

What will DTOcean produce?

A DESIGN TOOL SOFTWARE SUITE

The project aims at developing of a full suite of whole-system software design tools to enable the design, development and installation of wave and tidal energy converter arrays in a cost effective, timely and environmentally appropriate manner. The tool will deal with hydrodynamic, electrical architecture, moorings and foundations, logistics as well as system control and operation.

A TOOLS & MANUALS REPOSITORY

This repository will give direct and open access to a fully searchable database that contains all tools and manuals developed as well as the referenced and validated data collected and produced within the project with respect to the hydrodynamic performance of ocean energy arrays. This repository will be hosted by Joint Research Centre (JRC), to ensure a long-term exploitation.

Consortium



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This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement n° 608597



Optimal Design Tools for Ocean Energy Arrays

DTOcean



Supported by



Objectives

The development of a full suite of whole-system software design tools to enable the design, development and installation of wave and tidal energy converter arrays in a cost effective, timely and environmentally appropriate manner.

The strategic identification of enabling technologies to reduce deployment costs and increase the performance of ocean energy arrays.

Provide the wave and tidal energy sector, and its stakeholders, with well validated guidelines for accelerating decisions by means of reducing risks and uncertainties.

Design Tools



Array Layout

Characterisation of the hydrodynamic interaction between the individual devices in the array, how this affects the resource, power performance, cost uncertainties and environmental impact.



Electrical Architecture

Determination of technically and economically optimal configurations for the offshore electrical network



Moorings & Foundations

Development of models to inform about mooring networks and foundation requirements



Lifecycle Logistics

Design optimal logistic solutions during procurement, manufacturing, installation, O&M and decommissioning of ocean energy arrays



System Control & Operation

Identify, adapt and develop methods to optimise operational aspects of arrays of wave and tidal devices