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Efficient Equitable Electrification

Barr Foundation

Putnam Foundation

E4 THE FUTURE


City of Boston rep.
MIT professor
Utility executive
Community activist
Steelworkers Union
Energy Wonk
State Regulator
Governor's Office
"Gas is the bridge fuel" originator
Geothermal expert


GEO
MICRO
DISTRICT
Feasibility Stud
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Significant Environmental Imp
Natural Gas Leaks
Shared Action Plan Year 1 (201
Utilities Enacting the Leak Extent M
April 27th 2021
Environmental Science & Technology
pubs.acs.org/est
Repair Failures Call for New Policies to Tac
Distribution Systems
Morgan R. Edwards,* Amanda Giang, Gregg P. Macey, Zeyneb
Robert Ackley, and Audrey Schulman
Cite This: https://doi.org/10.1021/acs.est.0c07531
ACCESS | Metrics & More | Article Recommendati
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Natural Gas Leaks of Signific
Environmental Impact (SEI
Report of the 2018 SEI Field
Utilities Enacting the Leak Extent Met
March 2019
info@heetma.org, 516 900 HEET
21 Acorn St. Cambridge MA 02139
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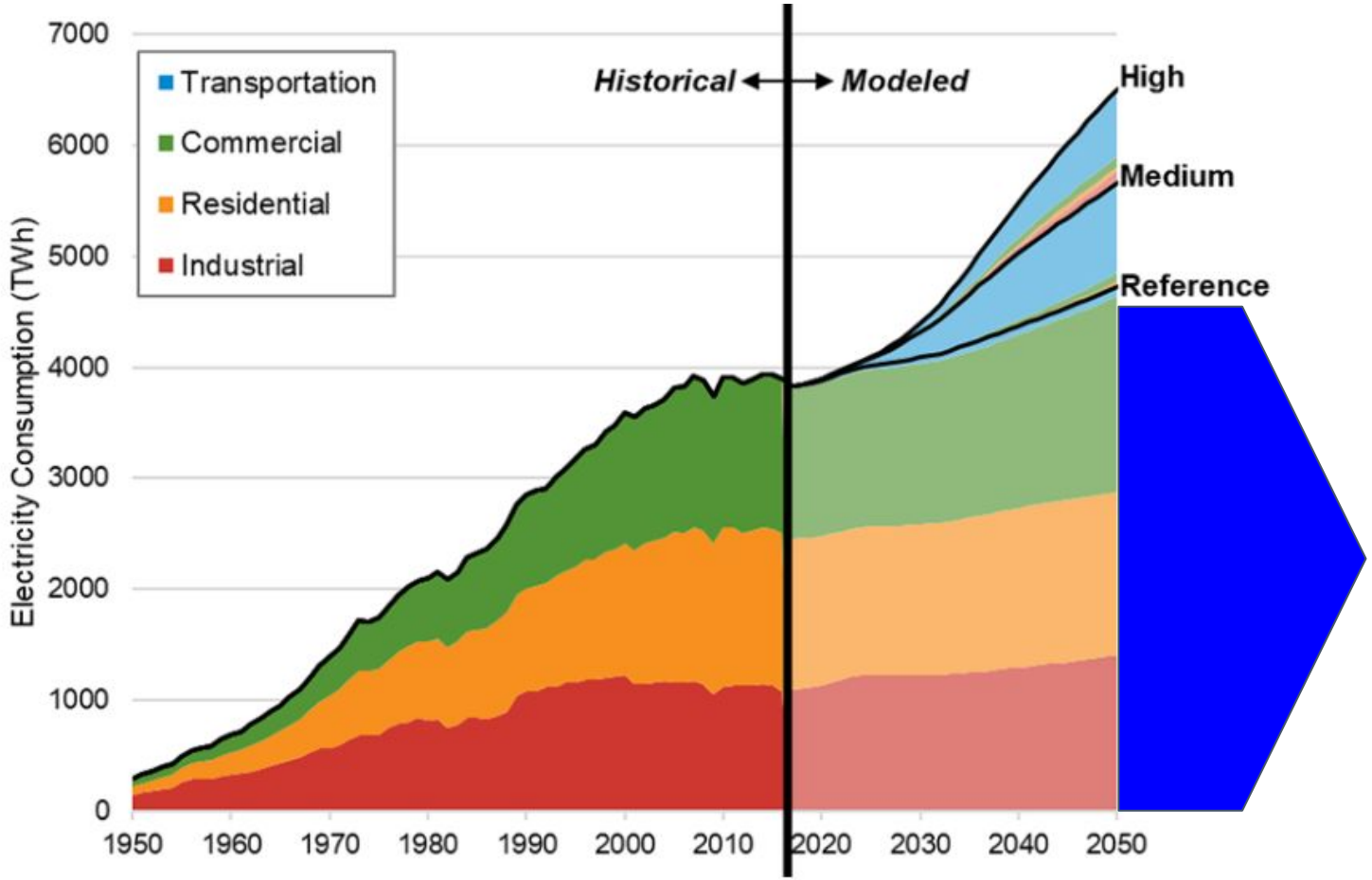
HEET 2219-1551
LEARNING FROM THE GROUND UP
GeoMicroDistrict Pilot: Installation, Evaluation and Research
Audrey Schulman, Business Manager
Zeyneb Magavi, Principal Investigator
roDistrict
HEET is an award-winning Massachusetts nonprofit that developed the GeoMicroDistrict concept and that aims to achieve two goals over the three-year project period:
1. Evaluate the pilot GeoMicroDistrict capacity a) meet annual heating and cooling demands for an approximately 100,000 sf dense, mixed-energy-use street segment b) minimize energy use and costs through optimization and management of bidirectional borehole thermal energy storage c) positively interact with the electric grid to increase resilience and reduce overall cost.
2. Establish a standard method of GeoMicroDistrict research and evaluation to inform policy makers and utilities of significant engineering and economic considerations and impacts of GeoMicroDistricts. By driving down costs and risks, the aim is to develop a business case for utilities to install networked geothermal systems, driving rapid market transformation.
GeoMicroDistricts use bidirectional borehole thermal energy storage (BTES) as the prime source of thermal energy for buildings. A subsurface ambient temperature water loop, maintained at 40-80°F across seasons, delivers that temperature through service lines to
The GeoMicroDistrict

Predicted Increase in US Electric Grid Demand



Historical and projected annual electricity consumption for the report's demand-side adoption scenarios

Building Electrification

NREL Electrification Futures Study: Scenarios of Electric Technology Adoption and Power Consumption for the United States, https://www.nrel.gov/news/program/2018/analysis-demand-side-electrification-futures.html

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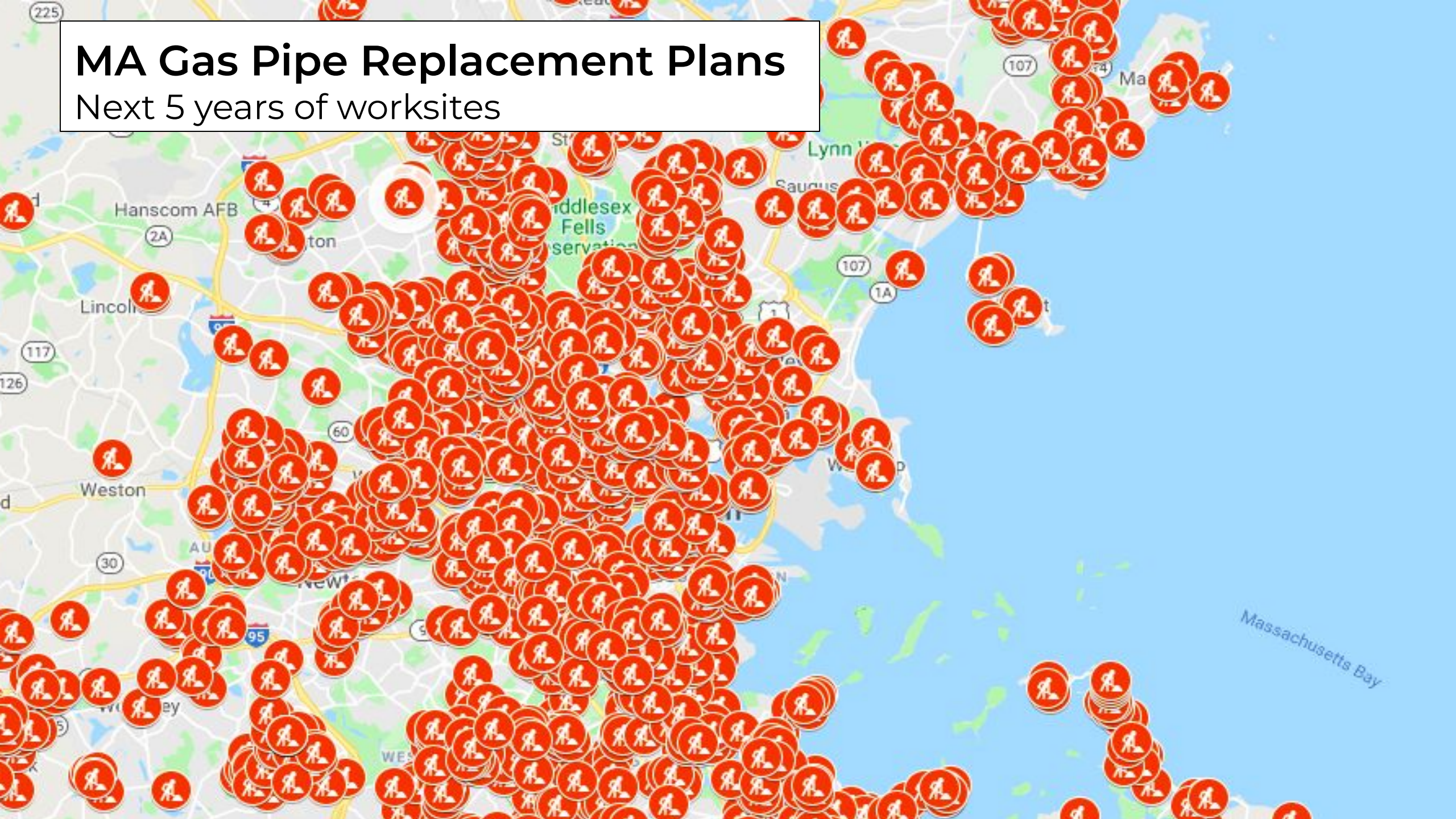
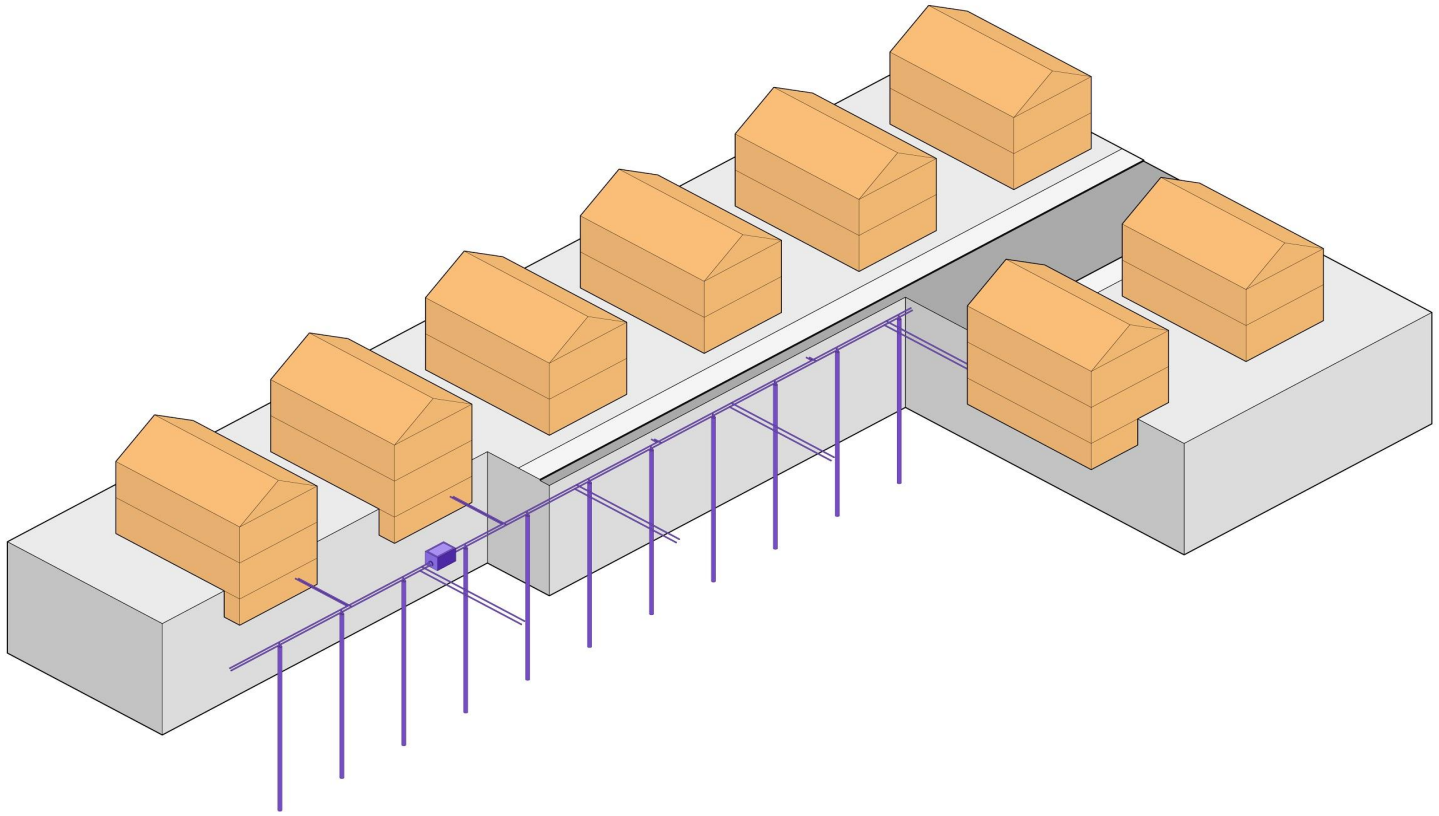
MA Gas Pipe Replacement Plans

Next 5 years of worksites



HEET's GeoBlock©



Demonstration Installations ($30 million)

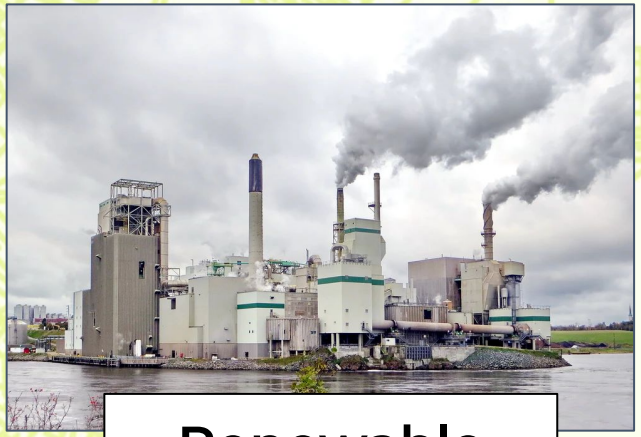
- **Eversource**: Approved
- **Merrimack Valley**: Approved
- **National Grid**: Filed
- **Con Edison**: Approved
- **NYSERDA**: Committed
- **Niagara-Mohawk**: Filed

BUROHAPPOLD ENGINEERING heet

Regarding Grid Modernization, to achieve Washington D.C.'s Carbon & Equity goals, the most critical obstacle is

We Need a Databased Transition Plan

Air Source Heat Pumps?



Renewable Natural Gas?

GeoGrid?