

World's largest solar-powered boat stops in Boston

The MS Tûranor PlanetSolar on an Atlantic expedition

By Gail Waterhouse

GLOBE CORRESPONDENT

JUNE 24, 2013

Bigger, fancier ships have plied these waters. But rarely has Boston Harbor seen a craft as unusual as this: a boat entirely powered by the sun, a catamaran with a flight deck of more than 500 solar panels, capable of sailing around the world completely under its own power.

The MS Tûranor PlanetSolar arrived in Boston over the weekend for a brief stay to show off the unusual engineering and design that makes it the world's largest solar-powered boat. The ship is on a scientific mission, led by one of the world's leading climate scientists, traveling along the Gulf Stream in the Atlantic to gather data about the depths of the ocean and its interactions with the atmosphere.

But it was the unusual boat, not its promising research, that first hooked Martin Beniston on leading the new expedition.

"I said, 'Let's go for a cruise. I'll get back to you on the science.'"

Beniston, an influential climatologist, was a member of a United Nations-backed panel on climate change that won the 2007 Nobel peace prize.

The PlanetSolar has more than 5,000 square feet of solar panels that, when fully deployed, stretch 75 feet across and 115 feet stem to stern. The panels charge arrays of lithium-ion batteries stowed in the catamaran's twin hulls, each battery set weighing five tons. When fully charged, the batteries have enough stored power to run the boat for as long as three days of bad weather.

For all of its size the boat is hardly spacious. And for all its technological marvel, it is nothing fancy inside. The rooms are nondescript: a large if bare interior, galley kitchen, and bunk space for up to nine people. The boat can hold 60 passengers, but there is little in the way of creature comforts.



JENNIFER TAYLOR FOR THE GLOBE

The MS Tûranor PlanetSolar docked in New York on Thursday before making its way to Boston.

What it doesn't have is noise. Like an electric car, the PlanetSolar glides soundlessly along its course, with none of the heavy sound and vibration of combustion engines. The scientific mission provided the news media with a brief tour of PlanetSolar in New York Harbor last week, and on a good day for a sail, it cut through a slight chop smoothly enough that the less experienced among the passengers did not get seasick.

However, the ship is on the slow side: Its average speed is just 6 miles an hour.

A small ladder leads up to the roof deck and its sheen of small, black solar panels. A pulley system extends panels out beyond the body of the boat.

In the ship's small command center, the crew monitors satellite images that chart the sunniest path to the next destination.

"I usually look at sea, wind, and current, and now I have to pay attention to sea, wind, current, and sun," said PlanetSolar's captain, Gérard d'Aboville.

Though this is the first solar-powered boat he has commanded, d'Aboville has plenty of experience with human-powered boats: He was the first man to row solo across the Atlantic and the Pacific oceans.

Other than its unusual power system, d'Aboville said, taking charge of the PlanetSolar is similar to some of his past boating experiences.

"I've been dealing with boats all my life," he said. "This is not very different."

The solar ship is the creation of a Swiss adventurer who launched MS Tûranor PlanetSolar in 2010 to demonstrate the power of renewable energies.

Its name was drawn from the mythic world created by novelist J.R.R Tolkien and is supposed to mean “power of the sun.”

For two years the ship sailed around the world on a route close to the equator for maximum sunlight, logging more than 37,000 miles and completing the first solar-powered circumnavigation of Earth.

The boat has since been put to work by climate scientists at the University of Geneva who are trying to measure the effects of global warming on the world’s oceans. “It’s another way of bringing climate issues to the public without being alarmist,” Beniston said.

The PlanetSolar Deepwater Project will look at the smaller-scale features of the Gulf Stream, which is a major source of heat for North America. One aspect the scientists will be measuring is how phytoplankton, or microscopic plant organisms that live in the ocean, are affected by global warming.

“We hope to contribute to a few important hypotheses on how climate change is changing the ocean,” said Bastiaan Ibelings, a professor at the University of Geneva who is part of the expedition team.



MATTHEW J. LEE/GLOBE STAFF

The boat parked at Fan Pier in Boston on Saturday.

Since the boat does not produce any carbon emissions, the scientists said they will have a higher confidence that their findings will be from the ocean itself, and not tainted by boat emissions.

“It’s an advantage to have a boat itself that’s clean,” Ibelings said.

Beniston, the project leader, is an influential climatologist who was a member of a United Nations-backed panel on climate change that won the 2007 Nobel peace prize.

He said the PlanetSolar will also be something of a floating classroom, allowing less-experienced researchers from select institutions to help collect data along the route.

For example, from Boston to its next stop in St. John's, Newfoundland, Sebastien Bigorre, a research assistant from the Woods Hole Oceanographic Institution in Falmouth, will help perform research.

"We want to give an opportunity to young scientists," Beniston said.

While the boat is in Boston, Woods Hole will cohost a scientific panel on ocean and climate Tuesday with Swissnex, the local science consulate for the Swiss government.

Swissnex's project leader, Sebastien Hug, said the PlanetSolar initially did not plan to make a stop in Boston, but, "We highlighted how important science is in Massachusetts."

Gail Waterhouse can be reached at gail.waterhouse@globe.com. Follow her on Twitter at [gailwaterhouse](#).