



## MONACOREV

### NUMERICAL TOOLS FOR DESIGNING WAVE ENERGY CONVERTER TECHNOLOGY

Among the various sources of Marine Renewable Energy (MRE) available, wave energy possesses considerable potential. Yet none of the existing forms of energy-converter technology presents itself as an obvious solution due to specific hydrodynamic issues that persist at multiple levels:

- At energy converter level (~100 m) – floaters' behaviour at sea when subject to large-scale movements, particularly in extreme weather conditions
- At wave energy farm level (~1 km) – interaction of waves between different energy converters
- At regional level (~10 km) – impact of farms on littoral zones.

The object of the MONACOREV project is to develop the appropriate tools to respond to this multifaceted problem.

Combining these numerical tools for designing wave energy converter technology will produce an integrated computational chain covering all aspects from assessing local effects in the neighbourhood of a converter to predicting the potential impact of a farm at regional level. The tools will be validated using experimental data.

Ultimately, these design tools will be invaluable to those developing wave energy converter projects, enabling them to devise farms equipped with optimised converters in terms of production capacity and in terms of limiting and controlling the impact on local and regional hydro-sedimentary conditions.

#### Partners

##### Companies

EDF R&D, Laboratoire National d'Hydraulique et Environnement (LNHE), Chatou  
HydrOcean, Nantes

##### Research centers

École Centrale de Nantes (ECN), Laboratoire de Mécanique des Fluides, Nantes [\[Project Developer\]](#)  
École Nationale des Ponts et Chaussées, Laboratoire Saint-Venant (ENPC - LSV), Chatou

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- Agence Nationale de la Recherche

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