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Planned energy park for 'Ewa uses solar panels

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A consortium of government and utility organizations hopes to build the state's biggest field of solar electrical panels at a model renewable energy park to be built on Navy land in 'Ewa.

The project will blend known alternative energy technologies with cutting-edge hydrogen storage and fuel cell research. Researchers hope it will help lead Hawai'i into a new age of increasing independence from fossil fuels for electricity.

The energy park, on 34.5 acres next to the Hawai'i Prince Golf Club, eventually could have a solar photovoltaic field producing 2 to 3 megawatts, making it the biggest photovoltaic project in the state. The initial stage — to be operational in 2005 — will have 200 kilowatts. That's roughly enough to power 60 Hawai'i homes.

Its biggest visible feature will be the field of photovoltaic cells, which produce electricity from sunlight. The electricity will be hooked up to the Hawaiian Electric grid, but research will also proceed on linking solar power with the latest technology in storage and generation — using the solar power to make hydrogen, improving hydrogen storage equipment, and then using the hydrogen in fuel cells to produce electricity again, but when the sun isn't shining.

The project will be launched using \$2.5 million in federal money, arranged through Hawai'i's Congressional delegation and approved by President Bush last week. The cooperating agencies are the Office of Naval Research, Navy Region Hawaii, Hawaiian Electric Company, and the Hawai'i Natural Energy Institute of the University of Hawai'i's School of Ocean & Earth Science & Technology.

An environmental assessment will be done next year, with the initial phase of construction to start in 2004 and to be complete in 2005.

The project has distinct advantages for each of the organizations involved.

"We need to focus on future sources of energy, and ways in which we can integrate intermittent sources into our grid," said Karl Stahlkopf, Hawaiian Electric's chief technology officer and vice president for energy solutions.

The federal money comes through the Navy, which will administer the grant. As landlord, the Navy gets a credit against its own power bill for any power shipped to Hawaiian Electric, said Gary Jensen, director of the Office of Naval Research's Greater Mid-Pacific branch office.

Additionally, the Navy is interested in everything that has to do with new ways of generating power.

"One of the holy grails is the all-electric ship," Jensen said. "That's probably 20 years off, but we're looking at energy sources that will facilitate it."

The Hawai'i Natural Energy Institute will run and own the plant, which seeks to develop a simple, modular design for an environmentally friendly power source. HNEI had already been working with the Navy on advanced fuel cell systems, and the use of methane hydrates, which are found on the sea floor, as fuels for the fuel cells.

"This photovoltaic park is an excellent example of the partnerships needed to help keep Hawai'i as a leader in furthering renewable technology," Sen. Dan Inouye said.

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