



ENERGY AND WATER DESALINATION AT SEA IN MALTA

Energy production in coastal and marine areas has often a great potential but unfortunately also extremely important economic and logistical challenges given the often adverse and hostile conditions of the marine environment.

Several projects are currently in their planning stage in Malta, both for the production of water by desalination as for the surveying of potential fossil fuel reservoirs.

MARITIME ENERGY, DESALINATION AND CETACEANS AND MARINE TURTLES

Industrial development and biodiversity conservation can be perfectly compatible if adequate risk prevention and mitigation measures are put in place. Energy-related projects are to take into account the

main vulnerabilities of such species and their critical habitats, as per national and international law.

WIND-FARMS

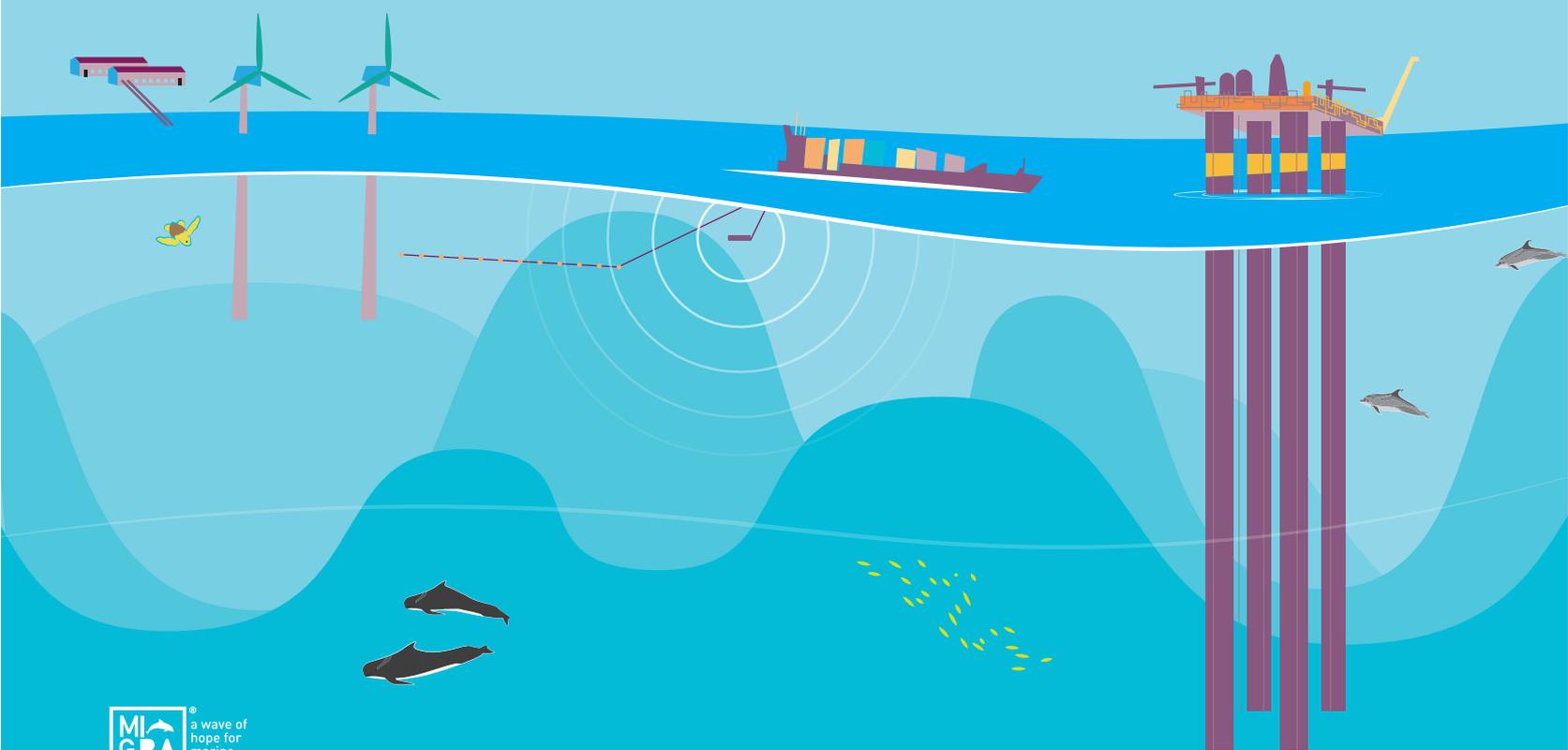
Possible future marine wind farm projects should take into consideration potential effects on marine fauna, especially during the construction phases, when pile driving or other activities with acoustic emissions could be a potential risk for cetaceans..

SEISMIC SURVEYS

There may be potential risks involved in seismic surveys that may require the adoption of prevention and mitigation measures.

Air gun arrays are used primarily for seismic oil and gas exploration and for research purposes. Air guns produce sound by introducing air into the water at high pressure, usually directed toward the sea floor, with up to 20 guns being fired in synchrony, while “streamers” of hydrophones record reflections from the sub-surface. The seismic air gun pulses used in the oil industry usually penetrate a few kilometres into the Earth’s crust, after having already travelled through the water column. Seismic surveys with air guns may last for many weeks at a time, depending on the nature and objective of the survey.

The UN General Assembly on sustainable fisheries has called upon the FAO to carry out studies on the socio-economic impacts of ocean noise pollution on fisheries – namely OP153 of document A/RES/68/71 which reads as follows: “Encourages further studies, including by the Food and Agriculture Organisation of the United Nations, on the impacts of underwater noise on fish stocks and fishing catch rates, as well as associated socioeconomic effects”. The need for such studies should not be underestimated. The use of air guns near fish stocks severely affects their distribution, local abundance as well as trawl and long-line catch rates. It has been explained that catch rates do not return to normal even days after noise has abated.



RISK MITIGATION MEASURES

For most potential risks, prevention and mitigation measures exist. For others, the collaboration between the regulatory frameworks and authorities, the industry and scientists, is developing and testing new technological measures that can make social and economic growth compatible with the conservation of marine biodiversity.

NOISE POLLUTION

Environmental Impact Assessments (EIA) for noise generating activities such as offshore petroleum and gas exploration may provide

a science-based tool for decision makers to better understand the consequences of their decisions, evaluate alternatives and mitigate impacts as for example through the proposal of species exclusion zones.

Major progress in mitigation of noise emission for pile driving has been made in recent years through the development and application of quieting systems such as bubble curtains, isolation casings, cofferdams, and Hydro Sound Dampers. Hence, the application of the available noise mitigation technologies should be considered.

Seismic air guns used primarily for oil and gas exploration generate a underwater noise

energy (anything over 100 Hz up to as high as 1 kHz) that is unused by the petroleum industry or geophysical researchers. They also produce an impulsive sound that may have an effect on marine life because it is so sharp (with a fast rise time). Various mitigation measures and more environmentally benign alternatives exist and should be used, such as e.g. Marine Vibroseis, which can be over 1,000 times quieter, without the sharp rise time and without any of the wasted sound. In some environments, it even outperforms air guns in collecting geophysical data.



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