



May 20, 2022

**Comments to the Conference Committee on House 4524 and Senate 2842
from Clean Fuels Alliance America and the Massachusetts Energy Marketers Association**

Representatives Roy, Chan & Jones; and Senators Barrett, Creem & Tarr:

Please accept these comments regarding Senate 2842 on behalf of Clean Fuels Alliance America (CFAA), formerly the National Biodiesel Board and the Massachusetts Energy Marketers Association (MEMA).

CFAA serves as the clean fuel industry's primary organization for technical, environmental, and quality assurance programs and is the strongest voice for its advocacy, communications, and market development. CFAA members play a significant role in state and national programs aimed at reducing carbon emissions, displacing petroleum using renewable biodiesel/advanced biofuel, improving public health, and protecting the environment.

MEMA, established in 1955, is the trade association representing the heating oil and renewable advanced biofuel industry in the Commonwealth. MEMA's members are the core companies providing warmth, comfort, and improved energy efficiency to over 650,000 customers statewide. The association is committed to reducing greenhouse gas emissions in Massachusetts by blending renewable biofuels with heating oil and installing high efficiency heating oil equipment.

Senate 2842

We are writing today to voice our opposition to Section 65 of Senate 2842. That section would establish a 10-municipality pilot program that, upon local adoption, would allow those communities to ban fossil fuel infrastructure for new buildings and "major renovation projects." This section should be eliminated because:

- The state’s Department of Energy Resources (DOER), in accordance with the requirements of the Climate Act of 2021, is already working on updating the existing Stretch Building Energy Code as well as a new Municipal Opt-in Specialized Stretch Energy Code. Because of this work by DOER, it makes no sense to create a municipal pilot program that would ban the use of an immediately available low-carbon liquid fuel.
- While bans on equipment that utilize heating oil may be well intentioned, such bans would derail our industry’s ongoing efforts to transition away from fossil fuels. One of the main benefits of renewable, clean biodiesel is that it works in existing heating equipment (i.e., immediate carbon reduction with no high conversions cost), and it is commercially available today. This is a more cost-effective, equitable and expedient path to decarbonizing heating oil homes in Massachusetts when compared to full electrification.
- Banning all fossil fuel infrastructure would prohibit the use of biodiesel-biofuel in heating oil, which is a more cost-effective alternative to full electrification. Biodiesel generates greater lifecycle greenhouse gas (GHG) reductions than electric heat pumps, particularly in the near term when the region’s electric grid is primarily supplied by natural gas generation.
- Although the term “major renovation projects” is not defined in Senate 2842, such a requirement could force anyone seeking to rehab their home to install an expensive, all-electric heat pump system, even if the existing system is operating efficiently.
- As cited in two decisions by our Attorney General on Brookline’s efforts to ban fossil fuel infrastructure, Section 65 pre-empts existing state law that prohibits local municipalities from instituting fossil fuel restrictions.
- The requirements of Section 65 will remove a person’s freedom to choose his or her energy source.

Biodiesel & Advanced Biofuels: Mitigating Climate Change

We would also like to provide your committee with additional information about biodiesel, also recognized by the U.S Environmental Protection Agency (EPA) as advanced biofuel. Our hope is that your committee and your fellow lawmakers, will begin to recognize the important role this renewable fuel has in helping Massachusetts achieve its GHG reduction goals.

Made from an increasingly diverse mix of resources such as recycled cooking oil, soybean oil and animal fats, biodiesel and renewable diesel are better, cleaner fuels that are available now for use in existing heating oil furnaces and boilers, and diesel engines without modification. Nationwide, some 3 billion gallons of biodiesel was consumed last year, and we project use will exceed 6 billion gallons by 2030, eliminating over 35 million metric tons of CO₂ equivalent greenhouse gas emissions annually. With advancements in feedstock, use will reach 15 billion gallons by 2050.

There is no doubt that biodiesel is a viable carbon reduction strategy in the thermal heating sector. We oppose all efforts to eliminate all liquid fuels and related infrastructure since such moves would preclude the use of biodiesel as a cost-effective pathway to immediate, near-term carbon reductions.

We understand electrification is a viable and important pathway to achieve greenhouse gas reductions, but it cannot realistically be the only pathway, particularly given the timeframe it will take to convert the large number of liquid fuel-fired heating systems currently in use, and particularly when the heating fuel industry is moving to ever-more higher blends of biodiesel - a comparatively priced drop-in fuel that reduces greenhouse gases immediately. It makes no sense to exclude such fuels.

The liquid heating fuel industry is firmly committed to achieving aggressive carbon reduction goals. In September of 2019, the liquid fuels industry in the Northeast adopted the *Providence Resolution*, which incorporates the goal of using renewable liquid fuels for heating at a B20 blend level (15% life cycle carbon reduction) by the year 2023, the B50 level (40 percent life cycle carbon reduction) by 2030, and net carbon neutrality by 2050.

Heat Pumps vs Liquid Fuel Use

The claim by some that inclusion of biofuel as a pathway for reducing carbon emissions will result in heat pump installation and weatherization efforts taking a back seat to liquid fuels is false. The fact is that addressing climate change effectively requires a comprehensive "all-of-the-above" strategy. Consider that:

- Average CO₂ reduction is 41-49% for retrofitting homes in cold climates through weatherization and energy-efficiency improvements; with most of those reductions coming from envelope upgrades (insulation)¹.
- CO₂ reduction from switching to B100 (soy) is up to 76% without considering indirect land use change (ILUC), 66-72% reduction when various ILUC cases are considered².
- The cost to convert a home to an air source heat pump is over \$20,000, according to the Massachusetts Clean Energy Center (not including the cost of weatherization and other envelope upgrades). By contrast, switching to a biofuel-hating oil blend imposes little to no extra costs on consumers

¹ • (Amann, J., R. Srivastava, and N. Henner. 2021. Pathways for Deep Energy Use Reductions and Decarbonization in Homes. Washington, DC: American Council for an Energy-Efficient Economy. [aceee.org/research-report/b2103](https://www.aceee.org/research-report/b2103), at 23, accessed March 29, 2022).

² • (Chen et al., Life Cycle Energy and Greenhouse Gas Emission Effects of Biodiesel in The United States with Induced Land Use Change Impacts, <https://www.sciencedirect.com/science/article/pii/S0960852417321648>, accessed March 29, 2022).

- And using biofuel blended with heating oil can achieve that 76% GHG reduction immediately, as opposed to the many years it would take for the deep deployment of envelope upgrades, which is critical for addressing climate change due to the "time value of carbon" reductions.

Time Value of Carbon Reductions

We all know we must act now. The IPCC's 6th assessment released last summer provided us with a stark warning: "It is unequivocal that human influence has warmed the atmosphere, ocean and land. Widespread and rapid changes in the atmosphere, ocean, cryosphere and biosphere have occurred." Furthermore, the report states, "From a physical science perspective, limiting human-induced global warming to a specific level requires limiting cumulative CO₂ emissions, reaching at least net zero CO₂ emissions, along with strong reductions in other greenhouse gas emissions."

Simply put, reducing carbon emissions now, is more valuable than reducing the same amount of emissions later. This is because earlier reductions limit the long-term climate impact caused by the accumulation of greenhouse gases.

This significant and often overlooked principal is frequently absent from policy discussions, which, for example treat a reduction of CO₂ in 2022 with the same weight as a reduction in 2050. This is simply not accurate and skews the market to seek low-technology readiness options which may not be deployed for years or decades, if ever at all.

The most recent publication from Argonne National Lab found that biodiesel, even when produced from crops such as soybean oil, a formerly waste byproduct of animal feed production, can reduce emissions approximately 76%³. This finding was updated in 2021 and demonstrated an increased savings for all raw material used to produce biodiesel. In fact, these findings aligned with EPA's original estimates which demonstrated that biofuels produced from residue feedstocks such as animal fats and inedible distillers corn oil can reduce emissions by up to 86%⁴.

As more renewable electricity comes online and production practices and processes get ever more efficient, it is expected that figure will continue to rise. It is critical to recognize that these deep reductions have a dramatic effect on our climate trajectory as carbon reductions now are worth more than carbon reductions later.

³ [Life cycle energy and greenhouse gas emission effects of biodiesel in the United States with induced land use change impacts - PubMed \(nih.gov\)](#)

⁴ <https://greet.es.anl.gov/>

Biofuel Does Not Pit Food Against Fuel

This claim by some of “devastating consequences” because of biofuel production is utterly without merit and is made without any supporting evidence.

In fact, replacing domestic petroleum diesel consumption with domestically produced biodiesel for heating applications not only reduces GHG emissions by up to 76%, but doing so is one of the most sustainable actions available to Massachusetts and other states concerned with addressing climate change effectively.

- Biodiesel is the most diverse fuel available, made from a wide variety of waste and by-product feedstocks such as used cooking oil, rendered animal tallow, recycled grease, and agricultural byproducts from canola, soybean, and other plant oils.
- Biodiesel is nontoxic and biodegradable, and its production reduces wastewater by 79% and hazardous waste by 96%.
- Biodiesel decreases soybean meal prices by \$20-\$40 per ton, saving livestock producers \$5 billion in reduced soymeal cost and reducing food costs for consumers.
- The U.S. biodiesel industry supports more than 60,000 jobs, generates \$11 billion for the U.S. economy, and recycles atmospheric CO₂ into valuable fuel that enables progressive states to keep climate-worsening crude oil in the ground.

The “devastating consequences” claim conflates palm oil production with soybean oil production. Palm oil production, conducted in tropical countries outside the U.S., often involves destructive practices, but those practices do not occur in domestic production of soybean and biodiesel. In fact, federal law precludes the use of palm oil as an “advanced biofuel.” If the state wants to preclude the use of palm oil, it can easily do so via a prescriptive or performance standard without excluding the environmentally and economically beneficial domestic biodiesel industry.

Indeed, biodiesel use in climate progressive states like California and Oregon has increased many-fold under their innovative low carbon fuel programs. For example, because of their positive attributes, biodiesel and renewable diesel have grown 61-fold in California since the start of its Low Carbon Fuel Standard program in 2011 to comprise over a third of the total on-road diesel fuel pool in the state.

Such rapid growth has taken place due to substantial increases in agricultural yield, efficiency gains in the processing and production of biodiesel, and other improvements that have enabled increased biodiesel production without the adverse land and soil carbon impacts noted by some environmental groups. It is inconceivable that California and Oregon would allow the use of such biofuels, much less the phenomenal growth these fuels have had, if the types of “devastating consequences” were actually being caused by these fuels.

The U.S. biodiesel and renewable diesel production capacity is currently 3 billion gallons, with 6 billion gallons projected by 2030 and, with further innovations in feedstocks, up to 15 billion gallons by 2050. There are ample domestically sourced feedstocks for biodiesel production to meet all the region's needs.

Other States Have Already Taken Action

New York has already recognized the important of biofuel in passing a heating fuel mandate bill last year. And other states and cities like Connecticut, Rhode Island, New York City and Massachusetts – through its Alternative Energy Portfolio Standard program and Governor Baker's Executive Order No. 594 -- have established biodiesel pathways for reducing carbon emissions. And as previously stated biodiesel and renewable diesel have been recognized by California regulators as a major factor in the success of that state's low carbon fuel standard.

Disadvantaged Communities Benefit from Biodiesel Use

We understand equity and affordability are important considerations for the General Court. To better characterize the health benefits biodiesel can generate in local communities who switch from petroleum-based diesel, CFAA commissioned a study by Trinity Consultants, a globally renowned air quality modeling firm, who specializes in air dispersion modeling. Their work, which is published online, characterizes the benefits of these fuels much more granularly, allowing decision makers to understand where the benefits of reduced particulate matter and improved health outcomes, would occur and to whom.

The results demonstrate that the use of B100 as a heating oil replacement reduces diesel particulate matter emissions by 86%. These dramatic reductions can lead to significant health benefits in the form of reduced asthma attacks, avoided work loss days, and reduced cancer risk.

This is of particular value to Environmental Justice communities which bear a disproportionate burden from the adverse health effects of fossil fuels. And, most importantly, these health benefits can occur with no additional consumer investments.

In conclusion, CFAA and MEMA believe that biodiesel should be identified as a viable climate mitigation pathway from lawmakers, regulators, and policy makers in Massachusetts. Thank you for the opportunity to provide comments on Senate 2842 and facts surrounding biodiesel.

Respectfully submitted,

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