

PRODUCTION OF RENEWABLE ENERGY FROM SEA AND OCEANS

Affordable and Clean Energy - Responsible Consumption and Production

Potential Goals



Agenda 2030



ENEA has developed a new smart and low-cost technology for energy production through the exploitation of ocean wave energy. The device called PEWEC (Pendulum Wave Energy Converter) is a floating system similar to a raft to place offshore: it can produce electric energy from the oscillation of the hull due to the incoming waves.

ENEA has also developed the first forecast system for wave energy and tides for the Mediterranean Sea. The system, that has been running for three years, produces high-resolution forecasts of the wave condition and currents in the Mediterranean Sea for the next 5 days.

Benefits and Advantages:

- production of clean and renewable energy
- lower environmental impact of energy production
- transfer and dissemination of innovative and efficient technologies made in Italy
- creation of skilled workforce

ENEA Service:

- design
- technology transfer
- technical support
- consulting
- training

Completed and Ongoing Activities:

PEWEC has been developed in collaboration with Politecnico di Torino under the Programme Agreement between the Italian Ministry of Economic Development and ENEA on the Electric System Research. A prototype designed for coasts characterized by waves of low height and low frequency has been realized. The 1:12 scaled prototype weighs 3 tons, with dimensions of 3m x 2m x 2m. ENEA and Politecnico di Torino are working on the project of a device with a nominal power of 400kW. The forecast system has been running for three years and produces daily wave and currents forecasts to developers and big companies involved in the ocean energy sector.

Keywords:

Renewables, energy, environment, renewable sources, energy efficiency, sustainability, training, consulting, qualification, certification, technology transfer, sea, ocean, waves, forecasts



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