

## ENERMAR PROJECT

Name of person filing the form (can opt to omit from on-line form)

Teresa Simas

Date submitted

04-07-2012

Project name: Enermar project

Project description:

*Project Developer:* Ponte di Archimedes International S.p.A.

*Technology type:* Kobold turbine

*Resource:* marine currents

*Project scale:* prototype

*Installed capacity:* 50 kW

*Additional Description:* The Kobold turbine is a rotor mounted on a vertical shaft which produces mechanical energy by exploiting marine currents. The system is moored by four anchoring blocks where the water depth is 18-25 m and the expected current velocity is about 2 m/s. The system consists of a buoyant support platform and the patented Kobold turbine. The platform, designed by the Ponte di Archimede Company, houses the gearbox, a 160 kW synchronous generator and the necessary electrical equipment. The Kobold turbine (cross flow rotor, 6 m in diameter, equipped with three blades with a span of 5 m) is placed under the platform.

*Project Website:*

[http://www.pontediarchimede.it/language\\_us/progetti\\_det.mvd?RECID=2&CAT=002&SUBCAT=&MODULO=Progetti\\_ENG&returnpages=&page\\_pd=d](http://www.pontediarchimede.it/language_us/progetti_det.mvd?RECID=2&CAT=002&SUBCAT=&MODULO=Progetti_ENG&returnpages=&page_pd=d)

Location:

*Ocean/Water body:* Strait of Messina, Sicilian coast

*Closest city:* Ganzirri, Messina

*Country:* Italy

*Coordinates:*

*Depth:* 18-25 m

*Process status:* The ENERMAR system has been installed in 2011.

Licensing information (brief description):

Key Environmental issues:

Environmental webpage: not available

## Monitoring and adaptive management: Enermar project

Monitoring and adaptive management: Enermar project				
General description		Several environmental studies made		
Receptor	Monitoring program description	Design and methods	Results	Status
Acoustics	Underwater acoustic environmental characterisation - Kobold turbine noise assessment	Underwater noise measures were taken in two days (10 <sup>th</sup> and 11 <sup>th</sup> July 2007) at 16 and 30 m. The sensor was set tight to a mooring cable towards east (day 10) and NE (day 11). An ITC 8073 calibrated hydrophone was used as an underwater sensor while surface acquisition and recording was carried out using a Sinus Messtechnik Samurai workstation. The system acquired signals for about 20 hours.	The Strait is cyclically involved in a massive water flow from the South Mediterranean up to the Tyrrhenian sea and back and the low frequency component (up to 20/40 Hz, most of which comes from flow noise) is normally the most intense part of the signal. The device noise intensity and frequencies of both turbines (k16 and k18) are described in the report.	Completed
Landscape	To evaluate the landscape impact of the Kobold prototype in the Strait of Messina	Semi-quantitative method to model a landscape assessment	The site where the plant is positioned at a distance of about 150 – 200 m from the shore. The results allow us to state that the measure of the impact landscape has been a huge success. In fact, the fuzzy variable representing the impact is 98% below the tolerance threshold.	Completed
Reports and papers	<ul style="list-style-type: none"> <li>- Bergamasco. A., Giuntab, G., Marinoc, D., Pandolfod, S., Sindonie, G. Fuzzy impact assessment on the landscape: the Kobold platform in the Strait of Messina case study. <a href="http://ideas.repec.org/a/fzy/fuzeco/vxviy2011i1p67-79.html">http://ideas.repec.org/a/fzy/fuzeco/vxviy2011i1p67-79.html</a></li> <li>- NAUTA-racs, 2007. Underwater noise assessment in the Messina Strait, Itlay - An underwater acoustic environmental characterization from the Kobold turbine. <a href="http://www.nauta-racs.it/Documents/Noise_assessment_Messina_Strait.pdf">http://www.nauta-racs.it/Documents/Noise_assessment_Messina_Strait.pdf</a></li> </ul>			
Research projects	Past or on-going environmental research projects at the site			