

GVSU Incubator Develops Renewable Energy Device

Dave Alexander, The Muskegon Chronicle



Grand Valley State

University's Michigan Alternative and Renewable Energy Center has launched a number of upstart businesses, but breakthrough products have been few and far between.

Energy Partners LLC founder and GVSU professor emeritus Jim Wolter thinks he and partner Ed Brandel have come upon an energy storage device that could be a game changer, according to The Muskegon Chronicle (<http://bit.ly/1bSf1qz> [1]).

Solar 24 combines a large solar energy panel with a battery pack and electronic circuits to provide a steady stream of energy whether the sun is shining or not.

Energy Partners — a three-year research and development venture that has made the MAREC business incubator its home — introduced Solar 24 at the Solar Power International Conference in Chicago at the end of October.

The energy storage device allows for the steady discharge of electricity created by solar panels over the course of a day even during nighttime hours, Wolter said. Besides technical support from MAREC, Solar 24 received funding from the Michigan-based Business Accelerator Fund.

"This is breakthrough technology," said Arn Boezaart, director of the Muskegon-based MAREC. "It's the first of its kind that I've seen in the renewable energy industry and addresses the often-cited intermittent nature of solar energy. This kind of innovation is the reason MAREC's business incubator program provides the

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resources and space to develop new products and concepts."

The "secret sauce" is in the electronic circuits that Brandel brought to Energy Partners, Wolter said, adding that patents are pending. The Muskegon native is a Texas Tech University engineering graduate who worked for Texas Instruments in Lubbock, Texas as an electrical engineer.

Brandel worked in the areas of consumer products, semi-conductors and microprocessors before returning to Muskegon, he said. Wolter and Brandel have been working together on the Solar 24 for the past year and a half.

"The circuitry controls how much power you take out of the device," explained Wolter, a retired professor of both engineering and marketing who has specialized in bringing new technologies to market.

The Solar 24 is a 5-foot-tall solar panel connected to a box with the electronic circuits and a lithium ion battery pack, which is produced by Harding Energy in Norton Shores. Wolter is the vice chairman of the Harding Energy board of directors.

The solar panel, made by a Milwaukee-based company, produces energy when the sun is shining to provide electricity and charge the batteries. As the sun energy declines, the batteries take over — producing a constant flow of current — until the next day's sunrise, the inventors said.

The Solar 24 components are all commonly found devices from Michigan or Midwest manufacturers, Boezaart said. Wolter said the device is a "software-defined" solution to the storage of alternative energy.

The current Solar 24 puts out enough energy to provide direct current electricity for, as an example, a Third World house that has no connection to the electrical grid. The energy storage device can't power an electric stove or air conditioner, but it does have the capability of recharging batteries for cellphones and computer tablets while also providing power for LED lighting and a radio in the house, the inventors said.

Other applications can be for small commercial signs that need lighting throughout the night or as a military use for a soldier on the battlefield with an array of electronic equipment, they said. The Solar 24 panels can be strung together, Wolter said, from 10 to 10,000 depending upon need.

At the Chicago solar trade show, Energy Partners began looking for a manufacturing company and investors to take its device to the global market, Wolter said. Initial reaction has been positive and meetings are taking place with interested parties, he said.

"I am confident that the Solar 24 will be into production in the short term," Wolter said. "We just need a little bit more testing time."

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