

December 2, 2020

Re: Comments of EDF on New York State Multi-State Action Plan for Zero-Emission Trucks and Buses

Via Electronic Mail to MHDZEVPlan.Air@dec.ny.gov

I. INTRODUCTION

Environmental Defense Fund (EDF) is pleased to submit written comments to New York’s process to achieve targets set forth in the Northeast States for Coordinated Air Use Management (NESCAUM) Memorandum of Understanding (MOU), designed to accelerate zero-emission trucks and buses. Guided by science and economics, EDF seeks practical solutions to resolve environmental problems, and uses the power of markets to speed the transition to clean energy resources. Consistent with its organizational purpose, EDF is engaged in activities to facilitate cost-effective and efficient energy market designs that encourage investment to modernize the energy grid so that it can support the increased integration of renewable energy resources and strategic deployment of zero-emission transportation. EDF works collaboratively with market participants and other stakeholders to advance progress in these areas.

EDF applauds New York for signing the NESCAUM MOU. Transportation emissions from medium- and heavy-duty vehicles are one of the predominant sources of climate- and health-impacting emissions nationwide – the need for action to transform this sector is made even more abundantly clear by a new EPA report indicating that over 500,000 diesel pickup trucks have installed illegal technology to disable emissions controls, “allowing excess emissions equivalent to 9 million extra trucks on the road.”¹ This transition is no less necessary in New York. Despite making up less than 5% of vehicles on the road in New York, medium- and heavy-duty vehicles are responsible for nearly 20% of climate-worsening carbon dioxide emissions.²

¹ Coral Davenport, *Illegal Tampering by Diesel Pickup Owners is Worsening Pollution, E.P.A. Says*, New York Times (Nov. 25, 2020), <https://www.nytimes.com/2020/11/25/climate/diesel-trucks-air-pollution.html>.

² Synapse Energy Economics, Inc., *Transforming Transportation in New York – Roadmaps to a Transportation Climate Target for 2035* at 2, Prepared on behalf of Sierra Club (Sep. 2019), <https://www.sierraclub.org/sites/www.sierraclub.org/files/blog/Transforming%20Transportation%20in%20New%20York.pdf>.

As well, the tailpipe emissions from medium- and heavy-duty vehicles are a public health menace that cause widespread harm in New York. Based on the Environmental Protection Agency’s 2014 National Emissions Inventory, diesel on-road and off-road vehicles account for 43% of nitrogen oxide (NOx) emissions in New York.³ NOx and particulate matter, as well as the ozone that NOx emissions heavily contribute to the formation of, result in a host of significant and harmful health impacts. This is particularly true in urban centers like New York City: though only accounting for 6% of all vehicle miles traveled, diesel emissions from trucks and buses “cause 170 deaths and 360 emergency visits in New York City each year.”⁴ And, in Buffalo, “asthma rates are 2.5 times the statewide rate and 4.5 times the statewide rate excluding New York City, and the New York State Department of Health has found that exposure to frequent truck traffic significantly increases the risk of childhood asthma in Buffalo.”⁵

Moreover, as has been well documented across other parts of the country, communities of color and low-income communities bear the biggest brunt of emissions across the state⁶ – and the associated health impacts – making decisive, swift action even more imperative in these communities. The COVID-19 epidemic has further heightened the need to bring swift relief to communities; there is increasing evidence that COVID-19 is exacerbated in individuals with pre-existing health conditions, including respiratory and other illnesses that result from living in close proximity to major sources of transportation emissions. The importance of ensuring that policies start to minimize similar risks in the future and build back a stronger, healthier economy cannot be overstated.

³ New York State Department of Environmental Conservation, *Multi-State Medium and Heavy Duty ZEV MOU and Action Plan*, Slide 9 (Oct. 21, 2020), https://www.dec.ny.gov/docs/air_pdf/mhdzevmou102120.pdf.

⁴ Earthjustice, *et al.*, Comments on New York State Department of Environmental Conservation Proposed Part 248 Use of Ultra Low Sulfur Diesel Fuel and Best Available Retrofit Technology for Heavy Duty Vehicles, and Part 200 General Provisions at 9 (May 15, 2020), https://earthjustice.org/sites/default/files/files/earthjusticecomments_dec_05.15.2020.pdf at 9 (citing Iyad Kheirbek et al., *The Contribution of Motor Vehicle Emissions to Ambient Fine Particulate Matter Public Health Impacts in New York City: A Health Burden Assessment*, *Env’tl Health* (2016), <https://ehjournal.biomedcentral.com/track/pdf/10.1186/s12940-016-0172-6>).

⁵ *Id.* (citing N.Y. State Dep’t of Health, *Childhood Asthma and Environmental Risk Factors in the City of Buffalo, NY* (Jan. 2005), https://www.health.ny.gov/environmental/investigations/breathe_easy_erie/).

⁶ Union of Concerned Scientists, *Inequitable Exposure to Air Pollution from Vehicles in New York State – Who Bears the Burden?*, <https://www.ucsusa.org/sites/default/files/attach/2019/06/Inequitable-Exposure-to-Vehicle-Pollution-NY.pdf>

While setting a target to transform the truck and bus sector is a laudable initiative, New York will need to adopt a suite of policies that are well-designed to achieve that target. We append a series of analytical reports that underpin these proposals and highlight general considerations in these comments. The key points are as follows:

- The threat of climate change and existing harm to human health requires swift, comprehensive action. The current timeframe of 2050 for 100% of new vehicles to be zero-emission vehicles is insufficient. New York should instead adopt a 2040 timeline for achieving the goal of 100% of new trucks to be zero-emission – an eminently feasible goal.
- A suite of solutions is needed to ensure a favorable total cost of electrification relative to diesel alternatives.
- In order to alleviate range anxiety and facilitate the successful integration of increasing number of vehicles, infrastructure deployment must be apace and strategically located. As well, robust standards must be put in place to ensure these charging stations provide maximum benefit.
- Policies must be equitably designed and must be designed with the participation of community groups.
- Emission and sales standards should be as robust as possible, continuing New York’s role as a state that adopts California’s more stringent standards under Section 177 of the Clean Air Act and integrating that state’s Advanced Clean Truck regulation.
- New York must ensure that it “builds back better” by harnessing job growth potential in the zero-emission transportation sector.

II. POLICY RECOMMENDATIONS

A more ambitious long-term target is needed. Under the current MOU, New York commits to transitioning 100% of truck and bus sales to zero emission by 2050. Simply put, this is not ambitious enough, given the state’s statutory requirement that emissions drop to no higher than 15% of 1990 levels *by 2050*. There are sectors of the economy where the technologies to decarbonize do not yet exist, but medium- and heavy-duty vehicles are not one of them, and New York’s 2050 goal will be out of reach if internal combustion engine vehicles burning diesel

remain on the roads in significant numbers in 2050. Nor do market trends indicate that the State needs to wait until 2050 to stop allowing sales of trucks and buses that emit pollution. Instead, New York should commit to a 2040 timeframe, at which point all new truck and bus sales must be zero-emission.

Two commonly held arguments against this ambition are that vehicles of all classes won't be available on this timeframe, and that upfront cost will still be too prohibitive to make a transition to zero-emission vehicles attractive. Both can be dispelled. First, technology is evolving at a rapid pace. Daimler, the parent company of Freightliner Trucks, Western Star, Thomas Built trucks, and other brands – which encompass a lot of vehicle types and use cases – has ambitions to build a completely carbon-neutral fleet by 2039.⁷ As well, Volvo Group, the parent company of Mack Truck, is aiming to have 100% of its 2040 sales come from fossil-fuel free vehicles.⁸

Second, while upfront cost is admittedly still a barrier (and as discussed in the next section, requires mitigation), even while lower operating and maintenance costs make zero-emission vehicles a more attractive option over time, cost parity will be achieved much more quickly than the currently proposed 2050 timeframe. Short-haul vehicles typically involved in the local and regional distribution of goods are expected to receive total cost of ownership (TCO) parity with diesel powered vehicles by 2024.⁹ As well, zero-emission vehicles – likely to be hydrogen – are expected to demonstrate TCO parity without incentives by around 2030.¹⁰ As component costs continue to decline, the case for purchase of vehicles will only strengthen leading up to 2040.

Policies need to bring down the total cost of electrification. Currently, the upfront cost of zero-emission trucks and buses present a significant challenge – the zero-emission alternative to a conventional vehicle can cost hundreds of thousands of dollars more upfront.¹¹ Of course, this

⁷ Daimler, *Ambition 2039: We are massively investing in the transformation*, <https://www.daimler.com/innovation/diesel/facts/fact-10.html>

⁸ Volvo Group, *Shaping the Future of Transportation*, <https://www.volvogroup.com/en-en/future-of-transportation.html>

⁹ California Air Resources Board, *Advanced Clean Trucks Total Cost of Ownership Discussion Document – Preliminary Draft for Comment* at 26 (Feb. 2019), <https://ww3.arb.ca.gov/regact/2019/act2019/apph.pdf>.

¹⁰ ICF, *Comparison of Medium- and Heavy-Duty Technologies in California – Executive Summary* (Dec. 2019) at 4.

¹¹ See, e.g., California Air Resources Board, *Advanced Clean Trucks Total Cost of Ownership Discussion Document – Preliminary Draft for Comment* at 9 (Feb. 2019), <https://ww3.arb.ca.gov/regact/2019/act2019/apph.pdf>.

presents a barrier for even large fleets that are inclined to take that financial risk, but is even more problematic for smaller fleets; given that smaller fleets are often more prevalent,¹² there is a need to ensure that these smaller companies don't get left behind. To that end, mechanisms must be put in place that lower the upfront cost. This can be in form of upfront rebates – preferable, as it avoids even a temporary outlay of more capital than necessary – as well as mail-in rebates, and tax credits.

As well, the total cost of electrification must be favorable relative to diesel and gasoline alternatives. Policies designed to address and mitigate various aspects of the total cost of electrification, including factors such as the higher upfront cost of ZEVs and installation and cost of infrastructure, soft costs related to things like permitting and approvals, and real or perceived risks and uncertainties are critical to achieving vehicle deployment commensurate with the need to address climate change meaningfully as soon as possible.

A significant component of this will be embedded in electric prices, which should be structured to encourage fleets to shift in demand away from peak usage times and to coincide with availability of renewables, should result in reasonable bills in the context of total cost of ownership, and should strive insofar as possible to unlock cost savings compared to fueling with gasoline or diesel.¹³ Compared to passenger vehicles, trucks and buses are a tremendously diverse segment that varies by attributes such as vehicle type, duty cycle, fleet size, business model, power needs, and experience with complex electric pricing. Electrifying most or all of these vehicles will require a variety of price structures that match these diverse characteristics. It is critical to recognize that achieving the level and speed of transportation electrification needed to reduce climate and local air pollution will not be as easy as merely swapping motors. Core rate design principles of cost containment (system and environmental costs should be contained by minimizing new demand spikes that increase costs for all ratepayers) and bill manageability (demand-based rates that are reflective of the customer's highest rate of electricity usage that

¹² *Reply Comments of Environmental Defense Fund on Transportation Electrification Framework Staff Proposal*, Order Instituting Rulemaking to Continue the Development of Rates and Infrastructure for Vehicle Electrification, R. 18-12-006 at 6 (Apr. 27, 2020), <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M334/K603/334603016.PDF>.

¹³ Victor A. Rojas, *et al.*, *Financing the Transition: Unlocking Capital to Electrify Truck and Bus Fleets*, Environmental Defense Fund (Nov. 2020), https://www.edf.org/sites/default/files/documents/EDF_Financing_The_Transition.pdf.

occurs while the distribution grid is being heavily used) will make fleet owners' "fuel" costs more understandable, predictable and transparent while ensuring that grid investments are right-sized and that environmental benefits can be maximized.¹⁴

Infrastructure needs must be carefully assessed. Another significant potential barrier is range anxiety, which can be alleviated via strategic deployment of infrastructure to support additional electric vehicles – potential EV drivers need to be assured that they can travel from point A to point B and fleet operators that they can carry out their day to day operations. Of course, the cost of this infrastructure must be factored in - this will necessarily involve working with, among other entities, state utilities and regulatory commissions to offer programs to deploy infrastructure that can offer assistance in defraying the upfront cost of charging stations via ratepayer-funded programs, as well as trying to leverage additional private capital. There is also a need to recognize that the charging needs and patterns of light-duty and medium-/heavy-duty vehicles will be vastly different relative to each other (and that there will likely even be differences between medium- and heavy-duty vehicle types and use cases); any infrastructure that is geared towards accommodating trucks and buses needs to account for this difference, as well as for the fact that there are many divergent use cases for these vehicles that infrastructure, as well as rate design, will need to accommodate.

Additionally, it is important to establish rules that can enable and streamline the installation of charging stations and behind- and in-front-of the meter infrastructure as a way to support a greater promulgation of zero-emission vehicles. This should be paired with load impact studies to ensure, to the extent possible, that infrastructure placement doesn't add significant load to strained parts of the grid – thus helping to avoid some costly grid build-out.

As well, careful infrastructure planning and rules can also aid in the greater promulgation of more advanced vehicle services, such as vehicle-to-grid and ancillary services. Streamlined interconnection standards will only reduce charging station installation timelines and more quickly enhance the viability of bidirectional charging. However, facilitating capabilities such as bidirectional charging will also require the establishment of PSC rules and utility programs that

¹⁴ Elizabeth Stein, *et al.*, *Smart Charging Principles for Charging Electric Trucks and Buses: Cost Containment and Bill Manageability*, Environmental Defense Fund (Oct. 2020), <http://blogs.edf.org/energyexchange/files/2020/10/ChargingFactSheet.pdf>.

allow electric vehicle grid services to bid into the wholesale market, which will require continuing to establish rules and market signals sufficient to allow managed charging and vehicle-to-grid to compete on an equal footing with traditional grid solutions.

To avoid a situation where a charging station becomes a stranded asset, there is a need to ensure that communication standards facilitate interoperability and reduce the risk of stranded assets and that cybersecurity on stations are effective in preventing unintentional release of sensitive customer information. To that end, an open charge point protocol (OCPP) that allows other companies to take over a charging station and standardization of standards that allow participation in demand response will be critical. As well there is a need to adopt an industry-supported standard related to communication between the vehicle and the charging station that facilitates cybersecurity and helps to successfully achieve effective vehicle-grid integration.

Policies must be equitably designed. Disadvantaged communities that suffer a disproportionate impact from air pollution need to be prioritized as policies to achieve the state's goals are built. This prioritization will need to be directly informed by data that can reliably show where pollution burden is highest, how that correlates to truck/bus facilities and vehicle traffic, and what the demographics of the populations in such area are; together, these data will give state leaders a clear indication of exactly where early deployment of zero-emission vehicles and associated infrastructure can help communities most. This targeting will require both ensuring that community-based organizations and members of those communities have a seat at the table at the outset. In this way, policymakers can ensure the needs and recommendations of these communities are integrated.

As well, it is critical to ensure that policy solutions, once formulated, are well set up to address inequities. It is not enough for these groups to be provided with accommodations after a policy is laid out; rather, these communities need to be at the table at the start, and their needs and recommendations must be prioritized.

Emissions and sales standards should continue to be as stringent as possible, continuing to adopt California standards like the Advanced Clean Truck regulation.

A key ingredient of the transition to less-polluting and zero-emission vehicles will be adoption of stringent emissions and sales standards. Although progress in this direction is underway in New

York, California provides a model for doing so consistently on an economy-wide basis. Continuing to mirror California’s standards for greenhouse gas and criteria pollutants, including the recent update to the omnibus low NOx rule,¹⁵ given their enhanced stringency relative to federal law, will be an important facilitator of cleaning the transportation sector. As well, New York would do well to consider adopting California’s transit bus¹⁶ and Advanced Clean Truck (ACT)¹⁷ rules in order to set a series of ramping targets as a way to ensure steady progress towards a total zero-emission transportation sector; government fleets should be included as well. In order to ensure that manufacturers and fleets will have a market and supply, respectively, New York should also consider whether adoption of a fleet rule, similar to a planned California regulation to require a specified percentage of fleet vehicles be zero-emission, would be desirable.¹⁸ Government fleets can and should lead by example, continuing to ramp up their zero-emission vehicle population – but to ensure they do so, rules requiring full transformation would add predictability and market certainty that may currently be missing in New York. For example, although New York City Transit has stated an intention of transitioning to zero-emission vehicles by 2040 as well as a goal for the biggest upstate transit agencies to move to 100% zero-emission vehicles by 2035,¹⁹ New York may wish to consider an across-the-board approach such as that embraced by California’s transit bus rule, which requires a state-wide shift to zero-emission vehicles.²⁰

The path forward on transportation must ensure that New York “builds back better”. As discussed in the introduction, COVID-19 has exacerbated the impact of underlying health conditions with a well-established link to air pollution, in addition to creating obvious economic harm. Transitioning to zero-emission vehicles can be a “win-win,” by increasing societal

¹⁵ California Air Resources Board, *Facts about the Low NOx Heavy-Duty Omnibus Regulation*, https://ww2.arb.ca.gov/sites/default/files/classic/msprog/hdlownox/files/HD_NOx_Omnibus_Fact_Sheet.pdf.

¹⁶ California Air Resources Board, *Innovative Clean Transit (ICT) Regulation Fact Sheet*, <https://ww2.arb.ca.gov/resources/fact-sheets/innovative-clean-transit-ict-regulation-fact-sheet>.

¹⁷ California Air Resources Board, *Advanced Clean Trucks Fact Sheet*, <https://ww2.arb.ca.gov/resources/fact-sheets/advanced-clean-trucks-fact-sheet>.

¹⁸ California Air Resources Board, *Advanced Clean Fleets*, <https://ww2.arb.ca.gov/our-work/programs/advanced-clean-fleets/about>.

¹⁹ New York State, *2020 State of the State Proposals*, <https://www.governor.ny.gov/2020-state-state-address/2020-state-state-proposals>.

²⁰ California Air Resources Board, *Innovative Clean Transit (ICT) Regulation Fact Sheet*, <https://ww2.arb.ca.gov/resources/fact-sheets/innovative-clean-transit-ict-regulation-fact-sheet>.

benefits through improved public health while simultaneously driving economic benefits by creating jobs in zero-emission vehicle manufacturing and infrastructure manufacturing and installation. Paired with job training programs, with a particular focus in disadvantaged/frontline communities, the potential for job growth and uptake can be maximized in this sector.

Predetermined metrics (e.g. target job growth) should be put in place that can put the state on a path of demonstrated success. Along with interim targets, these metrics can indicate where important course corrections need to be made in order to stay on track to meeting long-term goals.

Respectfully submitted,



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Appendix A: List of Attachments

1. International Council on Clean Transportation, Environmental Defense Fund, and Propulsion Québec, *Race to Zero – How manufacturers are positioned for zero emission commercial trucks and buses in North America* (Oct. 2020).
2. Environmental Defense Fund, *Smart Pricing Principles for Charging Electric Trucks and Buses – Cost Containment and Bill Manageability* (Oct. 2020).
3. Environmental Defense Fund, M.J. Bradley & Associates, and Vivid Economics, *Financing the Transition – Unlocking Capital to Electrify Truck and Bus Fleets* (Nov. 2020).
4. Environmental Defense Fund, *Accelerating to 100% Clean: Zero Emitting Vehicles Save Lives, Advance Justice, Create Jobs* (Aug. 27, 2020).