

By Ed Gately
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More people in the "Valley of the Sun" have turned to the sun for their electricity this year, resulting in a boom for the solar energy industry.

With less than two months to go, 2004 has been a "phenomenal" year for the solar energy industry, said Sean Seitz, president and co-owner of Valley-based America Solar Electric, and president of the Arizona Solar Energy Industries Association. Its members range from large, multinational corporations to small, local contracting companies that specialize in solar energy.

"We've seen a lot of growth in the residential and municipal sectors," he said. "People are treating energy as more of a priority now, and as it impacts their wallets, they're looking at alternatives. And the utility programs that exist today are very supportive of moving solar technologies forward."

Higher oil and gas prices, as well as power distribution problems this past summer, brought the issue of conservation and renewable energy to the forefront among many consumers, businesses and municipalities, Seitz said.

The Arizona Corporation Commission also has prompted more interest in solar electricity.

In February, the commission approved an increase in the Environmental Portfolio Standard, which requires utilities to generate a percentage of their retail energy sales through solar and other renewable energy resources.

Arizona's solar energy industry, specifically the sector involved in using solar energy to create electricity, is growing at about 35 percent annually said Robert Annan, a former director of solar energy programs for the U.S. Department of Energy. He now is a consultant to the state's solar energy industry.

About 250 people are involved in Arizona's renewable energy industry, including about 100 in solar energy, said Lane Garrett, president of Tempe-based ETA Engineering.

The industry still faces an uphill battle in its effort to convince more people to turn to the sun for their electricity needs, Annan said.

"We are faced with a very entrenched, fossil-fired generating power industry," Annan said. "And to displace that with new technology is not an easy thing to do. It means you just have to get used to it."

GROWTH THIS YEAR

ETA Engineering is a worldwide distributor of solar power and renewable energy products and services.

"Our customer base is very wide ranging," Garrett said. "Whoever uses electricity is a potential customer. Parts of Europe, and Japan are buying all of the renewable energy that they can get their hands on. We could have grown a lot more a lot faster if we could get enough product."

In recent years, ETA Engineering has seen an increase in demand for its products in Arizona.

Until two years ago, Arizona's solar energy market was confined to remote areas without access to electricity, Garrett said.

At the same time, Germany and Japan were ramping up their incentive programs and pushing for more renewable energy, he said. His company and others have profited from providing products and services to these countries.

"Japan and Germany are way ahead of Arizona in installations (of solar energy systems)," Garrett said.

The Environmental Portfolio Standard has helped expand the solar energy market in Arizona to areas where conventional electricity is available, he said.

"Demand for solar energy is very high," Garrett said. "Most of the major manufacturers have announced that they are literally doubling capacity in 12 months. The average industry growth rate has been maybe 30 percent per year for the last 2 1/2 decades, which is pretty good. But then all of a sudden to go to a 100 percent growth rate is awesome."

At any given time, ETA Engineering's products are being shipped out across the globe, while its solar electricity systems are being installed at households across the Valley.

American Solar Electric's business volume and revenue has doubled this year over 2003, Seitz said. It is a design build firm that specializes in solar electric power systems for commercial, industrial and residential applications.

"It's meant adding people to our payroll," he said. "We've pretty much doubled our employment from the beginning of the year to the present."

Arizona has the third largest solar energy market in the country after California and New Jersey, Seitz said.

"It's primarily based on the (financial incentives) and the dollars tied to the Environmental Portfolio Standard," he said.

UTILITIES' ROLE

Salt River Project and Arizona Public Service are involved in the effort to increase solar energy production and usage statewide.

Late last month, SRP announced the launch of its new SolarWise Energy program, which will pay up to \$9,000 to residential and small business customers who purchase and install solar energy systems that interconnect with its system. Also, customers can apply for up to \$750 to install solar water-heaters in their homes and offices.

SRP has committed \$1 million a year to the SolarWise program, said Richard Hayslip, manager of SRP's environmental, land and risk management departments.

"We hope this will provide an incentive and help those customers who are interested in doing this," he said.

In the meantime, customers of APS have reserved all of the \$2 million allocated this year for its Environmental Portfolio Standard Credit Purchase program. It is now placing customers on a waiting list for its 2005 program allocation.

Through the program, APS helps reduce the cost to customers who have new, complete solar energy systems professionally installed on their premises, by up to \$4 per watt by purchasing the EPS credits associated with the energy generated by these systems.

"If you the customer wants to put a solar system on your rooftop, that's going to cost you a few thousand dollars, and to many people who would like to help the solar evolution, that's a cost barrier," said Peter Johnston, APS's manager of technology development.

APS also is continuing its effort to add more solar power plants to its power grid, he said. It now has solar plants in Gilbert, Tempe, Scottsdale, Glendale, Prescott, Flagstaff and Yuma.

"We have almost 5 megawatts of solar generation now, but that's a pretty small fraction compared to the 5,000 megawatts of more conventional generation," Johnston said. "But it's 5 megawatts more than we had two or three years ago, so it's definitely growing."

The up-front cost remains a major obstacle for many consumers, he said.

"Today, solar energy costs about four times more than conventional energy," he said. "But as we do more and more of these installations and grow wiser about how to build solar systems, those costs are coming down. Eventually they will be more competitive with the more conventional energy sources. Then you'll see a larger proliferation of solar systems."

BEHIND CALIFORNIA

There's lots of sunlight to be collected for electricity as the sun shines brighter in Arizona than many other states and countries, Seitz said. However, solar energy use still lags behind here, he said.

Next year, California will offer \$150 million in incentive money for installation of solar energy systems, he said. The total amount of money spent on solar energy systems will be nearly \$1 billion there, he said.

In comparison, \$2 million to \$5 million in incentive money will be available next year in Arizona, bringing the total investment in solar energy systems to \$4 million to \$10 million, Seitz said.

"That's a huge difference considering our resource," he said. "The resource is good in California, but still we have a better resource. But they have a much more robust program and New Jersey is kind of the same way. They're putting millions and millions of dollars into their program while they have about half the solar resource that we have."

The spread of renewable energy systems across Arizona depends on funding and support from the state, Seitz said. Former Arizona Congressman Matt Salmon has been hired by the Arizona Solar Energy Industries Association to lobby for more government support of the industry and solar energy usage.

"If the political will is there, the market will explode," Seitz said.

California's renewable energy industry is at least 100 times bigger than Arizona's, and is growing at a much faster rate because there are more incentives for consumers and businesses to switch to solar energy, Garrett said.

The Environmental Portfolio Standard has been a real "shot in the arm" to the solar energy industry here, and increasing incentives is the key to getting more Arizonans to embrace solar, Annan said.

"It's unbelievable that you would find a product in such great use in Germany and Japan when they have one-third the amount of sun that we do," he said.