The Portuguese Pilot Zone (PZ) includes an area of 320 km$^2$ and it is located near the town of S. Pedro de Moel, between Figueira da Foz (North) and Nazaré (South).

The Portuguese Pilot Zone constitutes the maritime space delimited, under national sovereignty or jurisdiction, in waters whose depths are between 30 and 90 meters.

**General features:**
- Good swell, without being too destructive;
- Few storms, mainly in winter;
- Good work windows, waves and very little wind;
- Low intensity currents and absence of tidal currents;
- Reduced shipping;
- Seabed composed mainly of sand and gravel without outcrops;
- Proximity to Ports and Shipyards.

Its main objective of the Pilot Zone is to become an open space, in the Atlantic coast, devoted to the development of oceanic energies, from early conception stages until full commercialization stages, with special emphasis in the wave energy.
Legal Framework

- **Creation:** Decree No. 5/2008 of 8 January
- **Base Lease:** Decree No. 238/2008 of 15 December
- **Concession Agreement:** RCM No. 49/2010 of 1 July

*The signature of the contract took place on the 20th of October of 2010.*

In the 23rd of January 2012, the Decree No. 15/2012 was published in order to update the Decree No. 5/2008 and to alter the Decree No. 238/2008, concerning issues related not only to the privatization of the company, but also to the characterization of the initial costs.
Developed Work

Geophysical Characterization of the Pilot Zone:

- Realized by *Instituto Hidrográfico*, it comprises aspects such as:

<table>
<thead>
<tr>
<th>✓ Bathymetry and morphology</th>
<th>✓ Sedimentary structures</th>
<th>✓ Cartography of the sedimentary cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Establishment of a baseline for water quality and sediment</td>
<td>✓ Object detection</td>
<td>✓ Oceanography</td>
</tr>
<tr>
<td>✓ Sediment dynamics in coastal areas and corridors</td>
<td>✓ Safety of navigation</td>
<td>✓ Data integration and presentation</td>
</tr>
</tbody>
</table>

- According to preliminary data, the Pilot Zone has a great energetic potential, with great exposure to the oceanographic elements, especially winds and waves.
- The report received provisional approval DGEG and is under public discussion until 12/10/2014.
- The information is free and is available at [www.oceanplug.pt](http://www.oceanplug.pt)
Developed Work

Animal Survey – Birds and Mammals (abundant species)

Characterization of Geophysics Pilot Zone was complemented by a census of birds and mammals that inhabit permanently in the area or are in transit migration.

Visual censuses used standardized methodologies at European level by the ESAS (European Seabirds At Sea) and the MMA (Marine Mammal Association).

A variety of species was identified including most importantly:

- Cagarra
- Fura-bucho
- Alcatraz
- Gaivota – de-patas-amarelas
- Common Dolphin
- Common Tortoise
Developed Work

Access Regulation of the Pilot Zone

- Establishes the general principles that promoters must follow during their activity in the Pilot Area as regards the procedures for licensing, rents, rates and the use of common areas and equipment.

- It has received provisional approval by DGEG and is currently under public consultation until 10/12/2014.

- The document is available at www.oceanplug.pt
Developed Work

Environmental Characterization of the Pilot Zone

- Assembles the elements that underpin the characterization of the reference situation of EIncA projects to install in the ZP and any EIA to develop within the infra-structure of the ZP, allowing for both a definition of the scope for these same studies;
- Some of the addressed issues:

<table>
<thead>
<tr>
<th>✓ Climate</th>
<th>✓ Hydric resources</th>
<th>✓ Hydrodynamics, sedimentology, geology, seismicity and neotectonics</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ acoustic environment</td>
<td>✓ Aquatic fauna and flora</td>
<td>✓ benthic ecosystems</td>
</tr>
<tr>
<td>✓ Landscape, land and maritime space</td>
<td>✓ Population and economic activities</td>
<td>✓ Archaeological heritage</td>
</tr>
</tbody>
</table>

- The report is being evaluated by DGEG.
- All the collected information will be available at www.oceanplug.pt
Developed Work

**Access corridors definition**

- Establishes the tracings of corridors connecting the Pilot Zone to the substations of the electrical grid.
- Identifies areas of crossing, including maritime, dune, forest and urban.
- Identifies the necessary easements to the creation of required security conditions of the infra-structure.
- Document under evaluation by DGEG.
## Projects and Timings

<table>
<thead>
<tr>
<th>Project</th>
<th>Status</th>
<th>End</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geophysical Characterization</td>
<td>Concluded</td>
<td>Public discussion until 12th October 2014</td>
</tr>
<tr>
<td>Environmental Characterization</td>
<td>Concluded</td>
<td>Under consideration by the DGEG</td>
</tr>
<tr>
<td>Access Regulation</td>
<td>Concluded</td>
<td>Public discussion until 12th October 2014</td>
</tr>
<tr>
<td>Access corridors</td>
<td>Concluded</td>
<td>Under consideration by the DGEG</td>
</tr>
<tr>
<td>Onshore connection and Submarine electrical</td>
<td>Subject to</td>
<td></td>
</tr>
<tr>
<td>infrastructure</td>
<td>law amendment</td>
<td></td>
</tr>
</tbody>
</table>
Other activities

**Advertisement and promotion of the Pilot Zone**

**Promotion of the scientific and technological knowledge related to marine energy**

ENONDAS, S.A. has recently established a MoU with a promotor and such promotor:

- planned a two step development of 1/3 and full scale device.
- Is considering to run both phases in Portugal.

www.oceanplug.com
Similar development areas in Europe
Need for cooperation

There are several test zones across Europe, which should cooperate to promote the development and deployment of technologies related to marine energy.

ENONDAS/Oceanplug recently joined the EOF in order to participate in an active way in the development of the European energy marine sector.
Next Steps – subject to law amendment

Phase 1: Setup of the Test and Pre-commercial zone:

- Development of the ZP so that it can receive, in a demonstration of concepts scheme and pre-commercial regime, electricity generation equipments.
- Infrastructure project and installation:
  - Submarine electrical infrastructure
  - Onshore point of connection
  - Establishment of access corridors and easements
  - Connection to the distribution grid
Thank you.

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