

# ARPA PORTS



### R+d+i

New Technology Anti-Reflective Power Active Ports (ARPA)

#### Description

There is a clear market for the integration of energy absorption systems in ports, although it is at this moment at initial development stage. This project proposes solutions according to these possibilities:

- Energy generation
- Electricity sale
- Electricity generation for remote services without installation (surveillance, signaling, communications, ...)
- Improvement of anti-reflexive capacity
- Improvement of anti-reflection properties due to energy absorption
- Possibility of modification of passive systems (wave tuning)

## **Objectives and improvements**

In the frame of ARPA project technologies for generating electricity from the energy of the incident waves will be studied. The research will be focused on the development of a set of installation modular systems in maritime works for the conversion of energy.

The project will evaluate the integration of these technologies, their cost, advantages and disadvantages, as well as possible exploitation scenarios to guarantee its final implementation in real infrastructures.

# Results

Several marine generation technologies have been studied and their integration in caissons dams, both vertical wall and anti-reflective type, choosing the technology that provides best results among those analyzed.

A prototype has been developed and the complete system was tested at laboratory, obtaining measurements of the electrical energy generated and its anti-reflective capacity.





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Shceme 1 Arpa with NOWAVES



Scheme 2 Marine modular generator ARPA



Image of the tested marine generator

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