FC-R&D releases natural-energy power system

September 9 2011, by Nancy Owano

(PhysOrg.com) -- A home energy system that uses water, sunlight, and hydrogen has been released by Japan's FC-R&D. The system is called ZEEP24, where electricity is generated during the day using solar panels. Hiroshi Nakijima, FC-R&D president, in a video on DigInfo, talked about the significance of the system in making use of any excess capacity of electricity.

"In Japanese homes during the day, usually, not much electricity is used, as both parents are working and the children are at school. So with solar power, there's often excess capacity during the day. With this system, the excess capacity isn't sold; instead, it's used to produce stored hydrogen, another energy source, through electrolysis. Hydrogen is used because it has high energy density."

ZEEP24 was conceived for use for communities that experience power outages during disasters where the supply has been knocked out or for homes as a general emergency power supply.

The ZEEP24 as an alternative power source reflects the FC-R&D mission, defined as wanting to provide as many people as possible in Japan with applications of clean and sustainable energy. In talking about the new release of ZEEP24, he pointed out that it uses a hydrogen storage alloy, developed to absorb the hydrogen. Even when the system isn't being used, it does not consume unnecessary power. Also, he said, the system is carbon-free. In contrast with an ordinary battery, there is no carbon-induced deterioration.

Devices that are powered by hydrogen have been of interest to Japanese researchers for years. Hydro-electricity is a clean source of energy, and many companies have explored ways to harness it within varied

applications.

Around five years ago, Tokyo Seiden worked on a hydro-powered coffee stand bearing two small tanks of hydrogen, enabling the brewing of coffee and cooked food. Michio Tatsuno of Tokyo Seiden was quoted as saying that the stand, in the event of heavy snow or earthquakes, could provide electricity for medical teams and households.

The report in ITN Source also said that FC-R&D was focusing on hydrogen power to light up a miniature house. At the time, the devised power system was a combination of magnesium taken from sea water and vitamin C to generate hydrogen. Nakajima said the goal was to develop a larger version to light up a real house.

As for future directions, FC-R&D is working on attaching hydrogen storage containers directly to hydrogen-powered cars.

More information: Japanese product page

via Diginfo