



..... **Natural Geothermal Systems** .....

To generate power from natural geothermal systems, you need:



Abundant heat found in rocks deep underground

+



Fluid to carry heat from the rocks

+



Small pathways to move fluid through the hot rocks

..... **Problem** .....

Despite the presence of heat, sometimes conditions are not ideal for power generation from natural geothermal systems.

In these cases you have:



Abundant heat found in rocks deep underground

+



Insufficient fluid to carry the heat

+



Limited pathways to conduct fluid

# ENHANCED GEOTHERMAL SYSTEMS

..... **Solution** .....

A human-made enhanced geothermal system (EGS) can extract heat from tens of thousands of feet below the surface and put it to good use.



*What makes EGS?*

=



An abundant, previously inaccessible, heat source

+



Fluid injected from the surface

+



Pathways expanded by injected fluid

**With an enhanced geothermal reservoir, you can generate power anywhere with hot rocks deep underground!**

## ENERGY THAT *works* AROUND THE CLOCK

EGS is a reliable, baseload energy source. It can provide power **24** hours a day, **365** days a year, independent of weather conditions and with the flexibility to meet consumer demand.



## GREEN TECHNOLOGY FOR A *greener* WORLD

Power plants built for EGS emit *very* little carbon dioxide (CO<sub>2</sub>) over their lifetime.

CO<sub>2</sub> emissions

**0.05** kilogram (kg)

Geothermal binary closed-loop plant\*  
life cycle of  
**30 years**<sup>1</sup>

**8.91** kg

using 1 gallon  
of gasoline<sup>2</sup>



<sup>1&2</sup> For more information about the references, visit: [energy.gov/eere/geothermal/forge](https://energy.gov/eere/geothermal/forge)

\* A plant uses moderately heated geothermal and secondary fluid that pass through a heat exchanger. The geothermal fluid causes the secondary fluid to flash into vapor, driving turbines to power generators.

## CLEAN ENERGY FOR AMERICA'S HOMES



If this shape represents *all* the households in Texas,

EGS has the potential to *power* this:



EGS could provide more than **90 GWe** for the American people – the equivalent of more than **65 million homes!**

U.S. DEPARTMENT OF  
**ENERGY**

Energy Efficiency &  
Renewable Energy

For more information visit: [geothermal.energy.gov](https://geothermal.energy.gov)

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