



Geothermal power plant cost breakdown

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The average cost to build a geothermal power plant is \$2,000-\$5,000 per kWh. With an "average" plant size of 38 MW, you could expect to pay about \$2,000-\$2,500 or \$7.6-9.8 million. The smaller the plant, the more costs per kWh will be. For example, costs for a 1 mWh plant are estimated at around \$5,000 per kWh.

This detailed model is used for supply curve analyses, assessing the current economic feasibility and levelized cost of energy (LCOE) of hydrothermal geothermal systems and enhanced geothermal systems (EGS), and evaluating the potential impact of advanced geothermal technologies.

When examining the costs of geothermal power, the most common resources available are analyses of the "levelized cost" of different technologies. This report looks at three recent reports, all published in

2024 Annual Technology Baseline (ATB) data for geothermal are shown above. The Base Year hydrothermal costs are derived from data from actual geothermal power plants. Near-term enhanced geothermal system (EGS) costs are predictions based on reported improvements in a package of technologies currently being field demonstrated.

Recent Public Geothermal Power Purchase Agreement Pricing

* Only PPAs with pricing information are included. Other signed PPAs with undisclosed pricing information can be found in (Robins et al., 2021); (DOE, 2024).

The three scenarios for technology innovation are as follows:

Hybrid plants, or a combination of binary and flash systems, are used in some locations but are not modeled in the ATB.

Examples using these plant types in each of the three resource categories (hydrothermal, NF-EGS, and deep EGS) are shown in the ATB visualization.

Geothermal Potential Resource and Cost Characteristics

* Same for both identified and undiscovered hydrothermal resources.

For current total capacity estimations, the original USGS resource potential estimates for hydrothermal are updated with the following modifications:

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