

# Short on Cash and Know-How, U.S. Geothermal Industry Stumbles

**Jenny Mandel, Environment & Energy Report, 7-13-11**

In November 2009, Nevada Geothermal Power Inc. received \$57.9 million from the federal government to expand its Faulker 1 power plant near Winnemucca, Nev.

At the time, the plant was putting out 27 megawatts of power and the federal cash was supposed to pay for new drilling to bring the plant closer to 50 megawatts. Industry boosters hailed the deal as a sign of geothermal's resurgence.

But last week, stock analysts downgraded the company's stock to a "sell" rating after Nevada Geothermal Power announced its plant is stuck at 35 megawatts and investors are unlikely to get their money back.

The company says it will weather the storm. Investor relations chief Paul Mitchell said he is expecting a new \$7.5 million grant from the Department of Energy to come through soon, and the company will continue paying as scheduled a separate \$98 million debt backstopped by a DOE loan guarantee.

In the meantime, Mitchell said, he doesn't know when renegotiations on a commercial \$88 million loan might be completed.

John McIlveen, an analyst with Jacob Securities Research, agreed that Nevada Geothermal is not likely to go bankrupt from the failure. "I just don't think they'll end up with any cash benefits from their Faulkner 1 project," he said.

The company's fall mirrors a larger trend in the domestic geothermal industry, McIlveen said: dramatic drops in stock prices that reflect challenges in executing important projects.

The five major, publicly traded North American geothermal companies, he said, are valued at a fraction of what they were a year ago, with operational problems at several of them.

Ormat Technologies Inc. is struggling with a plant in California's Imperial Valley, and a valuation down by almost 25 percent over the past year. Ram Power Corp. is down almost 80 percent, facing major troubles with a Nicaraguan plant. Alterra Power Corp., which was formed earlier this year when the struggling Magma Energy Corp. joined forces with Plutonic Power Corp., is trading below a dollar per share, and U.S. Geothermal Inc. has had a turbulent year that saw it rise dramatically in value before falling by more than a third from its peak.

McIlveen said that general market conditions have had an outsize impact on the geothermal industry, a capital-intensive field in which getting a new project off the ground can take five years and drilling each well can cost between \$3 million and \$10 million, depending on local conditions and other factors.

But poor execution on individual projects has been a big factor, too, he added.

Noting that in the oil and gas industry, companies are valued based on the proven resources they have access to in the ground, McIlveen said that three years ago that was the case in the geothermal industry as well. "That value has all but disappeared with the lack of execution on the part of the geothermal companies," he said.

One problem he points to is a simple lack of expertise. During the 1970s oil price shocks, oil and gas companies

trained their geologists and engineers to go after geothermal energy -- a dependable source of baseload power that showed promise to meet Americans' growing interest in clean, reliable domestic energy.

And then oil prices dropped again, and the oil and gas companies moved on. Today, McIlveen said, there is a shortage of geothermal experts, meaning that companies have trouble accessing the resources they find and projects don't necessarily pan out as planned -- though he said up-and-coming training programs show promise in filling that gap.

In the meantime, even struggling companies are not necessarily getting bought up, he said, as the larger players already have enough resources that they cannot fully exploit.

"Everyone's got enough development properties that these smaller [companies], though these sites might be great," he said. "Everyone's pretty much got their boots full, in terms of development."

### **Future promise**

McIlveen, like many other geothermal boosters, insists there are plenty of undeveloped sites in the United States to continue to expand the industry. That would let geothermal guard its place alongside wind, solar and hydropower as a major renewable resource -- with the added appeal that, unlike wind and solar, geothermal power plants operate around the clock with very little downtime.

But others say there is a shortage of really promising sites in the United States, with the best ones already taken.

The biggest geothermal project in the world -- the Geysers, a 15-plant complex that generates 725 megawatts north of San Francisco -- was first developed in 1960 and peaked in 1987, according to operator CalPine.

The sites under development today are much smaller, generally with potentials below 50 megawatts. That stands in contrast to the typical coal-fired power plant, which might generate 300 megawatts of power.

McIlveen believes that a host of drilling technologies that have been developed in the past couple of decades for the oil and gas industries can transfer effectively to the geothermal industry.

Already, he said, advances in underground imaging that rely on seismic indicators and infrared data reduce the risk of drilling an unproductive well -- though he said reducing that risk further would be the single best place to spend money to move the industry forward, given the role that "dry wells" play in shaping project risk.

But hydraulic fracturing, or fracking, is also starting to be used more widely, he said, to promising effect. Above the ground, power plant improvements are allowing engineers to get more energy from a given resource.

The Geothermal Energy Association says the combination of new industry players, new technologies and new demand for renewables amounts to powerful momentum for geothermal energy.

The trade group counts 123 projects currently under development in the United States, a 12 percent increase over last year and a portfolio that could eventually bring more than 5,000 megawatts of new power online.

For his part, McIlveen sees potential for an industry turnaround next year, as the major companies score some successes in digging themselves out of the present hole.

With a rough year under their belt, he predicted, "I think we'll see some good news in 2012."