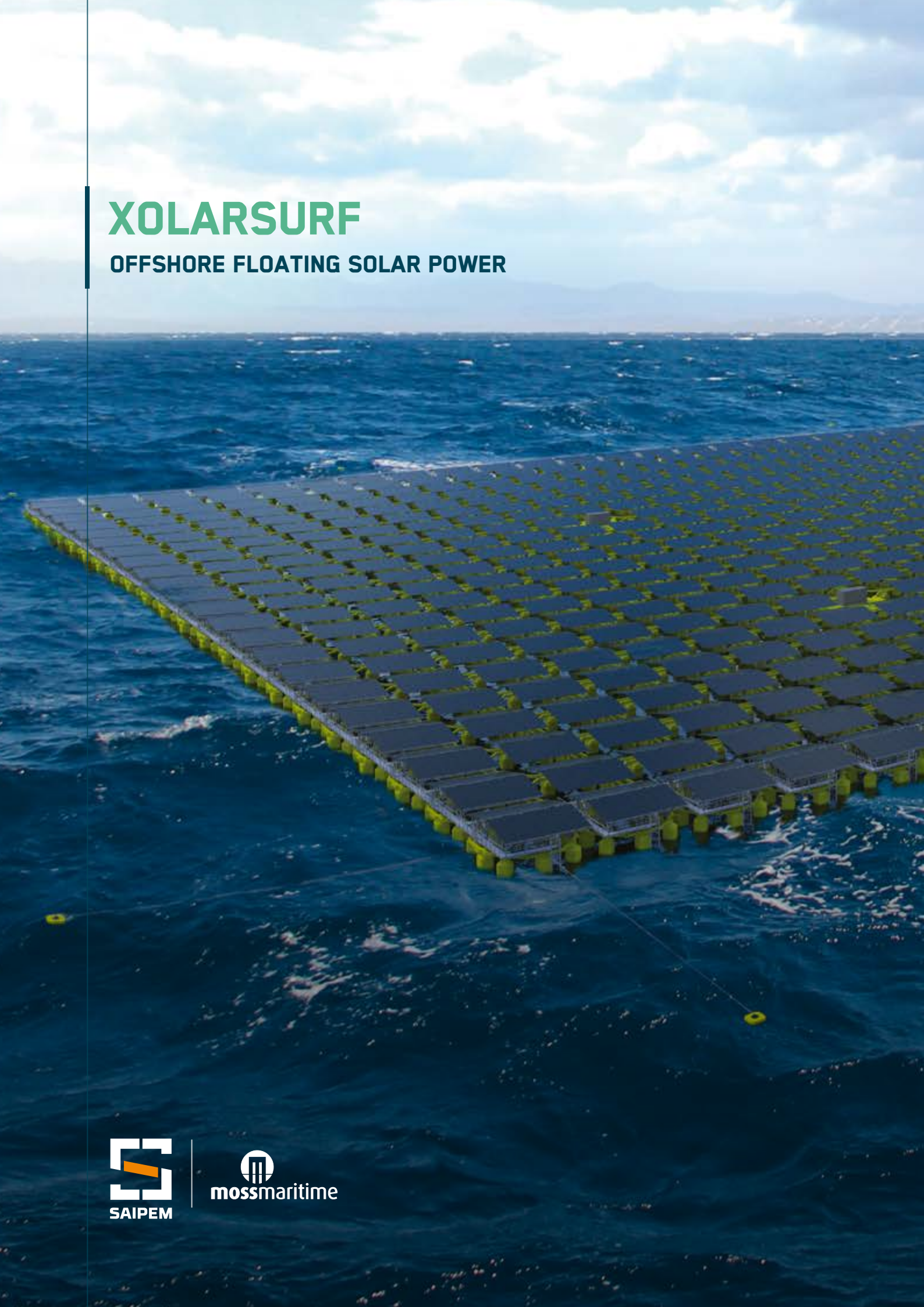
XOLARSURF

OFFSHORE FLOATING SOLAR POWER



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WHAT IS XOLARSURF?

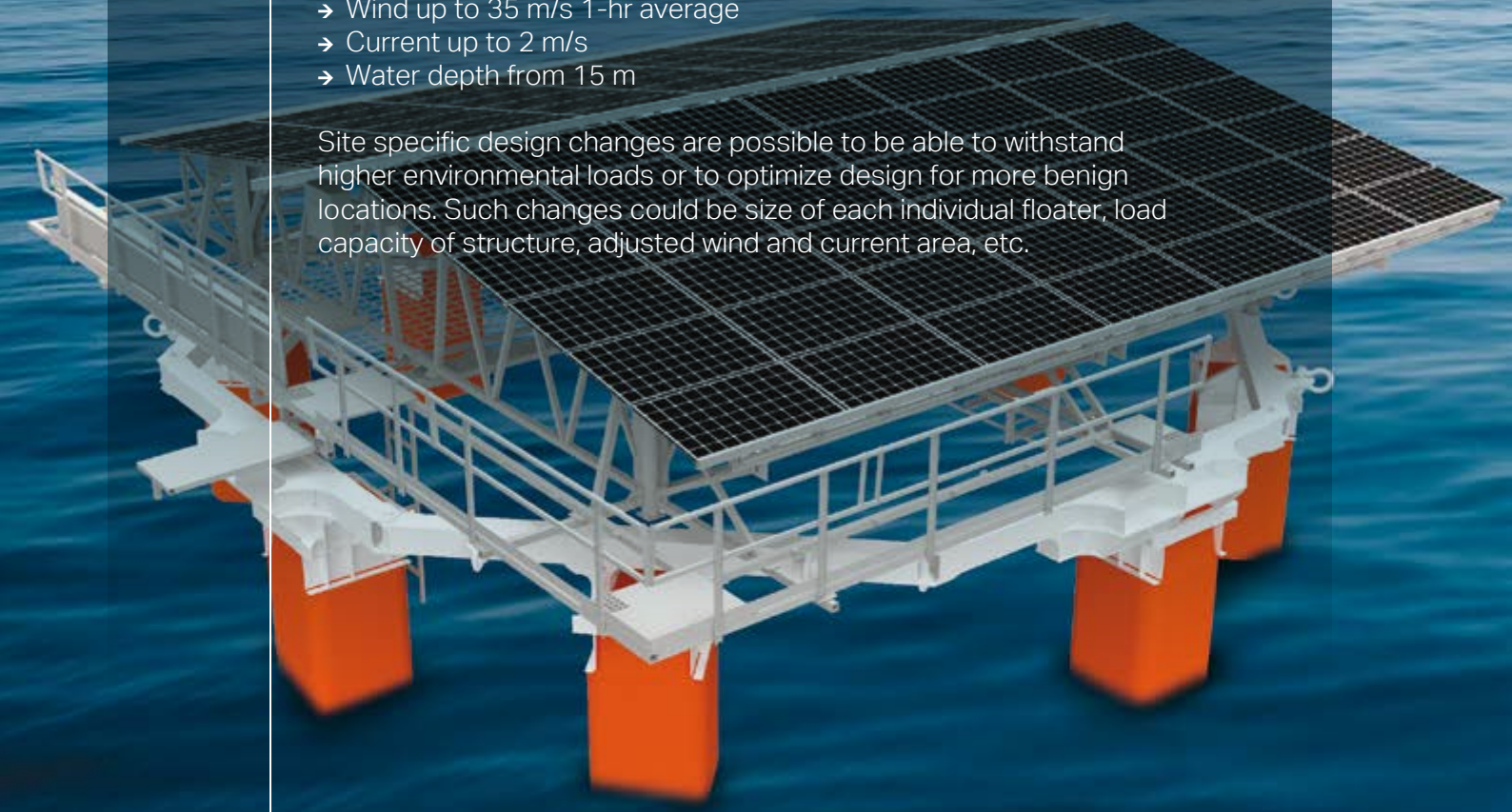
Xolarsurf is a cutting edge floating solar platform developed by Moss Maritime.
Its modular design can be adapted to operate in any offshore location under harsh environmental conditions.
With its 300x300 m span, it has a capacity of up to 13.5 MW and consists of almost 500 individual floaters.

WHERE CAN XOLARSURF BE INSTALLED?

Suitable for exposed locations, meaning sea-water environment and some wave action.

Base case design:
- Hs up to 4 m with Tp 10 s
- Wind up to 35 m/s 1-hr average
- Current up to 2 m/s
- Water depth from 15 m

Site specific design changes are possible to be able to withstand higher environmental loads or to optimize design for more benign locations. Such changes could be size of each individual floater, load capacity of structure, adjusted wind and current area, etc.



FLOATER DETAILS

Each PV-carrying floater consists of:

- Eight pontoons for buoyancy.
- Flexible steel frame with pretensioned fibre ropes. The flexible frame absorbs the dynamic loads coming from the water acting on the structure.
- A purpose made connector system between frame and PV mounting structure which allows for relative motions between the flexible frame and the rigid mounting structure.
- Rigid PV mounting structure to keep the PV panels out of water and prevent panel torsion from environmental loads. This structure has gangways for easy access for inspection and maintenance of all floater components.

DESIGN DEVELOPMENT

2017

Scatec **innovation contest**, first version of design.

2018 - 2019

Concept development with internal funding and **FORREGION (RCN)** funding development of numerical models with theoretical support from **SINTEF Ocean**. First simplified model test as part of MSc thesis at NTNU.

2020

Partnership with Equinor, concept phase, extensive model test campaign at SINTEF Ocean and first full size park analyses. Design improvements, e.g. flexible frame to prevent wave loads reaching the PV modules.

2021 - 2022

Pilot phase, **1 MW planned installation (6x6 floaters)**, with export cable to shore and connection to grid. During the course of the project it was scaled down to 0.5 MW to be able to reach 2023 installation.

2023

Reduced pilot to be installed in a benign location at Frøya, Norway. Reason for reduced pilot scope is **Equinor's change in FPV** strategy presented late 2022.

WHO WE ARE

Moss Maritime, part of Saipem, provides leading technology and expertise within design and engineering services to the offshore energy sector as well as other ocean-based sectors. Moss Maritime continues to specialize in frontier and technology advanced projects, providing a wide variety of design solutions for innovative floater designs for the energy industry in general, with focus on energy carriers such as LNG and hydrogen, as well as for the renewable energy sector.

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