

Latest geothermal technology trends

Geothermal power is an essential part of our decarbonized future. New technologies and innovative approaches will allow access to previously untapped sources and ensure projects are economically viable. Here are some of the key advances in geothermal technology today.

This report shows how advanced geothermal technology could increase the United States' geothermal energy production to 90 gigawatts or more by 2050, a twentyfold increase. This growth in geothermal energy supports the Biden-Harris Administration's goals of facilitating a carbon-free electricity grid by 2035, while creating thousands of good ...

A new report has been published on the research and innovation trends, TRL levels, and case studies in the European geothermal industry. The EU-funded GEOTHERM FORA project has published a new report that looks at the research and innovation trends from the last five years (2019-2024) for geothermal ...

Unconventional geothermal resources are key to expanding the geothermal energy ecosystem because the easily accessible resources are limited. Source: <https://ecropa/research-and-innovation/en/horizon-magazine/qa-why....> One of the key components we need to manage in any geothermal project - but especially in enhanced geothermal systems and unconventional ones - is risk.

The subsurface environment in geothermal energy projects can be very challenging because the chemistry of the brine, or geothermal fluid, is corrosive. There are also very high temperatures and very high pressures in some resources. This places enormous stress on the materials used in down-hole environments, such as casings and pipes. We look for solutions that reduce the risk of failure.

Our Integrated Well Services (IWS) team has developed a number of solutions. We have an automatic vertical drilling system that ensures a perfectly vertical well path, minimizing casing-borehole contact during directional drilling. That's an automated down-hole solution for well integrity. These same fluids are coming back to the surface, so using non-metallic flexible pipes can reduce the corrosion risk. We have that solution now for the surface, but the piping structures underground could also use non-metallic materials in the future. That is a unique capability in this area.

Baker Hughes is a finalist in the American-Made Challenges Geothermal Manufacturing Prize. The project team is proposing an additive-manufactured back-up ring. This is a key component used in high-performance packers in completions for geothermal applications. To cope with the extreme conditions, we used a combination of 3D printing and conventional machining to make components that can cope with up to 450 degrees Fahrenheit and 10,000 PSI.

We are using a combination of existing technology and additive manufacturing to improve the performance of

our geothermal products. It can be applied in our drilling system, drill bits, heat exchangers - any part you can name. Additive manufacturing, along with non-metallics, will change the future of enhanced geothermal systems. The team is working on the last stage of the competition and will manufacture an advanced functional prototype with all AM components fully incorporated. The submission deadline is July 2022, and contest winners will be announced around August 2022.

Enhanced geothermal systems is one of MIT Technology Review's 10 Breakthrough Technologies for 2024. Check out the rest of the list and vote for the final 11th breakthrough--we'll reveal the winner in April.

Climate tech is big news for 2024. So much so, it makes up not one, not two, but three entries in this year's 10 Breakthrough Technologies, MIT Technology Review's list of the tech that's changing our world.

1 US regulators have approved a new bitcoin-tracking product after allJust hours after saying a tweet confirming the news was the result of a hack. (NYT \$)+ The approval of bitcoin exchange traded funds is a major boon for crypto. (Reuters)+ A goldrush for investors could be on the horizon. (Wired \$)+ Funding for crypto startups is still in the doldrums, though. (Bloomberg \$)

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