

# Solar thermal plants go back to the future

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Thursday, 12 April 2007

Last Updated Saturday, 01 December 2007

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Solar thermal technology, which uses heat to generate electricity, is on its comeback tour.

Like a rock band that took an extended hiatus, solar thermal technology was essentially abandoned in the 1990s after a handful of power plants were constructed in the 1980s.

But on Monday, solar thermal start-up Ausra is expected to announce that it has attracted \$40 million in funding from venture capital firms Kleiner Perkins Caufield & Byers and Khosla Ventures.

The company is also expected to disclose that it has begun the permit process to build a 175-megawatt power plant in California that should be operating in about three years.

Ausra, which has sought to keep a low profile, said that its product design will make its power plants competitive with fossil fuel-based electricity in the next few years.

"We're talking about the U.S. producing its electricity and electricity for vehicles entirely within its borders. The implications for this are enormous," said David Mills, Ausra's founder and chief scientific officer who spent several years doing the basic research for the company's technology.

Ausra's plants are made up of hundreds of glass-covered metal "collectors" that concentrate sunlight on a tube filled with water. The water becomes steam which turns a conventional steam turbine.

High-pressure water storage tanks allow the company's solar thermal power plants to keep several hours' worth of electricity on tap, addressing one of the biggest hurdles of large-scale renewable energy, according to company executives.

"Energy storage is the key to enabling renewable sources of power to move from 10 to 20 percent of electricity generation to 90-plus percent," said Ausra Executive Vice President John O'Donnell.

Ausra executives said that the system can now deliver electricity at 10 cents per kilowatt hour, more than the 9 cents per kilowatt hour that natural gas power plants cost.

Once Ausra's manufacturing operations are working on a large scale, its production costs and cost of capital will go down below the price of coal-fired plants which are 6 cents per kilowatt hour, he said.

Because of regulations that require renewable sources of electricity, a number of companies are now pursuing utility-scale solar thermal power plants. Another start-up, Green Volts, recently signed a supply deal with Pacific Gas & Electric in California.

The U.S. National Renewable Energy Laboratories estimates that solar thermal technology can supply hundreds of gigawatts of electricity, or more than 10 percent of demand.