Around the world powered by the sun

Media Outline

Advanced technology for solar shipping created through a German-Swiss joint project

German and Swiss entrepreneurs are shaping the future with the construction of the largest boat with solar propulsion in the world -"TÛRANOR[1)] PlanetSolar" launch to take place on Wednesday the 31st March in Kiel/Germany

The launch of the world's largest solar yacht, the "TÛRANOR[1)] PlanetSolar" takes place in Kiel/Germany on the 31st March, and brings to the fore the leading role that German and Swiss companies play in the development of mobile solar applications. When it comes to solar shipping, intelligent innovation is required: less weight, less friction, efficient propulsion, and a reliable solar energy store. The success of this cooperation between a select number of highly qualified partners can be seen in the advanced shape of the vessel "TÛRANOR PlanetSolar".

The designer of the solar catamaran is the New Zealander Craig Loomes, whose company **LOMOcean Design (Auckland)** produces designs for some of the most innovative boats anywhere in the world today. Loomes designed the "TÛRANOR PlanetSolar" according to the so-called "wave-piercing" concept, where the catamaran "slices" through the waves. This uses less energy than is required for conventional concepts, where the boat "rides" the waves. The boat builder is located in the north of Germany on the canal joining the North Sea and the Baltic. There, the solar catamaran took form under the expert hands of **Knierim Yachtbau GmbH (Kiel)**, a company specialised in the construction of individual yachts utilising carbon sandwich technology; a sector in which it enjoys a reputation as the leading manufacturer.

1) The name TÛRANOR is derived from the Lord of the Rings Saga of J.R.R. Tolkien and translates into "The Power of the Sun".

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When building solar-powered boats, weight is of crucial importance. The lighter the boat, the less energy is needed to propel the boat using the power from the on-board energy store. The storage capacity (condensed into the smallest of spaces) is particularly important for the storage of solar energy, so energy is available on overcast days.

The energy stores utilised by the "TÛRANOR PlanetSolar" are large lithium-ion batteries made by **GAIA Akkumulatorenwerke GmbH (Nordhausen/Thuringa)**, a specialist manufacturer that can guarantee the currently highest energy/output density relative to weight.

The **HDW Howaldtswerke Deutsche Werft (Kiel)**, a shipyard with a long tradition, contributed its know-how regarding the cooperation with GAIA to the "TÛRANOR PlanetSolar" project. The HDW is also an important partner on account of the project having been built in a shed at its shipyard. It is to be launched for the first time in the dock at the Kieler Förde on the 31st March.

Solar energy is collected on the catamaran by PV panels made by **SOLON AG (Berlin)**. For this project, SOLON used high-efficiency solar cells made by the US manufacturer SunPower Corporation (San Jose, California). Through extensive manual work, an exceptionally large marine solar generator with a total area of approx. 500 square metres was created. The PV modules cover most of the surface of the catamaran; more have been added to the retracting outriggers that are on the starboard, portside and stern sections of the yacht, which together create a further 100 square metres of PV module. SOLON AG as supplier of the PV modules is part of the group of companies owned by Immo Ströher, client-owner of the "TÛRANOR PlanetSolar".

The energy yielded and stored is converted into highly effective forward propulsion by the drive technology specifically developed for this project by engineering company **drivetek AG (Ipsach/Biel, Switzerland)**. The drive relies on the yacht's propeller made by **AIR Fertigung-Technologie GmbH & Co KG (Rostock, Mecklenburg-Vorpommern)**. AIR, a member of the Voith Group, manufactures carbon fibre propeller systems that are characterised by their excellent efficiency.

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The long-term performance of the "TÛRANOR PlanetSolar" is to be tested for the first time in a circumnavigation of the globe. The **PlanetSolar SA (Yverdon-les-Bains, western Switzerland)** has currently scheduled the first circumnavigation exclusively with solar power for 2011 - the journey is likely to take 160 days, during which new information regarding the mobile use of solar energy can be gathered. Furthermore, the "TÛRANOR PlanetSolar" will carry the message about the efficient applications of solar energy around the world, literally.

The client-owner of the solar catamaran is Immo Ströher, a passionate advocate in the service of advancing solar technology. What Ströher already puts into daily practise in his energy management company **IMMOSOLAR GmbH (Langen, Hessen)** through the use of static renewables, he now plans to propel forward into the area of solar mobility. This way, knowledge gained from the stationary sector about efficient energy management can flow into the project. Ströher maintains the solar catamaran through his Swiss enterprise **Rivendell AG (Zug, Switzerland)**, whose task it is to develop a meaningful utilisation concept when the scheduled circumnavigation has been completed (e.g. through educational seminars and conferences, etc.). It is intended that the yacht will serve as an inspiration as to the many options offered by renewable forms of energy and thereby create new business opportunities.

Immo Ströher: "I want to demonstrate that it is possible to achieve commercially realistic earnings over the long term with advanced technologies." In addition, the "TÛRANOR PlanetSolar" should realise a "worldwide economic return" through further development amongst boat builders and component manufacturers.

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