



Overview

Geothermal energy refers to the [heat derived](#) from the Earth. [Geothermal resources](#) are hot water reservoirs beneath the Earth's surface that exist naturally or are created by human activities. Through drilling wells, these resources can be utilized for various purposes such as [generating electricity](#), [direct applications](#), and providing [heating and cooling](#). Although [conventional hydrothermal resources](#) such as natural reservoirs of steam or hot water, are primarily available in the western states, geothermal energy [can be tapped almost anywhere](#) with geothermal heat pumps and direct-use applications.

Policy Options (** indicates bipartisan support)

- ****Colorado SB 285 (enacted 2023):** Mandates the commission to conduct studies on the state's geothermal resource, evaluate the regulatory structure for geothermal resources, assess the regulation and permitting of underground hydrogen
- ****Colorado HB 1381 (enacted 2022):** Creates a grant program for homeowners, private organizations, and local governments to research, develop, and invest in geothermal processes
- ****Colorado SB 118 (enacted 2022):** Provides basic consumer education and guidance for geothermal energy systems and creates business models for geothermal projects in the state
- ****Maryland H.B.1007 (enacted 2021):** Altering the renewable energy portfolio standard in certain years to require a certain percentage of energy from Tier 1 renewable sources each year to be derived from certain geothermal heating and cooling systems
- ****New York S.9422 (enacted 2022):** Establishes the "Utility Thermal Energy Network and Jobs Act" to promote the development of thermal energy networks throughout the state and to provide jobs to transitioning utility workers

KEY POINTS

- Geothermal power plants produce consistent electricity, running 24 hours a day, seven days a week making them a great resource to address baseload energy demand. ([U.S. Department of Energy](#))
- Geothermal energy is a renewable energy source, and modern geothermal power plants emit no greenhouse gasses. ([U.S. Department of Energy](#))
- By 2050, geothermal energy could represent 8.5% of total U.S. electricity generation while being accountable for only 1.1% of power-sector water withdrawals with the majority of this growth could be supported using non-freshwater sources. ([U.S. Department of Energy](#))
- The U.S. has tapped less than 0.7% of geothermal electricity resources. ([University of Michigan](#))



Other Resources

- **Department of Energy:** [Geothermal FAQs](#) and [Geothermal Basics](#)
- **National Renewable Energy Laboratory:** [Geothermal Technologies Program: Direct Use](#)
- **University of Michigan:** [Geothermal Fact Sheet](#)
- **Western Governors' Association:** [The Heat Beneath Our Feet Initiative](#)

