



GeoNetworks

Efficient and Equitable Electrification of Heat

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About Sightline



OUR MISSION

Sightline Institute's mission is to make the Northwest a global model of sustainability— strong communities, a green economy, and a healthy environment.

Triple Threat for Gas Utilities

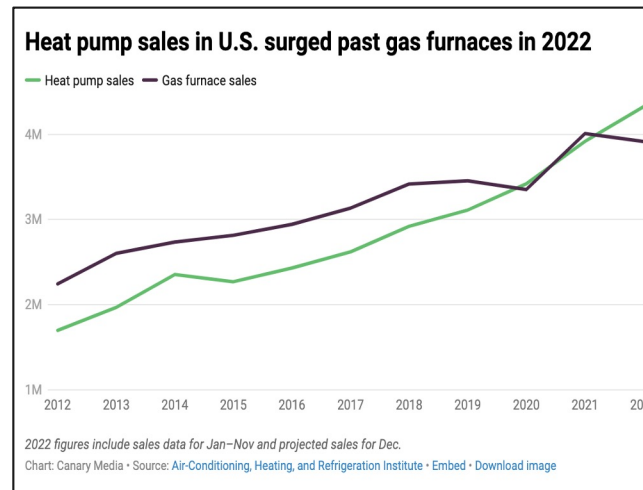
Emissions Reduction Statutes and Clean Energy Standards



- Washington: 45% below 1990 levels by 2030, and 95% below 1990 levels by 2050
- Climate Commitment Act
- Clean Energy Transformation Act

Adoption of Heat Pumps Outpacing¹ Gas Furnaces

- Federal Inflation Reduction Act (IRA) incentives
- State programs



“Mandated” Investment in Gas Pipeline



- Gas utilities in WA will spend more than \$840 million² over the next 10 years replacing at-risk pipe, authorized by safety mandates.

1. Canary Media
2. Pipeline Replacement Program (PRP) documents from each utility

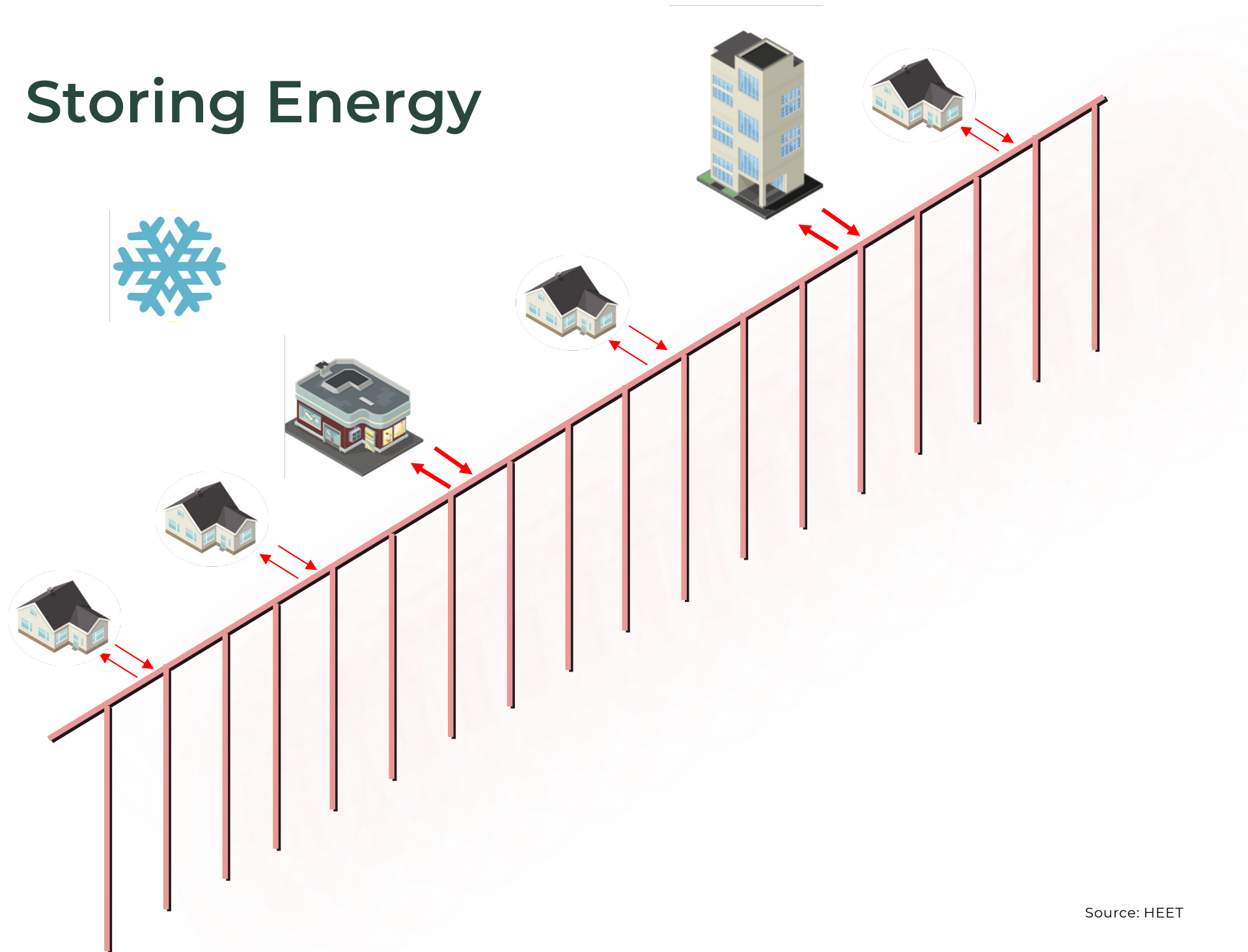
GeoNetworks: How they work

GeoNetworks (Networked Ground Source Heat Pumps)



- Infrastructure in the street
- “Shallow” boreholes
- Closed loop system - filled with water just once

Storing Energy



GeoNetworks: Outcomes

Outcomes

- Safer

Greenwood Gas Disaster 2016

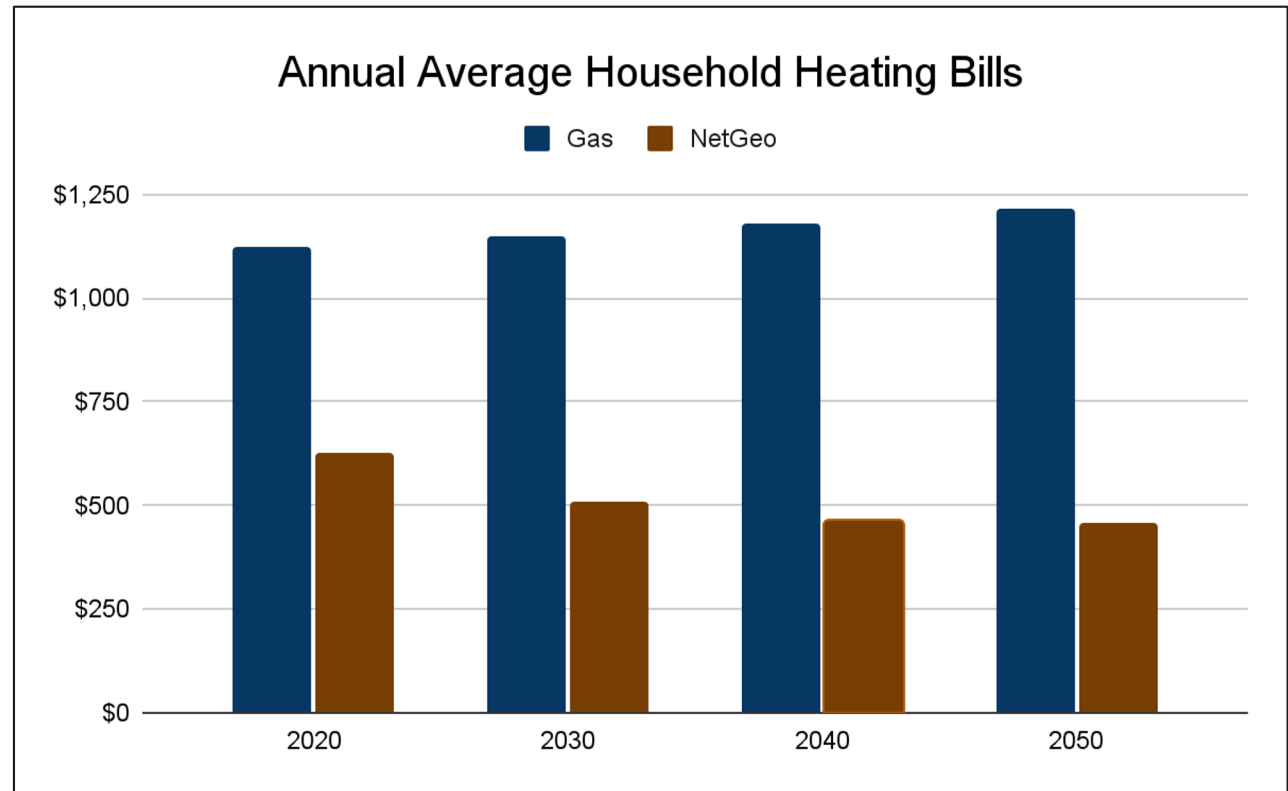


Outcomes

- Safer
- Lower customer heating bills

MA Heating Bill Projection (Gas vs. GeoNetworks)

(Applied Economics Clinic Brief)*



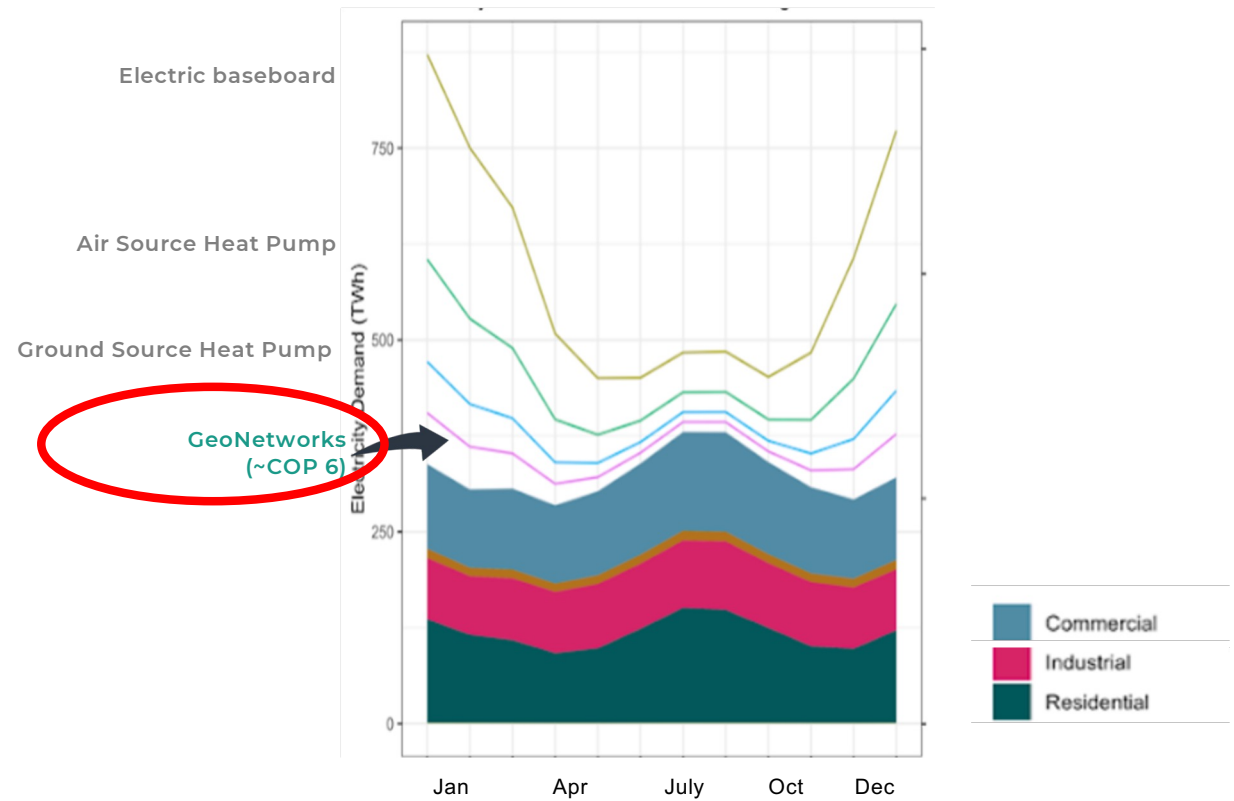
* Not counting electricity used

[Inflection Point; When Heating with Gas Costs More](#); Applied Economic Clinic Jan 2021

Outcomes

- Safer
- Lower customer heating bills
- Lower electric peaks

Future US Seasonal Electric Peaks (as we electrify)



Buonocore, J., Salimifard, P., Magavi, Z., Allen, J., "The Falcon Curve: Implications of Seasonal Building Energy Use and Seasonal Energy Storage for Healthy Decarbonization" DOI: [10.21203/rs.3.rs-1054606/v1](https://doi.org/10.21203/rs.3.rs-1054606/v1)

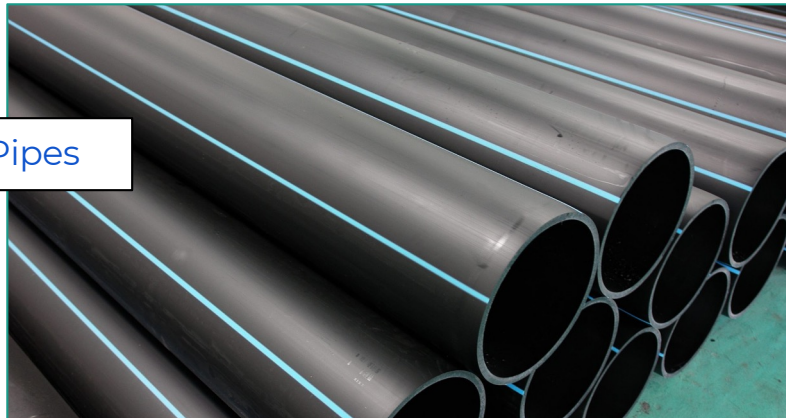
Outcomes

- Safer
- Lower customer heating bills
- Lower electric peaks
- Workforce can transition

Gas Pipes



Water Pipes



Outcomes

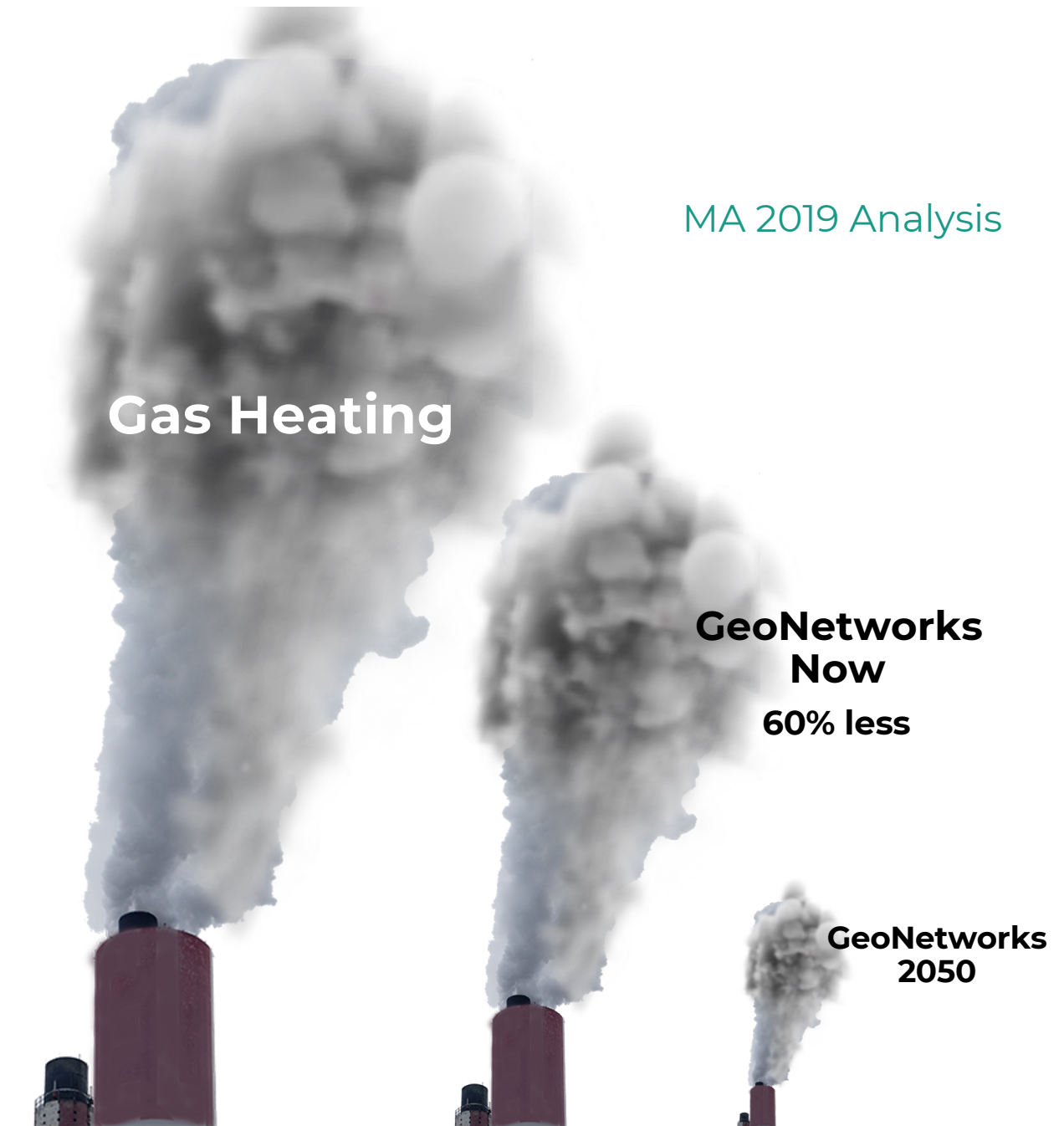
- Safer
- Lower customer heating bills
- Lower electric peaks
- Workforce can transition
- Lower emissions

MA 2019 Analysis

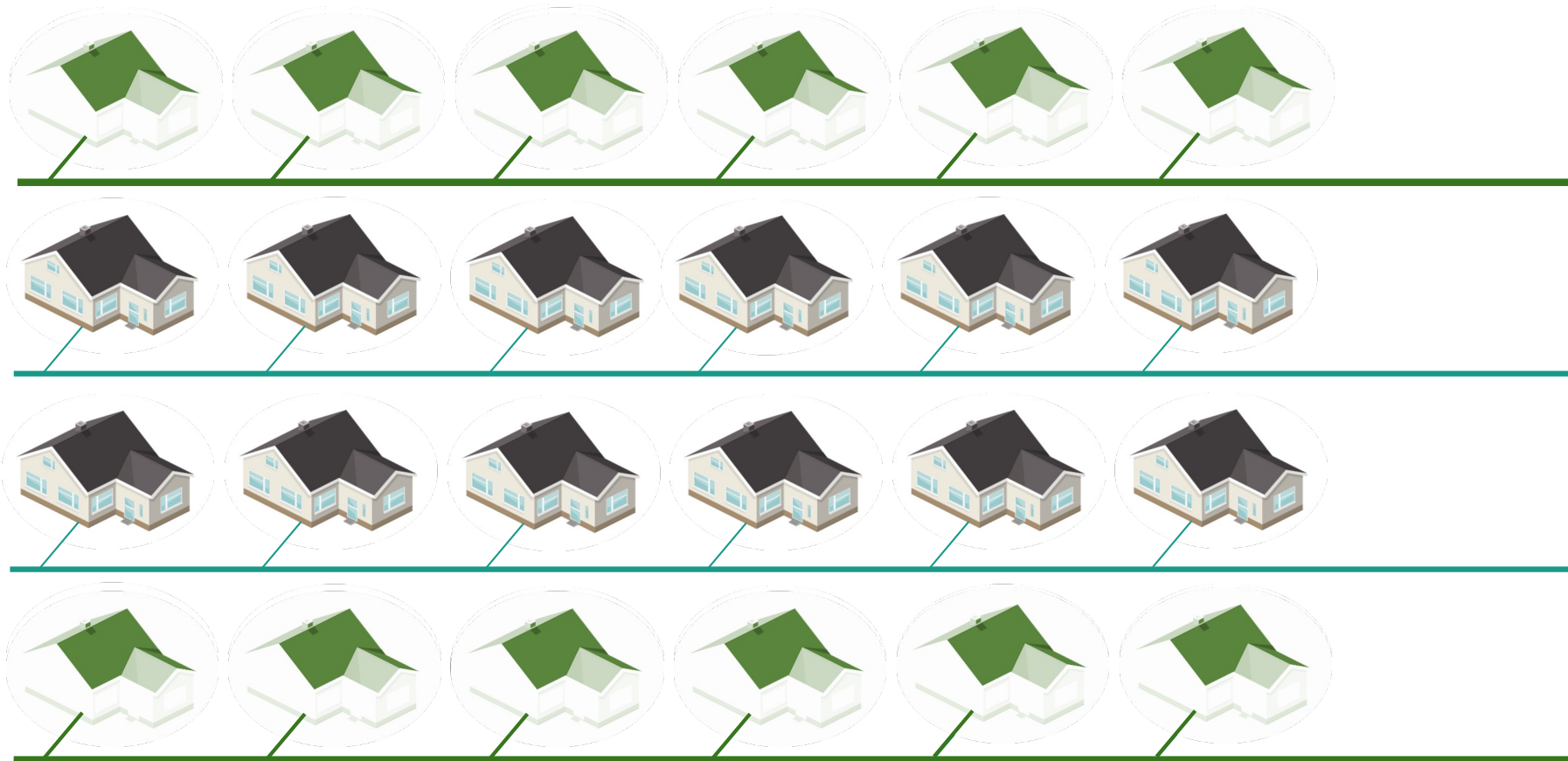
Gas Heating

**GeoNetworks
Now
60% less**

**GeoNetworks
2050**



Merged Gas/Geo Rate Base; Customer Bill Stays Low

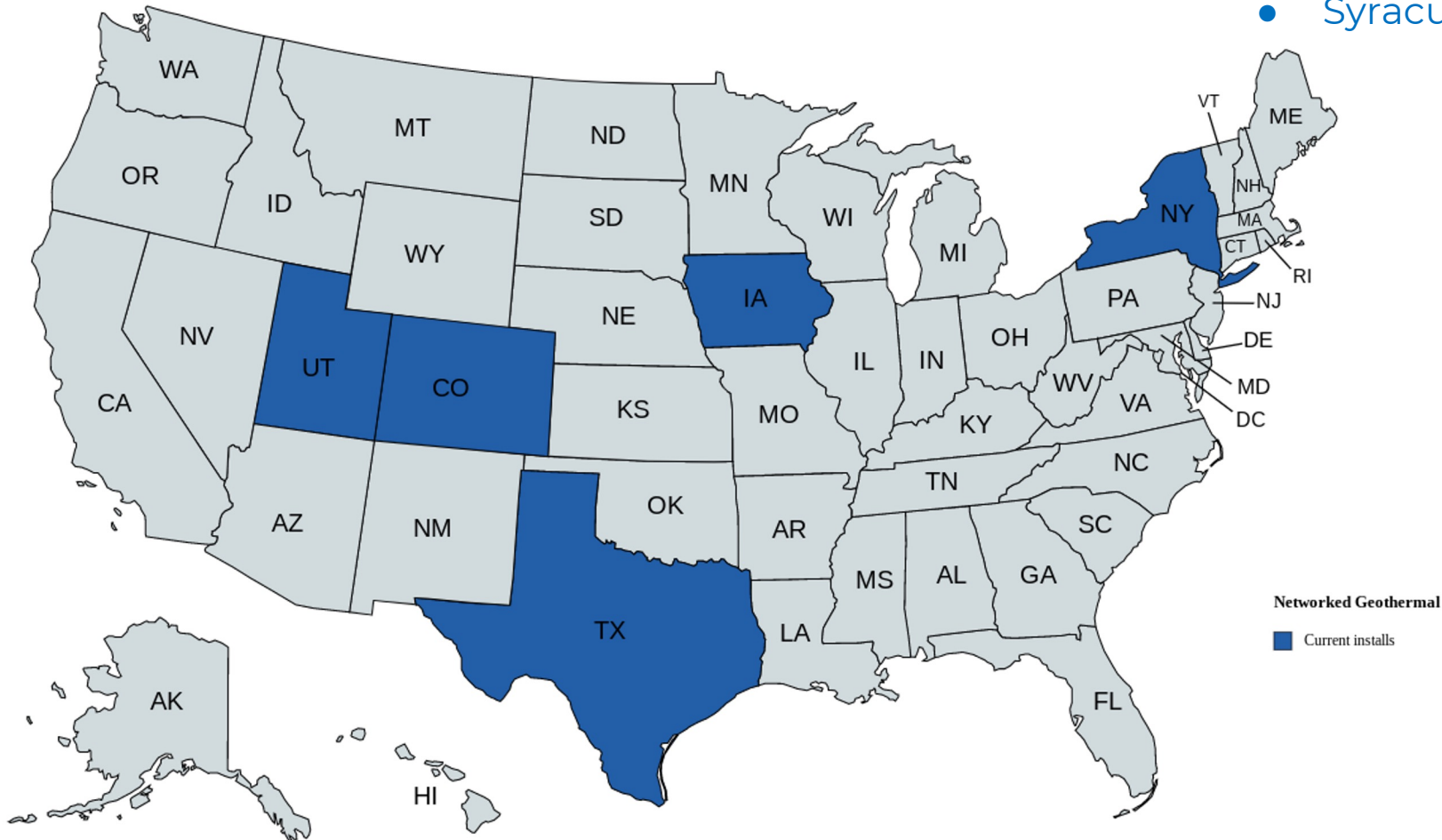


GeoNetworks: In Real Life

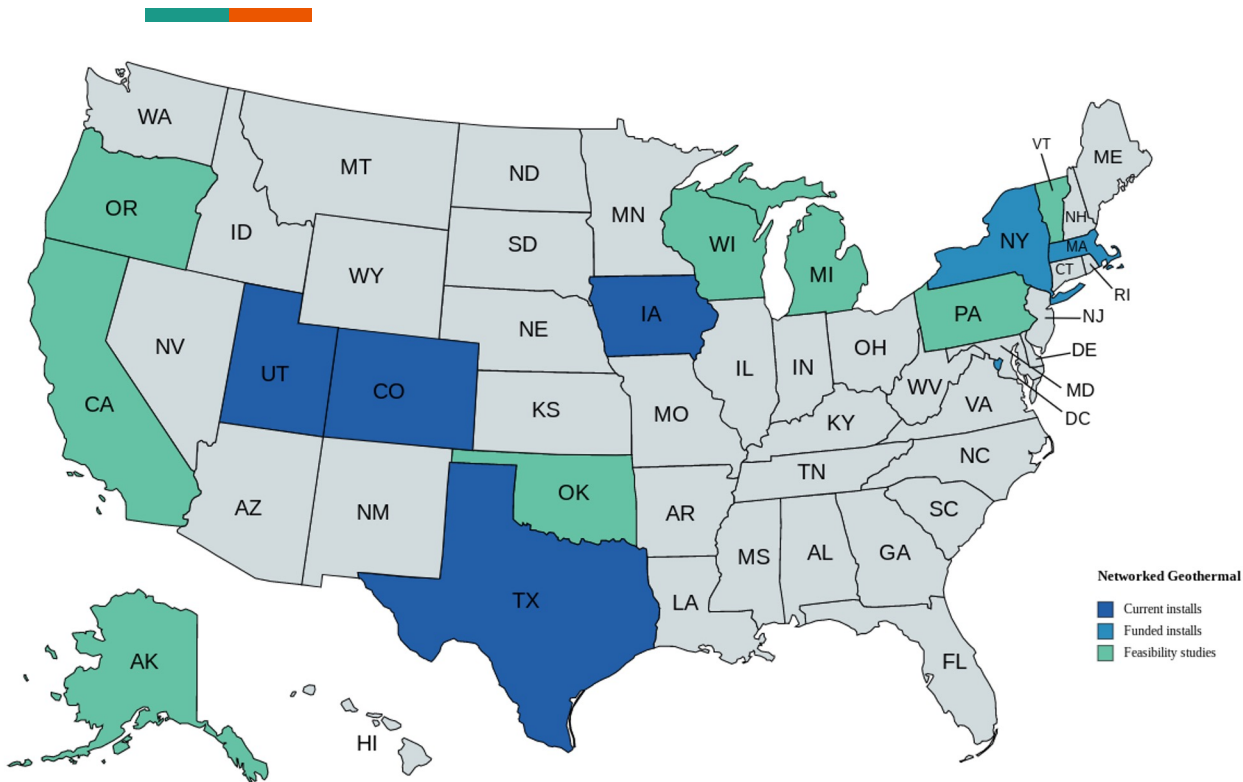
Current Installs



- Whisper Valley, TX
- West Union, IA
- Ogden, UT
- Grand Junction, CO
- Syracuse, NY



Feasibility Studies/Proposed Installs



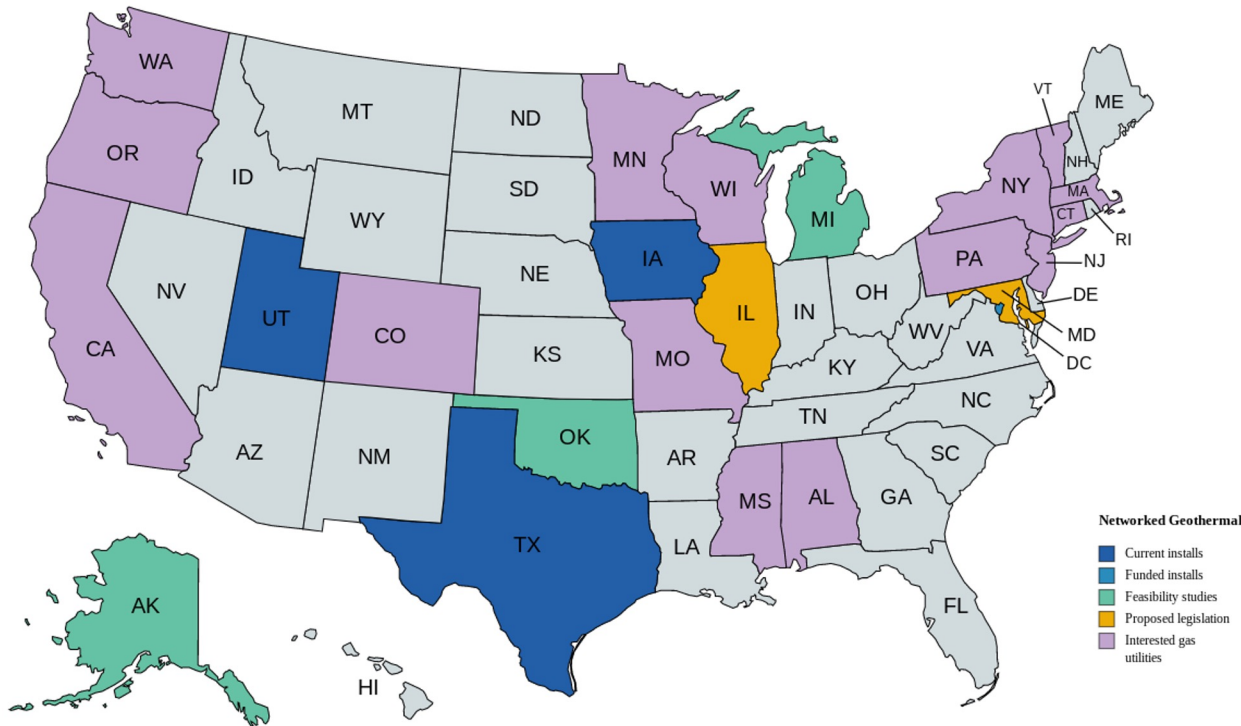
FUNDED

- Framingham, MA
- Lowell, MA
- Lawrence, MA
- Washington, DC
- Coney Island, NY
- Troy, NY

PROPOSED

- >35 NY
- >100 CA
- Philadelphia
- Ann Arbor
- Milwaukee
- Chicago
- Duluth
- Wallingford CT
- Carbondale CO
- Middlebury VT
- Seward AK
- Shawnee OK

Interested Gas Utilities



Networked Geothermal

- Current installs
- Funded installs
- Feasibility studies
- Proposed legislation
- Interested gas utilities



GeoNetworks: Opportunity for a Win-Win

Touchy Subjects



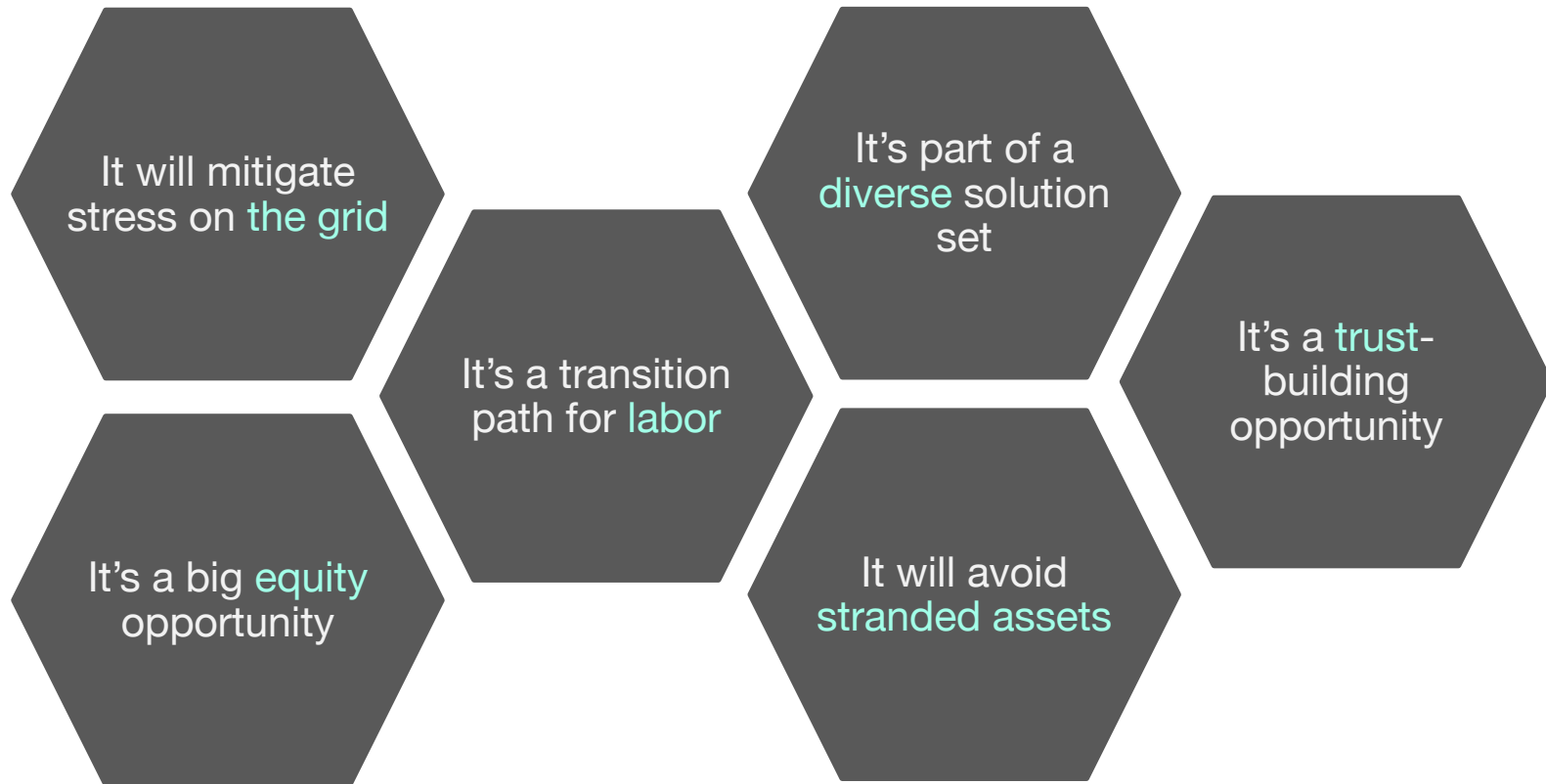
ISSUES on the UTILITY SIDE

- Gas bans, or any fast and blunt policy instrument
- Diminished future for the gas company and its labor force
- Suggesting that existing infrastructure is worthless
- Leaving out caveats for hard-to-electrify use cases

ISSUES on the CLIMATE SIDE

- Promoting GeoNetworks by disparaging ASHPs
- Favorable rhetoric about using RNG or hydrogen in buildings
- Grid anxiety used as an excuse
- Fear of giving away the game to gas companies or the trades

GeoNetworks FTW





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