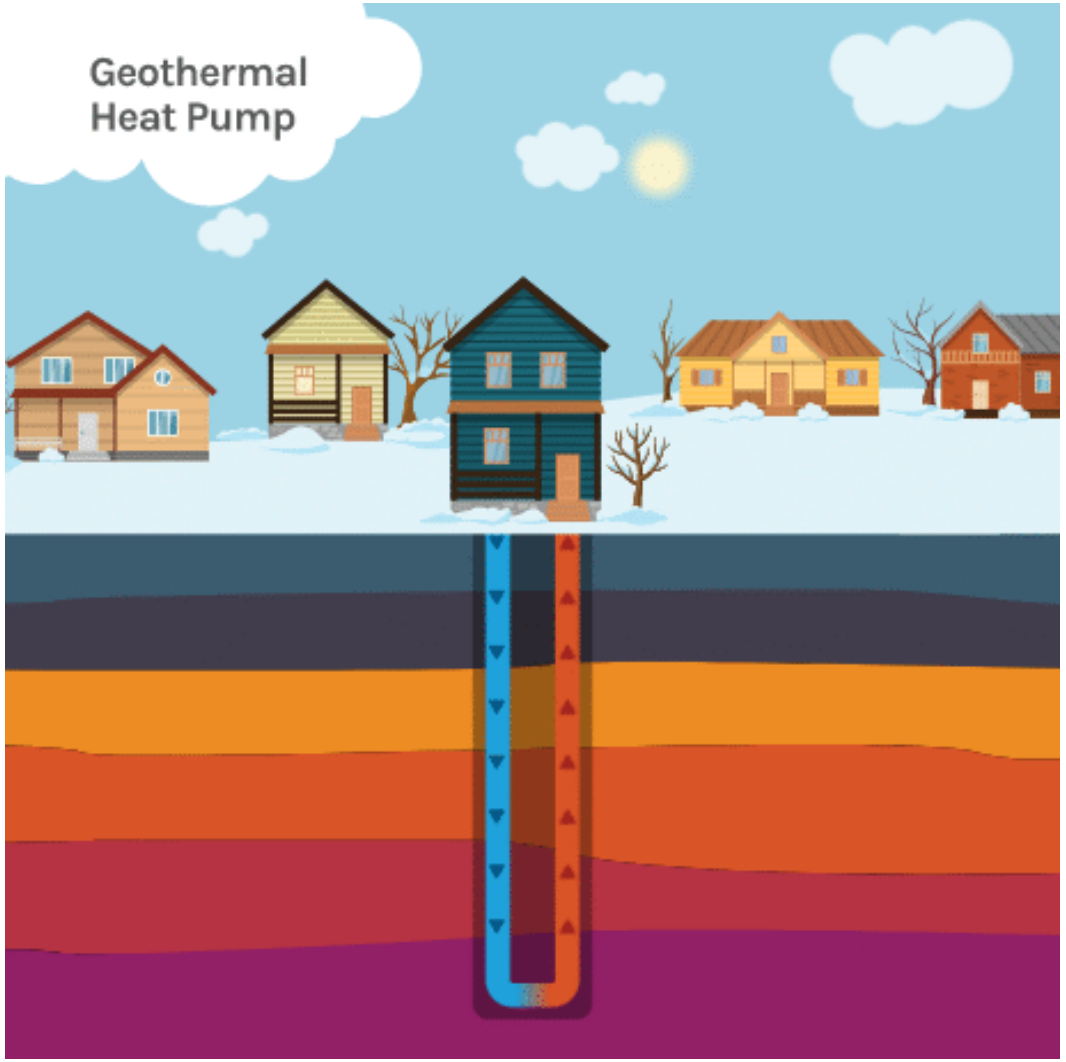
U.S. DEPARTMENT OF ENERGY

Office of ENERGY EFFICIENCY & RENEWABLE ENERGY

Community Geothermal Heating & Cooling Initiative

Alexis McKittrick, PhD
Low Temperature & Coproduced Resources Program Manager
Geothermal Technologies Office

Ground-Source Heat Pumps / Geothermal Heat Pumps



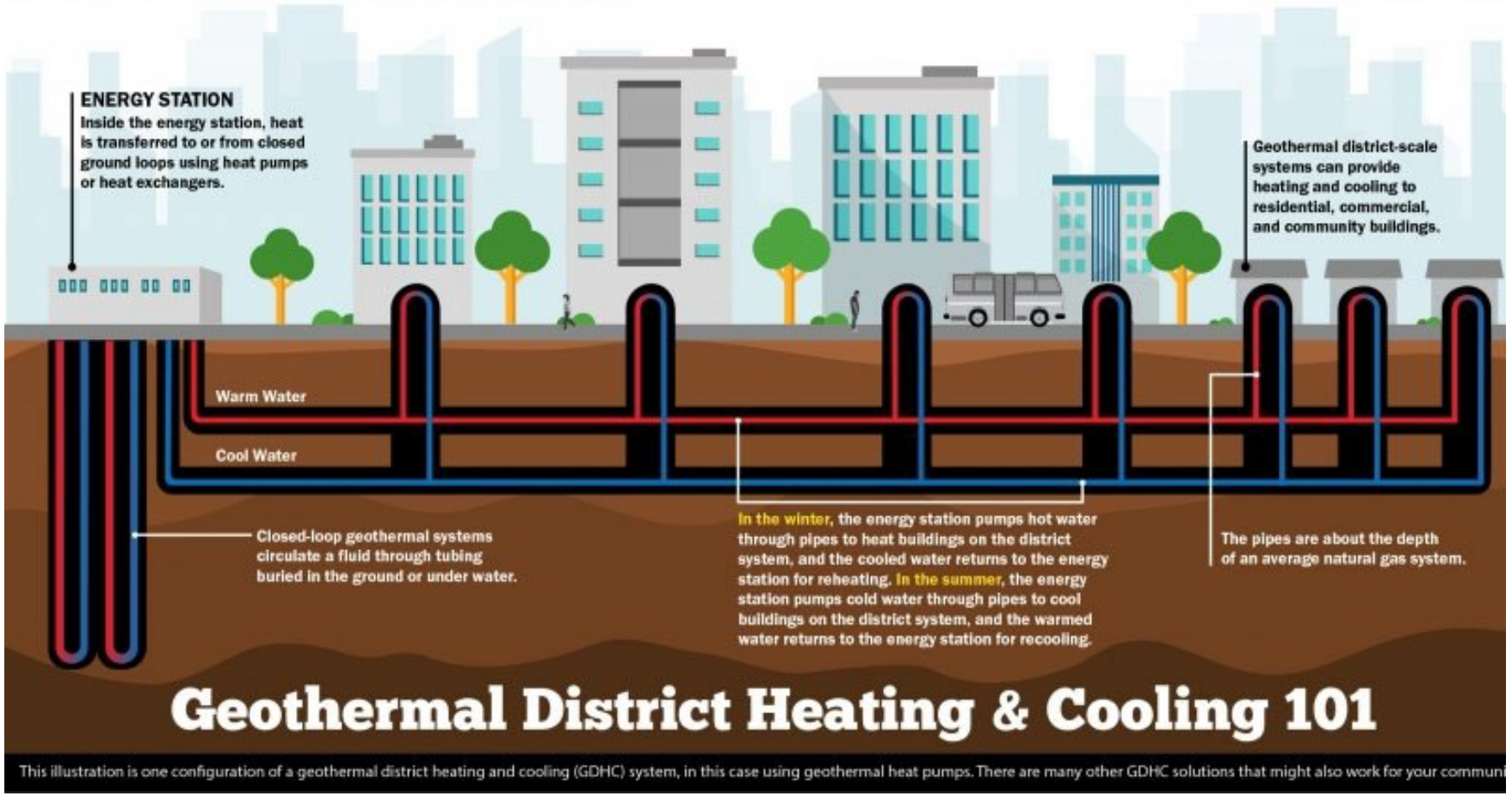
energy.gov/eere/geothermal/geothermal-heat-pumps

- Take advantage of constant underground temperatures to efficiently exchange temperatures
- Three key elements in a GHP system:
  - An underground heat collector
  - A heat pump
  - A heat distribution subsystem (e.g., ductwork)

Heat exchangers and circulation pumps for the geothermal district heating system in Klamath Falls, OR. Photo by Geo-Heat Center (NREL Pix 03694)

Geothermal District Heating and Cooling Systems

- Low-temperature, shallow systems
- Hundreds to thousands of boreholes connected to district energy stations
- Central loops distribute hot and cold water to buildings
- Major trends:
  - Replace existing district systems
  - Often hybrid systems
  - Buildings slowly retrofitted and added to system



Community Geothermal Initiative

Funds projects that will help communities design and deploy geothermal district heating and cooling systems, create related workforce training, and identify and address environmental justice concerns.

Widespread adoption of geothermal heating and cooling systems will help decarbonize the building and electricity sectors, reduce energy costs for families, and boost resilience.

COMMUNITY GEO
U.S. Department of Energy

- Help expand community-scale geothermal by supporting new systems and developing case studies to be replicated throughout the country
- Support the formation of U.S.-based community coalitions that will develop, design, and install community geothermal heating and cooling systems that supply at least 25% of the heating and cooling load in communities
- Advance the objectives of GTO to realize the potential of community-scale geothermal heating and cooling nationwide.

energy.gov/eere/geothermal/community-geothermal-heating-and-cooling-design-and-deployment

Community-Focused Teams

Community Geothermal Heating and Cooling initiative will help communities:

- Reduce energy burden and fossil fuel dependence
- Increase grid resilience and stability
- Improve environmental quality
- Support jobs

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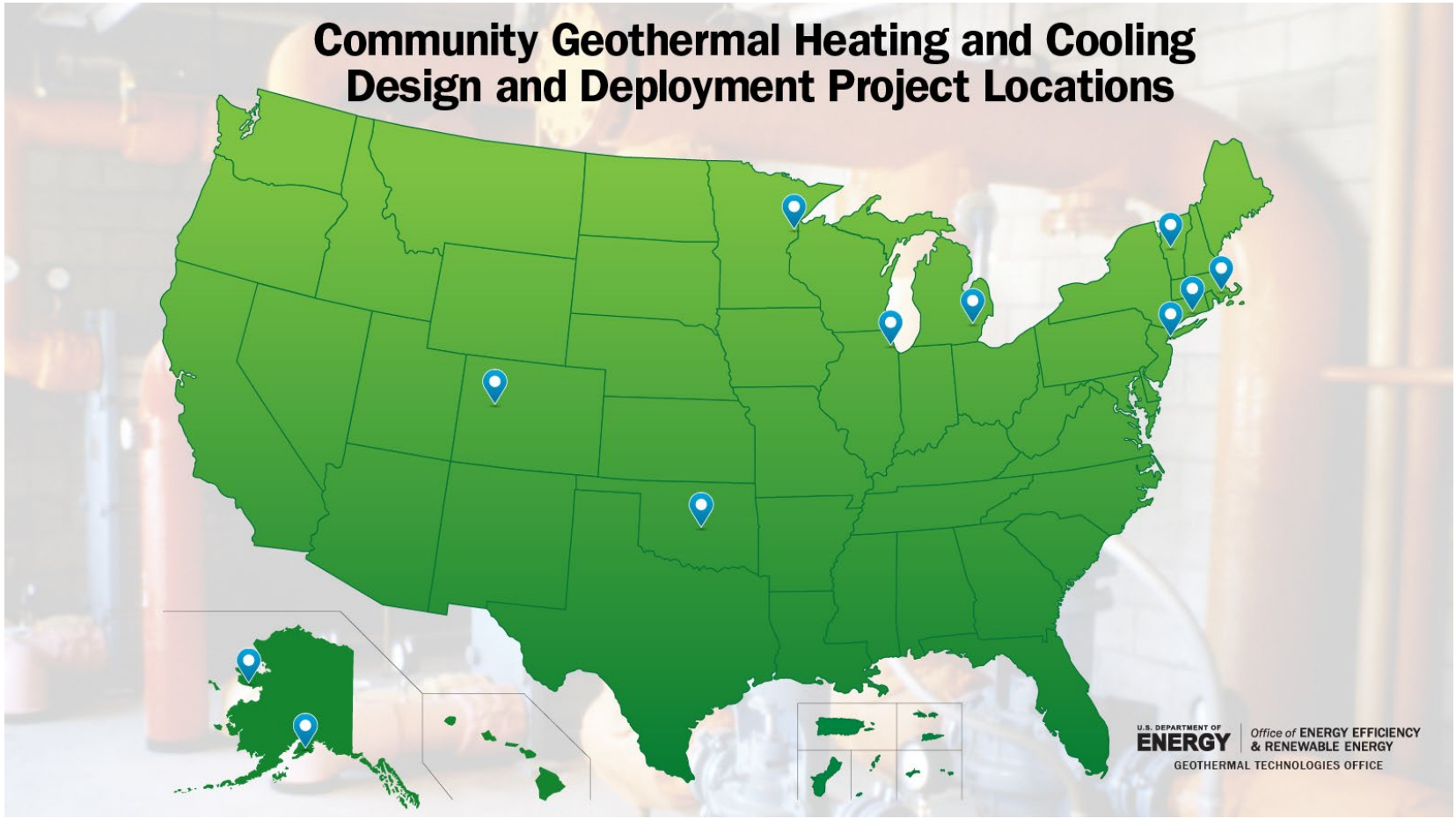
Community Geothermal Projects



Selected 11 communities in 10 states to assess and design community-scale geothermal heating and cooling systems

Urban
- Ann Arbor, MI
- Chicago, IL
- Duluth, MN
- Framingham, MA
- New York City, NY
- Wallingford, CT

Rural
- Carbondale, CO
- Hinesburg, VT
- Seward, AK
- Shawnee, OK

Remote
- Nome, AK

Community Geothermal projects kicked off October 1st, and teams have participated in kick-off calls with the GTO team. In early FY25, GTO will select 2-4 projects to deploy their geothermal system designs in their community.

energy.gov/eere/geothermal/community-geothermal-heating-and-cooling-design-and-deployment

Thank You!

the drill down

Klamath Falls, OR, where a geothermal system heats 23 downtown buildings and melts snow from sidewalks and bridges.

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

Sign up today: geothermal.energy.gov

Read DOE's *GeoVision* report:
energy.gov/eere/geothermal/geovision

Read GTO's Multi-Year Program Plan:
https://bit.ly/GTOMYPP

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Resources

GTO Website	geothermal.energy.gov
GTO Heat Pumps Page	energy.gov/eere/geothermal/geothermal-heat-pumps
GTO Low-Temperature and Coproduced Resources Page	energy.gov/eere/geothermal/low-temperature-coproduced-resources
GTO Community Geothermal Initiative	energy.gov/eere/geothermal/community-geothermal-heating-and-cooling-design-and-deployment
GTO Funding Opportunities	energy.gov/eere/geothermal/geothermal-technologies-office-open-funding-opportunities
DOE Office of State and Community Energy Programs	energy.gov/scep/office-state-and-community-energy-programs
White House Inflation Reduction Act Guidebook	whitehouse.gov/cleanenergy/inflation-reduction-act-guidebook/
EPA's ENERGY STAR Program	energystar.gov/