

Big tech's investment in geothermal energy continues to heat up

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On August 26, Sage Geosystems announced an agreement to supply Meta with 150 MW of geothermal power. Sage will use its proprietary Geopressured Geothermal System (GGS) to provide carbon-free power for Meta's data centers. This makes Meta the latest tech giant to invest in geothermal energy. In June 2024, Google negotiated a similar deal with NV Energy for 115 MW of geothermal energy to help Google power its Nevada data center.

Data centers typically require ever increasing amounts of energy around the clock, which alternate energy sources, such as wind turbines and solar panels, cannot provide on their own. This is especially true given the recent data center boom resulting from the growing interest in artificial intelligence (see ELM's previous AI coverage here: <https://bit.ly/3ZajU00>).

For example, Google has admitted its carbon emissions have increased by 48% since 2019. Similarly, Microsoft has acknowledged its emissions are up 30% since 2020. In fact, by some estimates, data centers could consume up to 9% of the United States' electricity by 2030. Strikingly, data centers currently account for approximately 4% of the current electricity consumption in the U.S.

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Although geothermal energy is not entirely new, it has historically only been viable in certain geological regions, such as California, Nevada, and Utah, where heat lies just below the Earth's surface.

Currently, geothermal energy only accounts for 0.4% of the country's present electrical generation. However, because of recent advances in technology, including existing oilfield technologies, companies are looking to untether these geographic limitations in

order to provide carbon-free power that is available at any given time.

Sage's first phase of the project is slated to begin generating carbon-free electricity for Meta's data centers at an undetermined location east of the Rocky Mountains in 2027.

Similar to fracking, Sage will use the energy in hot, dry rocks — which is far more abundant in the U.S. — to produce electricity by pumping water underground to harvest both pressure and heat. This method differs from hydrothermal energy, which relies on using existing underwater conduits of superheated water, such as underground reservoirs, to run electric turbines.

Notably, even though Meta's investment in geothermal energy is intended for its data centers, Sage will not be directly creating the energy that feeds into Meta's data centers. Rather, the energy, which is enough electricity to power approximately 70,000 homes, is fed back into a larger power grid, similar to a carbon offset.

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Although it remains to be seen whether geothermal energy can become the game changer for providing clean energy, the current administration is making similar investments in these newer technologies.

For example, this week the Department of Energy announced \$31 million in funding for geothermal projects. The DOE estimates that, with continuing improvements in technology, it is possible that geothermal energy could provide an upwards of 90,000 MW of the country's electric capacity by 2050, which is a twentyfold increase from today.

About the author



Sarah B. Mangelsdorf, a partner at **Goldberg Segalla**, has years of experience practicing across a broad range of legal areas, with extensive knowledge in toxic tort and environmental law. Her work entails counseling large corporations and businesses on general compliance and litigation issues arising from state and federal environmental regulations and enforcement actions. She has defended clients, through trial or settlement, in matters involving asbestos, environmental law, OSHA, product liability, and wrongful death. Based in St. Louis, Mangelsdorf can be reached at smangelsdorf@goldbergsegalla.com. This article was originally published Aug. 29, 2024, on the firm's website. Republished with permission.

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