Representing New York's Heating Fuels Industry

2021 Joint Legislative Budget Hearing on Environmental Conservation
New York State 2021-2022 Executive Budget Proposal
January 28, 2021

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The New York State Energy Coalition, Inc. (NYSEC) and Empire State Energy Association, Inc. (ESEA) are trade associations representing the retail and wholesale sectors of the home heating industry in New York State. Our members have been proactive in promoting policies that will displace petroleum, improve public health, and protect the environment. We have helped develop and begun delivering a clean burning heating fuel to our customers, reducing carbon emissions from their heating appliances, reducing appliance maintenance, and improving air quality. We have done this without increasing costs or requiring equipment changes. We are asking the state to partner with us to enhance the clean fuel strategies we have begun.

NYSEC and ESEA are supportive of the Climate Leadership and Community Protection Act (CLCPA) carbon reduction goals and will offer initiatives in this testimony to reduce the carbon emissions (CO2e) from the 1.5 million homes in the state that currently use heating oil. As such, we urge you to implement a significant role for biodiesel and renewable diesel to help achieve the state's decarbonization and environmental sustainability targets while realizing the economic benefits that come from job retention, new job creation, and energy solutions for environmental justice communities. Specifically, we respectfully request that a statewide biodiesel blending heating fuel standard be included in this year's state budget.

What is Biodiesel? As renewable, low carbon replacements for petroleum diesel fuel and heating oil, biodiesel and renewable diesel are made from used cooking oil, animal fats, brown (sewer) grease, and agricultural byproducts or co-products. These biofuels reduce lifecycle greenhouse gases on average 73% - 80%, based on a full life-cycle basis. In addition to significantly lowering greenhouse gas emissions, biodiesel can also significantly reduce harmful criteria pollutants created from the combustion of petroleum. These are pollutants that have been shown to lead to chronic health effects, especially in urban communities.

Emissions Improvements of Biodiesel versus Low Sulfur (LS) and Ultra Low Sulfur (ULS) Heating Oil[1],[2],[3],[4],[5]

Average Change	PAH	PM	CO	NO_x	SO_2	CO_2
Percent	-90 to -95%	50%	Similar to -15%	Similar to -25%	-98% (LS) Similar (ULS)	-73%

Note: PAH-Polycyclic Aromatic Hydrocarbons; PM-Particulate Matter; CO-Carbon Monoxide; NOx-Nitrogen Oxide; SO_2-Sulfur Dioxide; CO_2-Carbon Dioxide

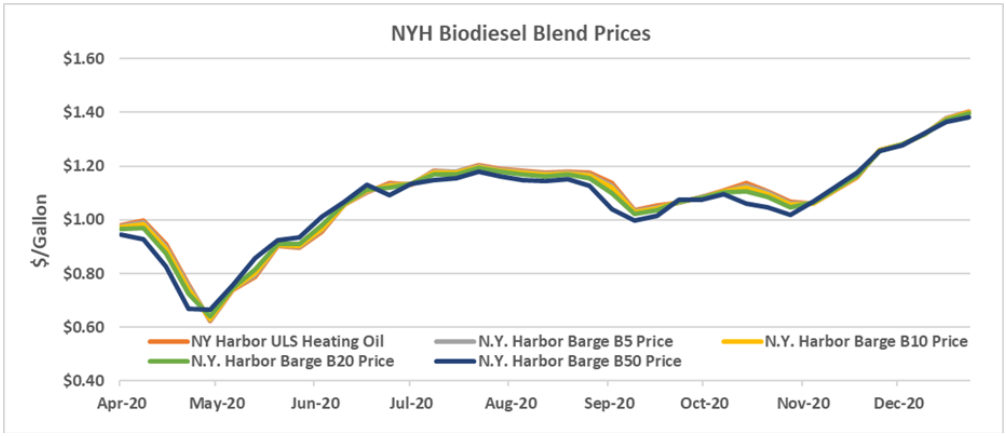
Feedstocks used to produce U.S. biodiesel have become increasingly diversified, with waste products making up an increasing volume of feedstock used to produce fuel. One of the chief reasons is biodiesel

[1] Macor, A., Pavanello, P., Performance and Emissions of Biodiesel in a Boiler for Residential Heating, *Energy*, vol. 34, 2009.C
[2] Krishna, C.R., Biodiesel Blends in Space Heating Equipment, Brookhaven National Laboratory, 2001.
[3] USDA/DOE 1998, Life Cycle Inventory of Biodiesel and Petroleum Diesel for Use in an Urban Bus.
[4] Lee, S. Win, He, I., Heritage, T., Young B., Laboratory Investigations on the Cold Temperature Combustion and Emissions Performance of Biofuels Blends, 2003.
[5] https://www.edf.org/sites/default/files/10071_EDF_BottomBarrel_Ch3.pdf

offers an especially effective and efficient outlet for recycling fat-based waste streams. While waste fats and oils can be treated in wastewater treatment plants, it is far more expensive and this process yields far fewer GHG savings, if any at all. Furthermore, by processing excess agricultural co-products such as soybean oil into high quality biodiesel, the industry is not only able to provide a lower carbon fuel, but we help facilitate lower protein costs by providing an additional revenue source for the production of soybean meal. Thus, with biodiesel production and use, there is no food-for-fuel issue. Currently federal law, rules, and regulations prohibit the use of palm oil in biodiesel production, helping further reduce deforestation. We are pleased to note that domestically-produced biodiesel meets all federal standards. In fact, US produced soybeans are so sustainable, they are approved under stringent, EU RED II Compliance scheme[6].

As a drop-in fuel, Bioheat® (the registered term for biodiesel blended heating oil) provides immediacy in reducing greenhouse gas emissions and has been effective in states that have biodiesel blending requirements for space heating - New York and Rhode Island, as well as in Massachusetts with their Alternative Portfolio Standard biodiesel incentive program. The same translates to those states with low carbon transportation policies.

Heating oil is currently being delivered to consumers in New York at blends as high as 35% (B35). This blend level and up to 50% (B50) has not required modifications to existing heating systems, nor has it resulted in increased costs to the consumer versus traditional heating oil. The New York State Energy Research Development Agency (NYSERDA) tracks home heating fuel retail pricing[7], and its data shows no differential in price within the regions of NY that require biodiesel blending[8]. Additionally, NYSERDA tracks biodiesel spot market prices and this data shows biodiesel consistently pricing at or below that of ultra-low sulfur heating oil (see chart below). This field experience and governmental data shows that biodiesel is a solution to GHG reduction strategies and is a seamless transition for heating oil customers.



Source: NYSERDA Winter Fuels Outlook, October 29 2020, NYSERDA Office of Energy and Environmental Analysis

The Transition to Renewable Liquid Fuel: Bioheat®. Through the efforts of the National Oilheat Research Alliance (NORA), which was authorized by U.S. Congress in 2000, the heating oil industry, in partnership with the National Biodiesel Board (NBB), has a laudable track record of accomplishments to improve the efficiency of equipment and provide a cleaner liquid fuel. NORA is funded by a government

[6] https://ussec.org/european-union-recognizes-ssap-red/
[7] https://www.nyserda.ny.gov/About/Publications/EA-Reports-and-Studies/Weekly-Heating-Fuels-Report
[8] Chapter 315 of the NYS Laws of 2017

sanctioned "check-off" program by which $0.002 is collected at the wholesale level on every gallon of heating oil sold in the U.S.; and NBB has contributed millions of dollars for research & development, and educational outreach. This partnership resulted in the development of Bioheat® fuel – ultra-low sulfur heating oil blended with renewable biofuel at levels ranging from B5 to B100.

Because of NORA's continued leadership and guidance from the NBB, the heating oil industry has proactively pursued all legislative and regulatory opportunities to transition to renewable fuel blends in the Northeast. The industry has supported the enactment of biofuel mandates for heating oil in New York City (B5 increasing to B20 in 2034), Rhode Island (B5), for diesel fuel in Pennsylvania (B2), and the 2008 Clean Energy Biofuels Act in Massachusetts.

Space Heating with Bioheat® in New York. The heating oil industry in New York (NY) is proactively working toward reducing the carbon intensity of its products. The NY heating oil industry is focused on displacing just the current volumes of traditional heating oil consumption. It is not our goal to meet the state's heating resource needs that are met by other sources, but to transform the 1.5 million homes in NY that currently use heating oil into a deliverable, clean burning renewable liquid heating fuel market by replacing their heating oil with Bioheat®.

New York state's total annual consumption of heating oil is approximately 1 billion gallons[9] or 20% of the U.S. heating oil market. This volume is less than 25% of current EPA-registered biodiesel production capacity in the United States.[10]

The heating oil industry's goal, as set forth in its "Providence Resolution,"[11] adopted in 2019, is to achieve a 50% biodiesel blend for heating oil (B50) by 2030. Within this context, the required biodiesel volumes would be reasonable, as the capacity of the domestically-produced biodiesel market is currently 4 billion gallons, with the potential to grow three-fold.

In 2017, at the behest of the state's home heating oil industry, New York State adopted (Chapter 315 of Laws of 2017) a 5% blending requirement for biodiesel/renewable diesel in heating oil for the New York metropolitan area, which includes New York City, Long Island (Nassau and Suffolk Counties) and Westchester County. This area comprises 70% of the state's home heating oil market by volume, thus 700 million gallons are consumed in this part of the state. New York City has a biodiesel/renewable diesel blending law (NY Local Law 119-2016) that will increase the blending requirement to 20% by 2034. However, the remainder of the state has no renewable low carbon heating fuel requirement.

Adopting a Biodiesel Blending Requirement. As the Governor and State Legislature negotiate the 2021-2022 State Budget, we urge them to act on an immediate reduction in carbon emissions for the 1.5 million homes in the state that currently use heating oil by instituting a statewide biodiesel blending heating oil requirement at 20%, as proposed in Senate Bill S.6344A of 2020 by Senator Todd Kaminsky. This legislation will eliminate the use of 200 million gallons of heating oil and reduce carbon emissions (CO2e) by over 1.8 million metric tons[12].

It is noteworthy to mention the biodiesel blending policy outlined in A.6344A is supported by the American Lung Association and regional organizations such as the New York League of Conservation Voters, New York Public Interest Group, and Citizens Campaign for the Environment.[13]

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[9] https://www.eia.gov/dnav/pet/pet_cons_821dsta_dcu_SNY_a.htm
[10] 84 Federal Register at 36,873
[11] https://nefi.com/news-publications/recent-news/heating-oil-industry-commits-net-zero-emissions-2050/
[12] https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator
[13] Support letters dated December 12, 2019, January 31, 2020, and March 9, 2020 are available upon request.

CONCLUSION

NYSEC and ESEA recognize that the New York Climate Action Council (CAC) and its advisory panels are currently meeting to help craft a Scoping Plan of policies for the state to consider in meeting the carbon reduction goals of the CLCPA. The negative impacts of climate change are not going to wait until the scoping plan is submitted in December 2021, nor for the final recommendations from the CAC in December 2024. Thus, the use of biodiesel and renewable diesel provide New York with solutions that can be enacted now and provide immediate greenhouse gas and co-pollutant reductions that can improve the health benefits of all New Yorkers, not to mention the most susceptible in Environmental Justice communities.

Thank you for your consideration.

NATIONAL BIODIESEL BOARD

SUSTAINABLE

Biodiesel Supports *U.S. Food and Fuel* Supplies

BIODIESEL DRIVES SUSTAINABILITY IN FOOD & FUEL SUPPLY LINES

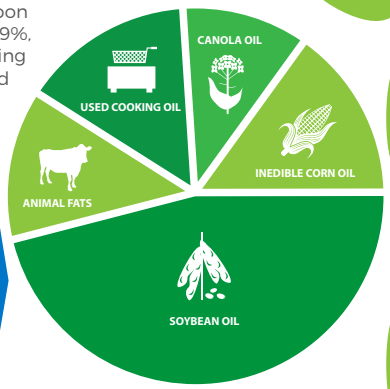
Biodiesel and renewable diesel production improves U.S. food availability and affordability by utilizing byproducts of U.S. food and fuel supply lines.

BIODIESEL COMPLEMENTS RATHER THAN COMPETES WITH FOOD PRODUCTION

Virtually every stage of U.S. biodiesel and renewable diesel production lowers protein costs, helping to reinforce the international food supply and lower costs.

4 REDUCING WASTE & EMISSIONS

Biodiesel and renewable diesel are produced from diverse U.S. resources – such as used cooking oil, recycled animal fats and surplus soybean oil – all of which are excess byproducts of food production. These domestically produced, commercially available advanced biofuels reduce carbon emissions by 52%-79%, even when accounting for market-mediated land use change.



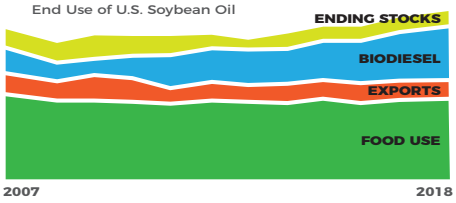
52%–79% REDUCTION IN CARBON EMISSIONS

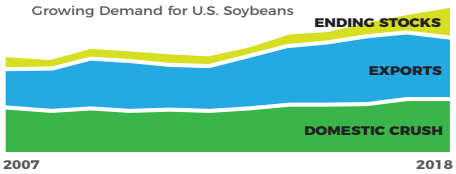
3 RECYCLING EXCESS OILS

The rendering industry recycles 10 billion pounds of oil and fat and collects 4.4 billion pounds of used cooking oil each year. These excess oils can be further recycled as biodiesel feedstock.

2 SUPPORTING SOYBEAN DEMAND

Soy-based protein meal is used as animal feed. Excess soybean oil can be used in food production. However, there is a growing global demand for soy-based animal feed and relatively stagnant demand for soybean oil in food production. Biodiesel supports a new market for the growing surplus of excess soybean oil.





1 CROPS TO CRUSH

U.S. soybeans are grown primarily for protein meal.

Soybean crops are "crushed" to separate excess oil from the protein-rich meal. Of the U.S. soybean crop's total yield, more than 80% is protein meal and less than 20% is surplus oil.

Palm oil is not an advanced biofuel feedstock under the U.S. Renewable Fuel Standard. U.S. biodiesel and renewable diesel producers do not use palm oil.

Sources: USDA Economic Research Service; North American Renderers Association.

nbb.org
biodiesel.org
mybioheat.com

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BIODIESEL+RENEWABLE DIESEL
Better Together

BIODIESEL & RENEWABLE DIESEL
are low-carbon diesel-replacement fuels produced from renewable feedstocks such as used cooking oil, animal fats, inedible corn oil, soybean oil and canola oil.

B BIODIESEL IS...
Produced through esterification or transesterification, a simple process that reacts a fat or oil with a small amount of alcohol (typically methanol) to produce a finished fuel.

RD RENEWABLE DIESEL IS...
Produced through hydrotreating, a process similar to a traditional refinery operation. This high-heat, high-pressure process produces a fuel that is chemically indistinguishable from conventional diesel.

A "drop-in" fuel that can be used in all engines and equipment up to 20% and many up to 100%.		A "drop-in" fuel that can be used in all engines and equipment up to 100%.
Non-toxic, biodegradable, ultra-low sulfur and 0% aromatics.		Ultra-low sulfur and 0% aromatics.
Better for engines due to higher cetane and improved lubricity.		Better for engines due to higher cetane.
Made to meet the requirements of ASTM D975 (B5), D7467 (B6-B20), and D6751 (B100).		Made to meet the requirements of ASTM D975 (all blends).

B + RD THE BEST FUEL IS...
A combination of biodiesel and renewable diesel produces a cost-effective full replacement option for petroleum diesel. As a paired fuel, biodiesel and renewable diesel optimize petroleum displacement and cost, as well as particulate matter, carbon and nitrogen oxide reductions.

B20 RD80

Up to 79% less carbon emissions.	GHG	Up to 79% less carbon emissions.
29% particulate matter reduction.	PM	56% particulate matter reduction.
39% fewer aromatic compounds.	BTX	53% fewer aromatic compounds.
23% less carbon monoxide.	CO	30% less carbon monoxide.
9% NOx reduction.	NO_x	6% NOx reduction.

B50 RD50

Sources: Impact of biodiesel and renewable diesel on emissions of regulated pollutants and greenhouse gases on a 2000 heavy duty diesel truck, California Air Resources Board, 2015; Effects of biodiesel blends on emissions, National Renewable Energy Laboratory, 2006.

ABOUT BIODIESEL AND RENEWABLE DIESEL

- Made from plant-based oils, used cooking oils, and animal fats
- Clean-burning ultra-low carbon
- Can be used in any diesel engine without modification
- Commercially available nationwide
- Today's solution for heavy-duty trucking, emergency vehicles, bus fleets, and farm equipment

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