WASHINGTON Examiner

Wednesday, January 17, 2018

Trump raises the thermostat for geothermal energy

by John Siciliano | Jan 16, 2018, 12:01 AM

Geothermal power plants are one of the few renewable energy resources, outside of hydroelectric dams, that can provide a constant source of 24-hour-a-day electricity without interruption, known as baseload power.

The Trump administration is looking to carve out a place for geothermal energy in its energy abundance agenda, starting several initiatives to help the undervalued renewable resource expand beyond the volcanic Pacific region.

Geothermal power plants are one of the few renewable energy resources, outside of hydroelectric dams, that can provide a source of 24-hour-a-day electricity without interruption, known as baseload power. Arguably, geothermal is becoming more reliable than hydropower, given water scarcity issues in the West.

The plants also don't suck up as much water as conventional power plants do for cooling, and use less land than the thousands of acres needed for large solar arrays.

The plants work by drilling down deep into the Earth's crust to use the high temperatures there as a limitless source of fuel to produce steam and generate electricity.

"There are a lot of pluses about geothermal," said Jonathan Weisgall, vice chairman of a new policy committee started last week by the geothermal industry to set its lobbying agenda in the new year.

Weisgall also is vice president of government relations for Berkshire Hathaway Energy, the energy firm owned by billionaire Warren Buffett's parent company, Berkshire Hathaway. Berkshire's energy business began with geothermal at the Salton Sea in Southern California where it now has 10 geothermal plants with 337 megawatts. "Our DNA is geothermal," he said.

"Unlike wind and solar, it is baseload; it's 24-7 energy," he said. "It's got a tiny footprint

compared to wind and solar" and uses an "extremely small amount of water for cooling."

On the "minus side" are time and money, he said. "It's more expensive than wind and solar. It takes longer to develop."

Since the power plants use the heat found deep under the Earth to produce electricity, the barrier to using it has mainly been the cost of drilling and exploration, according to experts.

That cost compounds when there is little obvious volcanic activity, which brings the heat closer to the surface, and exploration wells have to be drilled to find deeper sources of heat.

The Trump administration is brainstorming ideas that could help the industry, particularly in expanding its use eastward, where geothermal is more difficult to tap because there is less volcanic activity than in the Pacific Ring of Fire.

California produces the most geothermal-based electricity in the world, with the Philippines and Indonesia ranked second and third, respectively, according to the Energy Department.

Geothermal provides about 0.4 percent of power across the country. It's primarily used in the West, with California producing 5 percent of its power from it.

Nevada is number two in the nation for geothermal, which it uses with solar to meet its goal of moving away from coal to becoming completely dependent on renewable energy. Nevada Energy, the utility that operates most of the state's fleet of geothermal plants, is now owned by Berkshire Hathaway Energy.

Weisgall said federal incentives for renewable energy have not helped geothermal power production.

Since one of the main tax credits for renewables is based on energy production, not construction, and subject to periodic expirations over the past decade, the long construction timelines for geothermal made the subsidies nearly useless. That is the reason why 95 percent of the production tax credit, which is available to both wind and geothermal, has primarily gone to wind farms, he said.

Energy Secretary Rick Perry has started gathering information to find ways in which the federal government can help, especially with opening up geothermal energy to a broader swath of the country beyond the West.

The Energy Department's request for information, called "Identifying Opportunities to

Address Barriers for Lowering the Cost and Risk of Geothermal Drilling," said the agency "is specifically interested in information on defining major challenges in geothermal drilling and identifying opportunities in research and development and process improvement, including opportunities to collaborate on best practices with other drilling industries."

An administration official pointed out that drilling can account for 50 percent or more of the total capital costs for a geothermal power project. That alone makes "reducing drilling costs one of the most important factors for geothermal energy production to become economically viable," the official said.

Industry officials say geothermal has a lot of overlap with the oil and natural gas industry, not only because of drilling, but for generating onsite energy and heat to help run production facilities.

"Time is money, so expeditious permitting is critical," Weisgall said. "The administration's efforts to address the risks in geothermal exploration would pay scientific, technological, and financial benefits to the U.S. energy system, ratepayers, and American workers."

He also said that geothermal needs "timely decision-making" from federal agencies to speed up leasing of public lands and permitting for drilling and exploration, development, and construction. The George W. Bush administration began leasing more land for geothermal a decade ago, pointing out that all but 10 percent of the nation's geothermal plants exist on federal lands.

But hurdles for the industry continue, including permitting delays, access to transmission lines, and securing power purchase agreements to form a long-term customer base, according to the Geothermal Energy Association.

Another hurdle is low natural gas prices, which forced one geothermal plant to close prematurely in 2016. Low natural gas prices driven by the shale boom are also pushing coal and nuclear plants out of the market.

In an effort to strengthen their lobbying efforts at the federal and state levels, the two leading geothermal energy groups in the U.S., the Geothermal Energy Association and the Geothermal Resource Council, overwhelmingly voted last week to unite the two groups. Officials with both groups said the merger was necessary to improve their advocacy efforts.

The Energy Department is also continuing the Frontier Observatory for Research in Geothermal Energy, or FORGE, program to develop what is known as "hot rock," or enhanced geothermal systems, which can generate energy at lower temperatures

enhanced geothermal systems, which can generate energy at lower temperatures than conventional geothermal power plants. It would require drilling, but the enhanced systems can use a wider variety of natural heat sources. The so-called hot rock resources have the potential to make geothermal available to a broader range of areas.

“Geothermal energy represents a reliable, clean, and abundant baseload energy source," said Energy Department spokeswoman Jess Szymanski. "As part of the administration’s all-of-the-above energy strategy, DOE supports early stage research

into advanced geothermal technologies, with the goal of enhancing U.S. economic growth and energy security.”

The administration is looking to prioritize research and development in hydrothermal and enhanced geothermal systems, said an administration official. The agency's Geothermal Technologies Office plans to establish and manage a dedicated field laboratory to focus on "novel technologies and techniques" to advance the resource.

Scott Sklar, a clean energy consultant and president of the Stella Group, said he believes the administration is serious about geothermal energy.

"They understand it," Sklar said. The drilling and baseload power aspects make it attractive to the administration, while being a resource free from former President Obama's "bully-pulpit." The previous administration favored solar over most other renewable resources.

The geothermal industry is also urging Congress to extend two tax credits that would benefit geothermal energy products such as heat pumps and power plants, but Congress has not said if it is willing to take them up after last month's passage of the tax law.

Rep. Tom Reed, R-N.Y., who introduced a version of the energy extenders bill in the House last year, is hopeful that any larger extenders bill will include the energy credits.

"The congressman believes it's important to have this legislation included in any larger extenders package, and we are hopeful that it will be included," said spokeswoman Samantha Cotten.

Reed's bill looks to cut a deal to extend the geothermal and other subsidies for five years while phasing them out. His bill has 63 Republican and 53 Democratic co-sponsors.

A similar version of his bill was put in a tax extenders measure introduced last month in the Senate by Orrin Hatch, R-Utah, the chairman of the Finance Committee. But

industry sources say that after the fight over tax reform in December, some in leadership may not be as willing to wade back into a new tax debate, at least not any time soon.