



**Engagement**

**SoleMare: Resilient Offshore Solar Energy Hybrid Marine Platform**

Countries	Project value (€)	% by EPSILON	€ by EPSILON	Engagement	Funding by	Date	Partners
MT, EL, BE, PT, DK, CY, SE, UK, AT, LU, CH, IL	4.496.844	7,8%	350.625	HORIZON	EU	23.02.2022	EPS, ABS, CJH, ELL, EDPN, ETO, HIS, ITM, NAS, NTU, SEA, UEA, SVA, EDPP, WAV, COLAB, AMA, GRA, AGO

**Description**

Solar radiation is a widely accessible source of energy, cyclic and diurnal. Floating Photovoltaics (FPV) is a “hot topic” and essential for renewable energy production.

SoleMare was aimed at unleashing the business potential of the rapidly growing FPV business. Its objective was:

- To engineer, design, manufacture, test, and validate (both in the laboratory and in the Ocean) a floating photovoltaics functional prototype-platform, capable to withstand extreme oceanic conditions, and in case of a positive RTD project outcome at TRL6, to go-to-market via an EEIG start-up with the brand name SoleMare.eu.

SoleMare ambition was a New Business (NewCo). EPSILON and the consortium would develop and manufacture prototypes, test, monitor, and evaluate prototypes, and deliver at TRL6 an integrated resilient offshore floating solar energy platform aimed at:

- An innovative concept of Renewable Energy Source exploitation (via FPV) for European Seas/Ocean by considering multiple subsea and harsh met-ocean conditions ensuring integrity and durability at TRL6 for: North EU, Central EU, Mediterranean (mild conditions),
- Delivering of an enhanced performance offshore FPV system to support marine renewable energy harnessing,
- Improving investors’ confidence for a new system, environment friendly and of low investment risk
- Commercialisation of SoleMare, that may recover investment faster than alternative ocean technologies



**Outcome**

To achieve the project objectives, EPSILON and the Consortium proposed to:

- Test and validate the benefits of a new circular material in tough offshore FPV structures including anchoring, mooring, and energy production, whilst evaluating structural integrity and durability under demanding oceanic conditions. Delivery of 3 similar designs, but tuned to withstand North-EU ocean conditions, Central-EU milder conditions, and Med mild conditions.
- Test and validate new prototype components and materials in offshore FVP systems and verify their compatibility and resistance to oceanic environments, considering very high wind (speed >25m/s), current (>1.2 m/s) and wave (height >14 m) loads and corrosion and biofouling on all elements of the ocean energy systems.
- Provide research material properties and structural behaviors of an FPV Platform (carrying structure and FPV panels) in combination with the use of improved predictive computational modeling tools.
- Research, develop, validate improved predictive computational modeling tools for materials and structures, to be used in the design, construction, monitoring, and operation of offshore FPV platforms.
- Deliver a functional prototype that will contribute to the objectives of the Mission.