Sustainable Practices 2005

Innovations, Technologies, and Products
Coming Soon to a World Near You
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Toronto Scientists Invent High-Efficiency, Infrared-Sensitive Solar Material. Professor Ted Sargent of the University of Toronto and his research team have invented an infrared-sensitive material with possible applications including a digital camera sensitive enough to work in the dark and clothing with the capacity to turn the sun's power to electrical energy. The discovery could lead to shirts and sweaters capable of recharging personal wireless devices, according to Sargent. The researchers combined specially-designed minute particles called quantum dots with a polymer to make a plastic that can detect energy in the infrared. The film can be applied to any device, much like paint is coated on a wall. The film can convert up to 30% of the sun's power into usable electricity, whereas today's best plastic solar cells capture only about six percent. (University of Toronto News, January 10, 2005, http://www.news.utoronto.ca/bin6/050110-832.asp

Global Wind/Hydrogen Cooperatives Launched by U.S. Windfarming, Inc. U.S. Windfarming has launched a wind energy/hydrogen cooperatives development plan that includes projects in Poland, China and the United States. The cooperatives are designed to both produce electricity during times of favorable wind and peak load matching and produce hydrogen from water during non-peak times. The China project involves the construction of two 100 MW wind energy/hydrogen cooperatives while the Baltic Coast project in Poland will feature a 100 MW wind energy/hydrogen cooperative. Agreement has already been reached with the State utility in Poland to purchase the electricity produced from the project. The New York project will feature a 350 MW gas turbine with a hydrogen production component. US Wind Farming plans to contract with GE Wind for the turbines and Hydrogenics (formerly Stuart Energy) for the integrated hydrogen generation technologies. (U.S. Windfarming, Inc. 2005, http://www.uswindfarming.com/12-15-04.html, http://www.uswindfarming.com/12-6-04.html, http://www.uswindfarming.com/11-24-04.html)

Coconut Oil Offers Home-Grown Energy for Islanders. Pacific island nations are increasingly looking to coconut oil as an economically and ecologically sound petroleum alternative. Today, residents of Vanuatu, the Marshall Islands, Samoa, and the Cook Islands use coconut oil as fuel for diesel engines, but still on a relatively small scale. About 100 private buses in Vanuatu's capital of Port Vila are powered at least in part by coconut oil, as are similar vehicles in the Marshall Islands. In Vanuatu, coconut oil is cheaper than diesel, costing $0.80 a liter vs. $1.17 for diesel and can be used to power all diesel engines without any technical modifications. It requires about 5 coconuts to make a liter of fuel, with the process similar to that used to produce massage oil. As the use of coconut oil becomes more widespread, the demand for copra should provide jobs and income for rural villagers on many islands, where cutting copra has been the major source of outside income. (TerraDaily, January 18, 2005, http://www.terradaily.com/2005/050118033932.d0dgfeuw.html)

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