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Project InnerSpace Analysis Shows Geothermal Can Cost-Effectively Scale to Power the AI Data Center Boom

With the right investment and policy support, the cost for a 1GW geothermal energy project to power and cool a hyperscale data center could drop below $50 per MWh by 2035

BOSTON (**JULY 1, 2025**) – An in-depth technoeconomic study of the potential for a 1 gigawatt (GW) geothermal energy project to power and cool a hyperscale data center found that geothermal thermal energy can meet data center energy needs at a cost on par with natural gas and below that of nuclear if current tax credits remain in place.

The U.S. has 3,400 GW of geothermal potential accessible with today's drilling methods and technologies, and an oil and gas workforce with 80% of its skills transferable to the geothermal industry. Geothermal energy is ideal for AI data centers as a baseload energy source that can provide both electricity and cooling without drawing electricity from the grid.

"From Core to Code: Powering the AI Revolution with Geothermal Energy," published today by Project InnerSpace in partnership with Future Ventures, found that under current conditions, a first-of-a-kind 1 GW geothermal project located in a U.S. region with outstanding geothermal resources could deliver power and cooling to data centers at $88 per MWh with existing tax credits. With consistent project investments to develop the market and supply chain, advancing technological innovation, modular plant design and learning-curve effects, the U.S. geothermal industry could drive prices to $50 to $60 per MWh by 2035.

Policy support, especially investment tax credits and streamlined permitting, is crucial to bolster the early projects that will set the industry on the path to scale. An $11 billion investment tax credit for a first-of-a-kind 1GW project would drive a 61% improvement in costs from $88/MWh now to $50 or less per MWh by 2035, the analysis found. Data center operators could also save

$3.2 billion over 30 years by using excess energy for direct cooling. Cooling accounts for 30% to 40% of data center energy consumption.

"Data centers are critical infrastructure that will underpin global competition for AI supremacy so we must find reliable, affordable energy sources to power them. Geothermal energy holds great promise for powering the data center growth boom if we create the policy environment to encourage it," said **Mehdi Yusifov, Director of Data Centers and AI at Project InnerSpace and co-author of the study**.

"The geothermal industry has the know-how, the supply chain, the work force and the vision. It is ready to scale and primed to meet the baseload power needs of data centers. With the right investments, this vision will become reality with innovations that allow us to drill deeper to unlock the Earth's abundant heat," said **Nico Enriquez, a Principal at Future Ventures and co-author of the study.**

GeoMap, a global subsurface mapping database developed by Project InnerSpace, which was used to produce this study, now includes a data center module that can help technology companies identify the best locations for geothermal-powered data centers.

Project InnerSpace is a 501(c)3 non-profit focused on expanding the use of geothermal energy globally. We are a team of scientists working to combine the voices of visionaries, entrepreneurs, and disruptors with the breakthrough expertise of geologists, drilling experts, and well engineers to build a future where geothermal powers the world with abundant and affordable energy. For more information, visit ProjectInnerSpace.org or connect with us on LinkedIn.