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**RE: Ringsend Wastewater Treatment Extension**

Dear Sir,

Our attention has recently been drawn to the Ringsend Wastewater Treatment Extension project which has been granted planning permission on by An Bord Pleanála on (Reference Number: 29N.YA0010).

The Department of Arts, Heritage and the Gaeltacht recently proposed an area off Dublin Bay and North County Dublin as a Special Area of Conservation (SAC) for harbor porpoise (*Phocoena phocoena*) in recognition to the high densities recorded in this area and good adult-calf ratios. This proposed designation requires all developments to carry out an Appropriate Assessment of the impact of the activity on SAC qualifying interests (in this case harbor porpoise). We feel that the EIA is negligent in this regard and we request extra consideration be given to the impact of the Ringsend Wastewater Treatment Extension project on harbor porpoise.

We understand a 9000m long tunnel is to be constructed using a tunnel boring machine (TBM). This tunneling will be carried out 24 hours, 7 days a week for 18 months. We are concerned vibrations and noise levels caused by tunneling will degrade the local habitat for harbor porpoise. The EIA states that the principal underwater noise generating elements of the construction phase is the construction of the tunnel, the diffuser shaft and the outfall diffuser. The loudest underwater noise is likely to come from pile driving, with typical values for Sound Exposure Level for pile driving large steel piles are in the order of 190 dB re 1 uPa<sup>2</sup>.s @ 1m (SEL). The EIA estimates permanent hearing damage is caused to the animal is 2 metres for high frequency cetaceans and 8 metres for pinnipeds. We suggest temporary threshold shift would have been a more appropriate measure to assess impact and also the objective should be to minimize disturbance.

Brandt et al. (2011) showed harbor porpoise in the North Sea with a maximum peak source level of 196 dB re 1 uPa<sup>2</sup>.s @ 1m. This caused harbor porpoise to leave an area up to 2.6km from the sound source and activity remained below normal levels for between 24 and 72 hours after pile-driving ceased. At some sites with prolonged pile-driving harbor porpoise activity has not recovered some years later.

We note that the EIA advises an exclusion zone of 100m is monitored by an MMO and that details of the policing of the exclusion zone for blasting, a detailed Marine Mammal

Watch Plan including the provision of Marine Mammal Observers for the blasting programme will be submitted to the National Parks and Wildlife Service for agreement prior to the commencement of blasting.

Has this plan been agreed and does it take into account the increased conservation measures required by the SAC proposal ?

Mitigation of the acoustic impact of pile-driving and other activities on marine mammals is addressed in the new Department of Arts, Heritage and the Gaeltacht guidelines (Guidance to Manage the Risk to Marine Mammals from Man-made Sound Sources in Irish Waters. Consultation Draft March 2012).

Dumping at Sea also requires the use of a Marine mammal Observer (MMO) to ensure no harbor porpoise, or other marine mammal, are close to the barge on release. This is to ensure there is no disturbance to cetaceans in the area. This is consistent with Dumping at Sea Licences' issued within the Lower River Shannon cSAC which is designated for bottlenose dolphins.

In summary, while we fully accept this wastewater treatment is necessary for Dublin City we feel that the EIA and mitigation measures with respect to the impact on harbor porpoise needs to be reviewed in light of the proposed Special Area of Conservation off Dublin Bay and North County Dublin for this species.

Yours sincerely



Dr Simon Berrow  
Executive Officer,  
Irish Whale and Dolphin Group

#### References

Brandt, M.J., Diederichs, A., Betke, K. and Nehls, G. (2011) Responses of harbor porpoises to pile driving at Horns Rev II offshore wind farm in the Danish North Sea. Marine Ecology Progress Series 421, 205-216.

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## Addendum

With regard to the Environmental Impact Assessment(EIA) for the Ringsend Wastewater extension I feel it is necessary to highlight some points made in your EIA which are incorrect.

Table 14.3 Underwater Noise Exposure Criteria (Hearing Damage) (Southall et al, 2007) – *this critical piece of sound criteria refers to a reference not in reference list. I assume it is the article in Aquatic Mammals journal, it would appear Southall et al (2007) refers to injury criteria which is PTS (Permanent Threshold Shift) and not TTS (Temporary Threshold Shift) and therefore for example state:*

“Criteria in the “Sound exposure level” lines are based on the SEL eliciting TTS-onset plus (1) 15 dB for any type of marine mammal exposed to single or multiple pulses”

*The 15db is added to get an assumed PTS figure. I believe the TTS figures given in Table 14.3 of the EIA refer to PTS data.*

Reference: Southall, B.L., Bowles, A., Ellison, W., Finneran, J., Gentry, R., Greene, C., Kastak, D., Ketten, D., Miller, K., Nachtigall, P., Richardson, W., Thomas, J., and Tyack, P., (2007). Marine mammal noise exposure criteria: initial scientific recommendations. *Aquat. Mammals*, 33, 411–521.

### 14.4.3.1 Pile Driving

Typical values for Sound Exposure Level for pile driving large steel piles are in the order of 190 dB re 1  $\mu\text{Pa}^2 \cdot \text{s}$  @ 1m (SEL). *A reference for this is absolutely required please read (and note these reference other work extensively):*

OSPAR (2009) – Overview of the impacts of anthropogenic underwater sound in the marine environment, Vol. OSPAR Convention for the Protection of the Marine Environment of the North-East Atlantic ([www.ospar.org](http://www.ospar.org)) or Thomsen F, McCully SR, Weiss L, Wood D, Warr K, Barry J, Law R (2011) – Cetacean Stock Assessment in Relation to Exploration and Production Industry Activity and other Human Pressures: Review and Data Needs. *Aquatic Mammals* 37:1-93

These two suggest source levels of **220dB-257dB re 1 $\mu\text{Pa}$  peak-to-peak** .

Furthermore to quote the draft guidelines released last year by the NPWS they stated:

“Explosions of underwater blasting and the hammering or impacting action of large pile driving operations (e.g., wind turbine monopiles) can introduce single or multiple sound pulses with rapid rise times and at sound pressure levels (SPLs) exceeding 220-250 dB re: 1 SPa (Appendix 1). In the case of some pile driving operations, a persistent high degree of sound energy may be introduced into the environment in the form of many hundreds or thousands of pile strikes. This presents the possibility of tissue damage, permanent hearing loss (see Appendix 3) or even lethal injury in a receiving marine mammal due to the activity. Such activities can also introduce sound exposure levels (SELs) high enough to cause behavioural responses several or tens of kilometres from the source<sup>37,38,39</sup>”

I realise there are many ways to achieve a lower source level for pile driving but don't see any detailed so can only assume none are applied/required. The underestimation of source levels from pile driving and underestimation of injury levels of such sound could only be interpreted as a breach of legal requirements under the Habitats Directive and Irish Law, leaving those performing such work liable to prosecution regardless of permissions obtained.

Regards

Patrick Lyne  
IWDG MMO Officer