



solar power on the high seas

The world's largest solar-powered boat was recently launched in northern Germany. The Türanor — "power of the sun" — is a 100-foot catamaran topped by high-efficiency photovoltaic panels that cover the majority of its surface. Additional panels are attached to outriggers on its starboard, port and stern sections, which can be retracted in stormy weather. The solar energy, which is stored in a lithium ion battery — considered the largest in the world — powers the vessel's silent, pollution-free electric motor.

In 2011, the \$24.4 million Türanor will embark on a round-the-world trip skippered by Raphaël Domjan of Switzerland and Gérard d'Aboville of France. The two will attempt to capture as much available solar power as possible for an average speed of 7.5 knots as they showcase the capabilities of photovoltaic technology.

According to Dany Faigaux, a member of PlanetSolar, the Swiss team behind the project, "The mission of the skippers will be to chase the sun. Up until now, sailing navigation has involved working with the three parameters of the waves, wind and tide. But we've added two new dimensions — namely, sunlight and the lithium ion battery. It's a completely new form of energy management," he says.

The Türanor will store energy in its batteries by day and can run on its stored energy in the absence of sunlight for approximately three days at 7.5 knots. The vessel will travel 34,000 miles across the Atlantic, through the Panama Canal, the Pacific, the Indian Ocean and the Suez Canal to the Mediterranean over a scheduled 160 days to prove the potential of solar energy on the high seas. www.planetsolar.org

sitting pretty on recycled coke bottles

Four years ago, Coca-Cola approached aluminum chair manufacturer Emeco with a request to make its classic Navy Chair using the pop company's recycled plastic bottles. Emeco chairs are traditionally made from recyclable aluminum (80 percent recycled content) and have a life expectancy of 150 years. Coca-Cola's recycling plant in Spartanburg, SC, was looking for ways to show the value of recycled plastic using a formulation of rPET (recycled polyethylene terephthalate). The result is the 111 Navy Chair, made from 111 recycled plastic Coke bottles.

According to the Coca-Cola Company, "The goal of the 111 Navy project was to alter consumer behavior by illustrating the value of rPET with beautifully designed and everyday products — ultimately encouraging more recycling." www.emeco.net



plastic-to-fuel tech for a cleaner world

The United States produces 30 million tons of plastic each year, manufactured with 165 million barrels of crude oil. Today, an innovative, new technology has the ability to reverse the process of transforming oil to plastic by reusing plastic's byproducts.

Natural State Research, Inc. (NSR) of Stamford, CT, has developed the technology, which produces high-octane fuel for use in any combustion engine from almost all types of solid waste plastic materials.

Dr. Moinuddin Sarker, NSR's vice president of research and development, says the resulting fuel burns more efficiently and cleaner than commercial gasoline and diesel, and can be produced at a lower overall cost.

NSR's business model focuses on building local waste conversion plants for municipalities, utility companies and private enterprises, including waste management companies. NSR plans to commercialize its technology by licensing it to organizations that create locally owned franchises. NSR will then provide the technology expertise through onsite consultancy services.

A municipality, for example, that produces 25,000 tons of plastic would invest \$5 million in the technology and expertise required to set up an NSR plastic-to-fuel waste management system. The municipality can then use the refined oil for its own power needs or sell to other organizations that seek alternative energy.

According to Sarker, NSR's technology benefits users by:

- Reducing dependency on fossil fuels.
- Reducing environmental pollution by removing plastic from landfills.
- Creating sustainable jobs that cannot be outsourced.

While most plastic recycling processes today accept only plastic designations 1 and 2, NSR can recycle 1 through 7, helping to rid the environment of a broader range of discarded plastic materials. www.naturalstateresearch.com