



May 1, 2020

The Hon. Phil Murphy
Governor
Commonwealth of New Jersey
Office of the Governor
225 West State Street
Trenton, NJ 08625

Dear Gov. Murphy:

On behalf of the Diesel Technology Forum, we are writing in response to the Regional Greenhouse Gas Initiative (RGGI) Strategic Funding Plan for New Jersey.

By way of background, the Diesel Technology Forum is an educational not-for-profit organization whose members include leaders in diesel engines and equipment, vehicle manufacturers and fuel producers. Our organization serves a primary role of education along with the collection and commission of research to raise awareness of the environmental performance of the newest generation of diesel technology, including those that power commercial vehicles.

For reasons of timeliness, technology availability and certainty, we believe that the state's interests would be best served by pursuing a strategy that values carbon reductions from all transportation fuels, rather than solely invests in a single technology.

Efforts to use RGGI revenue to exclusively fund all-electric heavy-duty commercial vehicles will delay and dilute anticipated greenhouse gas reduction benefits. Effects of greenhouse gas emissions are experienced by all residents across the Garden State including those in designated environmental justice communities. Any policy developed to reduce greenhouse gas emissions must include immediate proven solutions alongside more risky investments that may prove beneficial in the future.

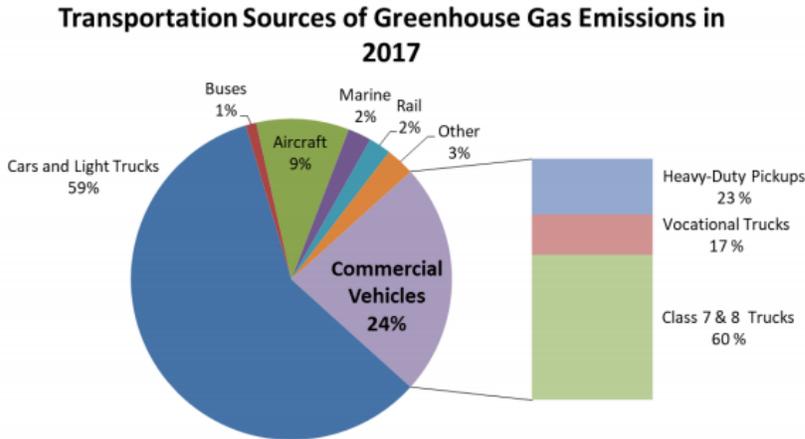
Specifically in the case of heavy-duty trucks, there are solutions to contribute to significant reductions in greenhouse gas emissions that are ready today and as proposed, these technologies would not be eligible for consideration as part of the Strategic Funding Plan. The State's plan also was developed in a pre-COVID-19 time, where economic conditions, market investments and technology pathways were more certain and favorable. We believe the State would be wise to defer action on the plan and revisit it as the COVID-19 impacts on technology availability and economic capacity are more clear. Otherwise the plan will be adopting policy that will be inconsistent and incompatible with current conditions.

As an alternative, we believe a more technology neutral approach is warranted and will achieve faster results. Even as all-electric and other zero-emission commercial vehicle technologies are in development today, these solutions including the build-out of specialized charging infrastructure, may not be ready for commercial availability at any scale within the decade. Meanwhile, diesel and advanced low-carbon biofuels are ready today to deliver significant greenhouse gas emission reductions across the broad fleet of New Jersey trucks.

Transitioning to Lower Emissions Class 8 Trucks will Generate the Greatest GHG Benefits

As the Strategic Plan notes, the fleet of cars and other light duty vehicles are responsible for the majority of transportation sources of greenhouse gas emissions. Unlike cars and pickups, the fleet of larger commercial vehicles is much more varied with unique duty cycles. According to the [U.S. Environmental Protection Agency \(EPA\)](https://www.epa.gov/), the

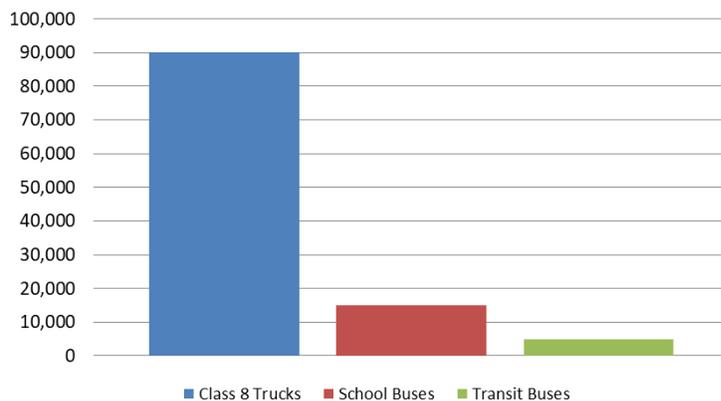
larger Class 7 and 8 trucks that include over-the-road trucks, are responsible for 60 percent of all fuel consumed and greenhouse gas emissions generated by Class 3-8 commercial vehicles. Efforts to transition the smaller categories of commercial vehicles, school and transit buses to zero emissions will not have as much of a measurable effect in reducing greenhouse gas emissions.



According to vehicle in operation data commissioned by the Diesel Technology Forum, there are far more over the road trucks operating throughout New Jersey relative to transit or school buses. These larger commercial vehicles are powered by much larger engines, hauling heavier loads and performing many more miles than buses or smaller commercial vehicles. A typical Class 8 tractor performs between 80,000 and 125,000 miles each year while an urban delivery Class 5 box truck performs about 35,000 miles each year. School and transit buses may perform even less. Transitioning a much smaller proportion of vehicles that do not generate a sizeable contribution to greenhouse gas emissions to zero-emissions technology will do little to help New Jersey achieve its climate goals.

Population of Class 8 Trucks and Buses in New Jersey

SOURCE: Vehicles in Operation (July 2019), data compiled for DTF by IHS Markit



Zero-Emissions Options for Larger Commercial Vehicles May not be Available to Generate Immediate Term Benefits

Truck and engine manufacturers are hard at work developing future zero-emissions options for the large variety of commercial vehicle types. Some, including the smaller urban delivery trucks, are commercially available today while others may become available soon. While some manufacturers have a zero-emissions Class 8 truck capable of performing a limited duty cycle, there is not a widespread availability of Class 8 zero-emissions options. Some truck manufacturers are currently involved in demonstration projects to test these zero-emissions Class 8 applications including those in niche applications like port drayage and some short-haul uses.

Near-Zero Emissions Options For Class 8 Trucks are Available Today Generating Substantial Benefits

There are currently options widely available today to help transition New Jersey's fleet of larger trucks to transition to cleaner and much lower emissions that will contribute to greenhouse gas emission reduction goals and cleaner air for many communities. Replacing older and higher emitting trucks with new technology available today will have a beneficial effect. Much like new passenger vehicles that are subject to fuel efficiency requirements, commercial vehicles must also meet stringent fuel economy and greenhouse gas reduction standards established jointly by U.S. EPA and the National Highway Traffic Safety Administration (NHTSA). The first phase of these rules were required of new trucks rolling off assembly lines beginning in 2014 while the second and more stringent standards will phase-in beginning in 2021.

Diesel technology is expected to be the dominant fuel type powering these more efficient trucks. While a variety of technologies will contribute to fuel economy gains and greenhouse gas reduction benefits, the diesel engine of tomorrow is expected to become much more efficient. According to an analysis conducted by IHS Markit, 80 percent of commercial vehicles in 2040 are expected to be diesel and they will drive the majority of the substantial greenhouse gas reductions:

Between 2010 and 2030, these more efficient trucks will have saved 1.3 billion tons of greenhouse gas emissions. This is equivalent to taking all cars off U.S. Roads for a year, or the electricity generated by over 150 million homes, according to the U.S. EPA.³

Replacing a single older Class 8 truck with a new more efficient model sitting on dealer lots throughout New Jersey can eliminate almost 10 tons of greenhouse gas emissions and save 960 gallons of fuel each year.

Significant Benefits from More Efficient Trucks Will Accrue to the Northeast

According to research commissioned by the Diesel Technology Forum, more efficient diesel trucks of the near-future can save states in the Northeast, including New Jersey, 131 million tons of greenhouse gas emissions and save nearly 13 billion gallons of fuel between 2010 and 2030. This is equivalent to taking 28 million cars off the road for a year or the emissions generated by 15 million homes.

Immediate Clean Air Benefits from Commercial Vehicle Replacements

Replacing older commercial vehicles with new diesel models generates substantial clean air benefits alongside reductions in greenhouse gas emissions. These benefits accrue almost immediately to the communities near these truck activities including those in designated environmental justice areas. New diesel trucks must meet stringent tailpipe emissions standards. The latest standard required of new trucks rolling off assemble lines beginning in 2010, result in emissions of fine particles (PM 2.5) and oxides of nitrogen (NOx), a smog forming compound, 98 percent lower than trucks built to previous emissions standards. Replacing a single older Class 8 truck with a new model can eliminate over 2 tons of NOx emissions and over 150 lbs of fine particle emissions.

³ *Reinventing the Truck*. IHS Markit, 2019. <https://cdn.ihsmarkit.com/www/pdf/Reinventing-the-truck-brochure.pdf>. Greenhouse gas reduction equivalencies based in U.S. EPA's Greenhouse Gas Equivalencies Calculator.

Research confirms that diesel trucks that come with technology to meet the near-zero fine particle emissions standard generate emissions far below what is required while there is no adverse health outcomes from exhaust exposure from these trucks.⁴ According to the U.S. EPA, a new diesel truck and an all-electric generate about the same emissions as most fine particle emissions associated with the operation of the truck is generated by brake and tire wear. These clean air benefits attributable to replacing older trucks with new diesel options are achievable today and do not require residents in communities near freight activity to wait for the development of future technology and associated infrastructure.

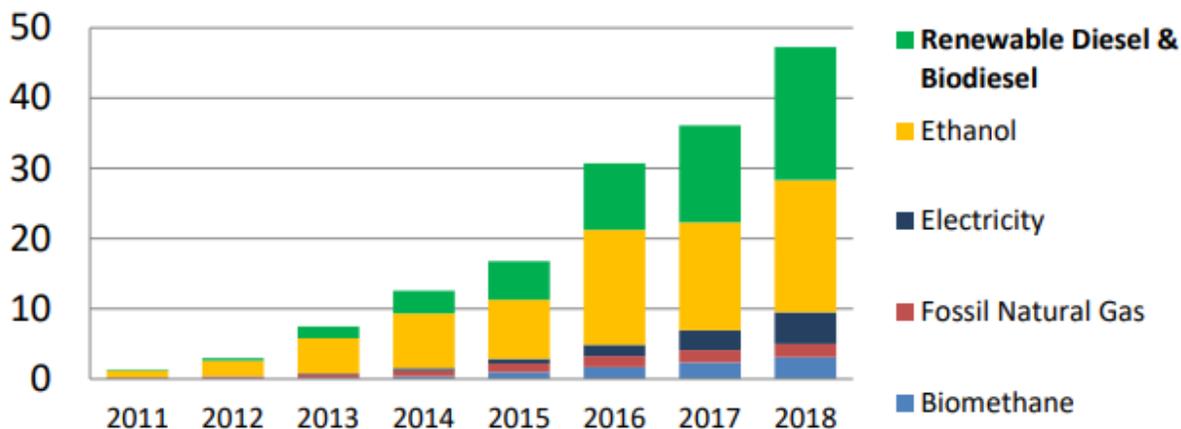
While near zero-emissions options are available today, 60 percent of New Jersey’s fleet is of an older generation of technology that does not meet the most recent tailpipe emissions standard established for model year 2010.

Significant Immediate Term Climate Benefits from Advanced Biofuels

The diesel engine patented by Rudolph Diesel over a century ago was developed to operate on peanut oil. Today, that still holds true. Modern diesel engines may operate on 100 percent renewable diesel fuel and blends of high quality biodiesel to generate significant and immediate greenhouse gas reduction benefits. The use of these fuels does not require any additional investment in recharging or refueling infrastructure or the purchase of new vehicles or engines.

The use of these fuels are delivering significant, immediate-term and low cost climate benefits to states and municipalities across the country. The state of California estimates that biodiesel and renewable diesel fuel have delivered the most greenhouse gas emission reductions from transportation sources exceeding those of electrification of cars, trucks and buses by nearly 4 to 1.⁵

Cumulative CO2 Reductions (million tons)
 SOURCE: California Energy Commission, Low Carbon Fuel Standard Dashboard



The use of these fuels are generating benefits closer to New Jersey. New York City announced that the City’s fleet of non-emergency trucks and equipment will exclusively operate on renewable diesel fuel to generate significant

⁴ *Advanced Collaborative Emissions Study (ACES)*. Health Effects Institute, May 2015. <https://www.healtheffects.org/publication/executive-summary-advanced-collaborative-emissions-study-aces>
⁵ Analysis based on data provided through the Low Carbon Fuel Standard Dashboard, California Air Resources Board. <https://ww3.arb.ca.gov/fuels/lcfs/dashboard/dashboard.htm>

emission reductions. The use of these fuels is part of a Citywide effort to reduce the carbon footprint of the City's fleet. According to the *Clean Fleet Plan*, the largest anticipated greenhouse gas reductions are expected to come from the transition to biodiesel and renewable diesel and not the adoption of all-electric light-duty vehicles.⁶ In the nation's capital city, the Department of Sanitation in Washington, DC, made the switch to operate its fleet of diesel sanitation trucks to operate on biodiesel and realized 1,000 tons of greenhouse gas emissions eliminated overnight.

An Alternative Strategy to Deliver Immediate Climate and Clean Air Benefits from Commercial Vehicles

While electrification in the passenger vehicle fleet is progressing as more models are offered with all-electric options and charging infrastructure is built out, the same does not hold true for commercial vehicles including those Class 7 and 8 trucks responsible for the larger share of emissions. Waiting for this technology to prove out in demonstration projects while a network of specialized charging stations are permitted and completed may not generate anticipated benefits. There are low cost and low emissions options available today that can generate significant benefits and ignoring these technologies represents a lost opportunity to make substantial progress towards New Jersey's climate and clean air goals.

A prudent approach relating to commercial vehicle incentives would see a technology and fuel neutral approach. Owners of older commercial vehicles have more options and fuel types available than ever before to generate substantial emission reductions. Diesel, natural gas, gasoline, propane, along with renewable fuels for each are available today along with some electrification. For some fleets, an all-electric option may prove beneficial for their unique needs. For others for which an all-electric option is not available or is not workable, other fuels and technologies would prove workable to generate substantial benefits.

Ignoring the benefits of all low emissions technologies by favoring a single technology may leave many older and higher emitting trucks in service far longer. This one-size-fits-all approach not only delays climate achievements but really asks New Jersey residents to continue to wait for cleaner air. Almost 60 percent of commercial vehicles on the road in New Jersey are of an older generation of technology and efforts should be invested to transition these older vehicles to cleaner options today. Incentive funds for commercial vehicles made available through Regional Greenhouse Gas Initiative revenue should include all low emissions technologies to help transition New Jersey's older fleet of commercial vehicles into new and cleaner options.

Please feel free to contact me with any questions or concerns at (301) 668-7230.

Sincerely,



Allen R. Schaeffer
Executive Director

CC: Catherine McCabe, Commissioner, Department of Environmental Protection
Joseph Fiordaliso, President, New Jersey Board of Public Utilities

⁶ *New York City's Clean Fleet Plan*. Department of Administrative Services, May 2015.
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