

TARGETED AND MODEST USE OF FOSSIL AND ALTERNATIVE FUELS

Fossil fuel use must drastically decline by 2050; however, modest judicious use of fossil or alternative fuels (e.g. bioenergy) will be needed to support low-cost reliability and resilience.

Connecting Outcomes to Goals

Net-Zero Emissions	Resilience	Increasing Social Equity
Deploying wind, solar, and electrification achieves mitigation goals by displacing fossil fuel use. However, fuels are needed to support low-cost energy reliability when solar and wind production is insufficient.	Fuels can help support energy system resilience at the grid and local (or building) scales. ^{29,103}	Limited fuel use has a role to play in ensuring low-cost, low-burden, and high resilience. The siting of such use needs to factor in past harms and future impacts.

The iconic Corita Kent painting on a Dorchester LNG tank has survived 40+ years, three utility owners and two tanks. Infrastructure can be beautiful, but needs to be sited carefully. (Source: Imgur)



Progress Assessment

Fuel use across all sectors has not declined in a manner consistent with Boston's goals. Further, there is a tension among views that fuel consumption must drastically and rapidly decline, that some sectors (e.g., aviation) are unlikely to be fully electrified, and that modest use of some fuels is necessary to maintain reliability and resilience at low costs.^{29,103} In the transportation sector, the role of fuels relative to electrification will likely be defined by technological and market factors. In the electric sector the technical feasibility of moving to a predominantly renewable grid is a concern. ISO-NE is planning¹⁰⁴ to ensure that there will be sufficient fuel-based electricity generation to support the scaling of wind and solar to meet increasing electricity demands, but reliability needs should not be used to delay or disadvantage the growth of renewable resources. In the building heating sector, a DPU-led investigation¹⁰⁵ into the future of gas has yet to produce a viable plan for managing the transition away from gas. The legislature has since taken a more active role in this planning given the conflicting interests of the utilities in planning their future.³⁰ Rightsizing the gas system will be essential for managing costs¹⁰⁶ and fugitive methane emissions, which continue to be a pernicious problem despite efforts to reduce leaks.³²

Equity Implications & Indicators

Siting of Fuel Infrastructure in Frontline Communities: Modest use of fossil fuels in a net-zero energy system reduces energy costs; however, continued combustion can impact frontline communities. While the scale of fuel use and infrastructure will decline by 2050, efforts to mitigate the impact of remaining infrastructure ensures equitable outcomes.

The development of a plan to right-size the gas system is essential for ensuring that those with the least agency to leave the gas system do not bear the burden of transition costs.

Big Lifts

Local Energy Planning: Local planning can improve outcomes surrounding existing and future fuel infrastructure, by more optimally using local resources and ensuring that such infrastructure does not unduly impact vulnerable communities.