

What is the geothermal energy use in Germany?

This country report update gives an overview of the geothermal energy use in Germany. It covers geothermal power production, direct use applications as well as geothermal heat pump units for heating and cooling. At the end of 2021, about 190 geothermal installations for direct use of geothermal energy were in operation in Germany.

How many geothermal installations are there in Germany?

At present, 180 geothermal installations for direct use of geothermal energy are operating in Germany.

Which regions in Germany are best suited for geothermal energy use?

Germany has three regions that are particularly well situated for geothermal energy use: the North German Basin, the Upper Rhine Graben, and the South German Molasse Basin. Each of these regions has characteristic features that pose different challenges for using geothermal heat.

Is geothermal energy a relevant part of energy system integration in Germany?

One focus of geothermal energy is a relevant part of energy system integration in Germany and complements fluctuating energy sources, especially in the heating market." is on hydrothermal reservoirs, i.e. thermal water-bearing rocks at depths between 400 m and 5,000 m. Deep wells tap geothermal waters with temperatures between 15 °C and 180 °C.

What is Germany's geothermal power plant?

This geothermal power plant used the Kalina process, has a thermal capacity of 38 MW, and supplies the district heating system with heat. In the same year (2003) the TAB (bureau for technological impact assessment of the German Bundestag) concluded that Germany's geothermal resources could be used to supply the entire base load of the country.

What are the pros and cons of geothermal energy in Germany?

Currently, more than 90 percent of Germany's heating systems are fuelled with oil and natural gas. There are pros and cons to geothermal energy. On the plus side, it is practically infinite in volume, as well as a very clean energy source. Its power plants are small and quiet. Geothermal sources generate power, heat, and cooling.

Germany desires to become climate-neutral in its heat supply by 2045. From 2024 onward communities are legally required to develop a plan documenting how the objective will be achieved. Geothermal resources can be a major building block to reach the aspirational target if they can be developed at competitive costs. To evaluate the economic potential of ...

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As a look at the heat output generated in Germany shows, deep geothermal energy in particular is still in its infancy. According to the Federal Association of Geothermal Energy (BVEG), a total of 37 plants provided around 350 megawatts of installed heat and 50 megawatts of electrical power in 2020. In contrast, there are around 440,000 near ...

A wealth of numbers and statistics describe the energy generation and consumption of nation states. This factsheet provides a range of charts (and data links) about the status of Germany's energy mix, as well as developments in energy and power production and usage since 1990.

Unlike conventional geothermal energy, which has been around for the better part of a century, ... Eavor is building its first commercial geothermal plant near Geretsried, Germany, and this should ...

Geothermal Energy Masterplan3 (2018) outlines an exemplary path toward decarbonising a natural gas-based energy economy. Geothermal energy has a unique role in urban regions, as this energy source does not require large amounts of land (such as wind or solar parks) or increased transport (such as biomass).

Geothermal energy. The proven I& C system enables central control of all automation tasks from the main control room at Stadtwerke München for a sustainable energy and heat supply. ... Germany's largest geothermal plant with six drillings between 2,670 and 3,140 meters deep has been in trial operation since 2021. To ensure high availability ...

This paper describes existing geothermal resources and potentials followed by the status of geothermal energy use in Germany. Different use categories such as district and space heating, thermal spas, as well as heat pumps and their contribution to ...

Geothermal energy is thermal energy extracted from the Earth's crust. ... Germany, and Soultz-sous-Forêts, France, while an earlier effort in Basel, Switzerland, was shut down after it triggered earthquakes. Other demonstration projects are under construction in Australia, the United Kingdom, and the US. [32]

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The joint strategy paper "ROADMAP DEEP GEOTHERMAL ENERGY FOR GERMANY - Recommendations for action for politics, business and science for a successful heat transition" by researchers from the Fraunhofer Society and the Helmholtz Association is available for download. "Achieving the climate neutrality of the heating market is a huge challenge and ...

Large geothermal facilities in Germany serve for district heating but in some cases also for geothermal power production. BGR is engaged in research and demonstration projects for deep geothermal energy development. Two deep geothermal wells in the area of Hanover have been operated by BGR.

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