U.S. DEPARTMENT OF ENERGY

Office of ENERGY EFFICIENCY & RENEWABLE ENERGY

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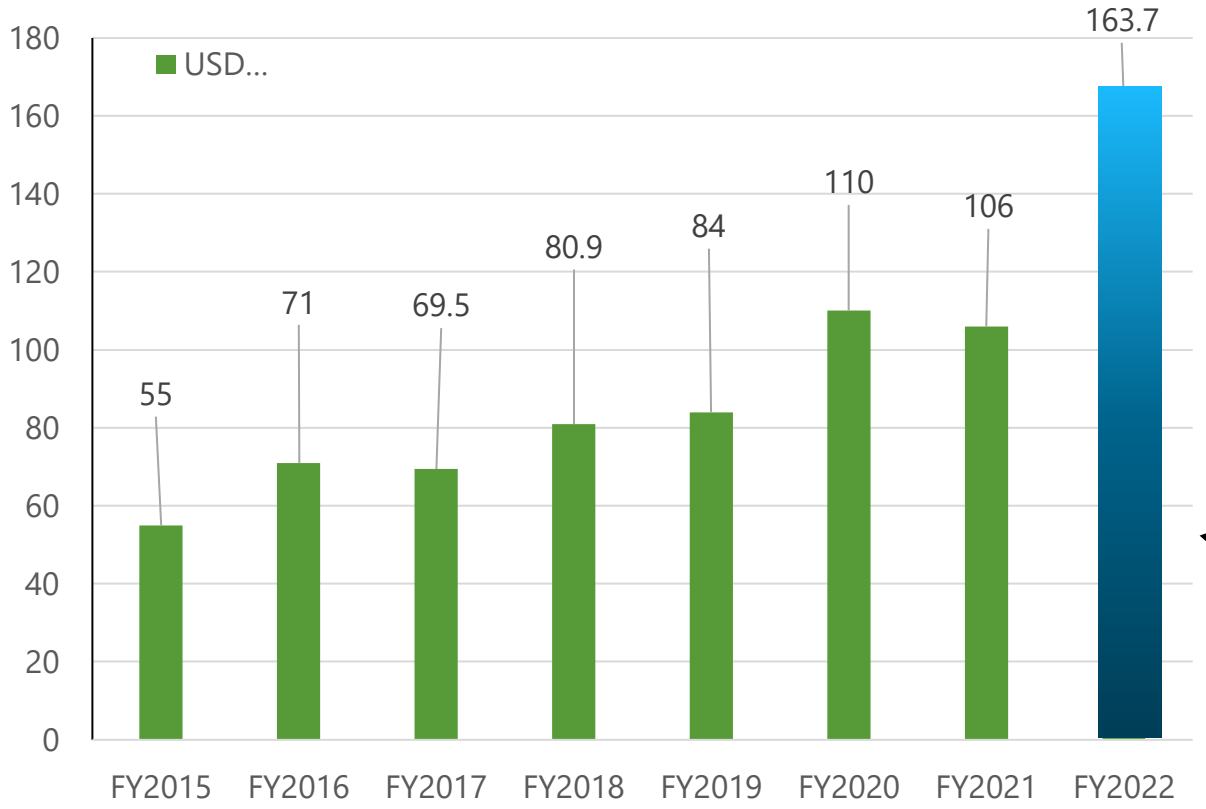
U.S. Department of Energy, Geothermal Technologies Office

GTO Budget



The **Geothermal Technologies Office** researches, develops, and validates innovative and cost-competitive technologies and tools to locate, access, and develop geothermal resources in the United States, enabling the deployment of carbon-free, flexible geothermal energy in both the electric and non-electric sectors.

54% increase FY21 to FY22
197% increase FY15 to FY22

Areas of emphasis in FY 2022

- Achieve a **carbon pollution-free electricity sector** no later than 2035.
- Help **reduce the carbon footprint** of the U.S. building stock by 80% by 2035.
- Accrue **benefits to disadvantaged communities.**

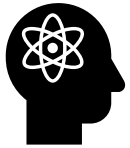
Alignment to EERE Priorities

EERE Guiding Principles

Accelerate the research, development, demonstration, and deployment (RDD&D) of innovative technologies that will transition Americans to a 100% clean energy economy no later than 2050 and ensure the clean energy economy benefits all Americans.

Keys to Ensure the Greatest Impact

Environmental Justice & Equity



Diversity in STEM

Workforce Development

State & Local Partnerships

EERE Program Priorities

- 100% decarbonized electric grid by 2035
- Decarbonize transportation across all modes
- Reduce the carbon footprint of buildings
- Enable a net-zero agricultural sector
- Decarbonize energy intensive industries

FY 2022 Highlights

Frontier Observatory in Research in Geothermal Energy (FORGE) ($20M)
Utah FORGE drilled the first-ever highly deviated geothermal well at a rate twice the industry standard. In FY 2022, GTO will support the next R&D solicitation, contributing to meeting Administration goals for a carbon-free electric grid.

Drilling Technology Demonstration Campaign ($20M)
This campaign will enable field demonstration to prove utility and efficacy to industry and attract future private investment and use to further the Nation's goal to a 100 percent clean energy economy.

Geothermal Energy from Oil and gas Demonstrated Engineering (GEODE) ($10M)
This is a new consortium designed to leverage the oil & gas subsurface industry to help solve geothermal energy's toughest challenges.

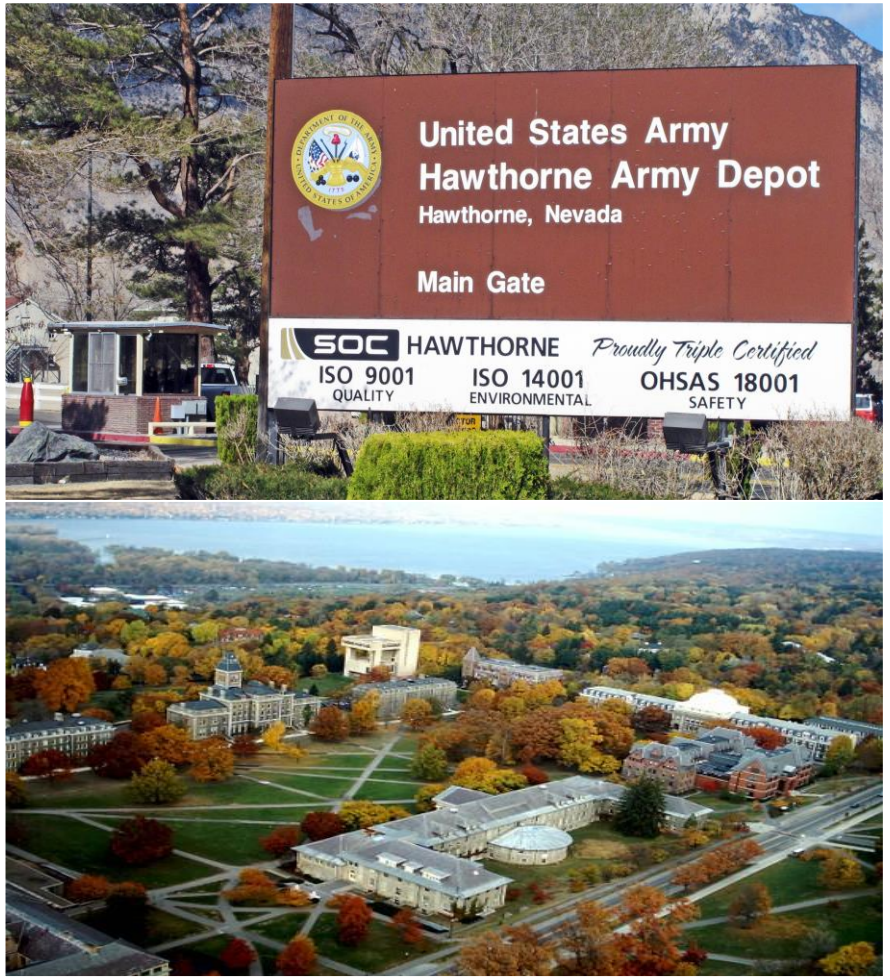
Shown here is a drilling rig at the FORGE site outside of Milford, Utah. RD&D at FORGE continues through 2024 and will drive technological advances in enhanced geothermal systems. Photo: Eric Larson / FORGE Utah

FY 2022 Highlights

Community Geothermal Heating & Cooling Technical Assistance & Deployment ($15M)
This initiative funds technical assistance to demonstrate, deploy, and implement community-scale direct use geothermal district energy systems through installation of geothermal heat pumps (GHP) and/or direct use of geothermal fluids.

Federal Partnerships for Geothermal Installations ($5.4M)
GTO and FEMP will make it possible for Federal agencies (DOD, GSA, State, NASA, DOE Labs, Park Service) to consider geothermal energy to heat/cool (and in some limited cases, potentially power) their installations.

Next Generation Connected Communities ($5M)
GTO will collaborate with the Building Technologies Office to demonstrate the market viability of highly energy-efficient, demand-flexible, low-carbon buildings integrated with distributed energy resources (DERs) to reliably and cost-effectively contribute to America's transition to a zero-carbon grid.



Military installations and university campuses are among the variety of locations that can benefit from direct use geothermal. Shown here are the Hawthorne Army Depot in Nevada and Cornell University in New York.

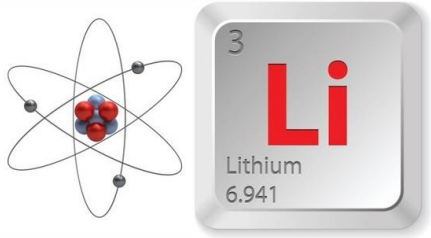
Accomplishments FY20 and FY21

Play Fairway Analysis

Deep Direct Use / Energy Storage

Zonal Isolation

GeoDAWN Western Nevada



Geothermal Lithium Extraction Prize

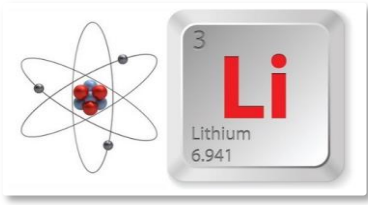
FORGE Utah

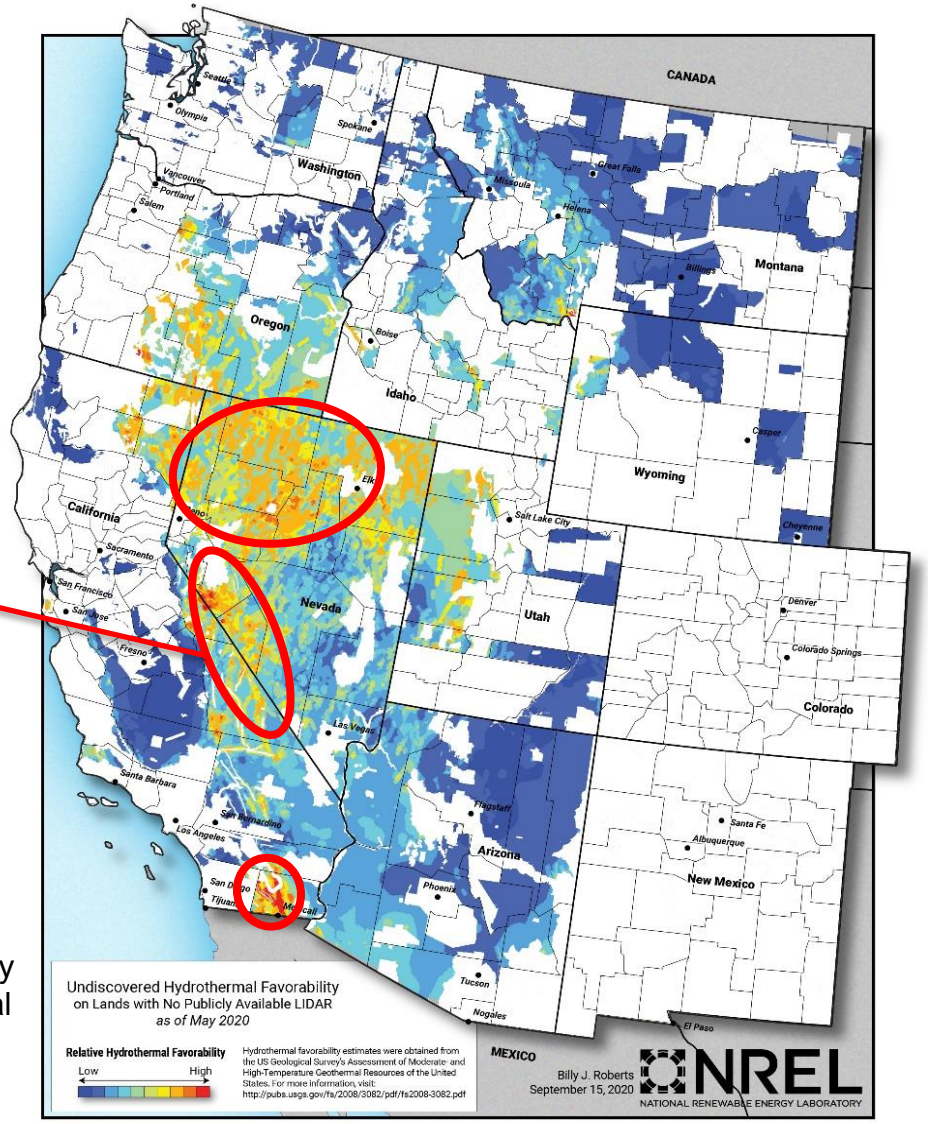
INGENIOUS Western Nevada

Geothermal Manufacturing Prize

A Deeper Look: GeoDAWN + Lithium Resources

Shown here is the Walker Lane geologic region of Western Nevada, along the California border. Image: University of Nevada-Reno





Data gap analysis conducted by the National Renewable Energy Laboratory shows areas of highest favorability for hidden, or undiscovered, geothermal resources. Areas of current and future DOE-funded R&D are circled – these regions are prospective for both geothermal and mineral resources.

Thank You!

The Drill Down

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