

What is Geothermal Energy?

Clean, Reliable and Renewable

[Geothermal energy](#) [1] is heat energy that comes from the earth's molten interior deep in the earth's crust. The heat is brought near the surface due to movements in the earth's crustal plates by intrusion of molten magma and by deep circulation of groundwater. Reservoirs of hot water under pressure are formed.

In some places, geothermal energy rises to the surface in natural streams of hot steam or water, which have been used since ancient times for bathing and cooking.

Utilization of this [geothermal energy](#) [1] is achieved by drilling wells into these reservoirs to bring such steam from the high pressure hot water, and direct the steam and separated hot water to drive turbines in power plants. The heat energy is thereby converted to electrical energy.

The cooled geothermal fluid is injected back to the reservoir where it is reheated and preserves the resource mass balance and sustainability.

The Advantages of Geothermal Energy:

- Harnesses a natural locally available energy source
- Provides an environmentally friendly energy alternative
- Avoids fossil fuel combustion
- Produces no nitrous oxide (NO_x) emissions and significantly lower levels of CO₂ than conventional fossil fuels
- Baseload electricity 24/7 year-round supply with high reliability
- Serves as a local energy source, providing security of energy supply and price, reducing need for importation of fuel

Due to the above advantages, geothermal power has become a preferred energy source wherever economically accessible.



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