



February 16, 2024

Commissioner Bonnie Heiple
Massachusetts Department of Environmental Protection 100
Cambridge Street, Suite 900
Boston, Massachusetts 02114

Re: The MassDEP Clean Heat Standard – Stakeholder Comments

Dear Commissioner Heiple:

The Northeast Chapter of the Combined Heat and Power Alliance (the “Northeast Chapter”) welcomes this opportunity to provide comments regarding the MassDEP Clean Heat Standard (“CHS”) Draft Framework as presented at the Technical Session held on February 8, 2024. The Northeast Chapter is the successor organization to the Northeast Clean Heat and Power Initiative, which submitted several prior comments during the MA Clean Heat Standard and Alternative Energy Portfolio Standard proceedings.

The Northeast Chapter is a group of manufacturers, system developers, engineers, and end-user representatives with the common goal of reducing energy costs and carbon emissions using the highly efficient and reliable technology of combined heat and power (“CHP”). Many of its members are located in Massachusetts and/or develop and operate projects therein. The Northeast Chapter strongly believes that CHP must play a crucial role in reducing marginal grid emissions in the near-term while assisting Massachusetts efforts for a fully electrified grid. The United States Department of Energy shares this sentiment in stating that “[i]ndustrial CHP can provide significant greenhouse gas emissions reductions in the near- to mid-term as marginal grid emissions continue to be based on a mix of fossil fuels.”¹ Ignoring CHP at this critical moment is fundamentally inconsistent with the express goals of the MassDEP’s CHS.

In furtherance of such goals, we are pleased to submit the following comments emphasizing the need to include CHP technologies in MassDEP’s comprehensive decarbonization strategy, specifically regarding the CHS.

- 1. The Northeast Chapter strongly encourages MassDEP to adopt a standard that is: (i) based on overall greenhouse gas reductions; (ii) expressed in relation to such reductions; and (iii) technologically agnostic regarding the method of achieving such reductions.**

The expressed purpose of MassDEP’s Clean Heat Standard is to reduce climate pollution. The Northeast Chapter shares the desire to reduce such pollution, which is why CHP must be included in the CHS. The inclusion of “full electrification” as a requirement to receive credits ignores CHP, which currently results in lower greenhouse

¹ US Department of Energy, Industrial Decarbonization Roadmap, Sep. 2022 at 14, <https://www.energy.gov/sites/default/files/2022-09/Industrial%20Decarbonization%20Roadmap.pdf>

gas emissions than the grid:²

Trend, CO₂ total output emission rate (lb/MWh), by state, 2018–2022

Select a state in the map above or the graphs at the right to see its trend here.

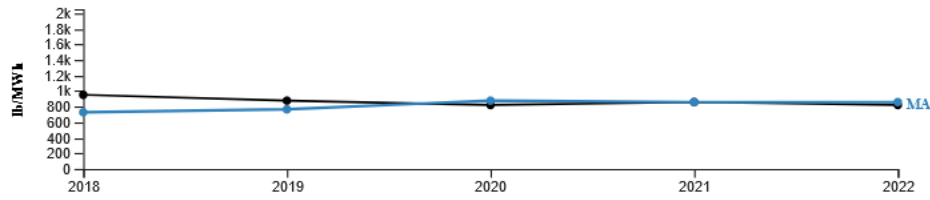


Figure A: MA Average Grid Emissions increased from 727.58 lb / MWh in 2018 to 851.74 lb CO₂/MWh in 2022 (higher than the national average of 823.15 lb CO₂/MWh).

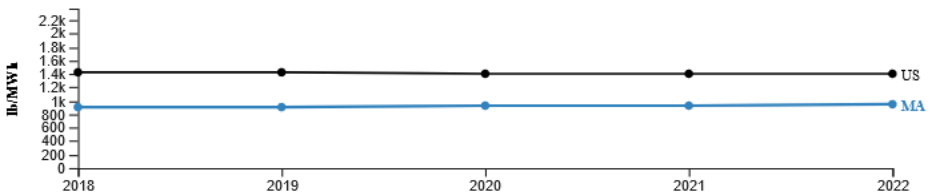


Figure B: MA Non-Baseload Grid Emissions increased slightly from 910.58 lb / MWh in 2018 to 944.55 lb CO₂/MWh in 2022.

The CHS must take a technologically agnostic approach that prioritizes actual greenhouse gas reductions over select technologies that are not currently delivering similar reductions. Such an approach will result in lower carbon emissions *now* while supporting the transition to full electrification. Additionally, this technologically agnostic approach will ensure that the Commonwealth remains at the cutting edge of innovation throughout the energy transition by not foreclosing the possibility that other technologies may reduce emissions further than is currently contemplated. Finally, a technologically agnostic approach will give the Commonwealth’s citizens a level of consumer choice that is likely to incentivize them to shift away from current fossil fuel sources in a timelier manner.

One of CHP’s greatest strengths is that it is not a “technology lock in,” but rather operates as a fuel-flexible system capable of using both low-carbon and zero-carbon fuels.³ As such, it can serve as a both a transitional technology, bridging the gap as Massachusetts moves to electrification and can fill the gaps by addressing difficult to decarbonize sectors. CHP is an established, high-efficiency technology reducing marginal grid emissions today by displacing dirtier grid resource carbon emissions, as demonstrated in Figure C:

² See United States Environmental Protection Agency, eGrid with 2022 Data, Summary Data. https://www.epa.gov/system/files/documents/2024-01/egrid2022_summary_tables.pdf; see *infra* Figure A.

³ Today’s existing and newly installed CHP systems can use a substantial blend of clean hydrogen – ranging from 20-100%, according to equipment manufacturers. CHP Alliance. “Clean Hydrogen and CHP: A Roadmap for Industrial and Commercial Decarbonization.” March 2022. <https://chpalliance.org/wp-content/uploads/2019/08/CHP-Hydrogen-Roadmap-2.pdf>

Renewable and Net-Zero Carbon Fuels Maintain CHP's Advantage

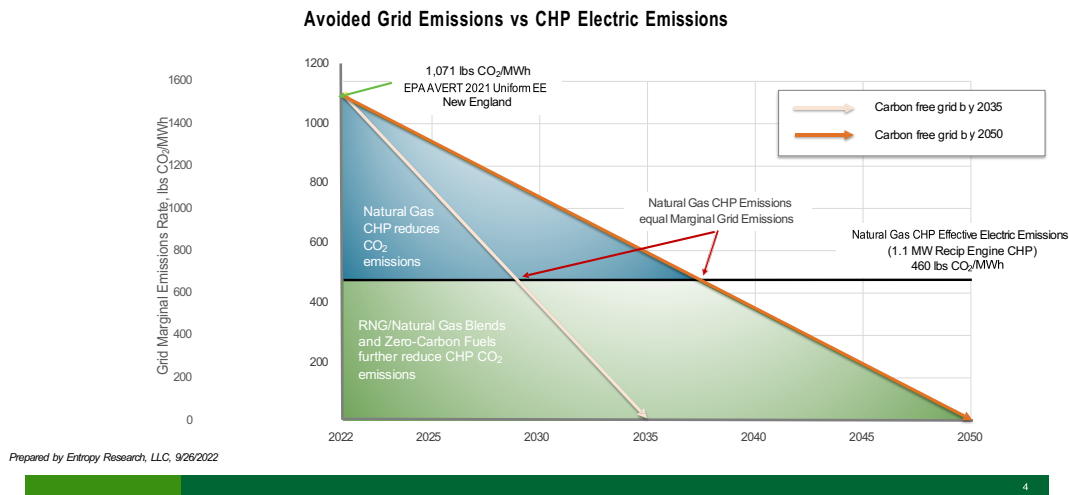


Figure C: In conjunction with Figures A and B, the reduction in difficult to ameliorate marginal grid emissions can be affected via Combined Heat and Power technology.

Furthermore, Figure C illustrates that as zero carbon fuels become available for use in CHP systems, they can maintain carbon advantage over the grid for a considerable period into the future. If, as some studies have suggested, net-zero carbon fuels are in limited supply and/or expensive, using these relatively scarce and costly fuels in high-efficiency CHP systems will ensure they are used in the most productive manner.

The Carbon Leadership Forum has noted that, “[b]ecause emissions are cumulative and because we have a limited amount of time to reduce them, carbon reductions now have more value than carbon reductions in the future. The next couple of decades are critical.”⁴ CHP is the precise type of technology that results in less carbon produced *now*. Accordingly, the MassDEP must adopt a technologically agnostic approach considering the critical nature of this moment in time. The consequences of ignoring in the near to medium term better performing technologies, such as CHP, could have significantly increased transition costs while increasing CO₂ emissions outcomes fundamentally inconsistent with the express environmental and affordability goals of the MassDEP’s CHS.

2. The Northeast Chapter urges that MassDEP include CHP as part of its commitment to equity, in its push to decarbonize and electrify the grid.

CHP can provide crucial assistance in the equity space, a priority the MassDEP highlighted in its recap of Initial Stakeholder Comments from the May-August 2023 comment period. CHP is presently being used to control costs and provide reliability within existing public housing infrastructure and healthcare facilities.⁵ The Northeast Chapter is committed to environmental justice and applauds the MassDEP’s commitment to equity concerns, which it has highlighted in its own presentations, and which concerns have

⁴ Larry Strain. The Time Value of Carbon, Carbon Leadership Forum, University of Washington, May 10, 2017. <https://carbonleadershipforum.org/download/35419/?tmstv=1696538222>

⁵ MassDEP. “Clean Heat Standard, 2023 Initial Stakeholder Comments.” May-August 2023. <https://www.mass.gov/doc/chs-summer-2023-comment-summary/download>

been shared by a variety of its stakeholders throughout the comments period. A proven driver of environmental equity, such as CHP, must be considered as part of the MassDEP’s CHS. Ignoring CHP would be a disservice to certain of Massachusetts’ most vulnerable communities.

3. The CHS should provide full credit for renewable natural gas (“RNG”), biofuels, and hydrogen, immediately and in perpetuity.

The Northeast Chapter strongly believes that all clean energy sources, including RNG, biofuels, and hydrogen should be eligible for credits immediately and that the proposed 2028 study to consider such other fuels be eliminated. In the alternative, the proposed study must be expedited so as to be considered during the 2024-2025 timeframe. As noted by other stakeholder comments, excluding other clean fuels until further study discourages their use, impedes investment in and stifles development of clean energy resource options, narrowing the set of alternatives at this critical moment for the environment. As noted by Eversource, significant electrical infrastructure improvements are required to enable the clean energy objectives of the Commonwealth reliably and safely.⁶ As those improvements are likely to take significant time to implement, decarbonized RNG and biofuels provide a viable solution while the Commonwealth constructs the infrastructure necessary to meet its climate goals. Disincentivizing the use of these energy sources during the energy transition puts the Commonwealth at risk of failing to meet its climate goals.

Hydrogen must be given full credit immediately and in perpetuity. National Grid agrees that alternate fuels like RNG and hydrogen are valuable decarbonization resources and therefore should be included in the CHS.⁷ In its submission dated September 1, 2023, the Northeast Chapter highlighted the benefits of the proposed Northeast Regional Hydrogen Hub, which was supported by seven regional states, including Massachusetts. Given the Commonwealth’s prior support for hydrogen, it should be included along with other clean fuels in the MassDEP’s CHS.⁸ Similarly, the United States Department of Energy believes that the use of “renewable and synthetic fuels, and clean sources of energy as the prime movers for CHP systems can avoid the use of fossil fuels, which will support the integration of CHP into a fully decarbonized energy economy.”⁹ Accordingly, RNG, biofuels, and hydrogen must be given full credit immediately, and in perpetuity under the CHS.

Several states, including California, Oregon, Washington, Vermont, and Colorado, allow for use of alternative fuels in their transportation sector Low Carbon Fuels Standard or CHS. The Commonwealth ought to look to the experiences of Colorado’s investor-owned gas utilities in meeting that state’s Clean Heat Standard. According to a recent article in S&P Global, gas utilities Atmos and Black Hills are relying heavily on energy efficiency and renewable natural gas (later, in 2030, hydrogen) to meet the CHS mandates and stay under the cost cap:

In assessing different clean heat portfolios, the companies {Atmos, Black Hills} ran into a dilemma similar to the one their larger peer, Xcel Energy Inc., encountered when it filed the state's first clean heat plan in August 2023. Achieving the full 22% reduction by 2030 would require far outspending

⁶ See *Id.* at p 26.

⁷ See *Id.* at p 64.

⁸ See *Id.* at p 72.

⁹ US Department of Energy, *Industrial Decarbonization Roadmap*, Sep. 2022 at 14, <https://www.energy.gov/sites/default/files/2022-09/Industrial%20Decarbonization%20Roadmap.pdf>.

the cost cap imposed on clean heat plans by legislators, or 2.5% of annual retail sales.¹⁰

We urge that all viable options for meeting our shared concerns, be kept open. Pre-selecting a subset of technologies and systems, while ruling out other alternative fuels as eligible measures in the CHS is not in line with a goal of maximizing emissions reductions and ensuring affordability for customers.

Conclusion

The MassDEP’s proposed CHS is not in alignment with its stated mission to reduce climate pollution.¹¹ In order to remain truly committed to this mission, all credits given to energy sources and technologies should be linked to the life cycle reduction in greenhouse gas emissions that these solutions provide. Accordingly, the CHS must be technology agnostic and provide full credits to a broader spectrum of energy sources, such combined heat and power technology and low carbon/zero carbon fuels such as hydrogen and RNG, provided that they deliver greenhouse reductions relative to fossil fuels.

Respectfully,

The Northeast Chapter of the Combined Heat and Power Alliance

¹⁰ Tom DiChristopher, Atmos, Black Hills Rely on Energy Efficiency, RNG in Colo. Clean Heat Plans, January 17, 2024. <https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/atmos-black-hills-rely-on-energy-efficiency-rng-in-colo-clean-heat-plans-80068913>

¹¹ Regulatory Assistance Project. “A Clean Heat Standard for Massachusetts.” June 2022. www.mass.gov/doc/clean-heat-standard-2-page-summary/download