

Geothermal Energy

Power Generation

Geothermal energy is heat from the Earth. It's clean and sustainable. Resources of geothermal energy range from the shallow ground to steam, hot water, and hot rock accessed by drilling wells up to thousands of feet beneath the Earth's surface. The extremely high temperatures in the deeper geothermal reservoirs are used for the generation of electricity.

Most electricity in the U.S. is generated using steam. The high-pressure steam spins a turbine that rotates a generator, producing electricity. The largest source of carbon emissions in the U.S. are the many power plants still burning fossil fuels to boil water for steam. Geothermal power plants, however, do not burn fuels to heat water to steam. Instead, they use natural heat found below the Earth's surface to generate electricity.

New geothermal power plants produce near-zero CO₂ and emit very little air pollution.

And unlike solar or wind energy, geothermal energy is available around the clock.



BENEFITS



Jobs Boost. Geothermal power plants employ about 1.17 persons per MW. Adding related governmental, administrative, and technical jobs, the number increases to 2.13.



Economy Boost. Over the course of 30 to 50 years an average 20 MW facility will pay nearly \$6.3 to \$11 million dollars in property taxes plus \$12 to \$22 million in annual royalties. Seventy-five percent of these royalties (\$9.2 to \$16.6M) go directly back to the state and county.



Locally Produced. Geothermal power can offset electricity currently imported into the state, keeping jobs and benefits in state and local communities.



Near-Zero Carbon Emissions. Geothermal flash plants emit about 5% of the carbon dioxide, 1% of the sulfur dioxide, and less than 1% of the nitrous oxide emitted by a coal-fired plant of equal size, and binary geothermal plants – the most common – produce near-zero emissions.



Small Footprint. Geothermal has among the smallest surface land footprint per kilowatt (kW) of any power generation technology.



Reliable. Geothermal power can provide consistent electricity throughout the day and year - continuous baseload power *and* flexible power to support the needs of variable renewable energy resources, such as wind and solar.



Sustainable Investment. Energy resource decisions made now for sources of electric power have 40-50 year consequences, or longer. Using renewables like geothermal resources avoids "price spikes" inherent in fossil fuel resource markets. Geothermal energy is an investment in stable, predictable costs. Investing in geothermal power now pays off for decades to come.

Find out more at
www.geothermal.org/states.html