

Destination: Decarbonization Station

Presented to:
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Regional Market Trends Forum**

Presented by:
Melissa Bartos, Vice President

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Today's Timetable

**Northeast State Policies Regarding Decarbonization:
High-Speed Bullet Train, Regional Commuter Train, or Scenic Railroad**

Express Route to Electrification Station?

Attention! Important Signals Ahead

Tracks Require Rails & Ties: Safety & Reliability

Rail Cars Worth Including for the Journey: No Regrets Actions

All Aboard? Don't Forget the Passengers!

High Speed Bullet Train:

Legislated Emissions Limits & Gas Industry Investigations

Massachusetts:

- Net-zero GHG emission limit by 2050; 50% reduction by 2030; sector specific sub-limits, including heating and gas distribution
- DPU required to consider how decisions will reduce emissions and promote equity (in addition to safety, reliability and affordability)
- DPU investigation into the role of LDCs in achieving 2050 climate goals

New York:

- 85% GHG emissions reduction required by 2050 (plus net zero goal); 40% by 2030
- Building heating and transition of the gas system are major components of Climate Action Council's draft scoping plan
- PSC investigation into LDC gas planning process





Regional Commuter Train:

Legislated Emissions Limits

States with 80% GHG emissions reduction by 2050 mandates, plus interim emissions reduction goals of 40-45% by 2030-2035:

- **Connecticut**
- **Maine**
- **Rhode Island**
- **Vermont**

Scenic Railroad:

Emissions Reduction Goals

New Hampshire

- 2009 Climate Action Plan set goal of 80% GHG emissions reduction by 2050

New Jersey

- 2007 Global Warming Response Act set goal of 80% GHG emissions reduction by 2050
 - 2019 GWRA requires Department of Environmental Protection to present recommendations for reaching 2050 goals

Pennsylvania

- 2019 Executive Order of Governor set goal of 80% GHG emissions reduction by 2050; 26% reduction by 2025



Express Route to

Electrification Station?

Is it premature to conclude that Electrification Station is a required major stop en route to Decarbonization Station?

Will challenges that lie ahead make the journey take longer than planned?

Questions that must be answered include:

- When will the electric grid be sufficiently sized to handle additional heating load?
- How long will it take to replace long-lived equipment in millions of individual buildings?
- Will electric heat pumps provide sufficient heat in cold weather?
- Will the end state be affordable?
- Will the final energy system be resilient (i.e., able to withstand shocks from storms, cyber attacks, etc.)?
- What incentives (mandates?) will be necessary to overcome end-use economics that currently favor natural gas heat?

Attention!

Important Signals Ahead

Pay attention to:

- Legislative activity – state and federal
- Technology developments – long-duration energy storage, electric heat pumps, gas heat pumps, RNG production, hydrogen production, carbon capture, others



Tracks Require Rails & Ties:

Safety & Reliability

Safety and reliability must remain top priority in the gas industry and cannot be compromised.

Some stakeholders have raised concerns about gas infrastructure investments, often focusing on:

- Pipe replacement programs
- Supply planning



Rail Cars Worth Including for the Journey:
No Regrets Actions



Increase energy efficiency

Educate, educate, educate

Support RNG/hydrogen development

All Aboard?

Don't Forget the Passengers!



We cannot forget that decarbonization will raise several challenges for consumers:

- Equipment changes will be necessary at millions of individual homes in businesses, in the northeast alone
- Up front costs for new end-use equipment will be substantial
- Energy costs will increase as a result of decarbonization
- Environmental Justice communities may be disproportionately affected

Many customers have expressed the importance of maintaining their choice of fuels.

Thank You

Melissa Bartos

Vice President

Concentric Energy Advisors

mbartos@ceadvisors.com

508.263.6240

