



Comments from The National Biodiesel Board  
on the  
APS Straw Proposal

Submitted to  
Department of Energy Resources  
100 Cambridge Street, Suite 1020  
Boston, MA 02114

Attention: Darchelle Petion

The National Biodiesel Board (NBB) offers the following comments to the Massachusetts Department of Energy Resources (MA DOER) on the Alternative Energy Portfolio Standard Straw Proposal as part of its 2020 APS Minimum Standard Review

The National Biodiesel Board represents the biodiesel, renewable diesel, and sustainable aviation fuel industries. NBB members play an important role in state and national programs aimed at reducing carbon emissions, displacing petroleum, improving public health, and protecting the environment. Many NBB members are members of environmental organizations and are supportive of state and local initiatives to achieve a sustainable energy future.

NBB commends the MA DOER for allowing stakeholders to participate in the rulemaking process for this APS Program that will help the Commonwealth achieve its climate mandates. We believe that stakeholder involvement is essential in helping guide the Commonwealth with this effort.

The National Biodiesel Board strongly supports an expansion of the Massachusetts Alt Portfolio Standard (APS) to support additional reductions of petroleum diesel usage in home heating applications. Further, we are highly supportive of a program expansion to allow for the use of additional, sustainable raw materials to produce biodiesel. We believe this commonsense alignment with existing standards like U.S. EPA's Renewable Fuel Standard and California Low Carbon Fuel Standard will result in significant additional reductions of GHGs and reduced criteria pollution for the citizens of the state. Furthermore, by aligning with other major U.S. markets, Massachusetts is reducing a significant financial and technical hurdle which is preventing many players from participating in the marketplace.

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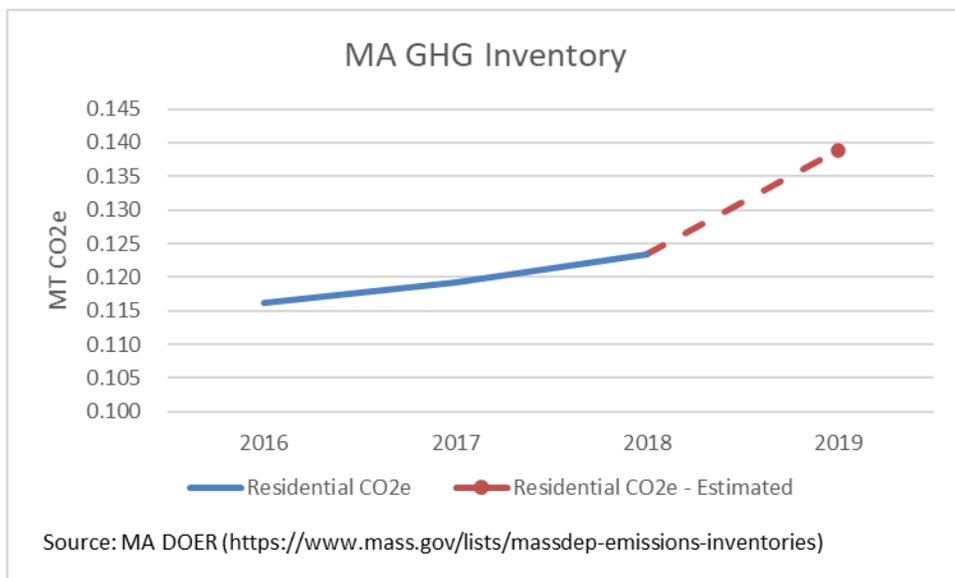
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However, we remain concerned that these proposed changes to the program will blunt the market signal for the use of lower carbon biofuels, limiting their potential to reduce GHG emissions and improve human health. Given the continued increase of global GHG emissions coupled with the urgent and stark IPCC 6<sup>th</sup> assessment released August 12<sup>th</sup>, 2021, we ask that MA DOER consider a more aggressive approach to energy transition.



Specifically, we encourage the state to remove the cap on credits under the Massachusetts Alternative Energy Portfolio Standard. Given the deteriorating state of our climate combined with the lack of currently available options for sustainable home heating, we believe the state should do everything in its power to provide access to higher blends of biodiesel to a larger population of heating oil users. This will enable Massachusetts to further reduce the burning of fossil fuel-based diesel, will provide significant GHG emissions, and eliminate diesel particulate matter, a substance which has been shown to be seriously detrimental to human health. Expanding, not limiting APS incentives will further strengthen MA DOER’s ability to protect citizens’ health and long-term energy and climate security.

**Expand “Eligible Feedstock” Definition for Consistency with Federal RFS.**

Renewable liquid biofuel is fit-for-use today in every home in Massachusetts using heating oil. In a 2020 study conducted for the National Energy & Fuels Institute, Kearney Consulting found that “the liquid heating fuel industry has the renewable fuel product today to drive immediate carbon reductions faster than alternative electric or gas options.”<sup>1</sup>

To further strengthen the move towards a “low carbon future”<sup>2</sup> for Massachusetts, MA DOER should expand the feedstock eligibility within the APS in 2022 to include the feedstocks designated for advanced biofuels in the federal RFS (i.e., the feedstocks identified in Table 1, 40 C.F.R. § 80.1426 for advanced biofuels, such as soy-derived biomass-based diesel and other qualified feedstocks).

MA DOER already relies on the RFS for the definition of Eligible Liquid Biofuel Supplier List in 225 CMR 16:00 and should endeavor to adopt the following RFS definition for feedstocks. Other states, like New York, use the federal RFS definition.

<sup>1</sup> Roadmap to Success: Achieving a Net-Zero Carbon Future by 2050, Kearney Consulting, December 202

<sup>2</sup> Daymark Energy Advisors, Alternative Energy Portfolio Standard Review, October 30, 2020

NBB recommends that to further enhance the sustainability criteria of the APS, MA DOER should not only require that the eligible biofuel be produced from feedstocks listed on Table 1, 40 C.F.R § 80.1426, MA DOER should also require that fuel sold into the Commonwealth also generate RINs<sup>3</sup> under the federal program.

This additional requirement would not be a burden to well-intentioned producers who would already be generating a RIN as a normal course of business. However, a requirement to generate a RIN, or at least be registered with EPA, would make it more difficult to sell unsustainable products into the Commonwealth.

Thus, we recommend the following language for defining an eligible feedstock:

"Feedstock" shall mean soybean oil, canola oil, oil from annual cover crops, algal oil, biogenic waste oils, fats, and greases, camelina sativa oil, distillers corn oil, distillers sorghum oil, and commingled distillers corn and sorghum oil, provided that the commissioner may, by rules and regulations, modify the definition of feedstock based on EPA's potential future modifications of Table 1 of 40 C.F.R § 80.1426<sup>4</sup>, and which has generated a RIN in compliance with the federal RFS program.

### **Expanding Eligible Feedstock Achieves GHG Savings.**

In establishing the RFS, the U.S. EPA determined that biodiesel, along with other advanced biofuels, reduce emissions by at least 50%.<sup>5</sup>

Since EPA's original analysis in 2010, several subsequent studies have been conducted on biodiesel. The most recent, conducted in 2018 by Argonne National Laboratory, the federal leader on the life cycle emission from transportation fuels found that "Relative to the conventional petroleum diesel, soy biodiesel could achieve 76% reduction in GHG emissions without considering induced land use change (ILUC), or 66-72% reduction in overall GHG emissions when various ILUC cases were considered."<sup>6</sup>

Expanding feedstock eligibility in the APS program will also help ensure that supplies of liquid biofuel are sufficient to meet the needs of the program and reduce petroleum with the immediacy that is being recommend by IPCC. NBB has many members who participate in the California Low Carbon Fuel Standard and that policy initiative attracted biodiesel producers and supply to the West Coast. The development of additional East Coast state policies will send market signals that will attract biodiesel back into the New England market in abundance.

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<sup>3</sup> Renewable Identification Number (RIN), 40 CFR 80.1401.

<sup>4</sup> Title 40, Code of Federal Regulations, U.S. Environmental Protection Agency

<sup>5</sup> Biodiesel: The Northeast's Carbon Solution, National Biodiesel Board

<sup>6</sup> Biosource Technology, Argonne National Laboratory, Life Cycle Energy and Greenhouse Gas Emission Effects of Biodiesel in the United States with Indirect Land Use Impacts, 2018

Today's national market for biodiesel has reached 2.8 billion gallons with more than 3 billion gallons of domestic production capacity online today. Capacity of planned U.S. expansions will grow to 6 billion gallons by 2030. Domestic biodiesel is produced using various feedstocks designated as advanced biofuels under the federal RFS, as referenced above. These feedstocks include used cooking oil, animal fats, inedible corn oil, soybean oil, and canola.

### **Expanding the availability of biodiesel, increases use, generates long-term climate benefits**

As stated in the IPCC AR6, "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 CO<sub>2</sub> emissions, reaching at least net zero CO<sub>2</sub> emissions, along with strong reductions in other greenhouse gas emissions."<sup>7</sup>

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 CO<sub>2</sub> in 2021 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.

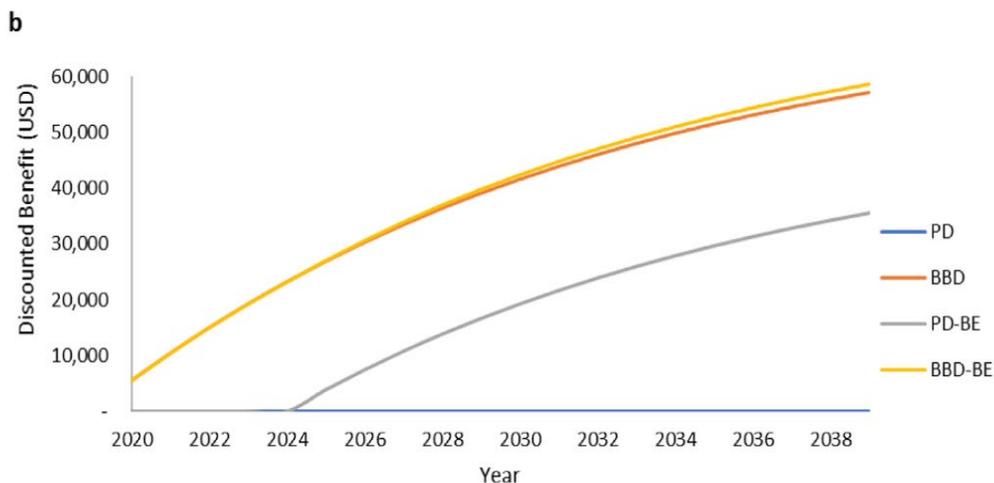
Recently, The State University of New York (SUNY-ESF) published research to highlighting the value of early GHG reduction, limiting the cumulative heating impact of carbon emissions.<sup>8</sup> This study compared the cumulative emissions reductions and associated societal value of using biodiesel today compared to waiting for a future, potentially lower carbon solution to be deployed later. These results demonstrated that when a technology with a lower life cycle GHG emission profile was deployed even five years later, it would generate less societal benefits arising from a reduction in GHG emissions than a higher-carbon (yet still sustainable) technology deployed sooner. More simply, carbon reductions now are more important than carbon reductions later. The benefits accumulate, much like compound interest on a savings account.

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<sup>7</sup> <https://www.ipcc.ch/assessment-report/ar6/>

<sup>8</sup> <https://www.sciencedirect.com/science/article/pii/S2666052021000108>

While the current study was focused on transportation, it is likely to be expanded to cover home heating, including the use of biodiesel, electric heat pumps and natural gas. This work, which considered the timing of carbon reductions from a financial and economic standpoint has been echoed from a physical sciences standpoint in different journals by other researchers at UC Davis who have studied what they call, the 'Time Adjusted Warming Potential'.<sup>9</sup>



### Co-Benefits of Biodiesel: Benefits Beyond greenhouse gases

The increased use of biodiesel in home heating oil applications not only has significant GHG benefits as noted by researchers across the nation but replacing diesel with biodiesel also results in a dramatic reduction in co-pollutants, sometimes called criteria pollution or tailpipe emissions. In particular, biodiesel can reduce diesel particulate matter emissions in home heating oil applications by 86%.<sup>10</sup> These dramatic reductions can lead to significant health benefits in the form of reduce asthma attacks, avoided work loss days, and reduced cancer risk.

Often, the modeling framework to assess the health benefits from a reduction in criteria pollution employs a top-down method, estimating a reduction in specific criteria pollutant like PM, and assuming there is a normal distribution of these benefits among citizens. While this is appropriate to generally characterize the benefits of a policy designed to reduce these harmful emissions, it often fails to help decision makers and citizens truly understand how the reduction in these emissions will affect their local community and in what way.

To better characterize the health benefits biodiesel can generate in local communities who switch from diesel, NBB 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<sup>11</sup>, characterizes the benefits of these fuels much more granularly, allowing decision

<sup>9</sup> [https://itspubs.ucdavis.edu/publication\\_detail.php?id=1634](https://itspubs.ucdavis.edu/publication_detail.php?id=1634)

<sup>10</sup> [https://www.biodiesel.org/docs/default-source/trinity-study/trinity-nbb-heating-oil-hra-v1-06.pdf?sfvrsn=241f743f\\_2](https://www.biodiesel.org/docs/default-source/trinity-study/trinity-nbb-heating-oil-hra-v1-06.pdf?sfvrsn=241f743f_2)

<sup>11</sup> *ibid*

makers to understand where the benefits of reduced particulate matter, improved health outcomes, would occur and to whom.

The results demonstrate that the use of B100 as a heating oil replacement reduces carcinogenic, diesel particulate matter emissions by 86%. Additionally, the switch would result in 63.3 million dollars in benefits a year, just in the city of Boston. Importantly these benefits only reflect the replacement of biodiesel in heating oil in the city, showing this is just the tip of the iceberg. Most significantly, this study was designed to be scalable, meaning, MA DOER can scale these results to any blend of biodiesel. In short, this demonstrates any replacement of diesel with biodiesel is going to dramatically reduce carbon emissions, contributing to the state's long-term climate goals, but more importantly, any use of biodiesel in place of petroleum is going to result in dramatic, immediate reductions in harmful diesel particulate matter, allowing the citizens of Massachusetts to immediately breathe easier. This is one of the key reasons limiting crediting of biodiesel under the APS to 20% is detrimental. Increased use of biodiesel in place of diesel will result in a linear reduction in particulate matter. Furthermore, since the use of diesel is most heavily concentrated in environmental justice communities these health benefits are likely to accrue where they are needed the most, in historically disadvantaged communities.

## **Conclusion**

We appreciate the opportunity to offer these comments on the APS Straw Proposal. While we wholeheartedly support the state's efforts to establish aggressive pathways to reduce carbon emissions to meet the state's statutory greenhouse gas reduction mandates, we believe a more robust program that recognizes the important place biodiesel has in providing immediate carbon reductions is one of those necessary pathways. Any aspect of the program that inhibits biodiesel use becomes, then, an implicit endorsement of continued petroleum-based fuel use.

Additionally, rapid adoption of biodiesel use will significantly reduce not only greenhouse gases, but secure immediate reductions in particulate matter, which not only benefit the entire state, but particularly the most vulnerable communities.

Thank you for your time and consideration of these comments. We are always available to assist the Department in any way.

Sincerely,

*Stephen C. Dodge*

Director of State Regulatory Affairs  
National Biodiesel Board

National Biodiesel Board