

Mr. Patrick O'Neill
Foreshore Unit
Department of the Environment, Community and Local Government
Newtown Road
Wexford

20 December 2012

Dear Mr. O'Neill

Re: Inland Fisheries Ireland response regarding CWE Ireland Foreshore Licence Application

In May 2012 CWE Ireland, a subsidiary of Carnegie Wave Energy Limited, applied for a Foreshore Licence to undertake Site Investigation works over an offshore site between Liscannor Bay and Mal Bay, County Clare. CWE subsequently completed a public consultation period in August 2012 to which Inland Fisheries Ireland (IFI) responded requesting further information regarding use of 2D or 3D methods, length of streamers, amount of array envisaged, anticipated sound level emissions and dissipation of same, timing and duration, mitigation proposals for the seismic surveying in context of marine mammals and of fish species, and of human population engaged in diving etc.

Below is further information relating to IFI's concerns that I hope are sufficient to allow the Foreshore Licence application to progress. I am, of course, more than happy to work closely with IFI, and other key stakeholders, to ensure that the proposed investigative surveys and future project development are conducted to their full satisfaction.

Kind Regards



Tim Sawyer
Project Development Officer

Summary of the survey

Details of the survey are contained in CWE Ireland's Foreshore Licence application. The site survey will involve a small scale seismic refraction survey (to establish the depth of bedrock), side-scan sonar and bathymetry survey. Bathymetric and side scan sonar surveys will take place over a large portion of the 885 Hectare proposed licence area, whilst seismic refraction surveys will take place at discreet locations using short (nominally 200m) runs. Surveys will be of limited duration coincident with suitable weather windows. Geophysical surveys are over a limited spatial area and, once started, are expected to take between 2 to 5 days between Spring to Summer 2013, potentially through the Marine Institute and/or GSI.

The seismic source will be a single airgun of approximately 3 cubic inches operating at 2000 psi. The output from the airgun is a peak to peak pressure of 2.5 bar at source which translates to a peak to peak source level of 228 dB re 1 μ Pa. A simple spherical spreading model indicated that this source could ensonify an area within a radius of 5.5km to a level of 140 dB re 1 μ Pa rms. The sound from the airgun is the only routine aspect of the site survey that has the potential to impact on sensitive fauna, including cetaceans. It is expected that a 24 channel hydrophone array (streamer) with a sensor interval of 5m will be used.

Environmental Values

CWE Ireland commissioned RPS Consulting Engineers to undertake an Environmental Scoping Study of the site. This included assessments of environmental designated sites, fisheries, marine mammals, water quality, geology and hydrogeology, landscape/seascape/habitats, existing infrastructure, human activities, navigation and heritage. The scoping exercise concluded that there are no internationally, nationally or locally protected environmental designations within the potential CETO deployment areas between Liscannor Bay to Mal Bay. The area is not heavily fished or trafficked by either recreational or commercial vessels, does not contain any known heritage features or shipwrecks, and is not in close proximity to areas of high population density. An SPA and SAC are adjacent to the southernmost edge of the investigation area and approximately 1.8 km from centre of investigation area.

There is the potential for cetaceans and other marine mammals to be present within the area identified for the proposed CETO deployment. Cetaceans are protected under Annex IV of the Habitats Directive, while marine mammals are protected under the Wildlife Act 1976. The Irish Whale and Dolphin Groups' (IWDG) database of marine megafauna sightings over the past 10 years off the Irish coastline shows there to have been Bottlenose Dolphin and Harbour Porpoise activity within the vicinity of the potential CETO areas. These sightings have been of individuals or couples of cetaceans, but no sightings have been reported of large pods in the immediate area. Within the study area there have been far more sightings and greater group numbers, mainly of Bottlenose Dolphins, spotted deeper within Liscannor Bay and off the Cliffs of Moher. The greatest number of sightings and the largest group numbers of marine megafauna recorded in the area are off Doolin Point and the Aran Islands (South Sound) to the north of the study area, and off Kilkee to the south of the study area. In the South Sound area there have been numerous sightings of Bottlenose Dolphins, Common Dolphins and Risso's Dolphins, Harbour Porpoises, Basking Sharks and Minke Whales. Offshore of Kilkee there have been sightings of Bottlenose Dolphins, Common Dolphins, Basking Sharks, Humpback Whales and Minke Whales. It is likely that many of these protected marine megafauna will pass through the potential CETO deployment areas from time to time; and their low level of sightings is more due to a lack of spotting activity within the area, rather than a lack of marine megafauna.

Environmental Risk Assessment

Non-routine aspects of the survey that could pose hazards to the marine environment include vessel collision and subsequent release of fuel or chemicals held onboard the vessel. The vessels, will, however, be manned by accredited seamen and maintained to the highest level. The survey is also being conducted out of any shipping

routes (nearest 10km distant) or port approach lanes. Due to the many reefs and rocky shorelines near the potential CETO development area, combined with the exposure to Atlantic swells it is unlikely that the immediate area would be heavily trafficked with recreational or commercial vessels, however on calmer days the area may be visited by angling boats. The risks associated with this hazard are therefore considered to be low.

Regarding underwater noise from geophysical surveys, instantaneous physical damage to cetaceans is only likely to occur when the peak noise levels exceed 220 dB re 1 μ Pa and physical injury leading to death is only likely to occur when the peak pressure level exceeds 240 dB re 1 μ Pa (Parvin et al., 2007). These noise levels are unlikely to occur beyond approximately 10m of the proposed seismic source.

Repeated exposure to lower sounds may lead to Temporary or Permanent Threshold Shifts (TSS and PTS respectively) in the hearing of whales, which are considered injurious and should be managed. The threshold level for onset of PTS or TTS in baleen whales is 160 dB re 1 μ Pa²s. The small sound sources proposed for this survey are not considered to generate sound of this level beyond 1 km from source.

To manage the potential risks to cetaceans, the code of practice for the Protection of Marine Mammals during Acoustic Seafloor Surveys in Irish waters will be implemented that relate specifically to multibeam, side-scan sonar and seismic surveys. This will include minimising sound source levels and varying frequencies to minimise potential impacts on sensitive species, use of marine mammal observers, and use pre-start and soft start procedures.

In addition, the surveys and investigations will be of limited extent and duration and will not take place within Natura 2000 sites, the boundaries of which are some 1.8km distant. In advance of commencing marine surveys, CWE Ireland will publish local Marine Notices through the DTAS Marine Safety Directorate and Sea Fisheries Protection Authority providing a description of survey operations, locations and dates for commencement and completion. Approaching vessels will be asked to keep a safe distance from operating surveys vessels and the mooring in accordance with maritime regulations. All vessels involved in marine survey operations will have appropriate navigational lighting and will be equipped with sophisticated navigational aids and competent crew maintaining a constant watch for other vessels.

Given the nature of the proposed marine surveys, and implementation of the code of practice for the Protection of Marine Mammals during Acoustic Seafloor Surveys in Irish Waters to seismic, multibeam and sidescan sonar surveys, no significant impacts on Natura 2000 sites or sensitive marine fauna are expected.