



## **Offshore Energy Mapping for Northeast Atlantic and Mediterranean: MARINA PLATFORM project**

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Deep offshore ocean energy mapping requires detailed modeling of the wind, wave, tidal and ocean circulation estimations. It requires also detailed mapping of the associated extremes. An important issue in such work is the co-generation of energy (generation of wind, wave, tides, currents) in order to design platforms on an efficient way. For example wind and wave fields exhibit significant phase differences and therefore the produced energy from both sources together requires special analysis. The other two sources namely tides and currents have different temporal scales from the previous two. Another important issue is related to the estimation of the environmental frequencies in order to avoid structural problems. These are issues studied at the framework of the FP7 project MARINA PLATFORM. The main objective of the project is to develop deep water structures that can exploit the energy from wind, wave, tidal and ocean current energy sources. In particular, a primary goal will be the establishment of a set of equitable and transparent criteria for the evaluation of multi-purpose platforms for marine renewable energy. Using these criteria, a novel system set of design and optimisation tools will be produced addressing new platform design, component engineering, risk assessment, spatial planning, platform-related grid connection concepts, all focussed on system integration and reducing costs. The University of Athens group is in charge for estimation and mapping of wind, wave, tidal and ocean current resources, estimate available energy potential, map extreme event characteristics and provide any additional environmental parameter required.