAM searches and times of ADD deployment if appropriate;
- Details of any marine mammals observed and mitigation measures taken;
- Details of any technical problems encountered and instances of non-compliance.

A discussion of any problems encountered relating to the mitigation protocol will be welcomed including suggestions for improvements.

We are also aware that ***Sabellaria spinulosa* reefs** were recorded during pre-application benthic surveys. Many of those identified were away from the proposed turbine deployment area and the final cable route was planned to minimise potential impacts to *Sabellaria* reefs. However, isolated patches were identified within these areas.

If recorded, details of any reefs affected by the UXO clearance should be included in the close-out report. This should include (where possible) details of the location, size and any damage caused as a result of the detonations.