February 14, 2023

Testimony before the
Joint Legislative Budget Hearing on Environmental Conservation

FY2024 State Budget

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Clean Fuels Alliance America *(Clean Fuels), formerly the National Biodiesel Board. The name change reflects our embrace of all the products our members and the U.S. industry are producing, which include non-fossil biodiesel, renewable diesel, sustainable aviation fuel, Bioheat ® fuel for thermal space heating, and maritime and railroad fuels. Clean Fuels members play an important role in displacing petroleum, improving public health, and protecting the environment. Many members are members of environmental organizations and are supportive of state and local initiatives to achieve a sustainable energy future.*

FY2024 State Budget

Clean Fuel's submits the following testimony on the Transportation, Economic Development and Environmental Conservation (TED) Bill, Section AAA - Advancing a Cap-and-Invest Program for New York.

Our comments will address how the Cap-and-Invest Program design, along with how a Clean Fuels Standard, as proposed in S.1292 (by Sen Parker) / A.964 (Member of Assembly Woerner) can complement each other to reduce carbon emissions, invest in implementing the state's climate goals and allow for private industry investments in clean fuel technologies for transportation, thus enhancing the achievable reductions in carbon and movement away from fossil fuels.

Additionally, Transportation, Economic Development and Environmental Conservation (TED) Bill, Section WW – Making NY Buildings More Sustainable. Clean Fuels will address the phase-out of fossil fuel heating equipment in New Construction and at End-of-Useful Life. Clean Fuels supports the phasing-out of fossil fuels for thermal space heating and replacing petroleum diesel with biodiesel and renewable diesel – together known as biomass-based-diesel. These are non-fossil, drop-in replacement fuels for petroleum diesel that provide immediate carbon reductions of up to 80% CO2e or more versus the fossil fuels they would replace and at little to no cost to the consumer. Technological advances in renewable fuel production and non-fossil fuel heating equipment manufacturing allow for an additional low carbon, cost-effective pathway for the current 1.3 million New York homes that use heating oil to switch fuels to biomass-based diesel and reduce the carbon emissions of their heating systems in alignment with the state's carbon reduction goals.

Cap-and-Invest

The Executive Budget Proposal advances a Cap-and-Invest program for the state as a mechanism to implement a gradually declining cap on greenhouse gases economy-wide while at the same time developing a revenue source for the state to limit the financial impact to New Yorkers, and strategically invests the proceeds in programs that drive emissions reductions.

Specifically, such a program requires large-scale greenhouse gas emitters and distributors of heating and transportation fuels to purchase allowances for the emissions associated with their activities. By applying to each metric ton of carbon emissions, the Cap-and-Invest Program will incentivize consumers, businesses, and other entities to transition to lower-carbon alternatives. The state intends to use the proceeds for investments in climate mitigation, energy efficiency, clean transportation, and other projects, in addition to funding a proposed Climate Action Rebate to help New Yorkers, residents and businesses, offset the costs associated with a transition away from fossil-based transportation and thermal heat.[1]

As the U.S. trade association representing the producers of non-fossil biodiesel, renewable diesel, sustainable aviation fuel, Bioheat ® fuel for thermal space heating, and maritime and railroad fuels, Clean Fuels understands the need for mechanisms such as Cap-and-Invest to help move the reduction of carbon emissions and raise revenues to support climate programs.

We do, however, have a concern about the greenhouse gas accounting mechanism that will be used in guiding the carbon intensity scores of renewable fuels as well as the treatment of biogenic emissions regardless of where the renewable fuels are produced.

Globally, national and subnational jurisdictions such as the United States, California, and New York report emissions inventories to establish, measure, and report carbon emissions and reductions. Unlike New York's Climate Leadership and Community Protection Act (CLCPA), however, the GHG reporting programs managed by the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) align with the approach recommended by the United Nations International Panel on Climate Change (IPCC). These reporting standards are governed under 40 CFR Part 98 and California title 17, CCR, sections 95100-95163, respectively.

The CLCPA interpretation by the Department of Environmental Conservation (DEC) creates a framework that is inconsistent in its treatment of biomass with currently accepted global reporting of biogenic emissions. More importantly, that inconsistency creates a strong disincentive to the use of biofuels, which as states like California continue to show, have provided the single largest source of GHG reductions in their respective clean fuels programs.

New York's CLCPA GHG accounting is generally inconsistent with other jurisdictions and counterproductive to aggressive climate strategies. During the Climate Action Council discussions, the New York State Energy and Research Development Authority (NYSERDA) brought forth a recommendation that the state include a second methodology of GHG accounting that aligns with these global protocols.

We believe that under any climate program, New York should aim for consistency with other major jurisdictions for purposes of reporting GHG emissions that are consistent with the established IPCC

[1] The California Climate Investments Program has implemented, since that state's Cap-and-Trade program began, more than 563,000 individual projects to address climate change and its associated impacts, providing $10.5 billion in cumulative revenues through 2022, half of which ($5.2 billion) benefited priority/underserved populations. See https://ww2.arb.ca.gov/sites/default/files/auction-proceeds/arsupportdata/cci_2022ar_ccifactsheet.pdf, visited at Feb. 12, 2023.

and EPA protocols. Consistency with such protocols facilitates linkage to the carbon programs in other states and jurisdictions, which New York may want to pursue if the state is not already planning for such. More importantly, inconsistency with such protocols means that New York's carbon reduction program will be significantly more costly than it otherwise would be (i.e. because biofuels would not be correctly credited with their achieved GHG reductions), requiring even more carbon reductions to meet the state's targets and substantially harming New York residents. This inconsistency would also put in-state industries at a significant disadvantage compared to competitors in other states, leading to undesirable economic leakage.

Clean Transportation Standard – A Complementary Policy Initiative to Cap-and-Invest

While a Cap-and-Invest Program will help the state achieve overall reductions in greenhouse gas emissions and raise revenue for the state to invest in its climate programs, its effects are economy-wide, which means it is not designed to achieve sector-specific objectives, such as reducing GHG emissions from the transportation sector. California's experience over a decade has shown that a Cap-and-Invest program works best when coupled with a low carbon fuel program, along with other complementary policies, to ensure both economy-wide and transportation-specific GHG reductions. Accordingly, a Clean Fuel Standard (CFS) will help New York accelerate the rate of carbon reductions and enhance the investments in clean fuel technologies, EV charging stations, electric municipal transportation, and other low carbon alternative fuels that will allow the state to meet its carbon reduction goals in a shorter time period.

Clean Fuels is a member of the CleanFuelsNY Coalition, along with the New York League of Conservation Voters, National Resources Defense Council (NRDC) and others. As you consider policy initiatives to help attain the state's carbon reduction and climate change goals, we urge the State Legislature to support a technology- and fuel-neutral Clean Fuel Standard for transportation, such as has been proposed in the CLCPA Scoping Plan, and authored in legislation S.1292 (Parker) / A.964 (Woerner).

A Clean Fuel Standard has become a critical government policy tool in reducing both GHGs and air pollutants which contribute to significant public health issues, including asthma and other respiratory and cardiovascular diseases that are linked to more severe cases of coronavirus. According to the American Lung Association's annual State of the Air Report, more than 50 percent of New Yorkers live in areas with failing air quality, and the greater New York City metropolitan region is consistently ranked in the top 10 cities with the worst air quality in the country.

There are great public health benefits to a Clean Fuel Standard. Unlike petroleum diesel, which adds large amounts of new carbon into the atmosphere, Clean Fuel Standards rely on clean, non-fossil fuels such as biodiesel and renewable diesel (collectively called "biomass-based diesel") to substantially decarbonize those sectors which are the most difficult to electrify: heavy duty on- and off-road vehicles, marine, rail and aviation. For decades, these low-carbon petroleum replacements have been at the forefront of the growing circular bioeconomy that New York is seeking to advance. Made from waste and by-product fats and oils, these fuels reduce GHG emissions by 80% or more depending upon feedstock, 74% on average. Further, biomass-based diesel can reduce particulate matter (PM) by nearly 50%-86%, carbon monoxide by over 40%, and other noxious pollutants by significant levels. And since these are drop-in[2] fuels, biomass-based diesel can produce environmental benefits immediately upon use.

[2] "Drop in" in this context means little or no significant new infrastructure or modifications to existing infrastructure, vehicles, or equipment are needed to use the fuels.

Moreover, disadvantaged and environmental justice communities are often located near or around high diesel-use activities, such as ports and railyards. Replacing petroleum diesel with biomass-based diesel substantially reduces diesel PM emissions, which in turn provides immediate public health benefits in the form of avoided cancers, deaths, hospitalizations, and asthma incidents (because diesel PM is a known air toxicant).

Clean Fuel Standards have been very successful in California and Oregon
A Clean Fuel Standard, also known as a low carbon fuel standard (LCFS), is a technology-neutral, performance-based standard that requires fuel manufacturers and importers to reduce the lifecycle greenhouse gas (GHG) emissions associated with the fuels they make and sell. These requirements have been in place since 2011 in California and 2016 in Oregon and have reduced GHG emissions in those states by 104 million metric tons combined. It is one of the single most effective GHG reduction policies in either state, yielding not only carbon reductions, but also transforming the transportation fuel pool, reducing petroleum dependency, increasing energy security, and reducing health-impactful air pollution.

Consumers have not experienced significant cost impacts at the pump
As we face an unprecedented health and budget crisis, a Clean Fuel Standard would allow New York to improve air quality and clean up the transportation sector at cost parity with conventional gasoline and diesel. Retail pump prices for gasoline and diesel compiled by the U.S. Energy Information Administration show California pump prices through 2020 were at or below 2011 prices, for both gasoline and diesel, after 10 years of the LCFS program operating in California.[3] In fact, biodiesel prices (reported for 20% biodiesel blend or B20) on the West Coast were on average 24 cents per gallon less than conventional diesel (as of October 2022)[4].

A clean fuel standard is good for the economy and the environment
Adopting a Clean Fuel Standard in New York will send strong market signals to producers of biodiesel and renewable diesel (collectively called "biomass-based diesel") that the state is open for the renewable liquid fuels business. Under California's LCFS, biomass-based diesel volumes grew from 14 million gallons in 2011 to over 1.22 billion gallons in 2021, an 87-fold increase. These sustainable diesel replacements currently comprised fully a third (33.3%) of the California diesel fuel pool in 2021 and are on track to displacing even more petroleum diesel in 2022.[5] They have generated about 45% of the carbon reductions in the CA LCFS program for the past five years and 42% overall to date. Since its adoption of the LCFS, California has seen the development of six biodiesel facilities and one renewable diesel production plant, supporting 4,100 full-time jobs, $156 million in wages, and over $1 billion in economic activity. Overall, the CA LCFS has created 38,000 jobs and billions of dollars in investments directly benefitting the state. And the CA LCFS has been cited as directly contributing to recent announcements by several petroleum refiners to convert a number of traditional refineries to renewable diesel production.

To illustrate the importance of an aggressive climate strategy like the LCFS as an environmental and economic driver, the recent expansion of North America's largest producer of sustainable aviation fuel (SAF) at the World Energy facility in Paramount, California, is tied directly to the LCFS and will

[3] U.S. Energy Information Administration, CA Weekly Retail Gasoline and Diesel Prices, 1/1/2011-1/1/2021.
[4] U.S. Department of Energy Clean Cities Alternative Fuel Price Report, October 2022, at 16.
[5] In fact, for just the first three quarters of 2022, California consumed 1.23 billion gallons of biodiesel and renewable, exceeding the entire amount consumed in 2021, putting California on track to consume about 1.6 billion gallons of biomass-based diesel and displacing nearly half (46%) of the diesel fuel pool. See CARB LCFS Quarterly Data Spreadsheet, Jan. 31, 2023.

increase production of SAF by 700%, generate over $19 billion to the U.S. economy, and support more than 18,000 jobs between now and 2024.[6]

A Clean Fuel Standard can also enable the complete displacement of petroleum diesel used by fleet operators. Existing fleet managers can convert their fuel consumption to 100% renewable fuel simply by purchasing and using a blend of 80% renewable diesel and 20% biodiesel (R80/B20), which would result in the environmental and public health benefits noted above without any use of petroleum diesel. As a matter of fact, the R80/B20 blend has become the premium blend at many CA truck stops, with no petroleum diesel being sold.

Health Benefits of Using Biodiesel Confirmed in Trinity Consultants Study
The health benefits of using biodiesel in place of petroleum heating oil have been studied and quantified by Trinity Consultants. Trinity studied a number of census tract areas and the surrounding 5- to 7-mile radius that are near and impacted by high-distillate use sites, so these results are granular and neighborhood specific. The Trinity Study shows the use of biodiesel in transportation and space heating reduces cancer rates by 45% to 85% in surrounding areas, as well as providing dramatic reductions in cases of asthma, premature deaths, and lost workdays.

Links to the Trinity study:

- https://cleanfuels.org/resources/health-benefits-study
- https://www.biodiesel.org/docs/default-source/trinity-study/trinity-v2-final-report-.pdf?sfvrsn=5d3a35c3_12

Since biodiesel is a drop-in fuel for transportation and home heating, these public health benefits begin accruing immediately upon the use of biodiesel in place of petroleum diesel. This means the asthma attacks, premature deaths avoided, and workloss days can be reduced every year starting today and for the next 10, 20, 30 or more years it will take the state to deploy deep electrification in either sector. For poor and disadvantaged communities that are heavily reliant on petroleum heating fuels or have numerous commercial depots and heavy-duty truck traffic, switching to biodiesel can provide substantial improvements in the health of those communities.

Four communities in New York State were studied: The Bronx, Albany and Buffalo for space heating, and the Port Elizabeth – Port of New York / New Jersey for transportation. The data below represents the results for the transportation site of Port Elizabeth. The full study is available via the links above.

Port Elizabeth – Port of New York / New Jersey

- Reduced cancer burden by over 2,500 cases (64% less)
- About 175 premature deaths avoided per year
- Nearly 75,000asthmas attacks avoided or reduced annually
- Over 33,000 fewer lost workdays each year
- More than 193,000 fewer minor restricted-activity days annually
- Equates to avoided health care costs exceeding $1.43 billion dollars annually

Note: Trinity Consultants is a multi-national firm with 69 offices across the U.S., Canada, United Kingdom, Ireland, Australia and China, and over 40 years of expertise in air dispersion modeling and health risk assessments. The Trinity Study, commissioned in 2020, completed in 2021 and updated in 2022, quantified the local community health benefits of switching from petroleum diesel or distillate to 100% biodiesel in 28 sites across 21 states in the U.S., with a focus on the transportation sector and space heating sector.

[6] See https://www.prnewswire.com/news-releases/world-energy-secures-permits-will-completely-convert-its-southern-calif-refinery-to-create-north-americas-largest-worlds-most-advanced-sustainable-aviation-fuel-hub-301531135.html.

Phase-out of Fossil Fuel Heating Equipment in New Construction and at End-of-Useful Life

We would begin by noting that in the implementation of the Inflation Reduction Act of 2022, Congress has created a $600 consumer income tax credit for the installation of renewable fuels compatible liquid fuel appliances. With this act, non-fossil low-carbon liquid fuel heating appliances have been identified as a viable path for GHG reductions.

The Executive Budget proposed the phase-out of fossil fuel heating equipment in New Construction and at End-of-Useful Life. Clean Fuels, along with the home heating oil industry, supports New York's phase-out of petroleum diesel for thermal heating but we encourage it's replacement with biodiesel and renewable diesel – known together as biomass-based diesel.

As New York State looks to advance the phase-out of fossil fuel heating equipment in new construction and at end-of-useful life, Clean Fuels urges policymakers to embrace the technological advances in fuel development and equipment that will allow home heating oil consumers to reduce their building's carbon emissions by simply switching to non-fossil, biomass-based diesel – with no additional fuel costs and in most cases no change to the home heating equipment.

Current home heating systems can use a blend of biodiesel and renewable diesel, and as you will read below, the home heating equipment manufacturers will be producing new equipment for renewable liquid fuels beginning in 2023.

This is all meant to say there are options for reducing carbon in buildings other than heat pumps. And, this should not be taken as opposition to electrification, but rather an alternative renewable liquid fuel pathway to decarbonizing a difficult-to-electrify sector, using current and future home heating equipment.

B100 Underwriters Laboratories (UL) – rated Equipment to be manufactured in 2023
The phase-out of fossil petroleum diesel is happening now. The two largest home liquid heating appliance equipment manufacturers, Beckett Corporation and Carlin Corporation, along with other manufacturers, worked with Underwriters Laboratories (UL) on a B100 UL-rated home heating appliance protocol, which was recently approved[7]. Their efforts are leading to the production of B100 UL-rated components in 2023. Indeed, Beckett Corporation has already begun producing B100-compatible burner equipment.[8] Thus, a 100% renewable liquid fuel for thermal heat that can save upwards of 80% carbon emissions is here, and ready to use now.

Heating oil industry resolves to phase-out petroleum diesel fuel for home heating
Additionally, in September 2019, the National Energy Fuels Institute (NEFI) hosted the Heating Oil Industry Summit in Providence, RI, at which the industry unanimously resolved to move to a cleaner burning fuel and transition away from conventional heating oil. The *Providence Resolution*[9] commits the industry to reduce the carbon emissions of home heating systems in line with the state's GHG reduction goals of 40% by 2030 and Net-Zero by 2050. Bioheat® fuel is that future renewable, low-carbon liquid heating fuel available now.

Biodiesel is a No Cost Increase Alternative for Current Home Heating Oil Consumers

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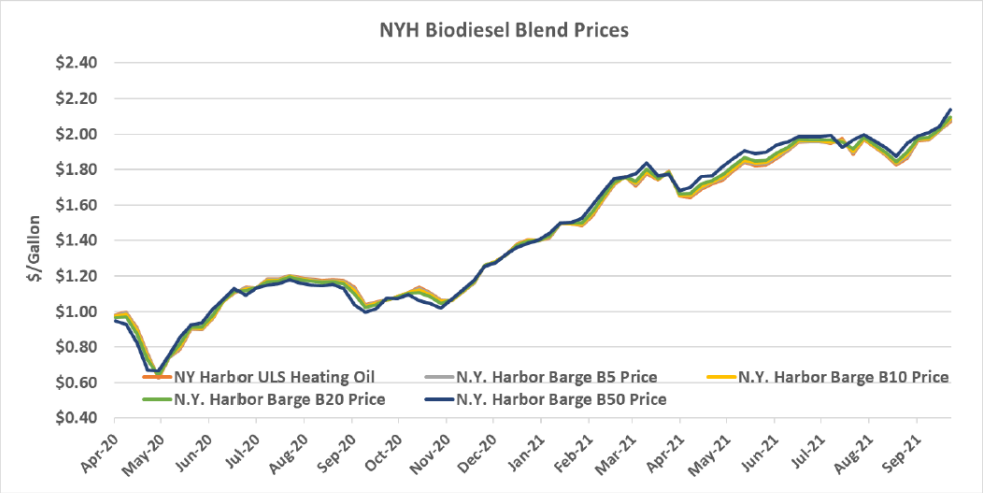
[7] See UL296, Nov. 14, 2022 Update to Include Biodiesel Blends Up to B100, NORAweb.org.

[8] Production began the week of Jan. 30, 2023. See Beckett announcement at https://www.beckettcorp.com/product-announcements/r-w-beckett-oil-burners-approved-for-b100-r100-blends/.

[9] https://nefi.com/news-publications/recent-news/heating-oil-industry-commits-net-zero-emissions-2050/

At the New York State Winter Fuels Outlook Meeting on October 28, 2021, NYSERDA showed the chart below (excerpted from the NYSERDA PowerPoint Presentation) which depicts its tracking of biodiesel pricing. The Authority's data shows that biodiesel prices track those of diesel fuel, thus proving biodiesel to be an economic and affordable fuel for current heating oil customers. NYSERDA's Weekly Heating Fuels Report and Dashboard tracks retail pricing and 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.



- 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, with just slightly higher prices.
  - B5 +$0.01/gal
  - B20 +$0.03/gal
  - B50 +$0.07/gal
- B100 biodiesel prices are affected by the price of soybeans as the primary feedstock as well as the value of the D4 RIN

Partnering with the Home Heating Liquid Fuel Industry to Transition to a Net-Zero Heating Renewable Liquid Fuel: Bioheat®

Clean Fuels, through a partnership with the National Oilheat Research Alliance (NORA), authorized by U.S. Congress in 2000, has invested tens of millions of dollars for research, development, and educational outreach that has led to the phasing out of petroleum diesel and the use of biodiesel at levels ranging from B5 to B100 (100% biodiesel)

Through NORA's continued leadership and guidance from Clean Fuels, the heating oil industry has proactively pursued all legislative and regulatory opportunities to transition to renewable fuel blends for thermal heat and transportation in the Northeast. This includes New York City (the first to transition), and the states of New York, Pennsylvania, Connecticut, Massachusetts, Rhode Island, and Vermont.

The state and the city of New York have been supportive of the use of liquid renewable fuels for home heating as a method of immediately reducing the carbon emissions of heating appliances with the recent state law (Chapter 750 of L.2021) requiring a 20% blend of Bioheating fuel. The City of New York's law (Local Law 119-2016) also embraced a 20% blend level and has also resulted in the City fleet's transition to biodiesel and renewable diesel.

Clean Fuels and the home heating oil industry are asking the Governor and Legislature to (1) include stand-alone renewable diesel and biodiesel-renewable diesel blends in the law, and (2) to increase the blend percentage to 50% by 2035, and then (3) to 100% use of biomass-based diesel by 2050, thus eliminating of use of petroleum diesel for thermal heating altogether

This would eliminate the approximate 1 billion gallons of heating oil from use in the state and provide immediate carbon reductions. The 50% blend will provide approximately 37% reduction in carbon

and a 100% replacement will provide upwards of 80% (74% on average depending upon feedstock), thus, aligning closely to the CLCPA carbon reduction goals.

Emissions Improvements of Biodiesel versus Low Sulfur (LS) and Ultra Low Sulfur (ULS) Heating Oil[10],[11],[12],[13],[14]

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)	-74%

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

Conclusion

New York State is a leader in climate change policy initiatives, and it is urgently critical that any such policies include all pathways that achieve the carbon reduction goals we all embrace. By purely relying on a single source of energy, electricity, the state will fall short of its goals in both a carbon reduction and timing standpoint.

Biomass-based diesel provides a viable, commercially available, and non-fossil pathway for governmental jurisdictions to reduce their carbon emissions across various sectors of the economy. In the case of the New York State Climate Action Scoping Plan, both the Transportation and Building sectors can see CO2e reductions by upwards of 80 precent, 74% on average, by simply switching fuels to biomass-based diesel. In addition to the immediate carbon reductions, there are substantial health benefits that will accrue each and very year for the betterment of all New Yorkers, but especially those in Disadvantaged Communities.

In the Transportation Sector, by requiring high polluting transportation fuel providers to purchase credits from low carbon fuel suppliers under a Clean Fuel Standard, the state can reduce greenhouse gas emissions and improve air quality, while creating in-state jobs and supporting regional economic development.

In the Buildings Sector, by simply switching fuels from fossil petroleum heating oil to biodiesel and renewable diesel, the state can achieve carbon reductions cost-effectively and improve the home health environment of 1.3 million New York homes.

Thank you for the opportunity to present and your consideration of this testimony.

Sincerely,

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[10] Macor, A., Pavanello, P., Performance and Emissions of Biodiesel in a Boiler for Residential Heating, *Energy*, vol. 34, 2009.C
[11] Krishna, C.R., Biodiesel Blends in Space Heating Equipment, Brookhaven National Laboratory, 2001.
[12] USDA/DOE 1998, Life Cycle Inventory of Biodiesel and Petroleum Diesel for Use in an Urban Bus.
[13] Lee, S. Win, He, I., Heritage, T., Young B., Laboratory Investigations on the Cold Temperature Combustion and Emissions Performance of Biofuels Blends, 2003.
[14] https://www.edf.org/sites/default/files/10071_EDF_BottomBarrel_Ch3.pdf at 5. Studies cited showed PM reduction from the use of B100 in place of fossil distillate heating oil is proportional to biodiesel content (e.g., 20% reduction for B20 blend, 50% reduction for B50 blend). To be conservative, Clean Fuels estimates the PM reduction from using B100 would be approximately 86% in heating applications.