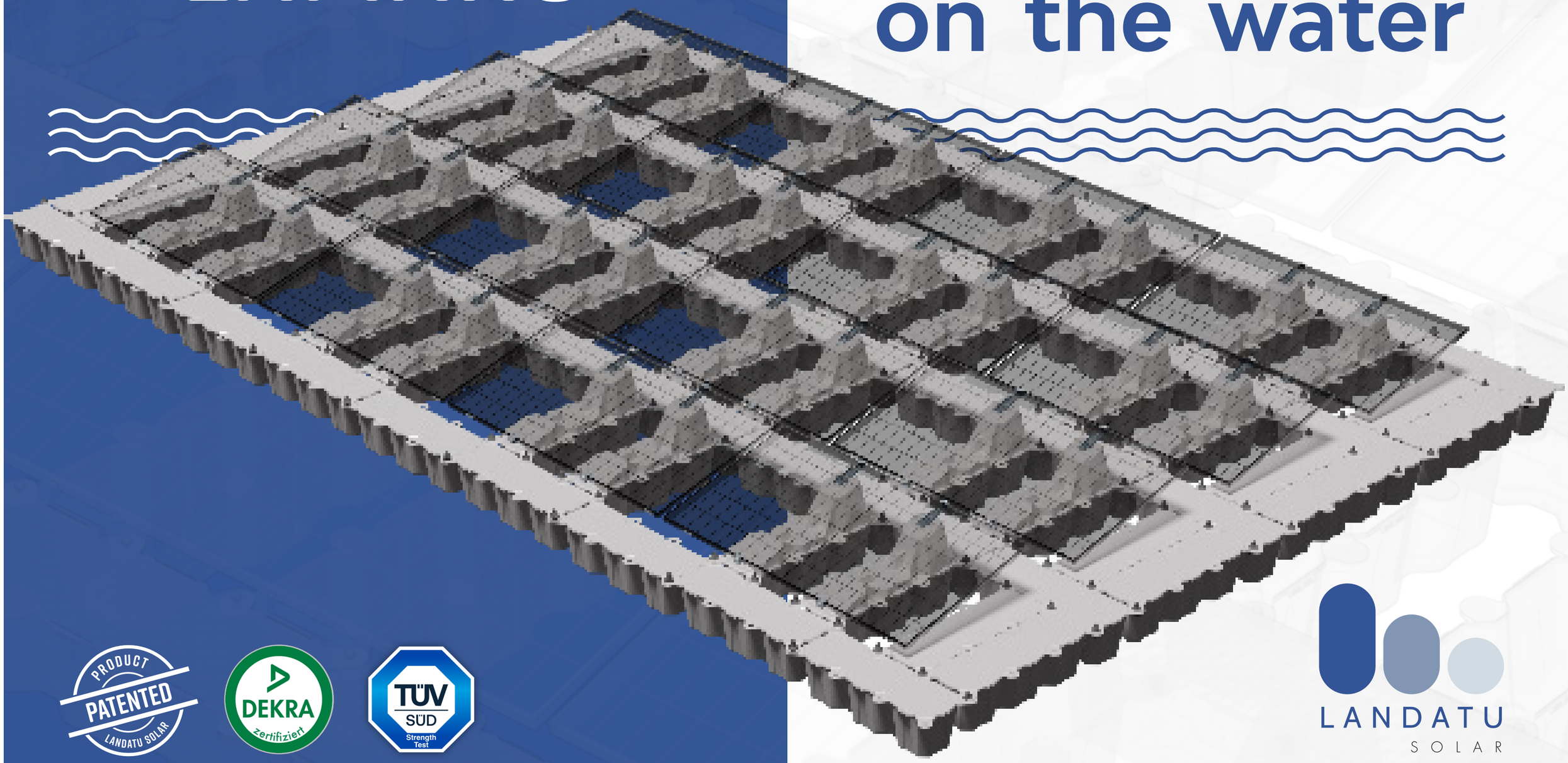
LAMARU®

Solar energy on the water



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DEKRA zertifiziert

TÜV SÜD Strength Test

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Floating solar energy

At Landatu Solar we design and build floating solar systems.

Our innovative patented system LAMARU® makes it easy to build and anchor floating photovoltaic systems to generate clean energy and preserve our environment.

Where?

Landatu solar solutions are designed for installation in any space that has a body of water.

Irrigation ponds

Dams

Lakes

Swamps

Pump giga battery

Market

Spain

10º largest reservoir capacity worldwide

1º per capita reservoir capacity

Spain is one of the European countries with the most dams and the one with the most pumped-storage hydroelectric facilities and giga batteries planned for construction.

Domestic potential

+35 Gw
in private irrigation ponds
>70.000 ponds

+9,5 Gw
in public bodies of water
>7.000 Ha

+47K mil €
Total volume of potential business

European potential

+200 Gw

+200K mil €
Total volume of potential business

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Projects

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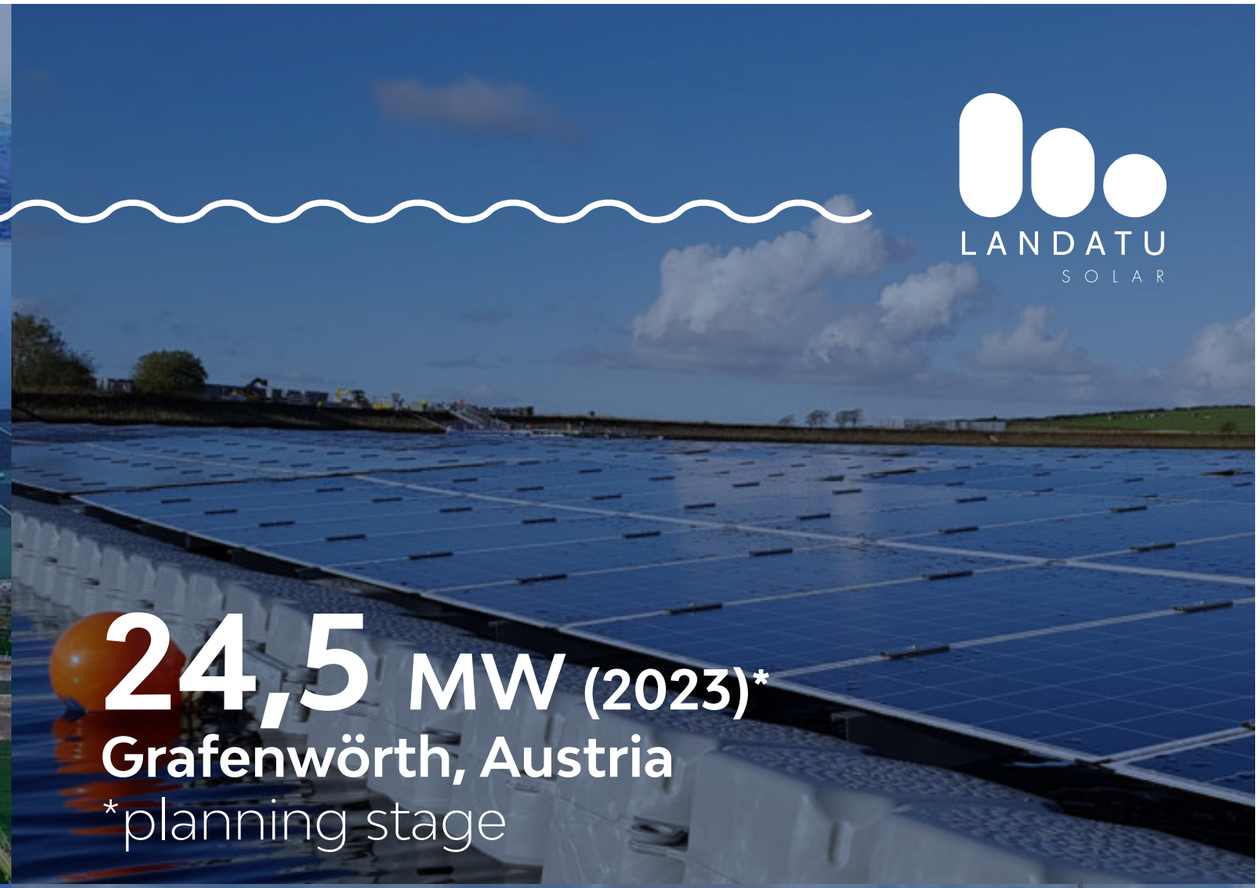
320 MW (2022)
Huaneng Power International HPI, Dezhou, China



24,5 MW (2023)*
Grafenwörth, Austria
*planning stage

600 MW (2023)*
Omkareshwar Dam, India
*planning stage

1,7 MW (2023)*
Torrelaguna Mini-Hydrolectric Plant, Madrid, Spain
*planning stage

Advantages
of solar energy

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Generate clean, unlimited and free energy for self-consumption

Carbon neutrality for your industry

Sell energy you don’t consume to the grid

High profitability for your facilities

Additional advantages
of floating solar energy

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Use unallocated space

Generate clean energy using unused space without wasting arable land.

Environmentally friendly

Environmentally friendly and facilitates environmental permitting.

Higher output

The cooling effect of water increases solar production by 5 to 12%.

Prevent evaporation

Prevents around 80% of water evaporation.

Higher water quality

Improves water quality by reducing algae and mud.

Our Technology

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LAMARU® patented floating and anchoring systems are designed to lower installation costs as much as possible and maximise energy production.

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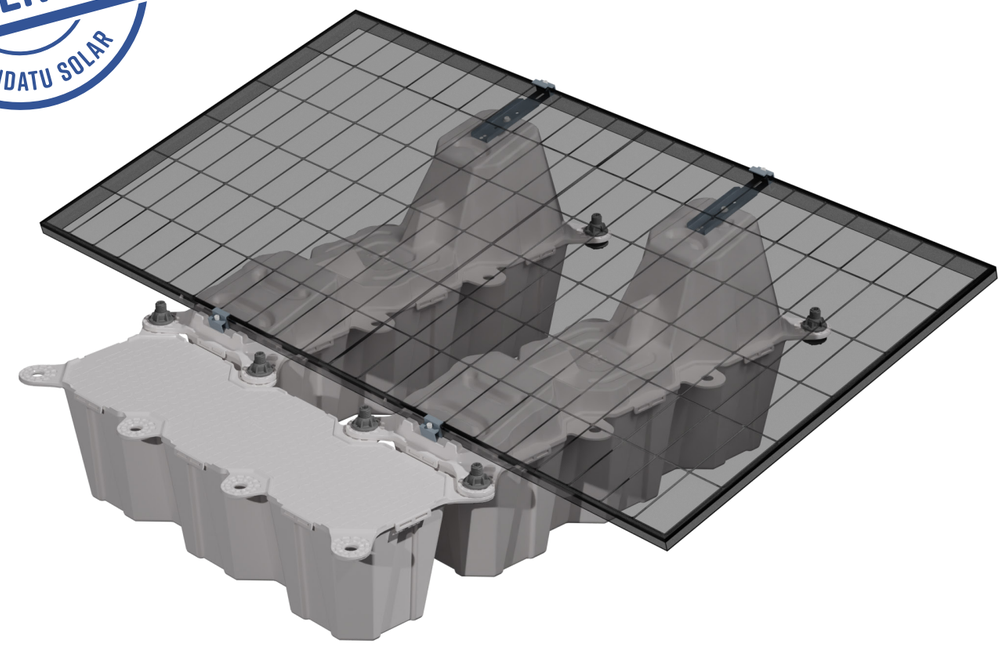


✔ Optimised for aquatic environments

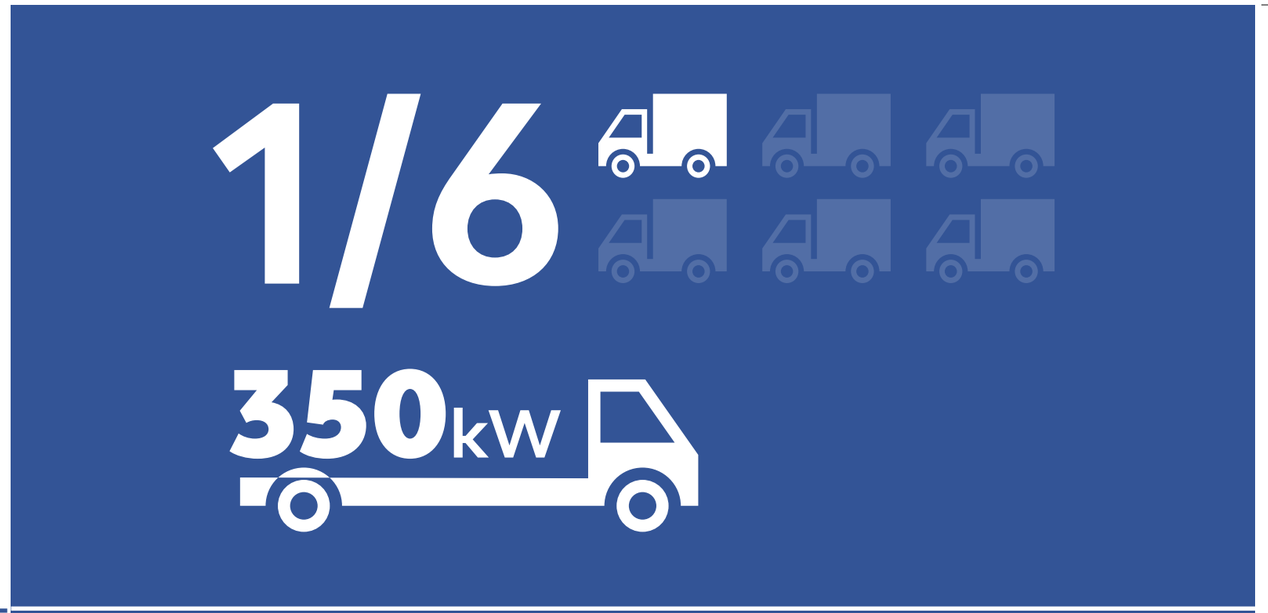
Adaptable to any system: Different water depths, currents, tides or gusts of wind.

✔ High compatibility

LAMARU® floats are compatible with most photovoltaic panels in the industry.

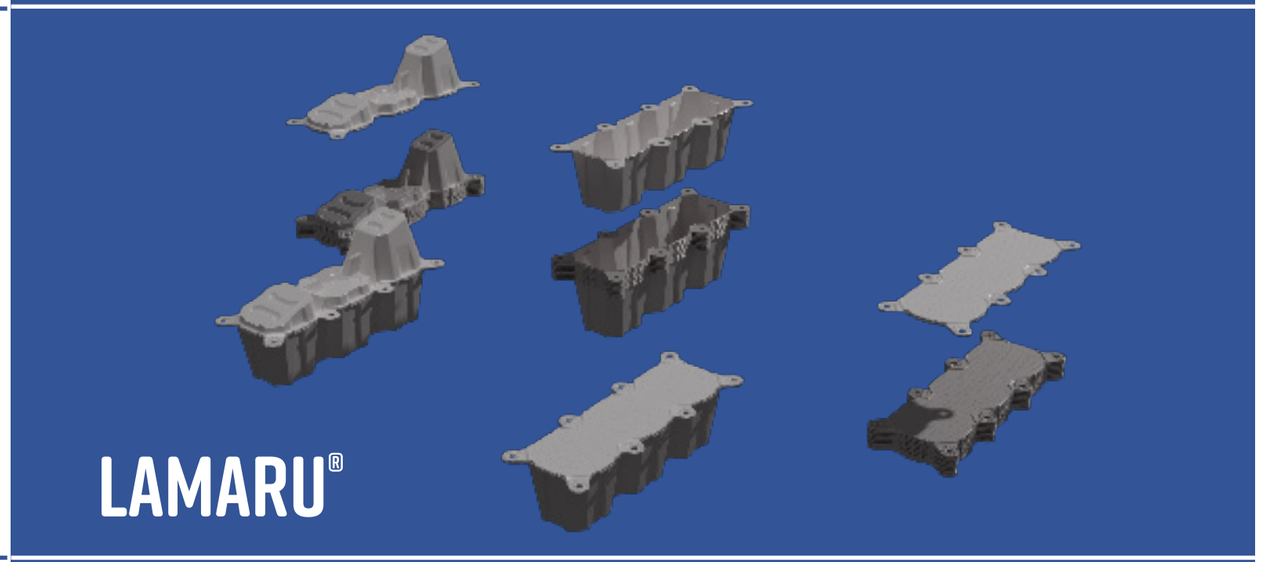
✔ Easy to transport

- The stackable LAMARU® float system reduces the space needed to move it to 1/6, which leads to enormous savings on transport.
- Up to 350 kW in a 40’ container.



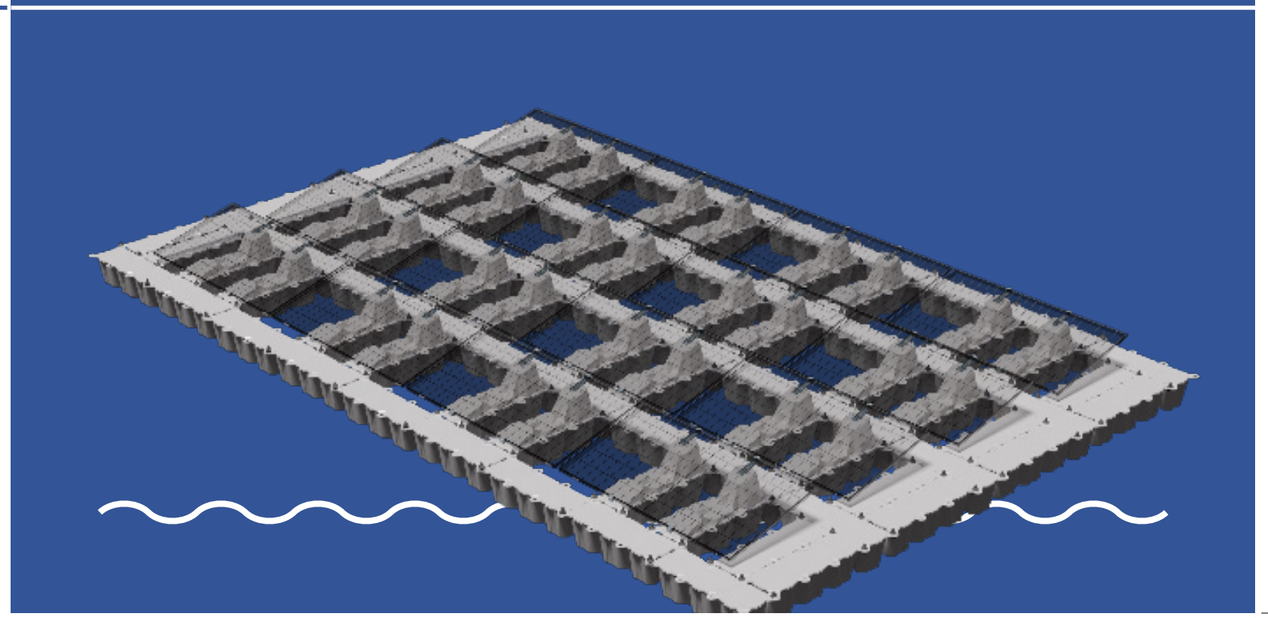
✔ Optimised design

- Made of high density polyethylene (HDPE).
- Injected material: the thickness of the material can be controlled. Maximum optimisation of materials costs.
- Competitive prices.



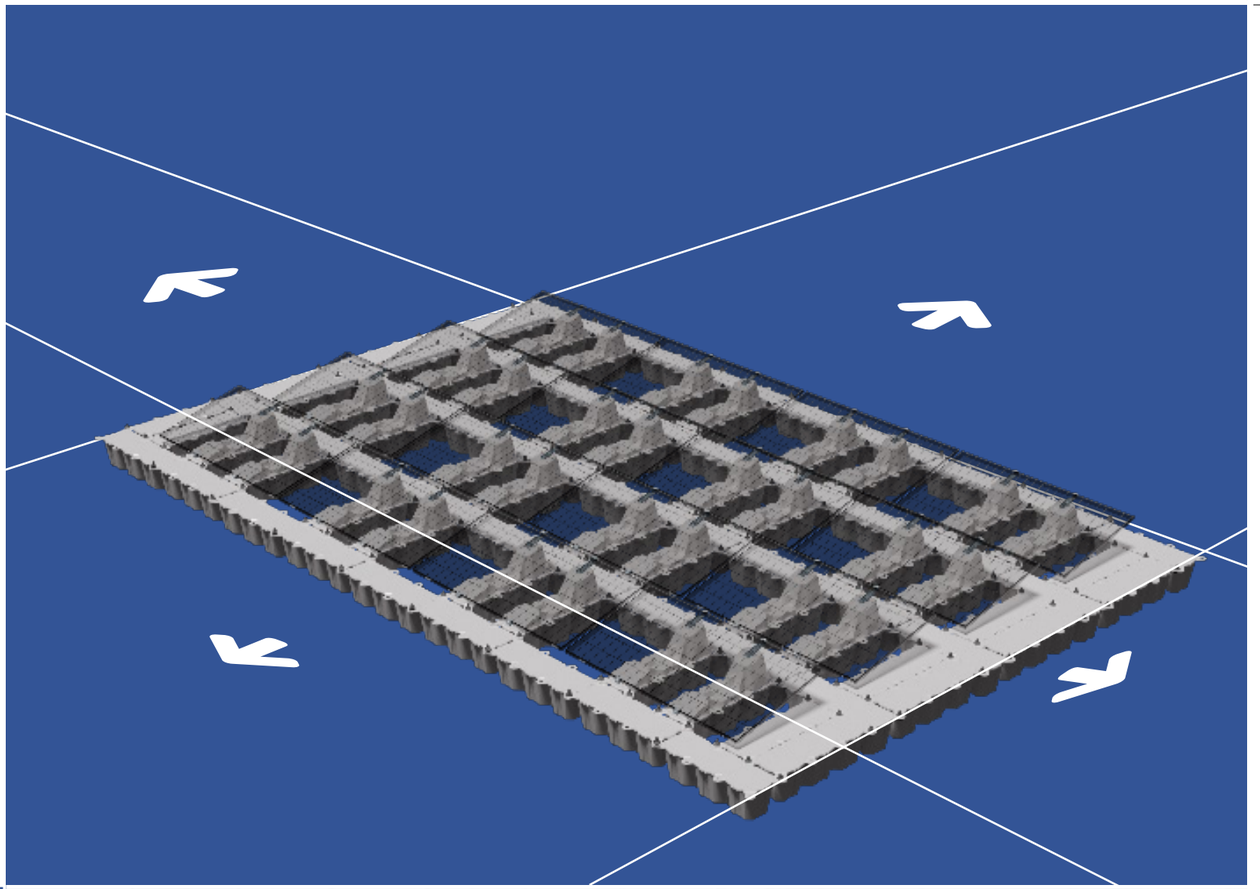
✔ Easy to install

- Optimised assembly system (1 MW installed in 15-18 days by a team of 4 people)



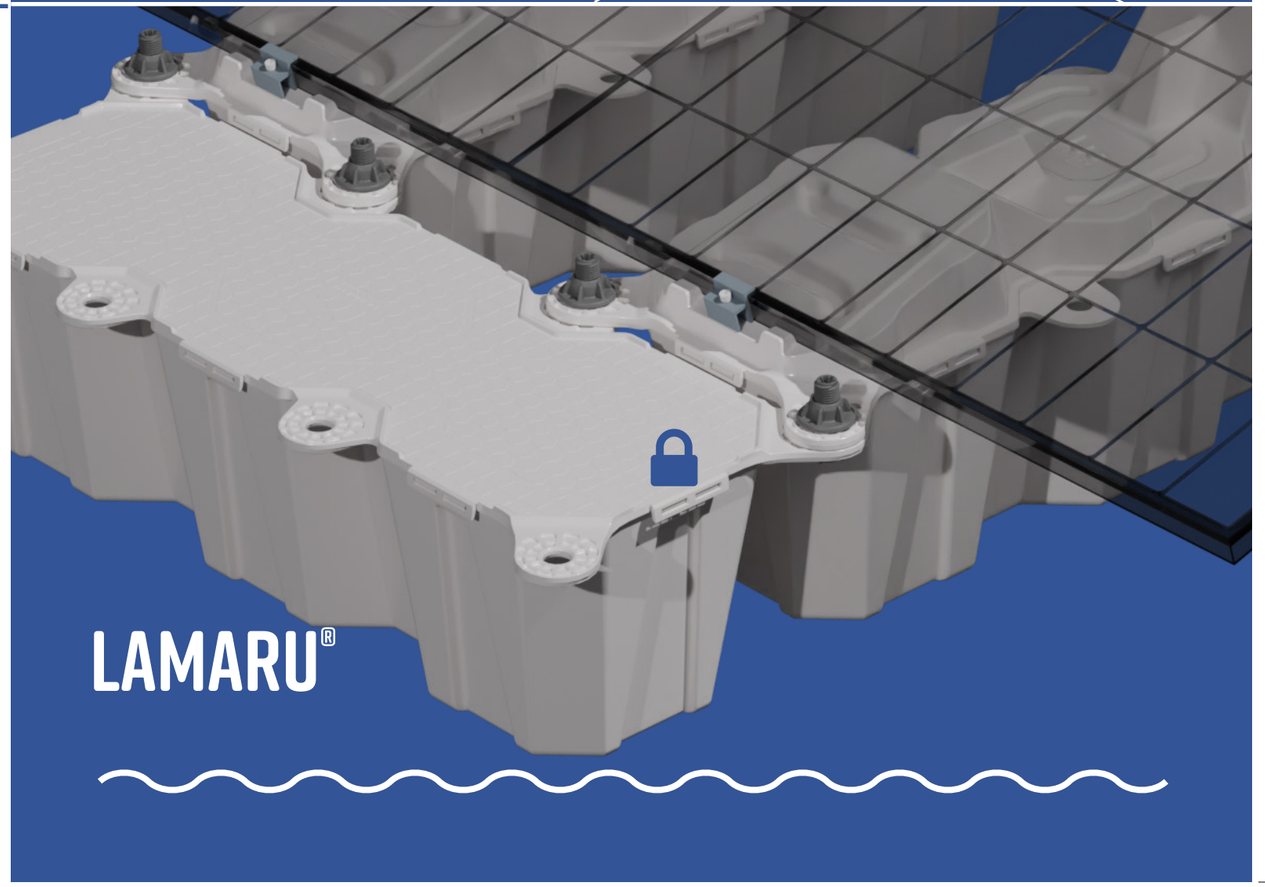
✔ Scalable

- Scalable to different sizes or pontoon islands (4 MW).
- Adaptable to project conditions Southern and east-west systems.
- Configurable maintenance corridor installation.
- Compatible with panels of different sizes and characteristics.
- Projects can be done in phases.



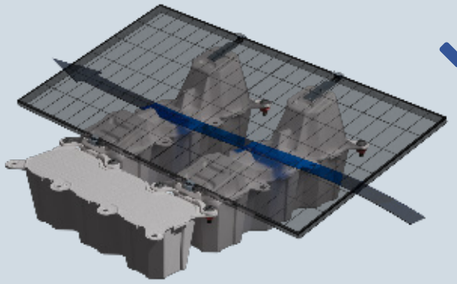
✔ Safe

- Closure between cover and float base with steel bar.
- Designed to keep water from getting into the floats.



15° tilt

Our design with a 15° tilt improves the performance of your system because it can withstand strong gusts of wind.

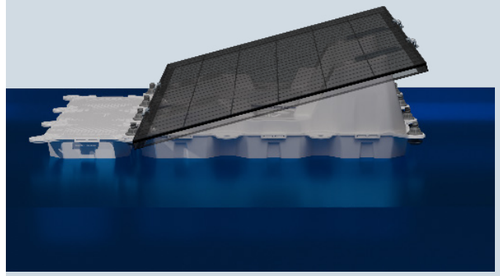


Optimal cooling

Our design allows good air flow between the panel and the float system so the modules are cooled properly.
The panels clean themselves better with rain water.

Quality and strength

Made of the best plastic materials, they have a unique design that can withstand tough weather conditions like wind, humidity, extreme temperatures and waves.



Safety

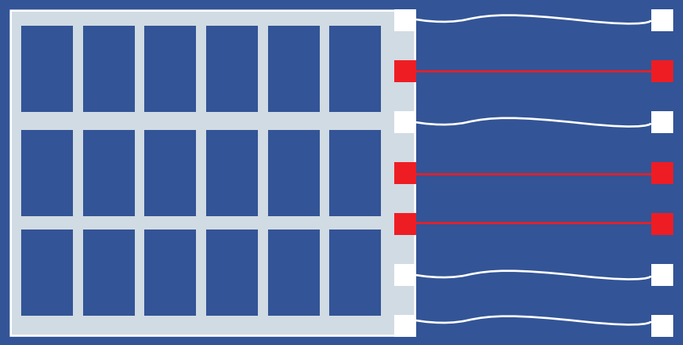
They have very high floatability and stability so the floats are perfectly adapted to the weight and requirements of every system. They have maintenance corridors to facilitate commissioning and maintenance of the system.

They have minimal wind resistance because of the design conceived to withstand adverse conditions.

Problems with anchoring systems

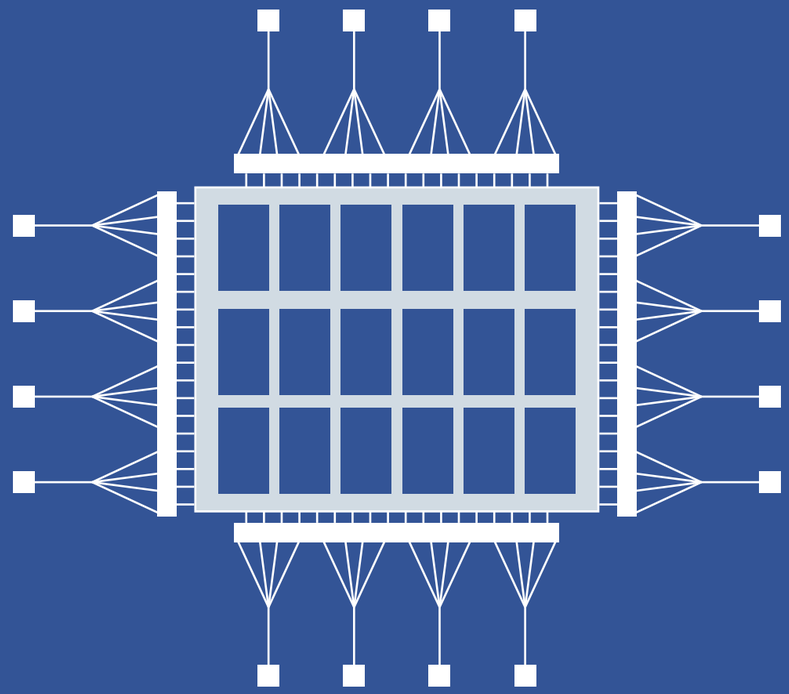
The system is redundant and has a high number of anchor points without using force.

- ✖ Non-constant voltage with uneven and imbalanced strength.
- ✖ The wiring exceeds its designed load which causes chain failures.
- ✖ Elastomers solve some of those problems, but the costs are very high,



Solar island with a modern anchoring system

- ✖ Only some cables are under stress.



Our Solution:
Patented anchoring system

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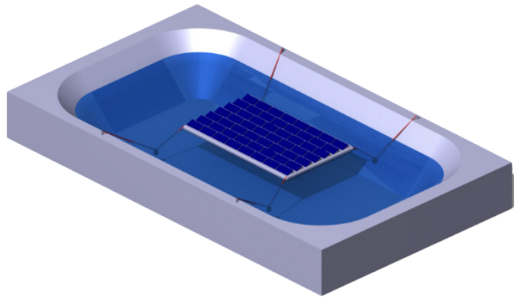
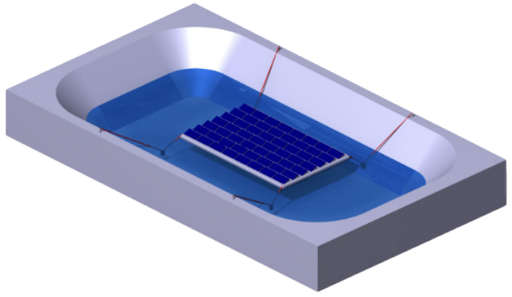
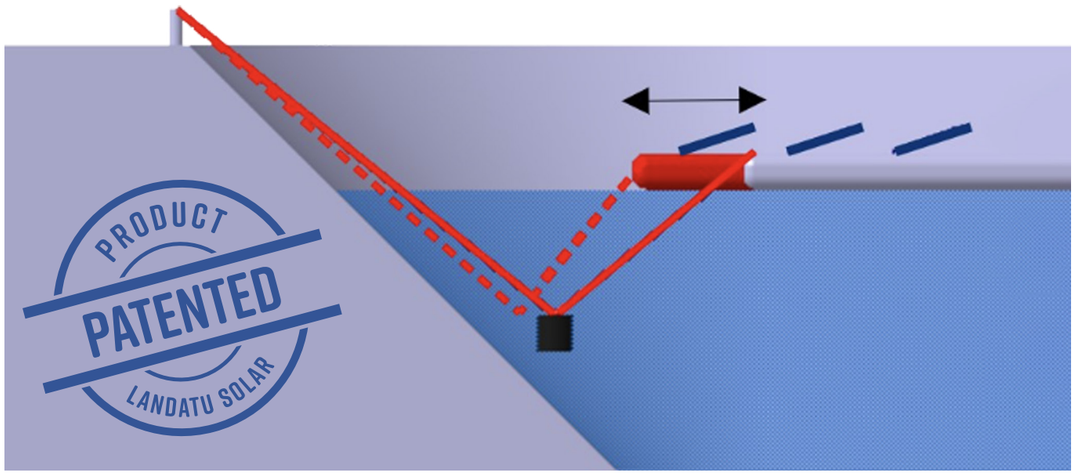
It has an individual stress compensation system using a moving weight that moves freely on both ends

- The tension between the ends is always kept constant.
- It guarantees the pond is balanced.
- Easy to install.
- Low construction costs.
- Can withstand waves (< 15 m) and gusts of wind (< 160 km/h).

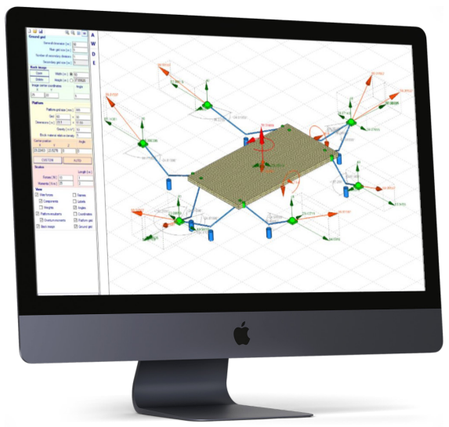






In-house software for calculating anchor points

A calculation system has been developed based on our anchoring systems.



- It solves a complex mathematical problem.
- The exact behaviour of the float island when it is operating can be known.
- It simulates the movement of the island under external loads, like wind or waves, to the balance point.
- It makes the design of the anchor point and manufacturing characteristics (strength, thicknesses, ballasts, etc.) more easy and agile.

Turn-key project

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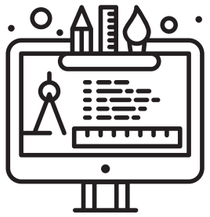
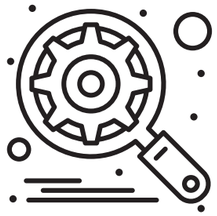


We can design your system



We adapt offers and projects to your needs

We supply all the materials

We can install the system

We can handle permits for the system

We can help you and orient you with applying for subsidies

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Our mission is to promote clean energy generation, preserve scarce water resources and free up land for other uses.

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