

# Solar power takes to the seas

PES takes a look at a revolutionary PV-powered boat which could facilitate an energy-efficient future and help conserve the increasingly-limited natural resources of the planet.

In February 2010, the world's largest solar-powered boat was unveiled at a dockyard in Kiel, Germany. Californian-based PlanetSolar now plans an official launch of its boat – also called PlanetSolar – in April, as a preamble to a round-the-world tour commencing in early 2011.

The \$24m vessel will receive all its energy from high-efficiency solar cells from SunPower Corp., a Californian manufacturer of solar cells, solar panels and solar systems.

When it comes to solar power, boats seem uniquely suited to the task – after all, they sit on top of a highly-reflective body of water with, ideally, an unobstructed view of the sun.

At least that is the reasoning behind the new catamaran. Conceived by skipper Raphaël Domjan, the multi-hull, 50-person catamaran is crowned with some 5,300 square feet of solar panels.

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The 31-metre (100-ft) long catamaran is covered with 500 square metres of photovoltaic solar panels, made up of approximately 38,000 solar cells. Each cell offers an efficiency of at least 22 per cent, the highest efficiency available on the market.

All of the boat's components are made up of classic, state-of-the-art technology, demonstrating the feasibility of reliable, solar-powered watercraft.

With an average speed of eight knots, (17mph) the catamaran, constructed by the Knierim Yacht Club in Kiel, is expected to be the fastest solar boat to cross the Atlantic and the first to cross both the Pacific and Indian Oceans.

Its round-the-world tour will run from East to West along an equatorial route with pre-planned stopover points including Hamburg, London, Paris, New York, San Francisco, Singapore, and Abu Dhabi.

At each stopping-off point the solar boat, skippered by Raphael Domjan alongside French sailor Gerard d'Aboville, will be available for inspection by up to 50 members of the public who will be able to examine fully its facilities.

"We are excited that the solar-powered boat is now a reality," said Raphaël Domjan, CEO of PlanetSolar SA. "As we embark on the next phase of this project, we look forward to our around-the-world trip, and are confident that SunPower's proven technology will get us there."

SunPower's high-efficiency solar cells are said to offer up to 50 per cent more power than conventional technology, and two to four times the efficiency of thin film technologies.

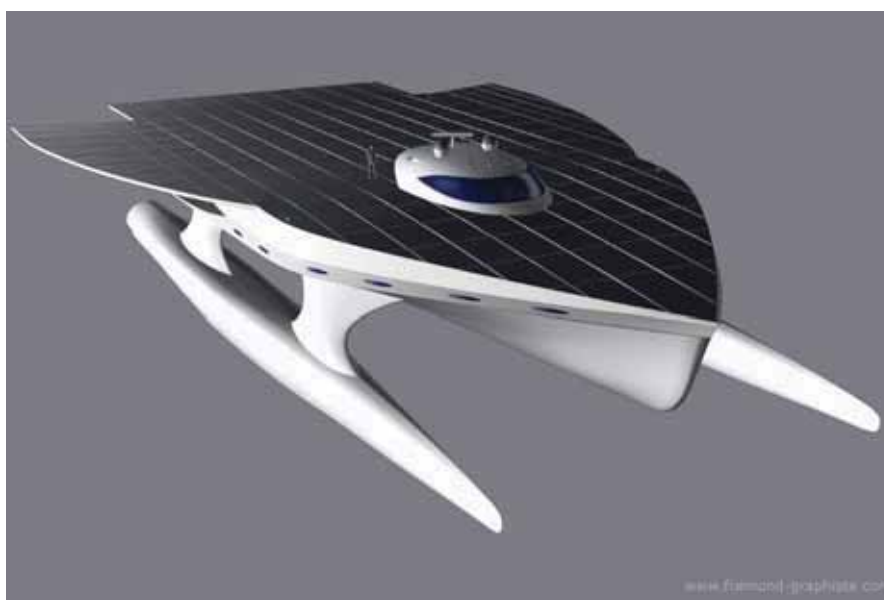
The same SunPower solar cells integrated into the skin of the solar boat were a popular choice for rooftop solar systems on homes and light commercial installations in the US, a spokesman added.

"We are proud to support the unveiling of the world's largest solar boat," said SunPower Senior Director Jorn Jurgens.

"SunPower's technology will enable the catamaran to circumnavigate the globe with the speed and performance expected from the planet's most powerful solar."

Based in Switzerland, PlanetSolar has brought together an international team of physicists, engineers, boat builders and others to show the viability of renewable energies and environmental protection.

Finally, what if the vessel runs into an overcast day? Batteries below deck store enough energy for several days without direct sunlight – heady stuff. ■



Planet Solar