

## RESPONDING TO GROWING DEMAND

BY LISA COHN



energy with rainy Oregon. However, two solar product manufacturers will have new plants up and running in the state by the second half of 2008 attracted largely by the state's skilled workforce and its ability to help meet the industry's growing demand for solar photovoltaic systems.

Solaicx, a manufacturer of mono-crystalline silicon ingots and wafers used in the solar industry, announced in June that it will establish its first high-volume manufacturing facility in Portland, Ore. In March, SolarWorld Group, based in Germany, said it will convert an existing semiconductor plant in Hillsboro, Ore. to a solar-wafer and cell manufacturing facility. When fully operational in the second half of 2008, it will be the nation's largest solar production facility.

"We surveyed the U.S. and realized the greater Portland area had the highest concentration of semiconductor wafer manufacturers. There are a lot of people in the area with relevant skill sets," says Bob Ford, chief executive officer of Solaicx, based in Santa Clara, Calif. The semiconductor wafer manufacturers employ

people who have experience melting, growing and wafering silicon ingots, skills needed to convert silicon into solar cells, he says.

When SolarWorld bought an unused chip plant in Hillsboro, Ore., it gained a couple of years in construction time, says Raju Yenamandra, director of sales and marketing for SolarWorld Industries America, based in Camarillo, Calif. In addition, the company was attracted to Oregon by the skilled workforce, he says.

The companies need new manufacturing facilities to meet the world's fast-growing demand for photovoltaic solar

panels. Worldwide demand for PV panels is growing at the rate of 35 percent per year, Yenamandra says. "We're trying to increase volume by 10 times because demand in the U.S. and worldwide is exploding," he says. Oregon's southern neighbor, California, ranks third in demand for solar — behind Germany and Japan.

Government subsidies are driving that demand, says Ford. In Germany, for example, residents who install rooftop solar panels and sell the power back get credits of more than 50 cents a kilowatt-hour, he says.

In addition, PV solar systems are now attractive because they're seen as a solution to global warming and dependence on foreign oil, Ford says.

Solaicx will ship its product globally, and SolarWorld will ship mostly to the United States and Latin America.

The solar energy that will be produced by these plants will be competitive with other sources of electricity under certain circumstances, Ford says. In California, without battery backup, PV solar systems now cost about 21–29 cents a kilowatt-hour. California's electricity rates generally begin at about 13.5 cents a kilowatt-hour, but can quickly rise to 25 cents a kilowatt-hour or so during periods of peak demand. "If you look at the most expensive electricity, the economics are there — even without the subsidies," Ford says.

In the next five years, the power from solar PV systems could drop as low as 10 to 12 cents a kilowatt-hour, Ford claims.

"Solar doesn't compete with hydro, wind or nuclear power," says Ford. "But these types of energy require facilities distant from their point of use. Solar doesn't. That's the elegance of solar."

The Northwest is quickly becoming a summer peaking region, notes Yenamandra. Solar energy offers important advantages for summer peaking regions because it can be used to help utilities avoid building expensive power plants to meet peak demands.

"Comparing solar to wind energy is like comparing a mainframe computer to a personal computer," Yenamandra says. Distributed solar systems can fit on rooftops and aren't hampered by transmission and distribution losses. In addition, solar systems can be brought on-line within a matter of weeks, he says.

In Oregon, more residents and businesses are expected to purchase solar systems. That's because the legislature recently passed a package of renewable-energy-friendly measures. One measure increased the tax credit for renewable energy systems installed by businesses from 35 to 50 percent and hiked up the project cost limit from \$10 million to \$20 million. In addition, the Oregon Public Utility Commission is now finalizing rules that will increase the size of projects that qualify for net metering from 25 kilowatts to 2 megawatts, according to Oregon PUC documents.

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The Department of Energy has awarded \$16 million to support the Global Nuclear Energy Partnership that supports nuclear energy, addresses nuclear weapon proliferation issues and deals with nuclear waste, according to the Associated Press.

The funds will be used to support research under an initiative launched by President Bush.

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