

# Geothermal Prospects Are Improving

By [CASSANDRA SWEET](#)

The Wall Street Journal

Companies that tap underground heat to generate geothermal power in the U.S. are poised to grow as the sector receives increased support from the federal government.

Growing renewable-energy markets, driven by requirements in California, Nevada and other Western states, have lured additional players to an area once dominated by longtime producers Ormat Technologies Inc. and Calpine Corp. Stimulus funding via investment tax credits, federal loan guarantees and technology grants helps. Pending federal legislation requiring utilities to cut greenhouse-gas emissions and use more renewable energy would boost the sector. But the risks that accompany project development remain, from drilling a "dry" well to building a plant that doesn't perform as expected.

The more-visible wind- and solar-power industries often overshadow other renewable-energy technologies. Unlike the sun, which generates electricity only during daylight, and wind, which generally blows strongest at night, geothermal power is generated around the clock. San Francisco-based PG&E Corp.'s utility unit and Las Vegas-based NV Energy Inc. have said they favor geothermal power for its always-on reliability.

Geothermal exploration and development are restricted to areas of the West with higher underground temperatures, although new technology that works with lower temperatures could greatly expand access to the resource.

With several decades' experience on geothermal projects world-wide, industry leader Ormat builds projects for itself and other companies. It also licenses its technology to other developers. The company specializes in equipment that generates electricity from lower-temperature underground areas.

"We expect that with time, these lower-temperature resources will become more economic because the industry will learn how to exploit them better," said Chief Executive Dita Bronicki.

Ormat supplies enough geothermal power to Reno, Nev., to supply the city's entire residential population, Ms. Bronicki said.

The company recently signed an agreement to supply NV Energy with more geothermal power, from a portion of the 160 megawatts of generation under construction.

Geothermal-power companies recently shared \$338 million in federal stimulus funds with universities and other institutions to improve drilling and other techniques. U.S. Energy Secretary Steven Chu said he hoped the funding would "help jumpstart the geothermal industry across the United States" and create or save thousands of drilling, exploration and construction jobs.

He said the government wants to help developers reduce the upfront risk of project development—for example, spending \$2 million to \$3 million drilling a well that could end up being unproductive.

Ormat received nearly \$14 million and Magma Energy Corp. \$10 million. Smaller companies also were included: \$10 million to Sierra Geothermal Power Corp.; \$5 million to Ram Power Inc.; and about \$3.5 million each to Nevada Geothermal Power Inc. and U.S. Geothermal Inc.

"There's a lot of potential resource out there," Piper Jaffray analyst Jesse Pichel said. "The problem is exploring and drilling—you don't know what you're actually going to get until you drill." "If we get some actual, tangible results from this initial grant, there could be more interest in devoting more resources toward geothermal."

Geothermal-power developer Raser Technologies Inc. knows production hazards—it is operating its 10-megawatt Thermo No. 1 plant in Utah at partial capacity because the water in production wells wasn't hot enough. Raser said it is fixing the problem and recently announced a new funding agreement with energy fund Evergreen Clean Energy LLC to help finance new projects.

Many of the states involved in geothermal have stringent requirements. California utilities must use renewable sources for a fifth of the power they sell by 2010, expanding to a third of their retail power by 2020.

Large Nevada and Oregon utilities have to use renewables for a quarter of the power they sell by 2025.

Geothermal power accounted for about 8% of total U.S. renewable power used in 2007, according to the U.S. Energy Information Administration; by comparison, solar power

accounted for less than 1%. Renewable energy research firm Emerging Energy Research predicted in a report earlier this year that U.S. geothermal capacity could more than double over the next five years.