Serving main street energy providers since 1942

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May 1, 2023

Submitted via email (climate.strategies@mass.gov)

The Honorable Bonnie Heiple
Commissioner
Massachusetts Department of Environmental Protection (DEP)
100 Cambridge Street Suite 900
Boston, MA 02114

Re: Massachusetts Clean Heat Standard Discussion Drafts for Program Design & Emissions Reporting Requirements for Heating Fuel Suppliers (March 2023)

Dear Commissioner Heiple:

Thank you for the opportunity to comment on the discussion draft documents for the proposed Clean Heat Standard (CHS) and related emissions reporting requirements for heating fuel suppliers (the discussion drafts). We write to express our concern that the proposed CHS will significantly harm small home energy providers and their employees and customers throughout the Commonwealth of Massachusetts and the broader New England region. While well intended, the program as envisioned by the Massachusetts Department of Environmental Protection (MassDEP) will increase harmful emissions, substantially increase home energy costs, and disadvantage vulnerable communities. We urge the Commonwealth to abandon its planned elimination of our small family businesses and work with them - *not against them* - to find common-sense, low-cost solutions for building decarbonization, including the deployment of renewable liquid heating fuels.

I. About Us.

The National Energy & Fuels Institute (NEFI), formerly the New England Fuel Institute, based in Wilmington, Massachusetts, has represented wholesale and retail distributors of liquid heating fuels and related services companies since 1942.[1] These businesses safely and reliably deliver warmth and comfort to nearly six million homes across the United States, including 662,000 homes in the Commonwealth alone.[2] Of the five billion gallons of heating oil and renewable liquid heating fuels used on average in the United States each winter, 85% is utilized by homes and businesses in the Northeast from Maryland to Maine.[3]

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[1] NEFI changed its name and became a national association on July 1, 2020.
[2] This is based on data from the U.S. Census Bureau, American Community Survey (ACS), Fuel Oil Use by Occupied Housing Units, Five-Year Avg. (2017-2021). Percent (%) of homes is calculated as a percentage of total state occupied housing units.
[3] Source: U.S. Energy Information Administration (EIA).

Most of our retail members, often referred to as "heating fuel dealers," are small, multigenerational family-owned-and-operated businesses with an average of 28 full-time equivalent employees.[4] NEFI represents both fuel delivery and larger "full service" businesses that sell, install, and service residential and commercial HVAC systems, including liquid fuel (i.e., oil- and biofuel-fired) and gas furnaces, boilers, and water heaters. Many also sell, install, and service electric air source heat pumps (ASHPs) and heat pump water heaters. Unlike utilities, our members personally deliver heating fuels and related services to the home. As a result, they often have a personal relationship with their most loyal customers and are actively engaged in the communities they serve.

II. About Renewable Liquid Heating Fuels.

NEFI members in Massachusetts and throughout the Northeast are actively working to replace conventional home heating oil with renewable fuels to reduce greenhouse gas (GHG) emissions, support local economies, and contribute to the region's energy and environmental security. Many are blending ultra-low sulfur heating oil with biodiesel, commonly branded as Bioheat® Fuel, with up to 74% lower GHG emissions on average than conventional petroleum.[5,6] Biodiesel is produced from an array of sustainable feedstocks, including recycled cooking oils and fats and surplus vegetable oils.

Other advanced biofuels, including renewable diesel, are suitable for use in space heating applications, and cellulosic biofuels are in development that are designed to replace conventional petroleum-based home heating oil. One example is ethyl levulinate (EL), a net-negative carbon heating fuel that utilizes feedstocks found in abundance throughout the Northeast including sustainably harvested wood products, municipal solid waste, and forestry and agricultural residues.[7] On March 20, 2023, the Town of Lincoln, Maine approved a 20-year lease for a $100 million EL biorefinery located at a former mill site. It is estimated this multi-phase project will eventually create up to 500 jobs in New England and ultimately produce more than 30 million gallons of what will be the "single lowest carbon-intensity liquid fuel commercially available anywhere in the world."[8]

Renewable liquid heating fuels, including Bioheat® Fuel, renewable diesel, and EL offer an immediate "plug and play" solution that utilizes existing and well-regulated storage and distribution infrastructure and, with minor and very low-cost modifications,

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[4] *2022 Energy Survey: Full Report – Overall Results*, Gray Gray & Gray, Canton, MA, 2022.
[5] Bioheat® Fuel is a registered trademark of Clean Fuels Alliance America (www.cleanfuels.org).
[6] Argonne National Laboratory; U.S. Department of Energy, Alternative Fuels Data Center, https://afdc.energy.gov/vehicles/diesels_emissions.html.
[7] A Biofine Developments Northeast Inc and EarthShift Labs 2019 GREET analysis shows EL reduces emissions by over 100% in heating applications.
[8] Bellavance, Megan, "Lincoln approves 20-plus year lease with Biofine to develop former pulp mill site," *News Center Maine,* March 22, 2023, available at https://www.newscentermaine.com/article/money/business/lincoln-approves-20-plus-year-lease-with-biofine-to-develop-former-pulp-mill-site-development-maine/97-c7f7af2c-c3eb-4ae2-b581-5a44478fe5a0.

work seamlessly in existing appliances to deliver immediate reductions in GHG emissions—all at little to no additional cost to the consumer.[9] Combined with residential energy efficiency and weatherization, these fuels are substantially reducing GHG emissions in residential and commercial buildings and provide our small family businesses and their customers a pathway to achieve net-zero emissions. Furthermore, they can do so without costly conversions of their entire home heating systems to other fuels or energy sources.

III. Comments on the CHS Discussion Drafts.

A. The main goal of the CHS is to install heat pumps, not reduce GHG emissions.

The CHS discussion draft openly admits the program is biased towards one specific fuel and technology. As stated therein, the objective of the CHS is ***not*** equitable reduction of greenhouse gas emissions, but rather "electrification of the thermal sector."[10] The MassDEP is misrepresenting the CHS as a market-driven emissions reduction program, not unlike a Low Carbon Fuels Standard (LCFS) utilized by some west coast states or the successful federal Renewable Fuels Standard (RFS). Both programs utilize tradeable credits to reward strategies that reduce GHG emissions. However, the discussion draft says the intent of these credits under the proposed CHS is to encourage contractors to "install clean electric heat pumps quickly and at the lowest possible cost to their customers," ***rather than*** reduce greenhouse gas emissions quickly and at the lowest possible cost to consumers. The CHS is intentionally designed to discourage, if not outright prevent adoption of *non-electric* low- or zero-carbon heating fuels and technologies in favor of air source heat pumps. The effect of this policy will be to restrict consumer choice and limit access to more immediate, practical, and cost-effective options for GHG reduction.

The proposed CHS will substantially increase the region's demand for electricity that will continue to be generated by fossil fuels for the foreseeable future, especially during the winter. Contrary to popular belief, electric heat pumps are not an emissions-free heating solution just because the on-site fuel source is not oil or gas. According to the Independent System Operators of New England (ISO-NE), fossil fuels continue to produce a majority of the region's electricity, especially during periods of peak demand.[11] For example, on December 24, 2022, fuel oil alone generated nearly 30% of the electricity across the six-states as temperatures in Massachusetts plummeted into the teens and natural gas was prioritized for residential space heating.[12]

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[9] National Oilheat Research Alliance, *Developing a Renewable Biofuel Option for the Home Heating Sector: A Report to Congress, State Governments and Administrator of the Environmental Protection Agency*, at 18 (2015), available at https://noraweb.org/wp-content/uploads/2015/10/Developing-a-Renewable-Biofuel-Option-May-2015-R2.pdf.

[10] *Ibid.*

[11] https://www.iso-ne.com/about/key-stats/resource-mix.

[12] Willson, Miranda, "New England clean energy goals slam into oil reality," *E&E News*, January 18, 2023.

MassDEP must acknowledge that the source fuel for electric heat pumps is electricity generated by fossil fuels. This will continue to be the case until New England has resolved all major logistical and technological hurdles necessary and expended the enormous financial and political capital needed to ensure all the region's electricity is generated by renewable sources. To be successful, any state climate program, *especially one that aspires to be fair and market-based*, must account for all lifecycle GHG emissions, including on-site and source emissions. As for methods of measuring these emissions, we insist that the Commonwealth adopt Argonne National Laboratory's GREET life-cycle analysis model, a well-tested and frequently updated method for measuring tailpipe and burner-tip emissions. The GREET model is utilized by governments, research institutions, businesses, and organizations across the world.

B. The proposed CHS is not "equitable."

The discussion draft calls the CHS a "regulatory option" for reducing GHG emissions from residential, commercial and industrial sources, which is perceived by the agency as required under the Massachusetts Clean Energy and Climate Plan for 2025 and 2030.[13] Despite the fact that a clean heat standard has never been implemented in the Commonwealth or by any other state, local, or territorial government in the United States, MassDEP has somehow determined it to be a "practical and cost-effective policy tool to meet emissions reduction goals for the thermal sector," and further concludes that it can "be implemented in a progressive, equitable manner consistent with the Commonwealth's objectives for a timely and equitable transition."[14] NEFI does not agree with this assertion and believes the CHS, as proposed in the discussion drafts, is neither fair nor equitable.

First and foremost, the proposed CHS will unduly burden low- and moderate-income (LMI) households. Installation of a whole-home heat pump system is prohibitively expensive. An analysis of the 2014-2019 Massachusetts Whole-Home Air-Source Heat Pump Pilot Program found the cost for installing a heat pump system in a home with about 1,500 air-conditioned square feet was often well over $20,000.[15] Adjusted for post-pandemic inflation, increased labor costs, and supply constraints in the HVAC sector, we estimate the total cost could exceed $30,000. Costs continue to rise due to several factors which will take years and decades to resolve. These include the national shortfall of qualified professionals and their long and restrictive licensing requirements.[16] Even taking into consideration available tax credits and public and private rebate programs, homeowners will be saddled with substantial recovery costs of at least five figures, a *significant* cost burden for LMI households. These households are therefore likely to

[13] Massachusetts Department of Environmental Protection (DEP), *Stakeholder Discussion Document: Clean Heat Standard Program Design*, p.1, March 2023.
[14] *Ibid.*
[15] Uglietto, Joe, *Cost of Residential Air Source Heat Pumps*, Diversified Energy Specialists, September 24, 2021.
[16] Ramukar, Amrith, *America is trying to electrify. There aren't enough electricians.*, Wall Street Journal, February 28, 2023. Available at https://www.wsj.com/articles/america-is-trying-to-electrify-there-arent-enough-electricians-4260d05b, accessed April 29, 2023.

continue to utilize fuels and technologies that do not meet the requirements of the CHS, effectively making the program regressive.

Second, the CHS will significantly harm our independent Main Street energy businesses by forcing them to surrender their consumers to large private utilities, some of which are foreign-owned. In addition to compliance with stringent annual emissions reduction requirements, the discussion draft also proposes to force these mostly small family businesses to convert at least 3% of their customers to electric heat each year.[17] Such a requirement constitutes an *egregious and unconstitutional* restraint of trade. This proposal renders our members in the Commonwealth no longer competitive, dramatically impedes interstate commerce, and constitutes a clear violation of both the Dormant Commerce and Due Process Clauses of the U.S. Constitution.

C. The proposal will harm regional energy security and reliability.

Forcing all 770,000 homes in the Commonwealth that rely on liquid heating fuel and propane to convert entirely to electric heat pumps will significantly jeopardize regional energy security and reliability. ISO-NE and other utility organizations have repeatedly cautioned that widespread building electrification will result in grid imbalances because policy-driven fossil fuel and nuclear plant retirements are outpacing plans for replacement generation from renewable (e.g., solar and wind) energy sources and demand response.[18] Additionally, as use of electricity increases, so does increased peaking problems of ISO-NE. Favoring electric cold-climate heat pumps not only puts increase peaking burdens on the electric grid, and as temperatures decline below freezing to subzero temperatures, the decreasing efficiency/temperature curve in these systems will create a new spiking peak in electrical demand resulting in increasing consumer costs and undermining grid reliability.

It also exposes our economy to possible attacks by foreign adversaries and terrorists and make our grid particularly exposed during the coldest days of winter. Consider that in 2016, Burlington Electric in Vermont was targeted by a Russian cyberattack operation known as "Grizzly Steppe," exposing both potential vulnerabilities of the region's grid and an interest on the part of U.S. adversaries to attack it.[19]

Furthermore, it is a fact that ASHPs simply do not provide adequate warmth and comfort during the coldest days of winter. In fact, most homes that install electric heat pumps as a whole-home heat source often require the legacy furnace or boiler to be retained as a backup. This is particularly true in states like Massachusetts that regularly experience prolonged cold periods. A backup liquid or gas heating system will be needed to alleviate a potential shortfall of the available low ambient temperature due to inefficiencies

[17] *Stakeholder Discussion Document: Clean Heat Standard Program Design*, p.4.
[18] Willson.
[19] Eilperin, Juliet and Adam Entous,

of the heat pump system.[20] Retaining such systems will ensure families have sufficient heat during the coldest parts of the winter, thereby securing their health and safety. In most cases, our members report homeowners are only interested in minisplit (i.e., ductless) heat pumps to heat smaller spaces, such as a home office or closed-in patio or sundeck.

IV. Conclusion

The discussion draft documents outline a program that prioritizes heat pump installations over greenhouse gas emission reductions. MassDEP will not accomplish its climate goals or successfully decarbonize the Commonwealth's building sector with this proposed "heat pump standard." The net effect of this program will be to ***harm vulnerable households and small businesses***, reduce market competitiveness and consumer choice, destabilize the region's electric grid, and very likely ***worsen climate change***. NEFI strongly urges that MassDEP work with the region's Main Street heating fuel providers to develop and implement common-sense policies that support small businesses while preserving market competition and consumer choice.

NEFI also notes for the record its full endorsement of the comments submitted by its affiliated state association, the Massachusetts Energy Marketers Association (MEMA). We commend NEFI and MEMA members and their hard-working professionals in the Commonwealth for their many decades of service to their customers and communities; and for their continued commitment to delivering safe, reliable, and efficient home comfort products and services for the lowest possible cost and minimal environmental impacts.

Thank you again for the opportunity to provide these comments. I would be happy to answer any questions or provide additional information as requested and can be reached at (202) 508-3645 or via email at sean.cota@nefi.com.

Sincerely,

Sean O. Cota
NEFI President & CEO

[20] Islam, Neehad, et al., *Development of a Best Practices for Integrated Hydronic and Ductless, Air-source Heat Pump Systems*, National Oilheat Research Alliance Research and Education Center, Plainview, NY, May 2021.