Future of Natural Gas

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We look forward to hearing from you

Please put all your questions into the questions section with this icon.

Current Environment – An Opportunity for Transformation

Ambitious decarbonization mandates for emissions reductions and other anti-fossil sentiment require clean energy innovation in gas territories

Massachusetts

- MA DPU Future of Gas proceeding held in 2022 to assess utilities' roles in decarbonizing natural gas systems; order released in December 2023
- MA DOER Fossil Fuel Free Building Demonstration Program municipal selections expected March 2023 (new construction, major renovations)
- MA DEP Clean Heat Standard proposal to reduce and regulate emissions from natural gas, fuel oil, and propane distributors by creating a cap-and-trade mechanism.

This environment creates opportunities to showcase decarbonized energy options and highlight grid system needs, while continuing to serve customers safely and reliably.

Future of Gas Study
DPU 20-80 Objectives

Explore how the gas companies can meet the net zero energy future mandates while safeguarding rate-payer interests such as safety and affordability

Required components included:

- Assessing the 2050 Roadmap and 2030 CECP plans
- Identifying and assessing alternative decarbonization scenarios
- Developing regulatory frameworks based on alternative scenarios
- Ensuring a robust stakeholder process throughout the proceeding

Deliverables included:

- Study of the modeling and decarbonization scenarios
- Company specific regulatory proposals
- Revised company specific business plan incorporating qualitative analysis and recommendations
- Full stakeholder process report and comments

Future of Gas DPU 20-80 Overview

New Gas Business Impacts

- Capital investments/new infrastructure changes
- New gas customer connections process
- Special gas contracts review under separate docket
- No ratepayer funded gas marketing

Decarbonization Opportunities

- Networked geothermal
- Hydrogen
- Renewable natural gas
- Hybrid heating

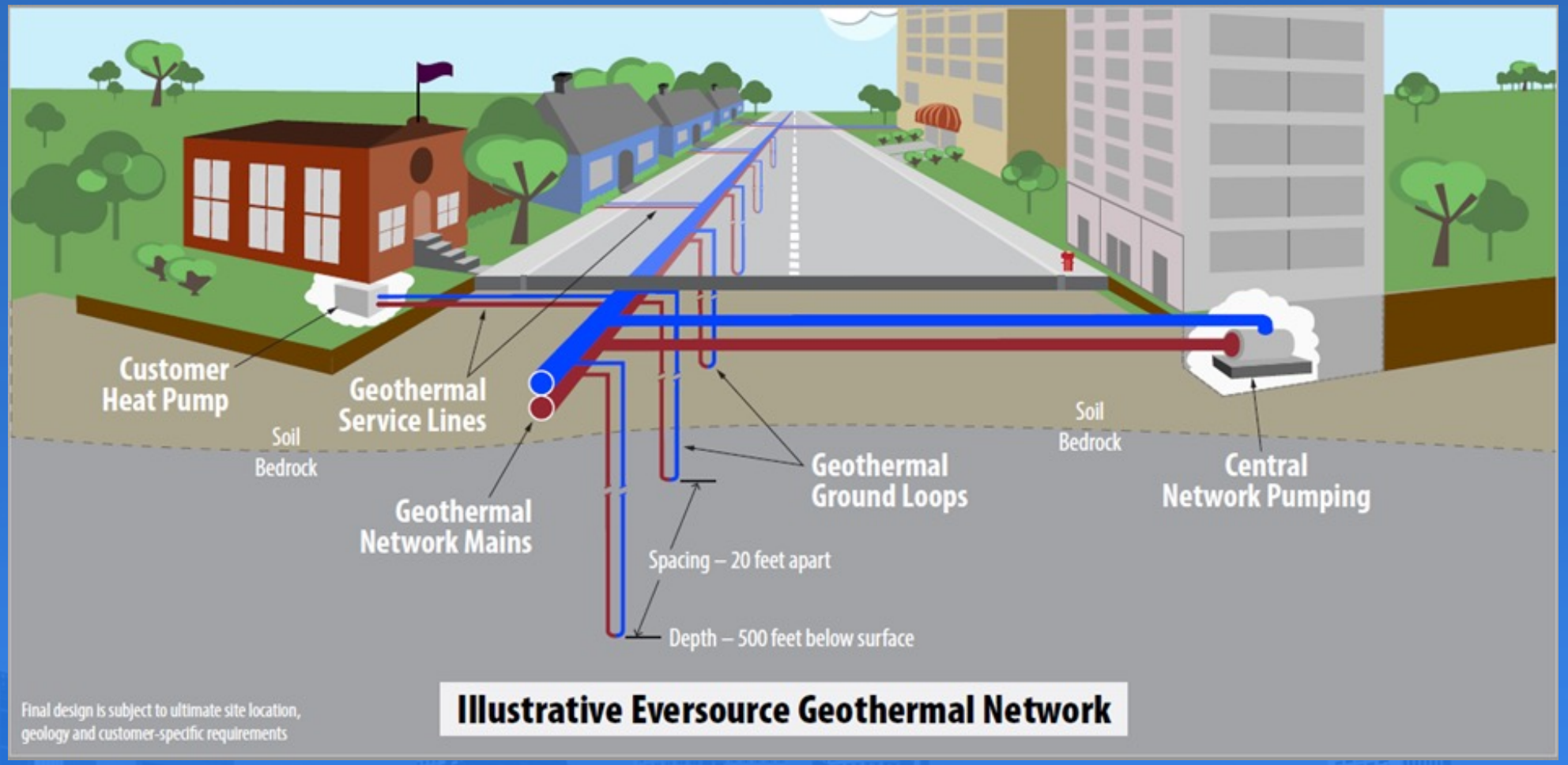
Integrated Planning

- Non-pipeline alternatives
- Joint gas and electric planning with stakeholder input

Reporting – Climate Compliance Plan

Networked Geothermal

What is Networked Geothermal?

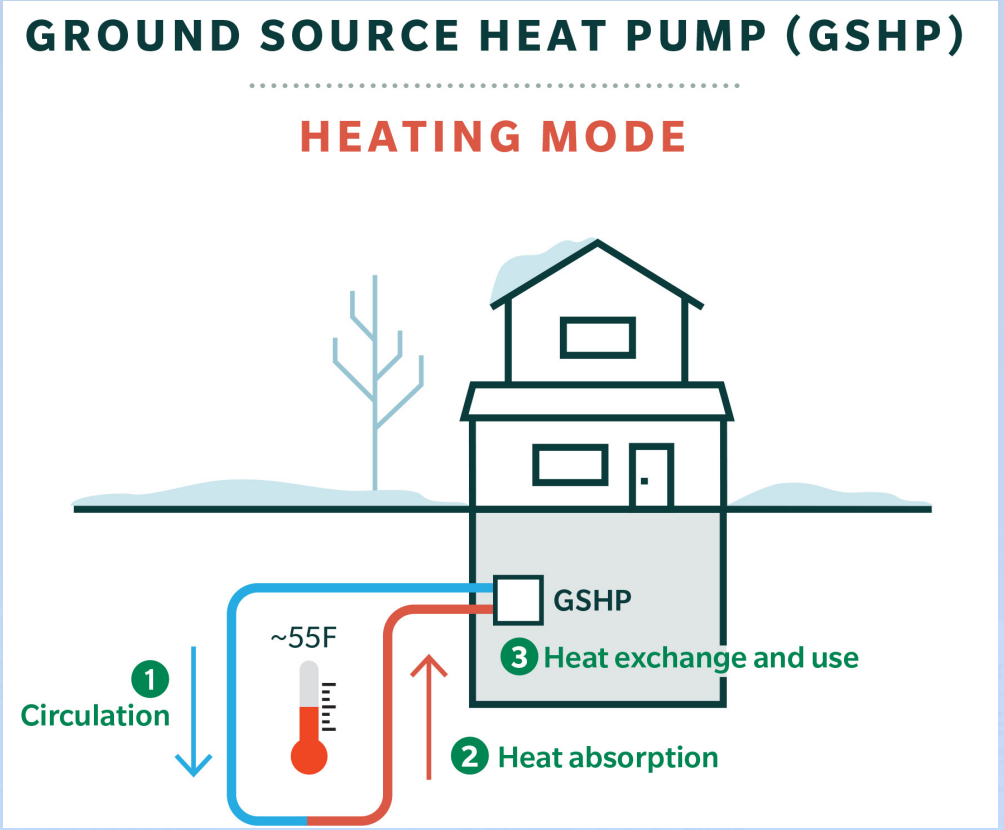


- Ground source heat pump (GSHP) system is a heating and cooling solution for customers
- Use the relatively stable temperature of the ground to provide heating and cooling
- Very efficient systems, with Coefficients of Performance (COP) of 300-600%

Networked Geothermal

Networked Geothermal and natural gas businesses share many common aspects:

- Capital intensive
- Buried, underground infrastructure
- Long-lived assets
- Regulated service
- Monitoring and system oversight
- Billing systems
- Similar customer opportunities



Framingham, MA Pilot Project

- Project approval as part of NSTAR Gas rate case in 2020
- Project began in 2021 with site selection with commissioning and operation targeted for later this year
- Single pipe system of approximately 1 mile of main throughout a neighborhood in Framingham, MA
- 40 buildings with 140 individual customers throughout
- 90 boreholes to provide capacity of approximately 375 tons of load

Geothermal Pipe Installation

Main and service installation extremely similar to gas work

Geothermal Bore Field Drilling

Deviated and traditional drilling used for the bore fields

Strong Collaboration with Community and Stakeholders

- Ongoing engagement with community and customers has been strong and yielded great results
- Numerous site tours with diverse groups have increased engagement and educated stakeholders locally and nationally
- Sharing information and lessons learned with broader audiences through media, newsletter and webinars

What's Next in Framingham – DOE Grant Opportunity

- DOE grant of $750K was awarded to explore the expansion of the pilot loop with the potential for construction funding to follow
- Planned expansion is utilizing proposed backup loop from original pilot site selection work
- Majority of the homes on expansion loop are delivered fuels netting big customer bill and emissions savings
- Expansion would demonstrate the cost savings of adding to an existing loop versus building one from the ground up

Questions?

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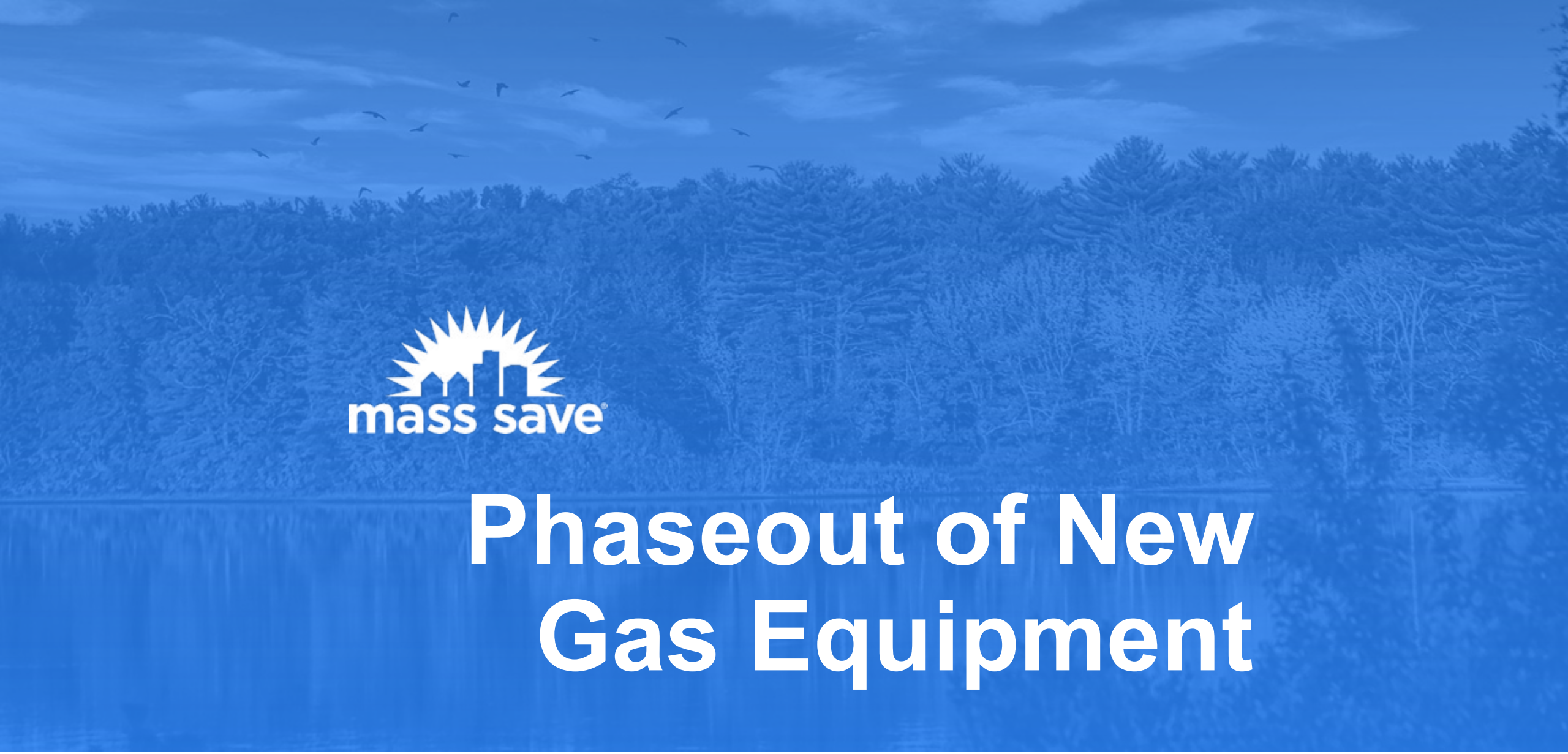

Phaseout of New Gas Equipment

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Agenda

- 2022 MA Energy Legislation
- Which gas equipment is still expected to be incentivized?
- What are the specific deadlines to install equipment and submit all documentation?

2022 MA Energy Legislation

August 11, 2022:
Former MA Governor Charlie Baker signed legislation designed to move the Commonwealth toward its goal of net-zero GHG emissions by 2050.

The Act:
Prohibits the Mass Save Program Administrators from incentivizing new fossil-fuel-fired equipment after December 31st, 2024.

H. 5060: *An Act Driving Clean Energy and Offshore Wind*
Specifically prohibits the PAs from:

- *Spending on incentives, programs, or support for systems, equipment, workforce development, or training as they relate to new fossil fuel equipment*
    - *Unless such spending is for low-income households, emergency facilities, hospitals, a backup thermal energy source for a heat pump, or hard-to-electrify uses, such as industrial processes ("Fossil Fuel Spending")*

Which gas measures are still likely to be incentivized for gas customers?

1. ***Measures that make existing gas equipment more efficient, such as:***
   - Controls for gas-fired equipment/distribution systems
   - Retro-commissioning/system optimization
   - Equipment, pipe, and duct insulation
   - Weatherization/building envelope improvements
   - Heat recovery
   - Steam traps

2. ***Hard-to-electrify equipment***
   - High-pressure steam equipment
   - Process equipment – incinerators, vats, heat treating, etc.

Deadlines

Deadlines to install new gas equipment and submit all required documentation:

- Downstream Prescriptive**: Sept 30, 2024**
- Midstream: **Sept. 30, 2024**
- Custom: **Oct. 31, 2024**

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