



**Comments on the
New York State Climate Scoping Plan**

The Diesel Technology Forum, a not-for profit educational organization based in Frederick MD is pleased to present these comments on the New York State Climate Scoping Plan. We represent manufacturers of diesel engines and equipment, key component suppliers and petroleum and renewable biofuel producers. A list of our members is attached.

We appreciate the opportunity to comment on the New York State Climate Scoping Plan ("Plan"). We share many of New York State's concerns about climate change and the importance of taking action. DTF members are leaders in energy efficiency, cleaner fuels, and low-emissions technology and many are investing heavily in zero emissions fuels and technologies.

However, we believe that some aspects of the Plan relative to diesel engines, fuels and equipment are based on erroneous and/or severely outdated information that does not fully represent the current state of advanced diesel technology, nor the future opportunities from upgrading existing diesel engines and equipment.

Likewise, a number of the representations made in the plan are regarding replacement of fossil-fuel based technology in several sectors now powered by diesel engines are aspirational and not based in reality in terms of feasibility, timing or cost.

Further we believe that the plan should more fully consider the experience and climate and clean air benefits achieved in other regions and nationwide with the use of advanced technology diesel engines and the use of renewable biodiesel fuels. These can provide important benefits to New York as well but are not fully considered in this Draft plan.

We look forward to working with the State of New York to reduce GHG and other emissions from diesel powered vehicles and equipment.

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I. Introduction: Diesel Technology Is Vital to The State Of New York.

Diesel Technology is vital to New York's economy, powering over 78 percent of all commercial trucks, almost 90 percent of all transit buses, nearly 100 percent of freight locomotives and marine work boats, and two-thirds of all farm and construction equipment. In addition, diesel technology plays a key role in the state's public health and safety services, including fire and rescue vehicles, backup power generation, and water pumping capabilities.

According to our latest analysis of data sourced from S&P Global Mobility TIPNet data of vehicles in operation for class 3-8 as of December 2021, there are

- Nearly 400,000 class 3-8 HD diesel powered commercial trucks are registered and operating in the state according to S&P Global Mobility, 49% are of the newest generation advanced diesel (MY 2010+).
- Over 12,000 diesel powered transit buses serve the Empire state, and 47% of these are the newest generation of advanced diesel technology.
- There are over 35,000 diesel powered school buses in the state, with 62% of them being of the newest generation of advanced diesel technology (MY 2010+).

II. **Substantial Portions of The Plan Are Based on Extremely Outdated Studies and Information That Misrepresents the State of The Science, The Population of Diesel Vehicles and Equipment Their Contribution to Emissions, And Potential to Positively Contribute To Helping NY Achieve Its Climate Goals.**

- A. The Plan fails to consider the latest science with regards to diesel engines, fuels, and technology. The plan is substantially lacking in an accurate and current assessment of diesel technology. This dramatically undermines the assumptions and recommendations and ultimately the credibility of the Plan in its assessment of fuels and technology. This is particularly true in the Plan's assessment of the impact of diesel engines relative to disadvantaged communities.

For example, In Section 8 (page 73), in the Plan cites *McCreanor, James. Respiratory Effects of Exposure to Diesel Traffic in Persons with Asthma. New England Journal of Medicine. 2007. 357(23):2348-58; Note 113).*

This 2007 study regarding the health effects of diesel emissions is cited conceivably as a means of justifying plan decisions to move away from diesel and fossil fuels.

The study was conducted, written, and accepted for publication in the year preceding the biggest transition in diesel fuel and technology in history.

Therefore, its conclusions and findings fail to capture the air quality and other benefits expected to accrue from these changes. The introduction of ultra-low sulfur diesel fuel (ULSD) and new [EPA regulations](#) effective in 2007 that enabled the introduction of particulate filters on all on-highway commercial trucks beginning in 2007, nor the introduction of selective catalytic reduction systems (SCR) that have enabled technology to achieve near zero nitrogen oxide emissions. The timing of the study did not consider nor study the emissions or health benefits from advanced technology diesel engines.

In a [study](#) commissioned for the Diesel Technology Forum, AutoForecast Solutions found that nationwide, the new generation of advanced technology diesel engines in class 3-8 trucks from model year 2007-2020 reduced 202 Million metric tons of CO2 emissions; 27 Million metric tons of nitrogen oxide emissions and saved 19.8 billion gallons of diesel fuel.

Today according to our analysis of data sourced from S&P Global Mobility TIPNet data of vehicles in operation for class 3-8 as of December 2021, about half of the 400,000 commercial vehicles registered in New York are of the newest generation diesel (2010+) and are equipped with both particulate filters and advanced selective catalytic reduction

systems. Combined these enable new diesel technology to achieve near zero levels for particulate matter and nitrogen oxides: a smog precursor. Utilization of these vehicles is already providing substantial benefits to all of New York and particularly disadvantaged communities located around freight corridors.

Other generalizations in the plan are faulty and reflect an underlying bias in the representation of diesel technology and a failure to differentiate old technology versus new and a failure to assess the current state of technology in New York.

For example, page 63 of the Plan notes

“Electrification of school buses would also prevent exposure of school children to diesel exhaust which often leaks into the cabin of buses posing a larger health threat than outdoor idling emissions.”

This assertion like many others in the Plan is based outdated anecdotal studies, in one [case](#) a 2001 study monitoring of 4 school buses in California measured for a total of 20 hours. As discussed previously, these studies are not representative of current conditions in New York and their reference here undermines the credibility of the Plan.

As noted previously, according to our latest information at the end of 2021, 62 percent of all school buses in operation in New York are 2010 and later model year vehicles, meaning that they are all equipped with both particulate traps and advanced selective catalytic reduction (SCR) systems.

Further, this assertion in the Plan regarding exhaust levels in buses is faulty because unless the electric school bus is traveling on roadways closed to other traffic and far away from developed areas, it is fair to say that children riding any school bus will be exposed to ambient air in road traffic conditions. This includes a mix of transportation emissions – gasoline, natural gas, propane, diesel as well as stationary and industrial emissions, including emissions created from electric power generating plants.

B. The Plan fails to consider the latest science with regards to health impacts of new generation of advanced diesel engines, fuels, and technology.

The Health Effects Institute (HEI) completed the most comprehensive study of emissions performance and health impacts from new technology diesel vehicles yet is not used to inform the statements or conclusions or cited anywhere in the Plan. This omission substantially biases the Plan findings and discussion relative to the impacts of diesel technology and dramatically underscores diesel technology’s importance in achieving the Plan objectives.

In HEI’s 2015 [Advanced Collaborative Emissions Study \(ACES\)](#) a joint project of USEPA, CARB and Industry, findings were noted as follows.

“The main findings of emissions and health testing of new-technology heavy-duty diesel engines capable of meeting US 2007/2010 and EURO VI/6 diesel emissions standards

were that the results demonstrated the dramatic improvements in emissions and the absence of any significant health effects (especially cancer). ACES was the most comprehensive examination done to date of engines meeting the US 2007 and 2010 on-road standards. It found that the overall toxicity of exhaust from modern diesel engines is significantly decreased compared with the toxicity of emissions from traditional-technology diesel engines.

In sum, the ACES results demonstrate the effectiveness of modern aftertreatment technologies used in the modern diesel engines: they greatly reduce the emissions of PM, NO_x, and NO₂, and the levels of other toxic components of NTDE, when tested in the laboratory using FTP and more stringent testing cycles.

After a lifetime of exposure, NTDE does not produce tumors in rats, unlike TDE. Thus, the ACES results demonstrate the effectiveness of DPFs, not only in greatly diminishing the amount of PM from new-technology engines, but also in reducing the toxicity of NTDE significantly as compared with TDE. The ambient levels of PM have gone down, especially in areas where aggressive approaches to reducing diesel emissions have been enforced, such as the Los Angeles basin. Thus, the regulations in the United States to control and reduce diesel engine emissions — and similar efforts in other industrialized countries — are already producing likely public health benefits, and this trend can be projected to continue as fleets change over and as refinements further enhance engine and aftertreatment technologies.

C. The Plan Fails to Consider Current Science and Studies with Regard to Biodiesel and Renewable Fuel Impacts on Emissions.

The Plan bases assumptions regarding renewable fuels on 15-year-old studies that are based on now 22-year-old vehicles. For example, the Plan cites a 2007 study in estimating emissions from use of renewable fuels: *Tang, Shida. Unregulated Emissions from a Heavy-Duty Diesel Engine with Various Fuels and Emission Control Systems. Environmental Science and Technology. 2007. 41:5037-5043.*

Throughout this work, it explores emissions control systems and fuel types that are no longer commercially available or only for very niche applications.

Substantially more recent technology studies have been completed and should form be included in formulation of the plan. [Low Emission Diesel \(LED\) Study: Biodiesel and Renewable Diesel Emissions in Legacy and New Technology Diesel Engines - Final Report \(ca.gov\).](#)

Diesel engines have been fundamentally transformed over the last 22 years. The use of biodiesel and renewable diesel fuels offers significant opportunity to decarbonize large sectors of the NY economy more rapidly than other strategies given their cost, complexity and lead time.

III. The Plan Fails to Fairly Evaluate and Consider All Options for Decarbonization, And Consistently Supposes and Assumes That Electrification Is the Only Climate Solution Strategy.

Given the broad scope of the plan and the many sectors involved, meeting greenhouse gas reduction and climate change goals can reasonably be expected to be accomplished through a variety of different strategies and approaches.

Yet the Plan seems to transpose the goal of reducing GHG emissions with one strategy: electrification. While electrification will undoubtedly play a major role in some sectors such as personal vehicles, it's future potential in other sectors like heavy duty trucking and construction are still very much in the formative phases, with virtually no commercial market at scale.

For example, the Plan (p.63) notes that

“Electrification of heavy-duty farm equipment and construction vehicles, which are typically diesel-powered, will protect the health of farm and construction workers and reduce emissions (and noise) in rural and urban areas where that are often in close proximity to residents and pedestrians.”

While this statement may be true on a very empirical level, the statement and the Plan misleads readers that electrification is in fact an option or a preferred option for these sectors and presupposes the benefits from it, without any justification. It assumes that such transitions are technologically feasible or possible based on current technology and industry trends.

IV. Achieving timely and effective GHG emissions reductions for Disadvantaged Communities and the Entire State of New York is At Risk Due to Admonitions from CJWG regarding consideration of continued use of fossil fuels.

Development of these policies would need to be mindful of the CJWG's admonition to avoid fuel policies that extend reliance on fossil fuel infrastructure or allow emissions from fuel combustion to continue to disproportionately impact Disadvantaged Communities (Page 96).

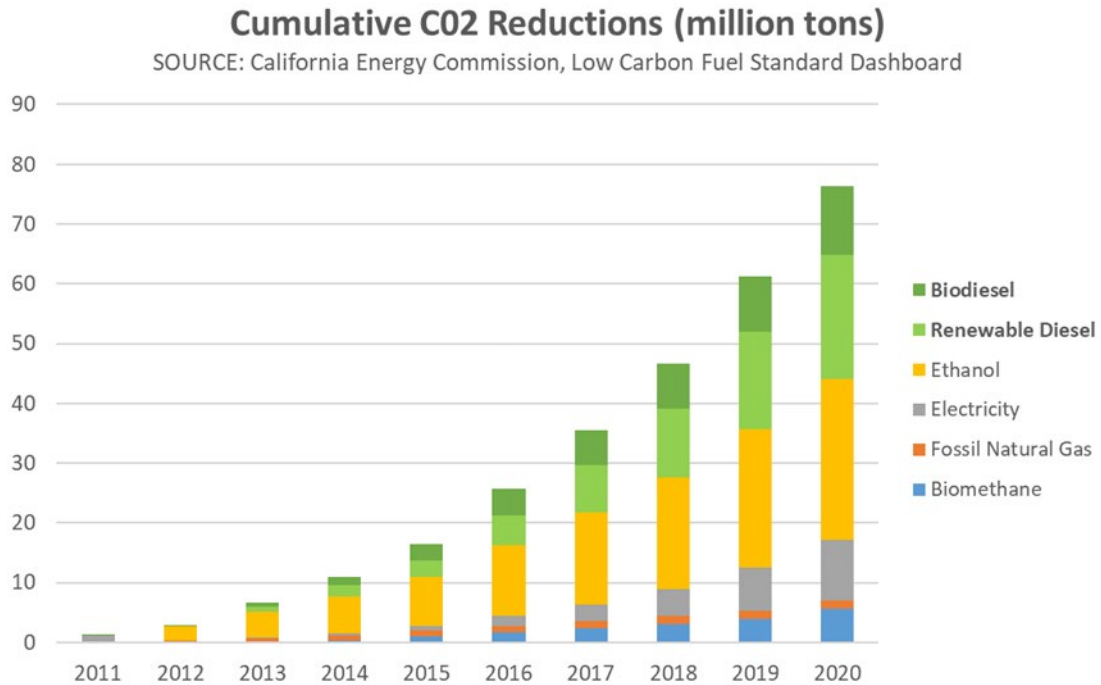
Comment: The Plan makes a proper finding (page 97) that “a large portion of vehicles on the road are expected to still use internal combustion engines in 2030, particularly in the MHD vehicle classes, one path to achieving 2030 emissions reduction targets would include strategies to make limited use of renewable diesel and other lower-carbon fuels to replace diesel in existing internal combustion engine vehicles until the transition to zero emission vehicles is complete. Policies like a clean fuel standard would be designed to displace fossil fuels with fuels and other energy carriers with lower emissions of GHGs and some co-pollutants, including green hydrogen and advanced biofuels, while also supporting electrification.

While consideration of CJWG's perspective is evident throughout the Plan, the Plan should not sacrifice near-term progress in both clean air and greenhouse gas mitigation for what in our view is a misplaced perspective that appears to be that “only electrification will solve the problems identified by CJWG and Disadvantaged communities.” Ultimately the entire state of New York will be disadvantaged if viable, affordable near-term GHG reduction options that don't fit the “electrification only” mold are not fully maximized.

Options for the very large fleet of internal combustion engines and vehicles and equipment and the fuels that they consume, not the incremental additions of electric vehicles, will largely determine the state's success in reducing emissions and progress toward the Plan objectives. Here, accelerating the turnover from the oldest technology ICE vehicles now in some sectors and the expanded use of both

biodiesel and renewable diesel fuel will deliver important progress well in advance of any meaningful scale of electrification or other ZEV approaches.

For example, In California, the state with the most progressive and advanced policies regarding GHG reductions, in 2021, more GHG reductions were realized from the use biofuels than from electrification strategies.



California 2020 LCFS Benefits: > 4 X GHG reduction comes from biobased diesel fuels than EVs

Biobased Diesel Fuel = 43% of GHG Reduction; EV Cars, Trucks & Buses = 10% of GHG Reduction

The Plan Notes that ...” Development of these policies would need to be mindful of the CJWG’s admonition to avoid fuel policies that extend reliance on fossil fuel infrastructure or allow emissions from fuel combustion to continue to disproportionately impact Disadvantaged Communities. Another path to achieving 2030 emissions reduction targets requires accelerated ZEV adoption and early retirement of internal combustion vehicles. Additional incentives would be required to achieve these outcomes.” (Page 96)

Comment: The Plan should evaluate options for incentive approaches that upgrade the existing, oldest, and hardest to decarbonize technologies and equipment to the newest generation of technology and the use of renewable biodiesel fuels as compared to available ZEV options.

V. Comments on various Aspects of the Plan

DTF offers the following comments on various aspects of the plan, noted to corresponding page numbers in the Draft Scoping Plan.

Page 104 : Adoption of Zero-Emission Trucks, Buses, and Non- Road Equipment

“Converting New York’s trucks, buses, and non-road equipment (including construction and farm equipment) to zero-emissions technologies plays a dual role of both reducing GHG emissions from a Chapter 11. Transportation 105 major source and reducing local air pollution from one of the most significant sources of poor air quality and adverse health impacts. Trucks and buses and non-road equipment are just starting to transition from diesel fuel to electricity as more options become available, but electric trucks, buses, and equipment are still much more expensive than their diesel counterparts. The transition to ZEVs for this subsector will entail a mix of battery electric and hydrogen fuel cell vehicles, which are just beginning to emerge into the market. Achieving the aggressive transition in this market will require a mix of regulations, incentives (which will require identifying new sources of funding), and removal of market barriers and depends on industry greatly accelerating the expansion of production capacity for these vehicles. Incentives for EVs and charging stations are expected to be needed primarily over the next 10 to 15 years, as the market for ZEVs reaches maturity. Incentives for hydrogen fuel cell vehicles may be needed for longer, as they are expected to take longer to enter the market in significant quantities.

Diesel trucks and port equipment are one of the largest sources of local air pollution in Disadvantaged Communities. Although they comprise only a small portion of total vehicles in the State, diesel trucks and buses are responsible for 30% of total PM and NOX emissions from mobile sources. Replacing diesel trucks and port equipment with ZEV trucks and equipment would have a substantial impact on improving air quality statewide, especially in Disadvantaged Communities.

The CJWG enthusiastically encourages a rapid transition to ZEVs, especially for MHD vehicles. Consistent with CJWG input, this Plan prioritizes MHD ZEV incentives in air pollution-overburdened communities for vehicles such as port equipment, refuse trucks, local delivery vehicles, construction equipment, and both transit and school buses and an accelerated transition of the State’s fleet vehicles to ZEVs.”

Comment: as noted previously, faster emissions reductions and larger scale GHG reductions may be possible through modernizing and upgrading the existing fleet to the newest generation of advanced diesel technology that achieves near zero emissions and the more expansive use of renewable biodiesel fuels in all vehicles and equipment, both new and existing. Failure to more seriously consider and adopt these options as part of the plan runs the risk of delaying clean air and climate benefits. The transition to ZEVs is wholly dependent on availability of fueling infrastructure, suitable vehicle availability, customer demand and funding.

T12. Lower Carbon Renewable Fuels (Page 118): “The strategies described above will reduce the State’s reliance on fossil fuels for transportation as expeditiously as possible. For harder to electrify vehicles and equipment, the scenarios identified for meeting the Climate Act GHG emission reduction requirements rely, in part, on the increased use of lower carbon renewable fuels, including renewable diesel, renewable jet fuel, and/or green hydrogen. Given the service life of current vehicles and equipment under the most aggressive scenarios identified for transitioning to zero-emission technologies, fossil fuels are expected to constitute most of the fuel mix until the mid- or late-2030s. Substituting sustainable renewable fuels for a portion of this remaining fossil fuel combustion will reduce GHGs and other emissions.

The CJWG opposed policies supporting renewable fuels on the grounds that they still release harmful air pollutants, particularly in areas overburdened with diesel emissions, and that the State should focus

instead on expeditiously electrifying vehicles and the use of hydrogen fuel cells. Because this Plan expedites electrification as much as reasonably feasible, any GHG emission reductions from the use of renewable fuels are in addition to the emission reductions from accelerated electrification. Although the CJWG is correct that renewable fuels still emit air pollutants, some renewable fuels have lower emissions of PM.

Components of the Strategy • Clean Fuel Standard: A clean fuel standard could facilitate decarbonization of transportation fuels by requiring the providers of fossil fuels to reduce the carbon content of the fuels they provide by either blending lower carbon fuels or by acquiring credits from providers of lowercarbon fuels into the stream of commerce. Since electricity in the State is an increasingly lowcarbon fuel, a clean fuel standard will support decarbonization as petroleum fuel providers finance the use of electricity for transportation use. DEC could structure the clean fuel standard to reward public transportation providers statewide for emission reductions from electrified transit, providing them with resources to accelerate zero-emission rollingstock and infrastructure enhancements. Legislation could be structured to allow aviation fuels to voluntarily opt into the program, reducing emissions in this difficult-to-electrify subsector. Decisions regarding the carbon intensity of alternative fuels will provide market signals that promote the use of those fuels that have a lower fuel cycle carbon intensity.”

Comment: As noted previously, CJWG’s opposition to support for renewable fuel policy will be to the detriment of the entire state and clean air and climate progress in the near term. As noted previously in California, use of biodiesel and renewable diesel fuel have reduced CO2 emissions by 4 times the number of electric vehicles. Ignoring California’s experience with renewable biodiesel fuels will delay a low cost and available option to aide in achieving the plan’s goals and bringing the promised benefits faster to New Yorkers including those in Disadvantaged Communities.

“Assess and then support RD&D needs with respect to the potential for some use of low-carbon fuels in buildings (such as RNG, green hydrogen, wood, and/or high-percentage biodiesel blends) and bioenergy with carbon capture and storage for harder-to-electrify buildings, which may include campuses with district energy systems.” (p.143)

Comment: The Plan properly Invests in Support RD&D for low-carbon fuels that will be a key to achieving near-term GHG reductions.

Power Generation (P.154) Transitioning to zero-emissions will require addressing emissions from both baseload and peaking facilities. “To facilitate and enable retirement of fossil-fuel fired facilities, New York needs to: continue and accelerate its deployment of new renewable generators (e.g., wind, solar, hydro); maintain the fleet of renewable generators it has now; upgrade its transmission and distribution system to allow for the maximum use of the renewable generators (i.e., get the power where it needs to go); and invest in energy storage technologies. As described in more detail below as the components of strategy E2, New York should also have a detailed process in place to ensure that the fossil fuel generators are gradually and safely retired, while still maintaining reliability. Studies such as the NYISO Reliability Needs Assessment (RNA) and overall Comprehensive Reliability Plan will inform this process to ensure consumer energy reliability while transitioning away from fossil fuel electricity generation. If a reliability needs or risk is identified, emissions-free solutions should be fully explored,

such as storage, transmission upgrades or construction, energy efficiency, demand response, or another zero-emissions resource. Only after these alternatives are fully analyzed and determined to not be able to reasonably solve the identified grid reliability need shall new or repowered fossil fuel-fired generation facilities be considered. These should only be considered if the NYISO and local transmission operators confirm that the fossil fuel fired facility is required to maintain system reliability and that need cannot reasonably be met with the alternatives listed above. Even in those cases, the fossil-fueled generation facility should assist in meeting the goals of the Climate Act. That is, its deployment should result in a greater integration of zero-emissions resources; a reduction in fossil fuel generation; a significant reduction of GHG and co-pollutant emissions; a benefit to an environmental justice community; and a benefit to the electric system that addresses the identified reliability need or risk. Additionally, public and stakeholder input must be incorporated into the decisionmaking process and a thorough analysis of equity considerations, as mandated by the Climate Act, should be completed by DEC and/or other relevant State agency. The CJWG is supportive of strategies to facilitate retirement of fossil fuel fired generation facilities.”

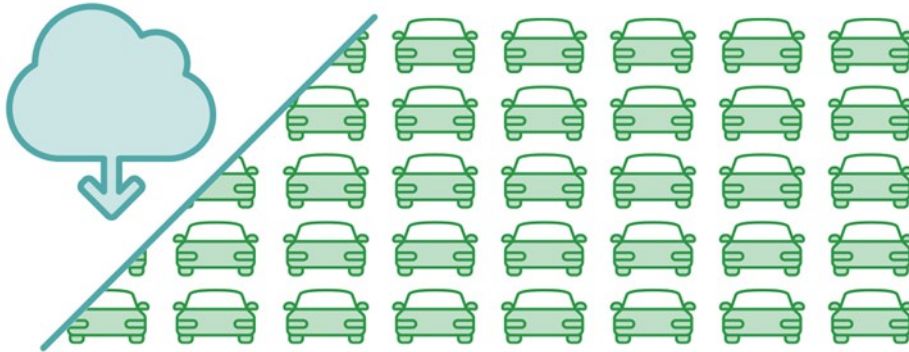
Comment: Back up emergency power systems including diesel and natural gas generators are a key part of ensuring resilience to critical functions and businesses in New York. The newest diesel generators can achieve near zero emissions utilizing similar technologies found in commercial trucks. As is the case in California, these generator units are being increasingly deployed as part of microgrid arrangements to provide reliable power when renewables are intermittent, and storage is depleted. These units can utilize low carbon renewable biodiesel fuels to reduce greenhouse gas and other emissions when operating.

Members of the Diesel Technology Forum

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New technology diesel trucks reduced **202 M tonnes of CO₂** emissions since 2007

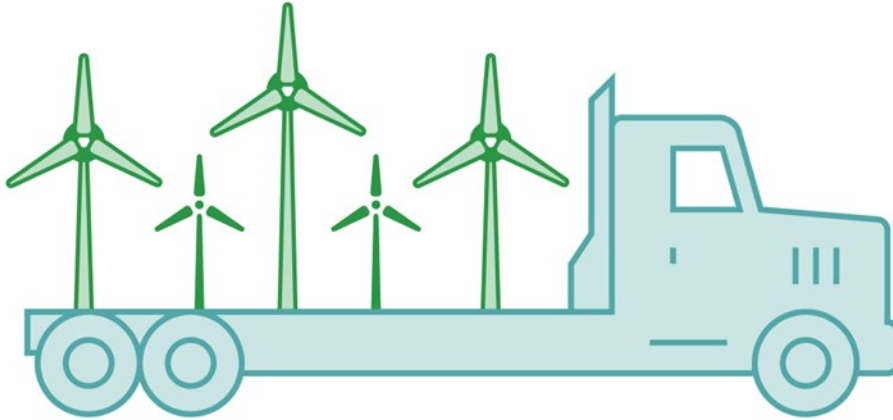


Equal to removing CO₂ emissions from **43M** passenger vehicles from the road for one year or making them **zero emission** electric vehicles



Source – AutoForecastSolutions, 2021

New technology diesel trucks reduced **202 M tonnes of CO₂** emissions since 2007



Equal to a wind farm with **42k turbines over 210k acres** (~5x the size of Washington D.C.)



Source - AutoForecastSolutions, 2021