

U.S. DEPARTMENT OF
ENERGY

Office of
ENERGY EFFICIENCY &
RENEWABLE ENERGY

Geothermal Rising: Annual Conference 2021

Dr. Susan Hamm, Director
Geothermal Technologies Office





YOU are the key to our success!

The entire geothermal community helps to advance geothermal R&D.

Administration Priorities

Build Back Better: Create a vibrant, clean energy economy that benefits all Americans.

- ✓ 100% clean energy electricity by 2035.
- ✓ Cut CO2 emissions in half by 2030.
- ✓ Support transition of fossil fuels workforce to renewable energy.
- ✓ Create millions of new clean energy jobs.
- ✓ Deliver 40% of the benefits of clean energy to disadvantaged communities.



Kelly Speakes-Backman, Acting Assistant Secretary for Energy Efficiency & Renewable Energy with President Biden at the National Renewable Energy Laboratory, where the President delivered remarks on building a clean energy future and a stronger economy.



Secretary Granholm (right) and Senator Lisa Murkowski (R-AK) meet with students of the Alaska Native Science & Engineering Program.

FY 2022 Budget Status

- Where are we in the FY 2022 budget cycle?
- The current Infrastructure Bill – what can we expect to see for geothermal?

Union Calendar No. 49

117TH CONGRESS
1ST SESSION

H. R. 3684
[Report No. 117-70]

To authorize funds for Federal-aid highways, highway safety programs, and transit programs, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

JUNE 4, 2021

Mr. DEFAZIO (for himself, Ms. NORTON, and Mr. PAYNE) introduced the following bill; which was referred to the Committee on Transportation and Infrastructure

JUNE 22, 2021

Additional sponsors: Mr. GARLAND, Ms. WILSON of Florida, and Ms. WILLIAMS of Georgia

JUNE 22, 2021

Reported with an amendment, committed to the Committee of the Whole House on the State of the Union, and ordered to be printed
(Strike out all after the enacting clause and insert the part printed in italics)
[For text of introduced bill, see copy of bill as introduced on June 4, 2021]





A new mission, built on an urgent need for action.

Renewed Mission, Renewed Purpose

EERE Mission

Equitably transition America to net-zero greenhouse gas emissions economy-wide by **no later than 2050**.

Ensure the clean energy economy **benefits all Americans**, creating **good paying jobs** for the American people...

...especially workers and communities impacted by the energy transition and **those historically underserved** by the energy system and overburdened by pollution.

Keys to Ensure the Greatest Impact



Environmental Justice & Equity



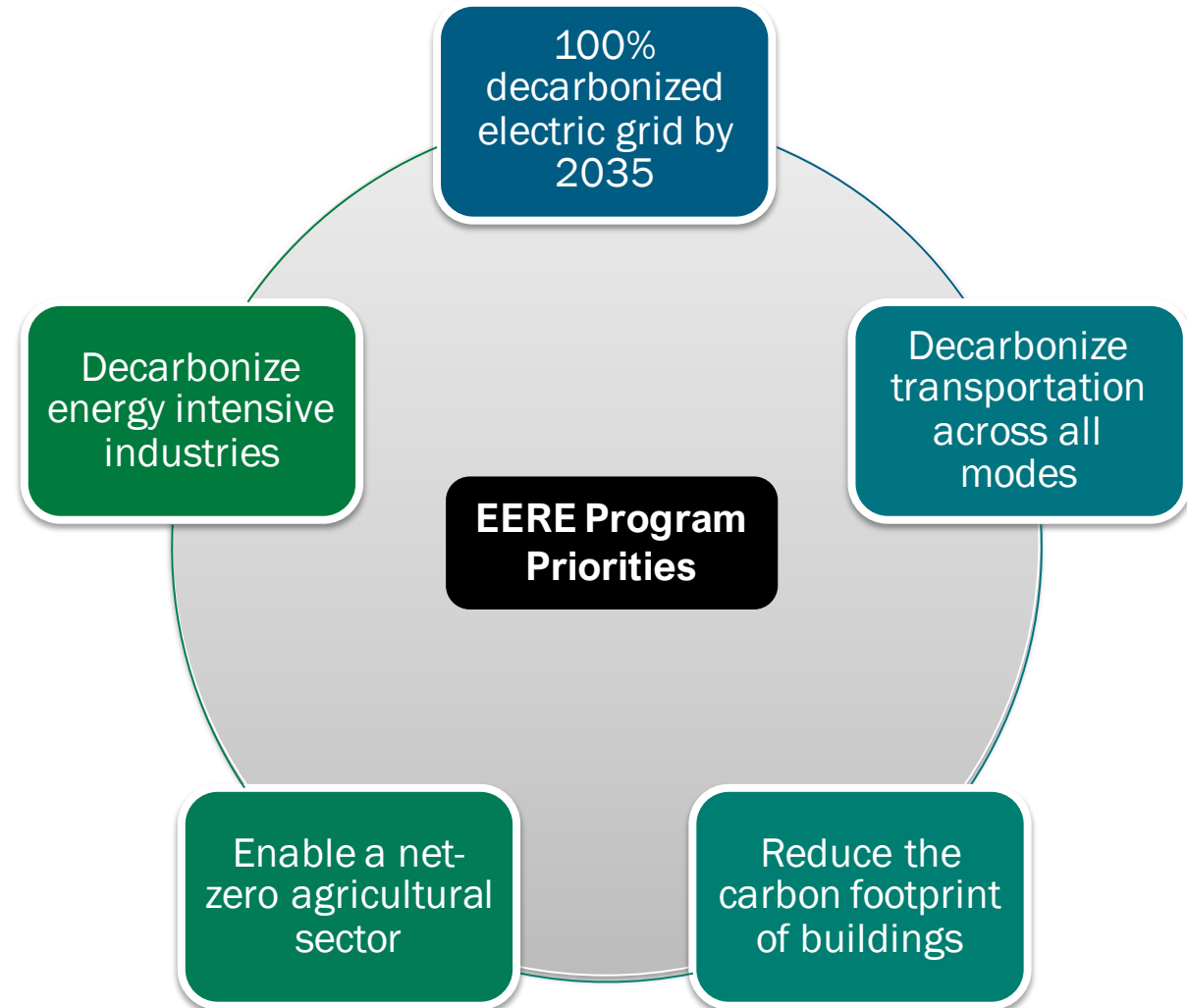
Diversity in STEM



Workforce Development



State & Local Partnerships



DOE and EERE Response

- **DOE/EERE Budgets:** Expected budget increases reflecting the urgency of climate change.
- **Joint Office Partnerships:** Emphasis on cross-office collaboration.
- **Critical Materials:** Focus on securing the supply of critical materials that build clean energy technologies.
- **S1 Deployment Metrics:** Quantify and accelerate the deployment of existing renewable resources.



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New DOE and EERE Initiatives

- **Inclusive Innovation Prize:** Prize that identifies and incentivizes activities to help traditionally underrepresented groups apply for and receive DOE funding.
- **DOE Communities LEAP (Local Energy Action Program):** Under LEAP pilot, supportive services, valued at up to \$16M, provided to low-income, energy-burdened communities for community-driven clean energy transitions.
- **EEEJ Analytical Roadmap**
- **EEEJ Metric and Stakeholder Engagement Guidance (December)**



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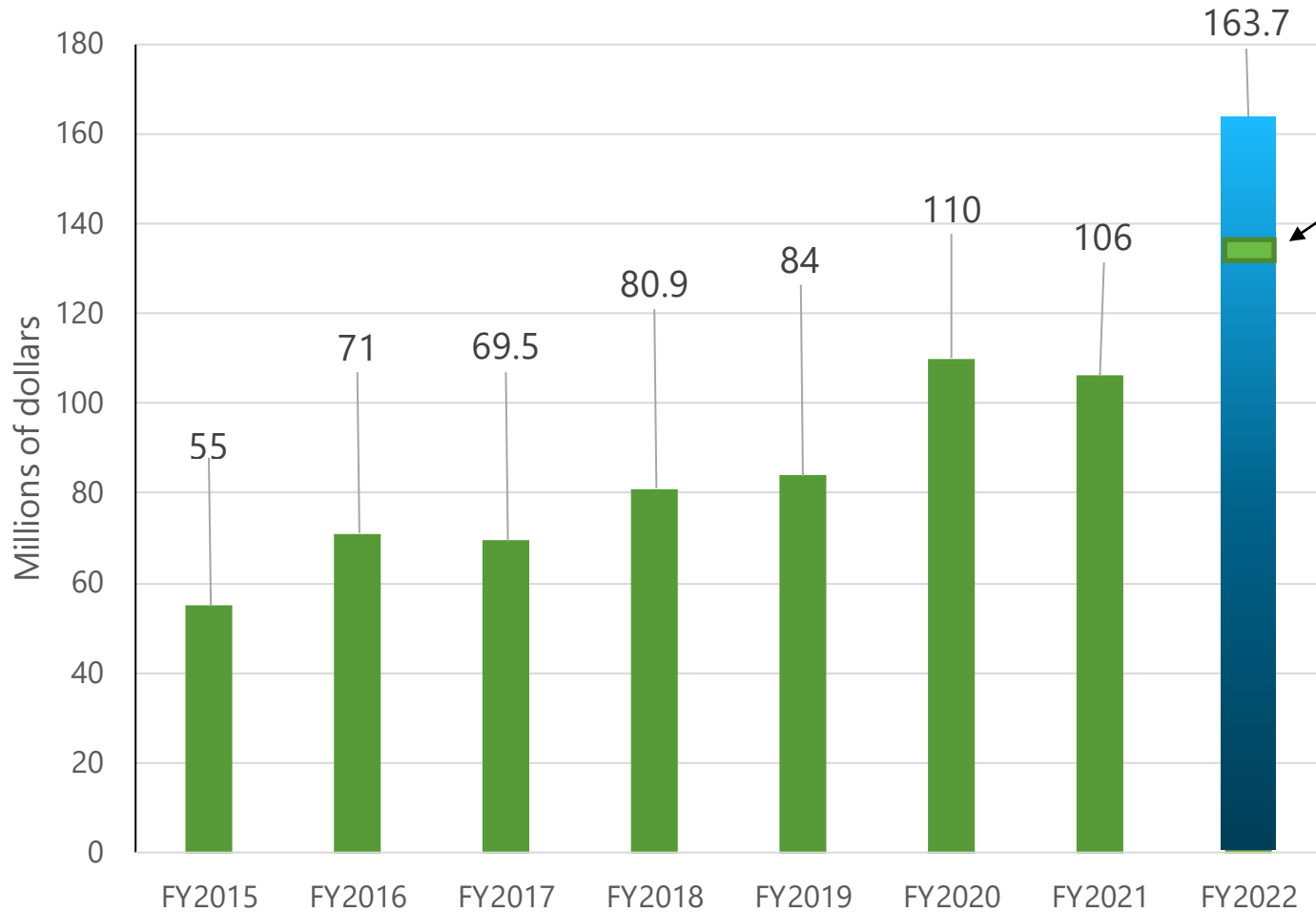
Inclusive
Energy
Innovation
Prize





As always, GTO is ready for the challenge...

GTO in FY 2022

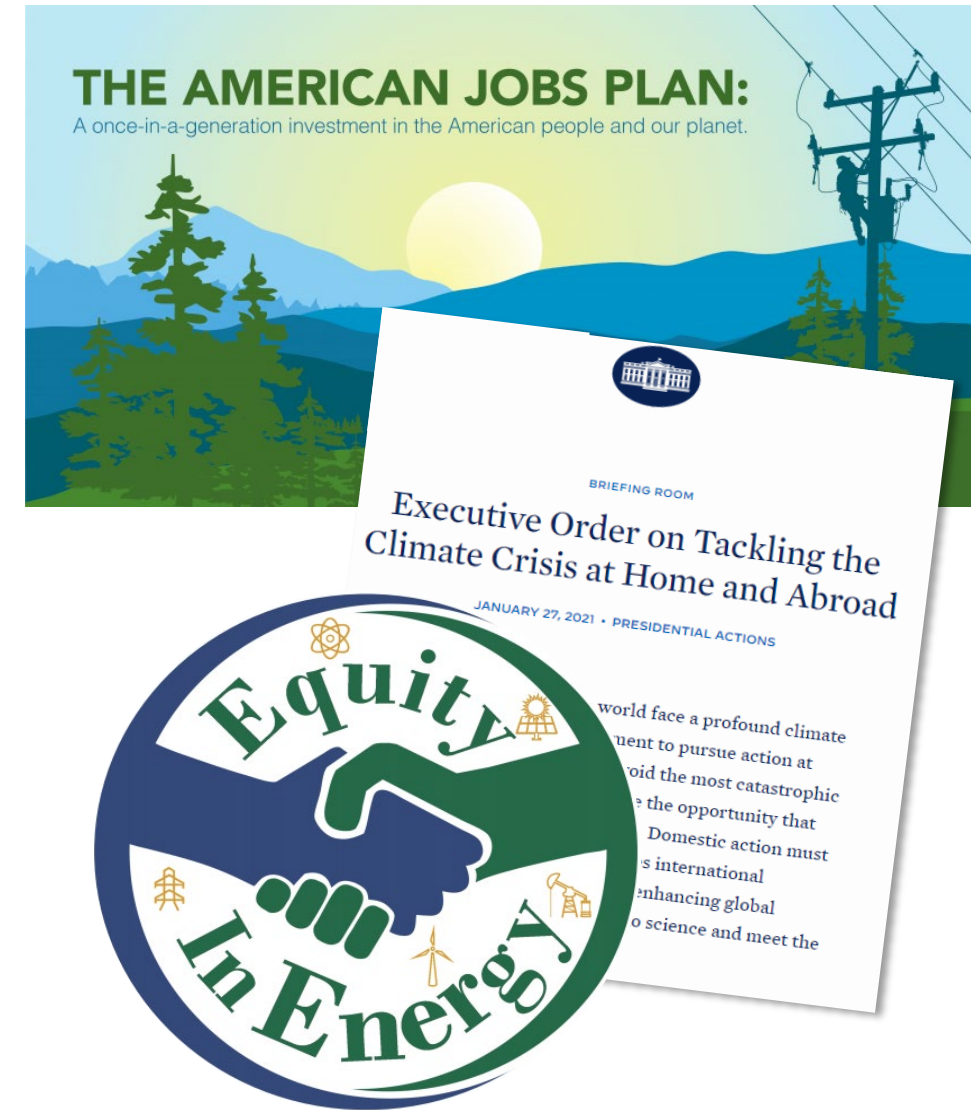


GTO's FY 2022 Budget Request:

- Exceeds previous appropriations.
 - Up 54% from FY 2021 and nearly tripled from FY 2015
- Focus on driving down the cost of geothermal and ensure that it's integrated into a resilient power system.
- Follows on years of growth that will help geothermal reach its potential.

FY 2022 Emphases

- **Renew the focus** on demonstration and deployment along with continued support of research and development.
- **Tackle the climate crisis head on** - work to achieve the Administration's goals of a carbon free grid by 2035 and a 100% clean energy economy by 2050.
 - Geothermal offers near-term renewable electricity deployment for 2035 goal.
 - Geothermal offers grid efficiency through geothermal heating and cooling, mapping to 2050 goal.
- **Incorporate tenets** of DEI, EJ, workforce development, diversity in STEM, just transitions for disadvantaged communities.
 - DEI merit review criteria, observers
 - New projects dedicated to deployment, modeling, utility outreach, Alaska outreach



FY 2022 Request Initiatives

Frontier Observatory in Research in Geothermal Energy (FORGE) (\$20M)

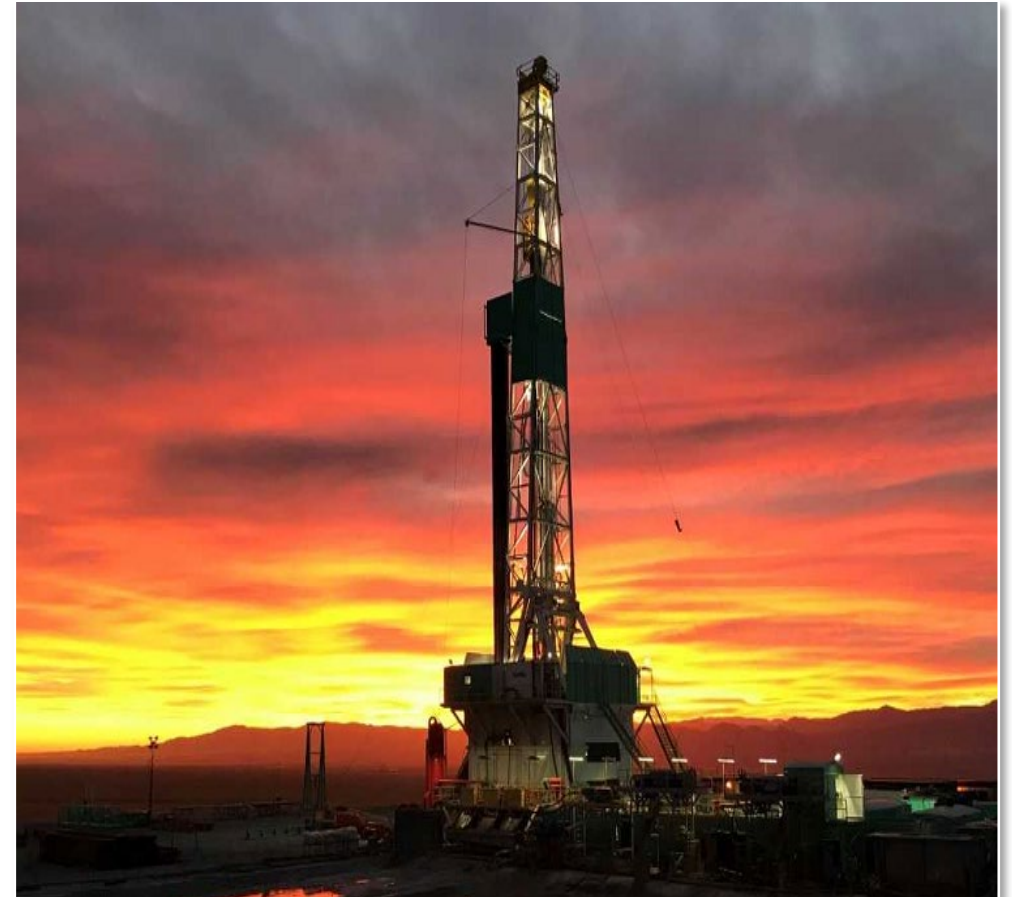
Utah FORGE drilled the first-ever highly deviated geothermal well at a rate twice the industry standard. In FY 2022, GTO will support the next R&D solicitation, contributing to meeting Administration goals for a carbon-free electric grid.

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 Request Initiatives

Community Geothermal Heating & Cooling Technical Assistance & Deployment (\$15M)

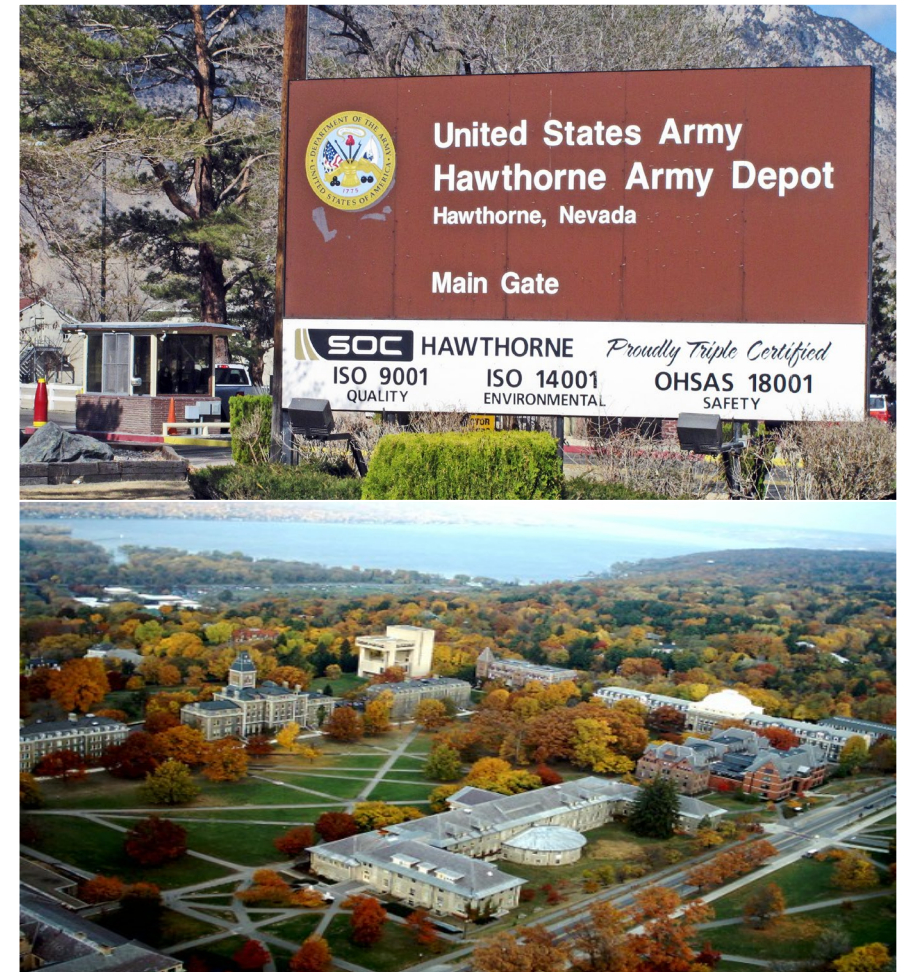
This initiative funds technical assistance to demonstrate, deploy, and implement community-scale direct use geothermal district energy systems through installation of geothermal heat pumps (GHP) and/or direct use of geothermal fluids.

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 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.

Status of Ongoing Initiatives

- **Hydroprops** (hydraulic properties) selection announcement on Sept. 20.
- **ReAmp** selection announcement in November 2021.
- FY 2022 AOPs with DOE National Labs will be finalized in November 2021.
- Lithium Extraction from Geothermal Brines Prize **Phase 1 winners** to be announced at COP26 in Glasgow on Nov. 4.
- GCC submission deadline on Nov. 4.



A photograph of a geothermal power plant facility, likely a solar tower or CSP plant, set in a desert environment. The facility consists of a large, rectangular structure with a metal frame and a roof, surrounded by various pipes and equipment. In the background, there are mountains under a clear sky. The foreground shows rocky terrain with sparse, dry vegetation. The entire image has a dark teal overlay.

...and with your help we can usher in a new world of geothermal opportunities.

Thank You!



Get the hottest geothermal news from *The Drill Down*, the new monthly newsletter from GTO!

Sign up today:

geothermal.energy.gov

Interested in serving as a merit reviewer for GTO RD&D projects?

Send us your resume or CV:

doe.geothermal@ee.doe.gov