GREENLINK INTERCONNECTOR BETWEEN WEXFORD AND THE UK

Submission to the Minister for Housing, Local Government and Heritage,
Foreshore Section, Department for Housing, Local Government and Heritage, Newtown Road, Wexford, Co. Wexford.

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It will be historically important that some concern was expressed by the public in anticipation of a decision being made by the Minister for Housing, Local Government and Heritage regarding Eirgrids subsea cable i.e. the Greenlink Interconnector between Freshwater West, Pembrokeshire, Britain and Baginbun Beach, County Wexford, Ireland for the purpose of transmitting electricity. This is especially important given the increasing international concern regarding the potential harm from electromagnetic fields (EMF) and man-made sound on all living things in our offshore seas and oceans.

At present, whether systemic authorities accept the fact or not, the majority science has already established that electromagnetic fields *per se* have the potential to cause adverse health effects on all living things. We have filled our environment with a power that heralds the potential destruction of nature in a way that is now more than apparent – it is predictable! Despite limited knowledge about electricity or magnetic fields but with enough knowledge to be aware of safer ways of establishing EMF systems, a valuable but misunderstood tool has been released in an unsafe way (wireless/Wi-Fi) on the basis of conviction that the destruction being created can be bundled into acceptable loss with the mantra 'the benefits outweigh the risks'.
Such a short-term vision!

This submission is written with little understanding of the technical 'science' regarding interconnectors and instead is written from a human perspective on behalf of our relatives who live in the oceans and who help to keep our planet as exquisitely balanced as it has been up to recent times. Limited knowledge also means that this submission will echo the voices of independent scientists who have not succumbed to the pursuit of personal reward or economic self-interest in lieu of morally based decisions.

INITIAL POINTS:

Eirgrids Greenlink Electricity Interconnector will link the electric grids in Britain and Ireland. As Britain is no longer part of the European Union it will not establish a direct link with Europe as stated in the Greenlink report. If given the 'go-ahead' it will create a power link with the UK, now a country independent of Europe.

The Greenlink report 4.1 states that the 'proposed interconnector does not constitute a "project" listed within the EU Directive 2014/52/EU 'accordingly an EIA (Environmental Impact Assessment) is not required in relation to the proposed interconnector'. However, the replaced Annex 111 under section (1) Characteristics of projects and (2) Location of projects in this Directive suggests that the Greenlink should be subject to an Environmental Impact Assessment.

Greenlink did have an Environmental Impact Assessment undertaken under Best Practice and the conclusion of the EIA regarding Marine Mammals and Reptiles (5.5 pg 26) refers to noise, identifying potential significant effects on marine mammals and reptiles and proposing mitigation. However, no conclusion is provided regarding the impact of electromagnetic changes on mammals – this is a serious oversight and should be rectified prior to any decision being made, especially given the findings in emerging reports.

The continuous recent use of the prefix 'Green' to all possible reports and projects regarding energy seems to be designed to manipulate the public into believing that proposals using the word 'green' are somehow eco-friendly. The fact remains; there is nothing 'green' about man-made artificial electromagnetic fields.

Finally, the proposed development will cross Hook Head which is a protected area referred to as a Natura site 2000 and is therefore seen as important enough to be protected under the EU Habitats Directive (92/43/EEC) and Birds Directive (2009/147/EC).

THE ISSUES

This submission takes two key issues identified as the basic areas to be considered with regard to sub-sea cables i.e. the potential adverse effects from Electromagnetic Fields (EMF) and Man-Made Sound.

Along with the myriad species of fish, shellfish, molluscs, reptiles etc at 'least 26 species of marine mammal are known to occur in Irish waters' such as two species of seal, and ''twenty-four species of cetacean (i.e. whales, dolphins and porpoises) have been recorded from Ireland. (*Guidance to Manage the Risk to Marine Mammals from Man-made Sound Sources in Irish Waters* – Department of Arts, Heritage and the Gaeltacht (2014) https://www.npws.ie/sites/default/files/general/Underwater%20sound%20guidance_Jan%202014.pdf

ELECTROMAGNETIC FIELDS (EMF)

The European Commissions, Science for Environment Policy Leaflet – How do subsea cables affect electromagnetic-sensitive marine species? (5th October, 2020/Issue 549) refers to a research paper *Anthropogenic electromagnetic Fields (EMF) influence the behaviour of bottom-dwelling marine species* https://ec.europa.eu/environment/integration/research/newsalert/pdf/549na3_en_how-do-subsea-cables-affect-electromagnetic-sensitive-marine-species.pdf (2020) and highlights the possible impact of EMF on particular 'marine species that have adapted to use electric and magnetic cues in essential aspects of their life cycle." Underwater cables, such as the Greenlink Interconnector, which will be installed in our coastal and offshore waters emit electromagnetic fields, which can disrupt cues used by some species to 'detect prey, avoid predators, find mates, orientate and migrate'. This research paper concludes that 'electro- and magneto-sensitive species display observable behavioural difference in the presence of an EMF-emitting HVDC electricity cable' and despite these cables being protected, this does not shield the emitted EMF, 'which is often used to locate buried cables.'

The Sustainable Energy Authority of Ireland's (SEAI) report,
https://www.seai.ie/technologies/ocean-energy/ocean-test-sites-in-ireland/foreshore-lease/Appendix-4-Impact-of-electric-and-magnetic-fields.pdf
IMPACT OF ELECTRIC AND MAGNETIC FIELDS FROM SUBMARINE CABLES ON MARINE ORGANISMS, THE CURRENT STATE OF KNOWLEDGE
This report also expresses concern that 'when more anthropogenic sources of magnetic and electric fields are present in the marine environment there is a potential that those organisms will be affected' i.e. those 'organisms that are able to detect the natural geomagnetic field for navigational purposes (such as whales, turtles, and fish) and others (mainly fishes as sharks and rays) that can also respond to the biological electric fields emitted by all organisms.' This study has shown that EMF emitted from a power transmission cable may be detected in a range 'of up to a few hundred meters' i.e. within the detection range of many species. The SEAI study mirrors the conclusions of the *Anthropogenic electromagnetic Fields (EMF) influence the behaviour of bottom-dwelling marine species* (link above) in that behavioural effects have been shown both for species that use the magnetic field for navigational purposes and for species using electric fields for detecting prey.
Concerns are particularly expressed about the impact on functional roles and migration behaviour of marine species.

MAN-MADE SOUND

A report from the Department of Arts, Heritage and the Gaeltacht, *Guidance to Manage the Risk to Marine Mammals from Man-made Sound Sources in Irish Waters* 2014
https://www.npws.ie/sites/default/files/general/Underwater%20sound%20guidance_Jan%202014.pdf
considers man-made sound sources in coastal and marine environments and their 'potential adverse impact particularly on mammals who have 'adapted to life in the sea by exploiting ' sound properties in water effectively' for the purpose of 'navigation and perception of their environment, communication, prey identification and capture, and the detection of predators'. Emphasis is placed on the hearing system of marine mammals and how their auditory sensitivity allows them to 'respond to changes in pressure' – an ability that is 'particularly susceptible to damage' from man-made sound sources. The

reports summary reminds us that 'it is an offence to disturb or injure a marine mammal (Section 1.2) whether this occurs via introduced sound or another anthropogenic source.' This strong response to potential injury from man-made sound on marine mammals places such an event in a category of extreme seriousness.

Scientific literature regarding the auditory responses to EMF by humans is well documented (first published by Allan Frey in 1961) and is experienced by a percentage of the population who are electrohypersensitive and have 'microwave hearing' – a constant torture. As yet, no scientific research has been undertaken regarding the possibility of such an effect occurring with marine mammals but remains a possibility. (*Auditory System Response to Radio Frequency Energy* – Technical Note – Aerospace Medicine 1961) https://zoryglaser.com/wp-content/uploads/2020/05/AUDITORY-SYSTEM-RESPONSE-TO-RADIO-FREQUENCY-ENERGY.pdf

OTHER

In light of the fact that the knowledge base regarding the potential effects of EMF or indeed man-made noise in coastal and offshore waters is still extremely limited and that no solid facts as yet exist, it behoves us to think very carefully about how the wrong decision could affect the future of our oceans and its integral life.

It is reassuring to note that marine mammal observers will be employed to assess impact, although it does not specify whether this will be a long- or short-term event.

It is believed that the Greenlink Interconnector will become more than just a cable and will link up to offshore wind power and perhaps wave power – future vision dictates that the issues of EMF and noise will escalate. Will these issues be revisited should that happen?

Many questions remain unanswered including one that has arisen today in which a threat has been made to cut supplies of electricity through an interconnector between France and the island of Jersey. Does a trade agreement exist between the UK and Ireland in relation to the Greenlink Interconnector and has such an event been addressed within it? Is there any legislation on this matter?

Given the obvious lack of established knowledge regarding the threshold sensitivities of marine species, the numerous unanswered questions and the fundamental ecological importance of this decision the Minister for Housing, Local Government and Heritage is asked to defer a decision on Eirgrid's Greenlink Interconnector until gaps in information and knowledge are met. Our waters are our Heritage and are teeming with life and it is our responsibility to protect these for the sake of the planet and for our children's future. We pay our representatives to ensure that this responsibility is taken seriously

Thanking you,

Ethna Monks

Recommended Reading:
Bees, Birds and Mankind, Destroying Nature by 'Electrosmog', Effects of Wireless Communication Technologies by Bio-scientist, Ulrich Warnke
Published as Brochure 1, by Prof. Dr. med. Karl Hecht, Dr. med. Markus Kern, Prof. Dr. phil. Karl Richter, and Dr. med. Hans-Christoph Scheiner (English version 2009)
https://ecfsapi.fcc.gov/file/7521097894.pdf