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Study shows geothermal potential

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The United States is bubbling with geothermal resources, a new study shows, and Nevada may reap the benefits.

The study, the first by the U.S. Geological Survey in 30 years, shows policymakers the potential for geothermal power, a trade association leader said.

"(The study) just reassures policymakers that there's a lot of (geothermal) resources out there," said Karl Gawell, executive director of the Geothermal Energy Association.

The study is particularly important to the Silver State because Northern Nevada has large fields of geothermal resources that could be used to make electricity for Southern Nevada. Geothermal power plants use hot underground water and steam to generate electricity, making them a renewable, virtually pollution-free source of electricity.

The cost of geothermal power also is close to the cost of power from natural gas-fired plants. Like gas- and coal-fired plants, geothermal generation plants run around the clock. Unlike solar and wind power plants, geothermal provides a reliable, continual supply of electricity without interruption.

Sierra Pacific Resources, the holding company for electric utility NV Energy, and independent LS Power are competing with proposals to build the first transmission line linking Southern Nevada to the geothermal power resources in the North.

The transmission line would serve other purposes as well, but it is key to developing geothermal power for use in the state because Northern Nevada already has all the power generation capacity it needs, analysts say.

"If we don't get that resource for ourselves, California is going to come in and get it," Sierra Chief Executive Officer Michael Yackira said.

The recently released Geological Survey concluded that conventional geothermal resources are more limited nationally than originally estimated 30 years ago. But the federal agency also reported additional, huge quantities of geothermal power that can be tapped with new geothermal technology.

The Geological Survey estimated the United States has 9,057 megawatts of electric power from conventional geothermal systems or reservoirs with water. That represents 260 percent more than the installed geothermal total of 2,500 megawatts.

In the prior assessment, the federal agency estimated 20,000 megawatts of geothermal electric power, but many of the systems then were thought to be much bigger than they are, said Colin Williams, the geophysicist and project chief for the geothermal study.

Government scientists estimated 517,800 megawatts of power-generation potential in the United States from enhanced geothermal systems in areas that lack natural underground water supplies. That represents half the nation's total energy consumption.

Enhanced geothermal energy wasn't assessed 30 years ago because the technology was new.

To use enhanced geothermal resources, power developers fracture the underground rock and pump water into underground fissures. Nearby geothermal wells tap the hot water or steam and generate power, Williams said.

The areas with the best enhanced geothermal resources are near conventional geothermal systems that have underground water supplies, Williams said. Most of these areas are in the Western states, including Nevada, California and Oregon.

Gawell wants the Geological Survey to conduct more extensive geothermal assessments with new field studies that help identify potential geothermal areas.

The trade group official also advocates agency assessments of low-temperature geothermal energy for direct heating in buildings and geothermal sources for power generation on the premises of power consumers.

The agency should expand on a study that shows geothermal power could be drawn from oil and gas wells, Gawell said.

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