

Geothermal energy

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Geothermal energy is thermal energy extracted from the Earth's crust. It combines energy from the formation of the planet and from radioactive decay. Geothermal energy has been exploited as a source of heat and/or electric power for millennia. Geothermal heating, using water from hot springs, for example, has been used for bathing since Paleolithic times and for space heating since Roman times. Geothermal power (generation of electricity from geothermal energy), has been used since the 20th century. Geothermal power plants produce power at a constant rate, without regard to weather conditions. Geothermal resources are theoretically more than adequate to supply humanity's energy needs. Most extraction occurs in areas near tectonic plate boundaries. The cost of generating geothermal power decreased by 25% during the 1980s and 1990s. Technological advances continued to reduce costs and thereby expand the amount of viable resources. In 2021, the US Department of Energy estimated that power from a newly built plant costs about \$0.05/kWh. In 2019, 13,900 megawatts (MW) of geothermal power was available worldwide. An additional 28 gigawatts provided heat for district heating, space heating, spas, industrial processes, desalination, and agricultural applications as of 2010. As of 2019 the industry employed about one hundred thousand people. The adjective geothermal originates from the Greek roots γῆ (gê), meaning the Earth, and θερμός (thermós), meaning hot.