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**Joint Legislative Budget Hearing
On Environmental Conservation
New York State FY2023 Executive Budget Proposal
February 1, 2022**

**Submitted by:
Rocco J. Lacertosa, CEO, New York State Energy Coalition**

Senators Krueger, Kaminsky and Parker, Assembly Members Weinstein, Englebright and Cusick, and other members, thank you for the opportunity to provide testimony on behalf of the home heating industry in New York City and New York State.

My name is Rocco Lacertosa and I serve as CEO of the New York State Energy Coalition (NYSEC). NYSEC is a New York based trade association that represents the home heating industry. Our members serve consumers in the five-boroughs of New York City, Nassau, Suffolk and Westchester counties.

Today's testimony will speak to the importance of liquid renewable biofuels in helping New York State achieve its climate change goals pursuant to the state budget actions and the Climate Leadership and Community Protection Act.

Introductory Remarks

Approximately 1.4 million homes in New York State use heating oil or a biodiesel-blended heating fuel known as Bioheat®, to keep their homes warm in cold weather and to provide hot water. These homes use one (1) billion gallons of heating oil per year and seventy percent (70%) of that fuel is consumed in the geographic area that includes the five boroughs of New York City, and the counties of Nassau, Suffolk and Westchester.

The home heating industry has been a partner with the state in lowering the carbon and particulate matter emissions of its fuel for over a decade. In 2010, we championed lowering the sulfur content of heating oil from 2000ppm to 15ppm. In 2012, we led the initial effort in New York City to blend biodiesel - a clean burning sustainable and renewable fuel, into heating oil to lower its carbon emissions. In 2016, we advocated for increasing that blend level to 5% in the NY City Metropolitan area, including Nassau, Suffolk and Westchester counties (chapter 315 of 2017). And in 2021, with the continued help of Senator Todd Kaminsky and Assemblyman Steve Englebright, we brought the use of biodiesel statewide to reach 20% by 2030 (Chapter 750 of 2021).

These laws will eliminate 200 million gallons of heating oil from use in New York State by 2030. This year, our industry is proposing a 50% blend by 2035, removing 500 million gallons of heating oil from use for space heating. The technology and fuel production exists, and we are asking the state to help make this state the first in the nation to replace its petroleum diesel for heating oil use with biomass-based renewable diesel

fuels. The state of Connecticut has already mandated 50% biomass-based diesel replacement for petroleum heating oil by 2035, and Rhode Island enacted a 50% replacement by 2030.

Additionally, the home heating industry has successfully advocated for the Rhode Island biodiesel blending requirement of 50% by 2030, the Connecticut requirement for 50% by 2035, the on-road diesel fuel in Pennsylvania currently at 2%, and the 2008 Clean Energy Biofuels Act in Massachusetts.

The home heating industry has also:

- Reduced residential home heating oil consumption by 40% per household, from 1,200 gallons to 700 gallons annually, through appliance efficiencies and delivering a cleaner burning fuel.
- Provided Residential Home Energy Efficiency Rebate Programs – making home heating systems 16.5% more energy efficient through state-of-the-art technology, burning 164 gallons less per home/per year.

Due to actions taken by the heating oil industry, today’s biodiesel-blended heating fuel is increasingly abundant, clean, efficient and renewable. We actually no longer sell “heating oil” – we sell “BioHeat®”, or as state law refers to it, “Bioheating fuel”.

What is Biodiesel?

Biodiesel is a renewable fuel that burns 73% cleaner than Ultra-low Sulfur Diesel.

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%	- 86%	Similar to -15%	Similar to -25%	-98% (LS) Similar (ULS)	-73%

Note: PAH-Polycyclic Aromatic Hydrocarbons; PM-Particulate Matter; CO-Carbon Monoxide; NO_x-Nitrogen Oxides; SO₂-Sulfur Dioxide; CO₂-Carbon Dioxide

Biodiesel is a gallon-for-gallon replacement fuel for petroleum diesel (heating oil) that has been thoroughly tested in the thermal sector. Biodiesel is derived from soybean oil, agriculture products and other co-products, and over 4.2 billion gallons are domestically-produced each year. It has gained increasing market acceptance and State regulatory support throughout much of the Northeast over the past decade. Biodiesel is also supported economically through federal tax credits and incentives. Most relevant to state climate goals, it can be provided to the end-use customer at little or no cost increase

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 at 5. Studies cited showed PM reduction proportional to biodiesel content (e.g., 20% reduction for B20 blend, 50% reduction for B50 blend). To be conservative, NBB estimates the PM reduction from using B100 would be approximately 86%

compared to traditional heating oil, as it can be used in current home heating appliances. Thus, it has a tremendous economic advantage to low and moderate income (LMI) households versus a potential costly conversion to an air source heat pump system.

Health Benefits of Using Biodiesel.

There are immediate and annually recurring health benefits of using biodiesel versus petroleum diesel for home heating. A census tract-based study by Trinity Consulting⁶, a multi-national air dispersion modeling company with offices in 69 countries, shows that 100% biodiesel use reduced cancer risk by 85%, incidences of Asthma, premature deaths, restricted activity days and workdays.

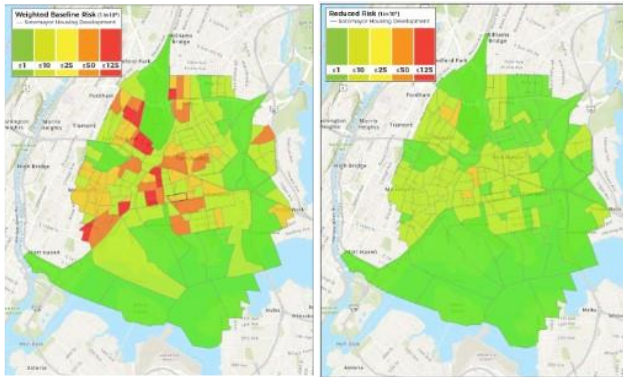
The charts below show the results for the New York communities of The Bronx (Sotomayor housing development), Buffalo and Albany. The areas studied include a specific census tract and surrounding 5-mile diameter.

For The Bronx, the results yield an estimated reduction in cancer burden up to 10 cases, which along with the avoided 16 premature deaths, 10,848 asthma attacks, and 2,304 lost workdays, equating to a valuation of about \$137M in avoided costs. In the Albany (New York) site, the use of B100 would reduce cancer burden by about 1 case, avoid 65 asthma attacks and 15 lost workdays, with avoided costs of \$1.23 million in that census tract (and surrounding 5-mile area) alone. And, the Buffalo, NY site would realize 29 fewer cancer cases per year, as well as a reduction of 2,879 individuals using Albuterol (an Asthma and Bronchial treatment drug), 21 less full Asthma cases, 7,206 less restricted activity days, 1,214 less lost workdays and 8 less premature deaths, with an avoided health costs total \$67.5 million.

⁶ <https://www.biodiesel.org/news-resources/health-benefits-study>

B100 BENEFITS: THE BRONX, NY – HEATING OIL

Cancer Risk Pre/Post-Switch to B100 (Up to 10 fewer cases)



Valuation of Reduced Incidence Benefits

Endpoint	Reduced Incidence	Benefit Value
Premature Mortality	15.5	\$135,249,595
Asthma Exacerbation	10,848	\$638,975
Minor Restricted Activity Days	11,889	\$827,239
Work Loss Days	2,034	\$291,321
Total		\$137,007,130

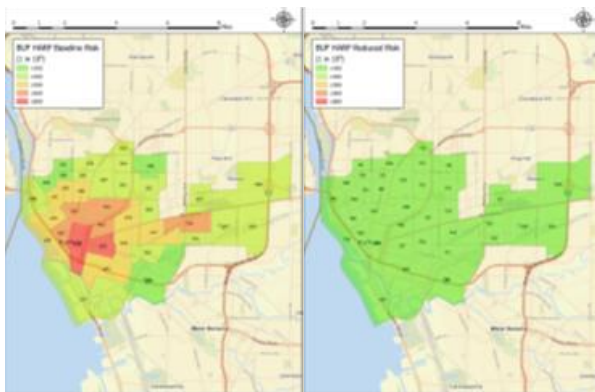
Reduction in Health Impacts

Baseline Cancer Risk (1 in 10 ⁵)	Cancer Risk Reduced to (1 in 10 ⁵)	Change in Cancer Risk (1 in 10 ⁵)	Baseline Tot. Cancer Burden (for study location)	Tot. Cancer Burden (for study location)	Change in Cancer Burden (for study location)
23.3	3.4	19.9 (85%)	12	2	10 (85%)



B100 BENEFITS: BUFFALO, NY – HEATING OIL

Cancer Risk Pre/Post-Switch to B100 (Up to 29 fewer cases)

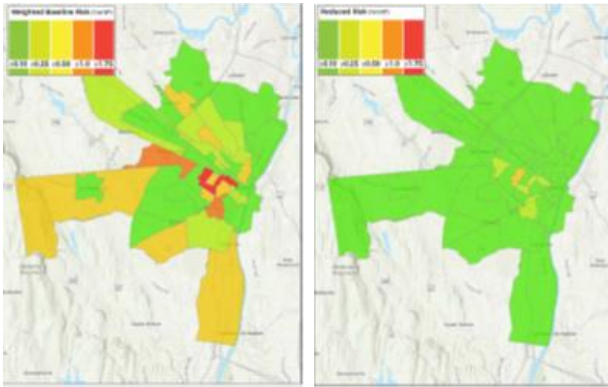


Value of Health Benefits from using Biodiesel in Buffalo (Per Year)		
Health Impact Endpoint	Reduced Incidence	Benefit Value
Acute Myocardial Infarction: Nonfatal	29.7	\$110,824
Asthma Symptoms: A Burden of use	2,879.4	\$995
ER visits: All Cardiac Outcomes	28	\$3,283
ER visits: respiratory	5.0	\$4,247
HA: All Respiratory	0.8	\$13,549
HA: All Immers Disease	2.7	\$32,701
HA: Cardio- Cerebro- and Peripheral Vascular Disease	1.4	\$21,944
HA: Parkinson Disease	0.8	\$10,575
HA: Respiratory-2	0.2	\$0
HA: Respiratory-2 HA: All Respiratory	0.9	\$0
Incidence: Asthma	21.6	\$94,107
Incidence: Hay Fever/Allergis	139.7	\$83,816
Incidence: Lung Cancer	1.4	\$18,054
Incidence: Out of Hospital Cardiac Arrest	0.2	\$5,691
Incidence: Stroke	0.6	\$20,853
Minor Restricted Activity Days	7,206.2	\$61,420
Mortality: All Cause	8.2	\$64,736,401
Work Loss Days	1,234.1	\$216,561
Total		\$67,344,221



B100 BENEFITS: ALBANY, NY - HEATING OIL

Cancer Risk Pre/Post-Switch to B100 (Up to 85% reduction)



Valuation of Reduced Incidence Benefits		
Endpoint	Reduced Incidence	Benefit Value
Premature Mortality	0.1	\$1,224,296
Asthma Exacerbation	65	\$3,854
Minor Restricted Activity Days	87	\$6,056
Work Loss Days	15	\$2,772
Total		\$1,236,978

Reduction in Health Impacts					
Baseline Cancer Risk (1 in 10 ⁴)	Cancer Risk Reduced to (1 in 10 ⁴)	Change in Cancer Risk (1 in 10 ⁴)	Baseline Tot. Cancer Burden (for study location)	Tot. Cancer Burden (for study location)	Change in Cancer Burden (for study location)
1.7	0.3	1.4 (85%)	<1	<<1	(85%)



FY 2023 State Budget

NYSEC offers the following comments on various sections of the FY 2023 Executive Budget Proposal:

Revenue Bill Part I – Provide Tax Credit for the Phase Out of a Certain Grade (#6) Fuel Oil

This proposal would institute a Grade No. 6 Heating Oil Conversion Tax Credit, up to \$500,000, for a business for the phaseout of #6 oil for heating with conversion to alternative fuels like biodiesel or geothermal.

New York City phased out the use of No. 6 oil in 2015, with a No. 4 oil phase out by 2030. Westchester County has phased out both as well: No. 6 oil in 2018 and No. 4 oil in 2020. The recently adopted law in New York State (Chapter 591 of 2021) would phase out grade No. 6 oil statewide by July 1, 2023.

This tax credit incentive for conversion from No. 6 heating oil to alternative fuels such as biodiesel and/or geothermal is a welcome program. NYSEC supports this effort and would suggest the same be proposed for No. 4 heating oil.

The home heating industry has been at the forefront of eliminating carbon and particulate matter emissions for more than a decade. Part of our policy work has been replacing heating oil of all grades (Nos. 2, 4 and 6) with biodiesel and/or renewable

diesel. As previously noted in the Introductory Remarks, biodiesel emits 74% less carbon emissions (CO₂e) across the entire greenhouse gas spectrum than petroleum diesel. Our industry requested and supported the current law for a 20% replacement and are advocating for 50% replacement of petroleum diesel by 2035 and the full replacement of petroleum diesel by 2050. This will remove 1 billion gallons of heating oil from use in the state and save over 8.59 million metric tons of carbon from release into the atmosphere.

Revenue Bill Part K – Extend the Clean Fuels Tax Credit for Three Years

Originally established as an incentive to blend biodiesel into heating oil, the Clean Fuels Tax Credit has been a tool that retailer suppliers of biofuels have used to assist their customers gain the tax credit for the use of the renewable fuel for home heating. A consumer can gain a \$0.01 per gallon tax credit up to for every percentage of biodiesel blended into their heating oil up to up to \$0.20 for a 20% blend.

As the state continues to look for ways to achieve its carbon reduction goals in compliance with the Climate Leadership and Community Protection Act (CLCPA), replacing petroleum diesel with biodiesel saves 74% in carbon reduction on average for the fuel switching.

NYSEC supports the Governor's 3-year extension of the Clean Fuels Tax Credit, and would encourage a longer extension.

TED Part CCC - Gas Service

This proposal is aimed at discouraging the use of natural gas as a fuel of choice by disallowing gas corporations from covering the first 100 feet of infrastructure between the natural gas main and the building. This cost averages about \$2,500 for the 100 feet.

Even with the gas corporation's current ability to cover the costs for the first 100 feet, many homeowners within that 100-foot range have continued to use their current home heating fuel, in many instances, heating oil which is now blended with biodiesel for a reduction in carbon emissions.

NYSEC supports the Governor's proposal as the utility should not be able to build into their rate base the cost of converting customers. If a consumer wants to switch to natural gas, they should cover those costs.

As the state strives to reduce carbon emissions in home heating, a biodiesel blended heating oil as low as 5% will burn cleaner from a greenhouse gas perspective than natural gas. Thus, this policy, along with Revenue Bill Part I, will bring biodiesel and geothermal into play as alternative heating fuels with low carbon emissions.

This Part also allows natural gas corps to own geothermal energy companies and NYSEC does not have an issue with the proposal. NYSEC believes that natural gas customers should have a choice of an alternative low carbon emissions fuels and with tax credits applied equally, the consumer can make the best financial choice for themselves.

TED Part EEE – Advanced Building Codes, appliance and equipment efficiency standards, and the Building Benchmarking Act of 2022.

The purpose of the section of the Transportation and Economic Development legislation is to encourage conservation of energy and to promote the clean energy and climate agenda, including but not limited to greenhouse gas reduction, as set forth within the Climate Leadership and Community Protection Act (CLCPA).

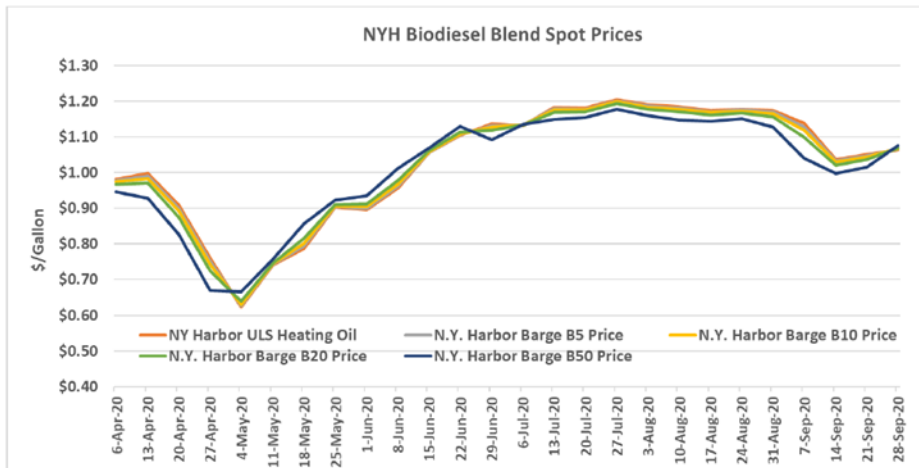
Specifically, the section proposed a State Energy Construction Code to require zero onsite greenhouse gas emissions in new construction by 2027 and include renovations of buildings in that emission standard. In addition, it sets forth a process for New York to set efficiency standards for numerous equipment and appliances.

The state's climate goals include reducing statewide carbon emissions by 40% by 2030 and 85% by 2050. This economy-wide goal takes on various aspects relative to sectors of the economy. I would like to address the buildings sector, with specific focus on the 1.4 million homes that currently use heating oil, as well as the balance of approximately 4.2 million homes that use natural gas and propane for heat and hot water.

Studies by Brookhaven National Laboratory in Upton, NY, indicate that Bioheat®, as a drop-in replacement fuel for petroleum diesel, works seamlessly in current home heating appliances, at low blends of 5% and even at high blend volumes of 50% and beyond. The home heating industry is currently working on Underwriters Laboratories (UL) protocols for heating appliances rated to use 100% liquid renewable fuels and those results are expected later this year.

According to New York State Energy Research & Development Authority (NYSERDA) pricing data, current Bioheat® users in New York State are seeing no additional costs for their heating fuel. This is supported by NYSERDA's internal price tracking of biofuels, as well as in their Weekly Heating Fuels Report and Dashboard that tracks retail pricing. An examination of historical data also shows no discernable price differential in the areas of the state where biodiesel is required versus where it is not.

Biodiesel



- > After accounting for the value of the associated RIN (D4) and the biodiesel tax credit, biodiesel prices are competitive with ultra-low sulfur heating oil.
- > B100 biodiesel prices are affected by the price of soybeans as the primary feedstock as well as the value of the D4 RIN

Thus, the building sector can achieve greenhouse gas emission reductions in the building sector by simply requiring a switch from petroleum diesel to biodiesel and not requiring a conversion to all electric buildings. Biodiesel is no-to low-cost solution for the 1.4 million households that currently use heating oil, versus the potential for spending \$20,000 – \$30,000 per household to install air source heat pumps.

Furthermore, of all the fossil fuels, heating oil is the only fuel that has a gallon-for-gallon replacement that is readily produced and available to replace the full volume of fuel currently in use. Neither natural gas or propane have that market position today, and there are indications that they never will.

As previously stated, the heating oil industry has proactively pursued all legislative and regulatory opportunities to transition to renewable fuel blends in the Northeast. We provide a resource that state governments can utilize to achieve their carbon reduction goals without excessive costs to consumers or dislocation to industry participants and employees. In New York, there are 750 companies that deliver liquid heating fuel. These companies are primarily small family-owned businesses that employ some 8,900 residents of this state, representing \$462 million in annual payroll.

Conclusion

Biodiesel is the low-to-no cost solution for removing carbon emissions from the home heating sector.

As the State Legislature reviews, debates and negotiates the environmental conservation and energy policies within the FY2023 New York State Budget, NYSEC hopes that it will fully review and consider the benefits of liquid renewable fuels such as biodiesel and renewable diesel in helping the state achieve its greenhouse gas reduction goals as set forth in the Climate Leadership and Community Protection Act.

Thank you for your consideration.

For further information, please contact:

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