

# Geothermal Energy 101

## What is geothermal energy?

Geothermal energy comes from heat beneath the Earth's surface. This constant, renewable heat can be used 24/7 to generate electricity, heat and cool buildings, and support commercial and industrial uses.

## Why does geothermal matter?

Geothermal energy is different from many other energy sources. It is:

- Reliable - works day and night, in any weather
- Clean - produces no or minimal emissions
- Local - uses energy from beneath the ground
- Stable - does not depend on fuel prices

## What does this mean for New Mexico's energy transition?

Geothermal energy provides reliable, always-available clean power that complements solar and wind, helping keep the grid stable as more renewable energy is added. Because it is not dependent on weather or fuel markets, it supports more predictable long-term electricity costs and reduces the risk of outages as demand grows across homes, businesses, and emerging industries.

By delivering steady, locally sourced energy, geothermal helps reduce reliance on fuel price volatility while strengthening overall grid reliability. It also builds on New Mexico's existing strengths, particularly in drilling and subsurface expertise, supporting local job creation and long-term economic development. With New Mexico ranked 6th in the nation for geothermal potential, the state is well positioned to expand this resource as part of its energy future.

## Implementation & Grid Readiness

Geothermal projects are designed to integrate directly into existing grid infrastructure, providing steady "baseload" power that balances more variable energy sources like solar and wind. Planning for transmission access, interconnection, and system readiness is an important early step, ensuring geothermal energy can be delivered reliably to homes, businesses, and essential services as projects come online.

## What does this mean for community energy costs?

Electricity costs in New Mexico are rising, mainly due to aging local power lines and equipment, weather damage and climate stress, and rising fuel prices. Geothermal can help by:

- Providing steady power that reduces reliance on fuel price volatility.
- Supporting local energy supply close to where electricity is used.
- Reducing strain on the grid during peak demand.

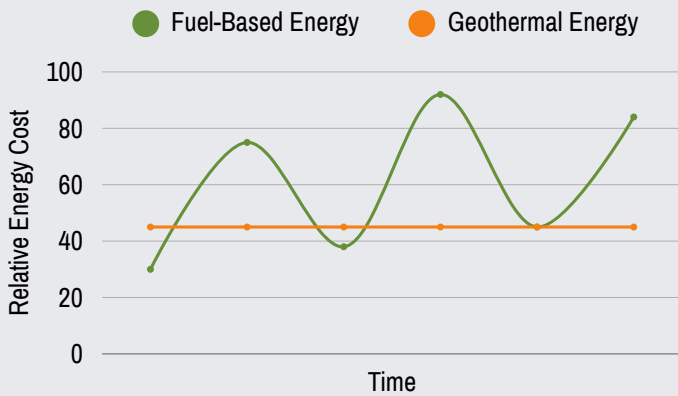
## Discussion Points Explained

- Communities, state agencies (including EMNRD), utilities, and local partners can act now by planning, updating policies, and supporting early geothermal development.
- Workforce development can build on existing oil, gas, and energy sector skills through targeted training and upskilling.
- Universities, national labs, and industry partners play a key role in identifying viable geothermal resources and reducing development risk.
- Existing infrastructure and expertise from the oil and gas sector can accelerate geothermal deployment.



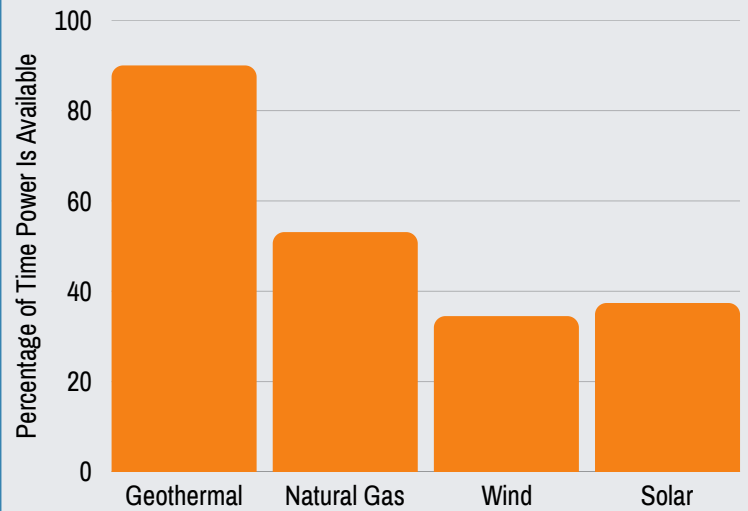
# How Geothermal Supports Reliable and Affordable Energy

Energy Costs Over Time (Conceptual Example)



Some energy costs rise and fall over time, especially when they depend on fuel prices. Geothermal energy uses heat from the Earth, which helps keep costs more stable and predictable.

How Often Energy Sources Can Provide Power



## Community Benefits of Geothermal



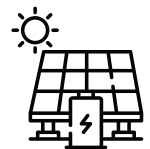
Supports long-term local jobs



Improves power reliability for essential services



Provides stable, locally controlled power that lowers energy risk



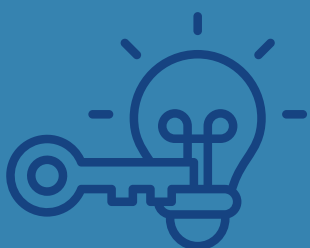
Works alongside solar, wind, and storage

### Scale of Opportunity in New Mexico

Recent analysis (InnerSpace, 2024) estimates that New Mexico has the technical potential to generate up to 163 gigawatts (GW) of geothermal power. To put this in perspective:

- That is more than 100 times the electricity demand of the Albuquerque metro area at peak use
- It represents enough energy to power millions of homes and position New Mexico as a national leader in geothermal energy

This highlights not just a local opportunity, but a statewide and regional economic and energy advantage.



### Key Insights

- Geothermal energy is always available and weather-independent
- New technologies are expanding where geothermal can be developed
- It supports reliable power and stable energy costs
- Early planning and community involvement are critical to success



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