

## Risks for Peabody peaker owners go beyond capacity prices

This Applied Economics Clinic (AEC) policy brief—prepared on behalf of the Massachusetts Climate Action Network (MCAN)—presents risks that Municipal Light Plants (MLPs) should consider as they decide whether to retain their ownership shares in the Peabody peaking power plant or withdraw from the contract: 1) market risks, like capacity and fuel prices, and 2) climate/environmental risks. We find that New England capacity prices are projected to remain at current levels over the next decade. While ownership in the Peabody peaker protects against some capacity market risks, it leaves MLPs open to a variety of other important risks, including gas fuel prices, existing Massachusetts emissions reductions and Environmental Justice (EJ) community protection laws, future emission limits for the Commonwealth’s electric sector, and the potential for stronger EJ laws, new federal legislation, and/or regulatory changes that put fossil fuel-fired assets at a disadvantage.

### Introduction

The Peabody “Project 2015A” peaker—a 60 mega-watt (MW) gas and oil-fired peaker plant in Peabody, Massachusetts—has been approved, but not yet built. In September 2020, the project received its air permit from the Massachusetts Department of Environmental Protection (DEP). In August 2021, the Massachusetts Department of Public Utilities (DPU) approved Massachusetts Municipal Wholesale Electric Company’s (MMWEC—the project operator) request for \$170 million in bonds to fund the facility. A “License and Use Agreement” between the City of Peabody and MMWEC allows the plant to be built on land owned by the City.

Fourteen Massachusetts MLPs have signed contracts to own a portion of the project: Boylston, Chicopee, Holden, Holyoke, Hull, Marblehead, Mansfield, Peabody, Russell, Shrewsbury, South Hadley, Sterling, Wakefield, and West Boylston. In April 2021, Holyoke and Chicopee alerted the DPU that they had informed MMWEC of their intent to withdraw from the contract. As the remaining twelve MLPs decide whether or not to remain in the Peabody peaker contract, there are multiple important risks for MLPs to weigh, including market risks (like capacity and fuel prices) and climate and environmental risks (like existing law and the potential for new and/or stronger laws) (see Table 1). There are many risks for these MLPs that extend beyond risks associated with the capacity market.

**Table 1. Risks for Peabody peaker owners to consider**

Risk category	Risk type
Market	Capacity price volatility
	Capacity price projections
	Fuel price volatility
	Fuel price projections
Climate/ Environmental	Environmental Justice protections
	Existing Massachusetts climate law
	Potential for stronger Massachusetts law
	Potential for new federal law(s)

### Market Risks

MMWEC claims that owning a share of the Peabody peaker “stabiliz[es] Participants’ capacity costs”<sup>1</sup> against what it characterizes as “very volatile”<sup>2</sup> prices in ISO-New England’s (ISO-NE, the regional grid operator) forward capacity market by supplying them with a capacity resource that helps meet their capacity obligations under ISO-NE, rather than paying the market rate.

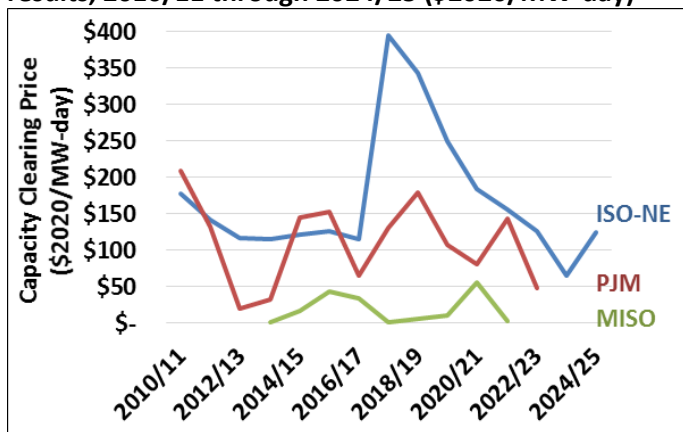
ISO-NE’s forward capacity market prices hit an all-time high of an inflation-adjusted \$396 per megawatt (MW)-day in the capacity auction for 2017/18 and a low of \$66 per MW-day in the 2023/24 auction. As MMWEC suggests, ISO-NE’s capacity market has shown greater price variability and often higher prices compared to those of other ISO’s (see Figure 1 below). New England’s 2021 *Avoided Energy Supply Component (AESC) Study* expects ISO-NE capacity prices to remain at or below the

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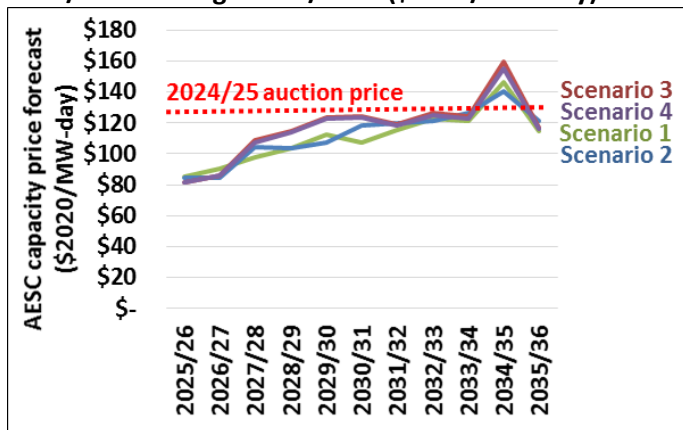
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most recent auction prices in ten of the next eleven capacity auctions across multiple future scenarios (see Figure 2). There is also a risk that capacity market prices fall dramatically, which would make it cheaper for MLPs to buy capacity on the market rather than owning capacity.

**Figure 1. ISO-NE, PJM and MISO capacity market results, 2010/11 through 2024/25 (\$2020/MW-day)**



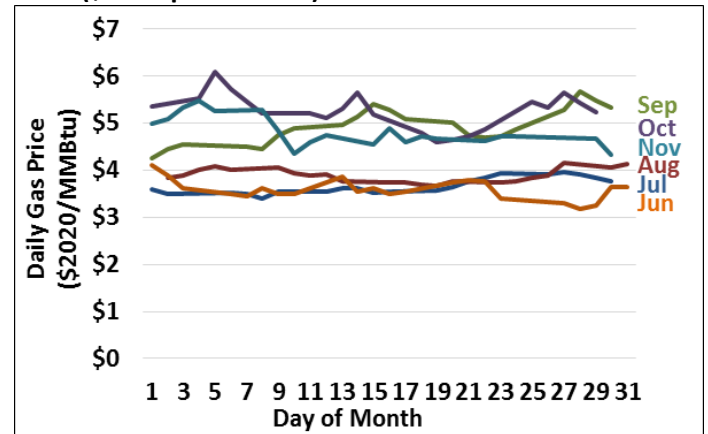
**Figure 2. 2021 AESC ISO-NE capacity price forecast, 2025/2026 through 2035/2036 (\$2020/MW-day)**



While capacity market risks are an important consideration, there are other market risks that MLPs should also address in their investment decisions, such as gas price volatility. U.S. gas prices vary greatly from day to day, including wide swings in their values: between June and December 2021, daily gas prices fluctuated between \$3 and \$6 per MMBtu (see Figure 3). Gas prices are also expected to increase over time,

rising from about \$2 per million Btu (MMBtu) in 2020 to over \$3.50 per MMBtu by 2034, a substantial increase to customer costs.

**Figure 3. Henry Hub daily gas prices, June-December 2021 (\$2020 per MMBtu)**



## Climate and Environmental Risks

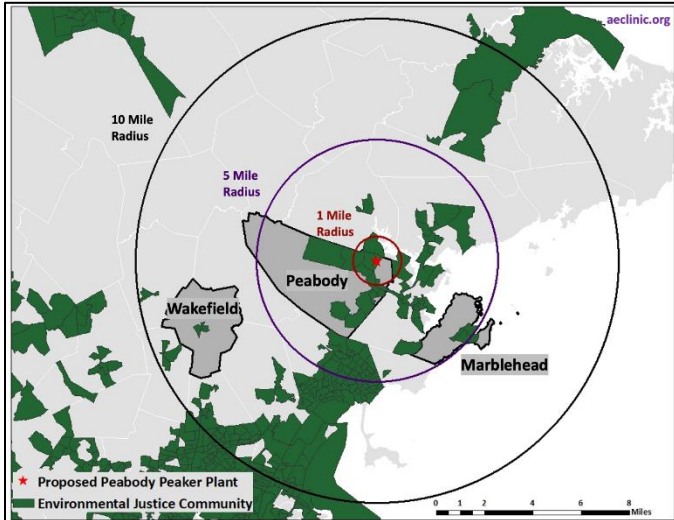
Existing Massachusetts law requires that statewide emissions be reduced by half (from 1990 levels) within this decade and reach net zero by 2050, setting strict limits on fossil fuel-fired capacity resources like the Peabody peaker. Massachusetts law mandates that these emission reductions be achieved in an equitable manner, accounting for the unjust distribution of existing environmental harms by providing important legal protections for Environmental Justice (EJ) communities. As the Commonwealth works to achieve its legal goals, strengthens existing legal mandates, and introduces new climate legislation, risks for fossil fuel-fired capacity will deepen and proliferate. New federal climate laws and regulations also pose potential risks to fossil fuel-fired capacity.

The risks of more robust protections for EJ communities as they relate to energy infrastructure directly impact the viability and operating costs of the proposed Peabody peaker. Multiple EJ communities are located in close proximity to the planned site of the Peabody peaker (see Figure 4 below).

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**Figure 4. EJ communities near the Peabody peaker**



In March 2021, Massachusetts passed *An Act Creating a Next Generation Roadmap for Massachusetts Climate Policy* (Climate Roadmap Act). In addition to setting Commonwealth-wide emission reduction targets of 50 percent by 2030, 75 percent by 2040 and net zero emissions by 2050, the law also includes several important EJ provisions that:

- Codify EJ definitions into law using criteria based on income, race, and English-language proficiency;
- Require an environmental impact report “for any project that is likely to cause damage to the environment and is located within a distance of 1 mile”<sup>3</sup> of an EJ population;
- Create new standards for public participation in the decision-making process, such as offering translation services for public meetings and making project documentation publicly available;
- Establish a new EJ council to advise the Secretary of Energy and Environmental Affairs (EEA); and
- Require DEP—by September 2022—to conduct project impact analyses that account for the cumulative impacts experienced by the community in question, using publicly solicited feedback from the community itself.

Under the Climate Roadmap Act, the EEA and its

Massachusetts Environmental Policy Act Office (MEPA)—which is responsible for environmental impact reviews—have produced updated EJ policies. The new policies expand the share of projects that will be subject to environmental review by, for example, mandating that *any* proposed project within 1 mile of an EJ population must undergo an environmental review and that the review must assess “existing unfair or inequitable environmental burden[s]”<sup>4</sup> in the impacted EJ communities. The new policies also require that “existing facilities in [EJ] neighborhoods comply with state environmental, energy, and climate change rules and regulations.”<sup>5</sup> The proposed Peabody peaker is located within 1 mile of EJ populations. Moving forward, there is reason to anticipate that existing EJ protections will get stronger rather than weaker: for example, the 1-mile environmental review mandate may be expanded—Figure 4 shows any EJ community located within 1, 5, and 10 miles of the proposed Peabody peaker. All MLPs with ownership stakes will be affected if the Peabody peaker cannot run because of its negative impacts on nearby EJ communities.

In Peabody, there are cumulative, inequitable impacts from other polluting, hazardous, and toxic facilities to consider. According to the U.S. Energy Information Administration, there are already two polluting electric generators in Peabody: the gas-fired 65 MW Waters River and 7 MW Rousselot plants. According to the U.S. Environmental Protection Agency’s (EPA) Toxics Release Inventory, seven facilities in Peabody release toxic chemicals that pose a threat to human health and the environment. EPA’s Environmental Justice mapping tool ranks the Peabody area in the 80 to 95<sup>th</sup> percentile (nationally) for proximity to hazardous waste sites. Even though the Peabody project has been approved without a review of environmental burdens, EEA/MEPA should on their own initiatives undertake a review assessing compliance with all state rules and regulations.

In December 2020 (prior to the adoption of Massachusetts’ Climate Roadmap Act), the EEA published a *2050 Decarbonization Roadmap* that

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identified “cost-effective and equitable strategies”<sup>6</sup> that would enable the Commonwealth to reach its net zero by 2050 goal. These tactics included adding new renewable generating capacity “at a pace that is much faster than historic or current levels.”<sup>7</sup> Since the adoption of the Climate Roadmap Act, the EEA is also mandated to establish specific emissions limits every five years for the electric sector.<sup>8</sup> Power-sector emission limits will increase the likelihood that fossil fuel-fired assets—like the Peabody peaker—become stranded (i.e. abandoned) before the end of their useful life because they are no longer permitted to run.

There is also the potential for new, federal climate law limiting greenhouse gas emissions and/or regulatory changes at ISO-NE and/or the Federal Energy Regulatory Commission (FERC) that disadvantage fossil fuel-fired assets. New fossil fuel generation like the Peabody peaker is at risk of becoming less and less cost-effective—to the point of obsolescence—as the renewable energy transition accelerates and EJ protections continue to mature and develop.

## Notes

- 1) MMWEC. June 22, 2021. “Project 2015A: Public Information Session.” Slide 18. Available at: <https://bit.ly/3LeIVzj>.
- 2) Ibid. Slide 13.
- 3) The 192nd General Court of the Commonwealth of Massachusetts. March 26, 2021. An Act Creating a Next Generation Roadmap for Massachusetts Climate Policy. Chapter 8. Section 58. Available at: <https://malegislature.gov/Laws/SessionLaws/Acts/2021/Chapter8>.
- 4) MEPA. December 2021. “301 CMR: EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS. 301 CMR 11.00: MEPA REGULATIONS.” Available at: <https://www.mass.gov/doc/december-2021-301-cmr-1100-clean/download>. PDF page 24.
- 5) EEA. June 24, 2021. “Environmental Justice Policy of [EEA].” Article 97. P. 5-6. Available at: <https://www.mass.gov/doc/environmental-justice-policy6242021-update/download>.
- 6) EEA. December 2020. “Massachusetts 2050 Decarbonization Roadmap.” Available at: <https://www.mass.gov/doc/ma-2050-decarbonization-roadmap/download>. Cover page.
- 7) Ibid. Page 65.
- 8) Climate Roadmap Act. Section 3A.

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