

Name of person filing the form

Javier González  
(Updated by Jonathan Whiting)

Date submitted

October 29<sup>th</sup>, 2012

Project name: Marine test site for ocean energy converters

Project description:

*Project Developer:* Oceanic Platform of the Canary Islands (PLOCAN).

*Technology type:* Wave energy converters and offshore wind turbines

*Resource:* Waves and wind

*Project scale (test site, prototype, array, commercial):* Test site for prototypes

*Installed capacity (MW):* 15 MW

*Additional Description:* Marine test site for emerging oceanic technologies focused on ocean energy converters. PLOCAN is a Public Consortium ruled by the Spanish Government and the Regional Government of the Canary Islands. PLOCAN is a marine scientific and technical infrastructure to facilitate the development of new oceanic technologies providing different services to the enterprises and researchers. The five strategic lines are: ocean observation, underwater vehicles, marine test site, platform of innovation and Training centre.

*Project Website:* [www.plocan.eu](http://www.plocan.eu)

Location:

*The site is located on the east coast of Gran Canaria Island of the Canary Islands in Spain. It is located at the border of the continental platform with depths between 30-200m in the Atlantic Ocean.*

*Coordinates:* 466000 E, 3102000 N

Process status:

This test site is operative without grid connection since 2010. Grid connection is expected by the end 2013. A total capacity of 10 MW will be installed.

Licensing information (brief description):

The following procedures are underway:

- Environmental authorization
    - Institution issuing the permit: Regional Government of the Canary Islands – General Directorate for Nature Protection
      - Regional
      - Regional Law: Law 11/1990 of Ecological Impact Prevention
  - Marine space occupation
    - *Institution issuing the permit: National Government - General Directorate of Coast and Sea Sustainability - Ministry of Agriculture, Food and Environment*
      - *National*
      - *National law: Law 22/1988 of Coasts*
  - Grid connection and power generation:
-

- Institution issuing the permit: Regional Government of the Canary Islands
  - National
  - National Law: Royal Decree 1955/2000, ruling activities of transport, distribution, trade, supply and authorization of electrical installations; Technical guideline T243

**Key Environmental issues:** brief description on the most important environmental issues raised by the project (e.g. Sensitive species/habitats/areas that were of particular concern and/or received special protection) and how they were addressed.

The test site is out of sensitive areas in terms of NATURA 2000 or any National and Regional Declarations. The most interesting species detected in the area are:

- *Avrainvillea canariensis*: Algae declared as “Interesting for Canary ecosystems” by the Regional Law 4/2010.
- Mäerl: Include in the Annex V of Habitat Directive.

**Environmental webpage:** link to project official environmental webpage (if available). You can also include here the contacts for the project environmental issues. This web site is underway.

Baseline and project effects studies:						
General description						
Receptor	Study description including question and/or objective (several can be listed per receptor)		Design and methods (brief description)	Results (brief description)	Status (planned, underway, completed, with dates)	
Physical environment	Water quality	In-situ	Survey conducted with multi-parameter probe: conductivity, temperature, pH, turbidity, oxygen, chlorophyll.	No contamination detected	Completed	
		Laboratory	Sampling with oceanographic bottles. Parameters: nutrients, pigments, metals, pH, conductivity, oxygen			
	Geophysical	Sediments morphology, type and quality (PAHs, PCBs, Organic matter)	Van Veen dredger to collect bottom samples	Sand, Gravels and Rocks. No contaminations detected	Completed. Planned side scan sonar.	
		Sub-bottom layers	Sub-bottom profiler TOPAS		Underway	
	Waves conditions			Waverider buoy data analysis	Average values: Hs = 1.5 m Tp = 8 s	Completed
	Underwater acoustic survey					Underway. Planned a more detailed study.

Benthos	Identification of Benthic communities	Video transects, Previous existing information	Most interesting species: - Avrainvillea canariensis (algae) - Mäerl community	Completed
Fish and fisheries	Study of fish and fisheries in the area	Review of existing information	Presence of some species of sharks documented. No interaction with fisheries	Completed
Large vertebrates	Presence of marine mammals in the area.	Review existing information	Transit of mammals documented.	Underway
Marine uses / users	Review of uses	Review and consulting existing information	No affection	Completed
<b>Reports and papers</b>	Not available			
<b>Research projects</b>	<p>Project name: WELCOME (Wave Energy Lift Converter Multiple España) Sector: Wave energy Status: Prototype deployed Environmental monitoring: Oceanographic parameters: temperature, conductivity, turbidity, pH, oxygen, hydrocarbons, chlorophyll, currents speed and direction, waves Meteorological parameters: wind speed and direction, air temperature, atmospheric pressure, rain, relative humidity, photosynthetically active radiation (PAR)</p> <p>Project name: INNFACTO WAVE ENERGY Sector: Wave energy Status: Prototype on design</p> <p>Project name: UNDIGEN Sector: Wave energy Status: Prototype on design</p>			

### Monitoring and Adaptive Management:

General Description: Monitoring studies completed after the installation of the turbines.

Receptor	Monitoring Program Description	Design and Methods	Results	Status
Physical Environment	In situ: temperature, conductivity, pH, oxygen, turbidity, chlorophyll, hydrocarbons, wind speed and direction, air temperature, atmospheric pressure, rain, relative humidity, radiation PAR.	Seasonal boat based survey with multi-parameter probe.		Underway
		Permanent deployed oceanographic buoys.		Planned
	Laboratory: nutrients, pigments, metals, pH, conductivity, oxygen.	Seasonal boat based sampling with oceanographic bottles.		Underway
	Waves.	Permanent deployed wave buoy.		Underway
	Currents.	Permanent deployed ADCP.		Planned

	Underwater noise.	Permanent deployed monitor noise systems.		Planned
	Electromagnetic fields.	Electromagnetic field monitoring produced from cables and submarine station.		Planned
Benthos	Monitoring the impact on benthic communities.	-ROV inspections -Permanent underwater video cameras -Inspections with divers		Planned
Fish and Fisheries	Monitoring the presence of fish, particularly sharks.	Boat based surveys (visual counts). Permanent submarine video cameras.		Planned
Large Vertebrates	Monitoring the presence of mammals.	-Boat based surveys (visual counts) -Permanent submarine video cameras -Acoustic monitoring		Planned
Reports and Papers	N/A			
Research Projects	N/A			