



**Via Email**

March 10, 2021

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Division of Air Resources  
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**Re: Comments to DEC in Support of Adopting California's Truck Emission Standards**

To Whom It May Concern:

Transportation is the largest emitter of greenhouse gas emissions in the United States and in New York. On-road vehicles, especially medium- and heavy-duty vehicles (MHDVs), are also a significant source of toxic pollutants that are harmful to human health. The transportation sector's detrimental impact on climate, air quality, and health is an urgent crisis that must be addressed immediately. The Empire State must therefore act quickly to create concrete, long-term mechanisms to accelerate transportation electrification. In particular, New York must focus on policies that support zero-emission MHDVs.

Addressing the MHDV sector will not only reduce the state's carbon footprint and improve air quality but will also ensure equitable access to clean transportation and improve health in communities historically overburdened by diesel pollution. For these reasons, the undersigned groups strongly encourage the New York State Department of Environmental Conservation (DEC) to begin a rulemaking process to adopt California's Advanced Clean Trucks (ACT) and Heavy-Duty Omnibus (HDO) regulations. These standards will set New York on a path to a clean and equitable transportation system.

## Transitioning to Zero-Emission MHDVs is a Climate and Public Health Imperative.

### Emissions from Trucks and Buses are Rising

In New York State, transportation accounts for 36% of statewide GHG emissions, more than any other end-use sector.<sup>1</sup> While emissions from the electric sector have been on a consistent downward trajectory—total GHG emissions from electricity generation are less than half what they were in 1990—emissions from transportation are trending upwards.<sup>2</sup> Total transportation sector GHG emissions have increased by 25% since 1990, “by far” the greatest increase of all in-state energy-related emissions sources.<sup>3</sup> In fact, the transportation sector represents the only major fuel combustion sector that has seen an increase in total GHG emissions over the last three decades.<sup>4</sup>

In 2019, New York State adopted one of the most ambitious climate statutes in the United States—the Climate Leadership and Community Protection Act (CLCPA). The CLCPA sets a goal for New York to fully decarbonize the economy by 2050.<sup>5</sup> It also establishes a binding economy-wide emissions limit, requiring an 85% reduction in greenhouse gas (GHG) emissions by midcentury, with an interim target of a 40% reduction in GHG emissions by the end of the decade.<sup>6</sup> Under the CLCPA, DEC is responsible for “ensur[ing] compliance with the statewide emissions reduction limits” by promulgating regulations to “[e]nsure” aggregate GHG emissions “will not exceed the statewide [GHG] emissions limits”<sup>7</sup> including “measures to reduce emissions from... internal combustion vehicles that burn gasoline or diesel fuel.”<sup>8</sup> Moreover, state actions and investments to mitigate emissions must “prioritize the safety and health of disadvantaged communities.”<sup>9</sup>

A year after passing the CLCPA, New York joined 15 other states and the District of Columbia to sign a zero-emission MHDV memorandum of understanding (MOU), committing to 100% zero-emission truck and bus sales by 2050. The MOU declares that “electrification of the transportation sector is essential to achieve” GHG emission reduction targets and to improve air quality.<sup>10</sup> The MOU affirms New York State’s commitment to zero-out emissions from all MHDV sales by 2050 and establishes an interim goal that at least 30% of all new MHDV sales be zero-emission by 2030.<sup>11</sup>

Various projections confirm the need for deep decarbonization across all sectors to meet mid-century zero-carbon targets. A New York State Energy Research and Development Authority (NYSERDA) study found that New York State will need to virtually eliminate GHG emissions from on-road vehicles to meet the CLCPA’s 2050 targets.<sup>12</sup>

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<sup>1</sup> New York State Energy Research & Development Agency, New York State Greenhouse Gas Inventory: 1990-2016 at S-12 (2019) (“NYSERDA GHG Inventory”).

<sup>2</sup> *Id.* at 7 tbl. 2, 19 tbl. 11.

<sup>3</sup> *Id.* at S-10, 19 tbl. 11.

<sup>4</sup> *Id.* at S-10 tbl. S-2.

<sup>5</sup> CLCPA § 1(4).

<sup>6</sup> N.Y. Env’tl. Conservation Law (“ECL”) § 75-0107(1).

<sup>7</sup> ECL § 75-0109(1), (2).

<sup>8</sup> *Id.* § 75-0109(2)(d).

<sup>9</sup> *Id.* § 1(7).

<sup>10</sup> Multi-State Medium- and Heavy-Duty Zero Emission Vehicle Memorandum of Understanding (“MOU”) at 2 (July 14, 2020).

<sup>11</sup> MOU at 3–4.

<sup>12</sup> See Energy & Environmental Economics, Pathways to Deep Decarbonization in New York State at 23 tbl. 2 (2020) (“E3 Analysis”). The E3 Analysis found that overall transportation sector GHG emissions must decrease by 86%-97% relative to 2016 levels to achieve the CLCPA’s binding 2050 emissions limit. Presumably, the analysis would find that additional transportation sector emissions reductions would be needed to meet the CLCPA’s net-zero goal.

A zero-emissions transportation sector is incompatible with continued reliance on fossil fuels. Decarbonizing the transportation sector at this scale is technologically feasible, but hinges on the “phase-out of internal combustion engine vehicles and replacement with electric drivetrains.”<sup>13</sup> Phasing out sales of new combustion vehicles must happen “almost immediately” to reach net-zero emissions by 2050.<sup>14</sup> This is due to the long useful lifetime of vehicles, which can range from two to four decades for MHDVs, and will impede turnover to ZEV fleets.<sup>15</sup> Today, nearly 10 million pre-2007 diesel engines are in use and 1 million are expected to be in 2030.<sup>16</sup> Policies targeting MHDV fleets must be implemented now to overcome the lag between new sales and existing vehicle stocks.

Given the expected lag, to reach net-zero or near-zero emissions by 2050, sales of new combustion MHDVs must be eliminated well before the 2050 target set by the MOU. Especially in light of potential challenges in decarbonizing aviation and other challenging sectors, New York must pursue a strategy to transition the *entire* stock of MHDVs to zero-emission by 2050. The NYSERDA study found that ZEVs must be “normalized” by 2030 – and nearly all new MHDV sales must be ZEVs by 2040.<sup>17</sup> Preliminary modeling conducted for New York State shows that, absent a MHDV ZEV sales mandate, only 7% of sales in the sector will be ZEVs in 2030, increasing to just 27% by 2050 – meaning a large majority of trucks and buses on New York’s roads would still burn fossil fuels in 2050, and fail to meet CLCPA targets.<sup>18</sup>

Forecasted increases in truck volumes underscores the urgent need for immediate and transformative policies like the ACT and HDO rules. Trucks are the fastest growing fuel users globally, and the same is true in the U.S. Already class 3-8 trucks, which represent only 4% of the on-road fleet in the U.S., account for 25% of all vehicle fuel use - consuming roughly 44 billion gallons of fuel in 2015.<sup>19</sup> While GHG emissions from gasoline-powered, mostly light-duty vehicles have shown a modest decline since 1990, this reduction is more than offset by the nearly 70% increase in emissions attributable to diesel-powered vehicles like trucks and buses.<sup>20</sup> The latest data show that the total vehicle miles traveled (VMT) from diesel-powered heavy-duty vehicles nearly doubled from 1990 to 2007, with most of that increase seen in the period since 2002.<sup>21</sup> Through 2050, freight trucks’ total VMT is projected to increase by 54%, which would result in a net increase in total emissions even assuming improvements in fuel efficiency.<sup>22</sup> In New York, trucks already account for 88% of all freight movement and truck tonnage is projected to increase 50% over the next two decades.<sup>23</sup>

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<sup>13</sup> Nat’l Academies of Sciences, Engineering, and Medicine, *Accelerating Decarbonization of the U.S. Energy System* at 48 (2021) (“NAS Decarbonization Report”).

<sup>14</sup> Jeffrey Rissman, Energy Innovation, *How to Reach U.S. Net Zero Emissions by 2050: Decarbonizing Transportation*, Forbes, Nov. 11, 2019, <https://www.forbes.com/sites/energyinnovation/2019/11/11/how-to-reach-us-net-zero-emissions-by-2050-decarbonizing-transportation/?sh=6b2a72772040>.

<sup>15</sup> *Id.*

<sup>16</sup> EPA, DERA Fourth Report to Congress (2019).

<sup>17</sup> E3 Analysis at 12 tbl. 1, 44–45.

<sup>18</sup> New York Climate Action Council, Meeting 8 at slide 18 (Feb. 26, 2021), <https://climate.ny.gov/-/media/CLCPA/Files/2021-01-26-CAC-Meeting-presentation.pdf> (presentation of preliminary NYSERDA of vehicle sales, stocks, and emissions).

<sup>19</sup> 21st Century Truck Partnership, Research Blueprint at 3 (2019), [https://www.energy.gov/sites/prod/files/2019/02/f59/21CTPResearchBlueprint2019\\_FINAL.pdf](https://www.energy.gov/sites/prod/files/2019/02/f59/21CTPResearchBlueprint2019_FINAL.pdf).

<sup>20</sup> *Id.*

<sup>21</sup> *Id.* at 17 tbl. 10.

<sup>22</sup> *Id.* at 3.

<sup>23</sup> New York State Dep’t of Transportation, New York State Freight Transportation Plan, Technical Mem. 5 at 28 and tbl. 6-1 (2017), [https://www.dot.ny.gov/content/delivery/Main-Projects/projects/P11618881-Home/P11618881-repository/Tech%20Memo%205\\_FINAL.pdf](https://www.dot.ny.gov/content/delivery/Main-Projects/projects/P11618881-Home/P11618881-repository/Tech%20Memo%205_FINAL.pdf).

Absent strong electrification mandates, emissions from trucks and buses can be expected to rise.

Considering these challenges, the only way to meet 2030 and 2050 emissions reduction targets is to pursue aggressive strategies to address MHDV emissions that have largely escaped state regulation. Modeling referenced earlier shows that, to have any chance of meeting mid-century decarbonization targets, we will need targeted policies that can bend the curve of MHDV emissions. By jumpstarting electrification in the MHDV sector, the ACT and HDO rules will accomplish just that.

### The Significant Public Health Impact of Vehicle Tailpipe Emissions

It is equally critical to curb air pollution from vehicle emissions, which is one of the main drivers of public health disparities. Air pollution is a major public health threat in New York State and across the globe. New research concludes that air pollution “is the leading environmental health risk factor globally.”<sup>24</sup> In particular, emissions from fossil fuel combustion have been found to be “the world’s most significant threat to children’s health” and are “major contributors to global inequality and environmental injustice.”<sup>25</sup> Transportation emissions are significant contributors to air pollution. After factoring in the environmental, climate, and health effects of transportation emissions, each gallon of fossil fuel consumed by motor vehicles imposes \$3.80 to \$4.80 in total damages to society.<sup>26</sup>

The transportation sector is one of the largest end-users of fossil fuels and, consequently, a major source of the health burden caused by air pollution. Motor vehicles directly emit dozens of harmful pollutants, including carbon monoxide (CO), black carbon (BC), NO<sub>x</sub>, fine and coarse particulate matter (PM<sub>2.5</sub> and PM<sub>10</sub>), as well a range of toxic air substances like benzene and formaldehyde.<sup>27</sup> These emissions also lead to the formation of “secondary” pollutants, like ozone, that are not directly emitted but form afterwards through reactions in the atmosphere. Each of these pollutants can cause adverse human health and environmental impacts.

Numerous researchers have sought to quantify the public health toll of vehicle emissions. For example, a recent study looking at the health impacts from two pollutants—ozone and PM<sub>2.5</sub>—estimated that 385,000 premature deaths could be linked to vehicle emissions globally in 2015.<sup>28</sup> New York City ranked 11<sup>th</sup> in cities worldwide with the greatest number of transportation-attributable premature deaths with over 1,400 annual deaths linked to vehicle emissions—accounting for more than 6% of all such deaths in the U.S.<sup>29</sup>

There are currently nine counties in the state of New York in “serious” nonattainment of the 75 parts per billion (ppb) ozone standard set in 2008. These counties are also in violation of the stricter 2015 ozone standard of 70 ppb. As a result, over 12 million New Yorkers live in areas currently in violation of the federal air quality standards for ground-

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<sup>24</sup> Susan Anenberg et al., Int’l Council on Clean Transportation, A Global Snapshot of the Air Pollution-Related Health Impacts of Transportation Sector Emissions in 2010 and 2015 at i (2019),

[https://theicct.org/sites/default/files/publications/Global\\_health\\_impacts\\_transport\\_emissions\\_2010-2015\\_20190226.pdf](https://theicct.org/sites/default/files/publications/Global_health_impacts_transport_emissions_2010-2015_20190226.pdf).

<sup>25</sup> Frederica Perera, *Pollution from Fossil-Fuel Combustion is the Leading Environmental Threat to Global Pediatric Health and Equity: Solutions Exist*, 15 Int’l J. Env’tl. Res. & Public Health 1, 1 (2018), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5800116/>.

<sup>26</sup> Drew T. Shindell, *The Social Cost of Atmospheric Releases*, 130 Climatic Change 313, 321 (2015).

<sup>27</sup> See Health Effects Inst., Special Report 17, Traffic-Related Air Pollution: A Critical Review of the Literature on Emissions, Exposure, and Health Effects at vii (2010), <https://www.healtheffects.org/system/files/SR17TrafficReview.pdf>.

<sup>28</sup> ICCT 2019, at i.

<sup>29</sup> *Id.* at 38, tbl. A2

level ozone, which is harmful to breathe and can cause immediate and long-term respiratory and cardiovascular health problems.<sup>30</sup> The Clean Air Act requires that states with nonattainment regions implement measures necessary to come into compliance with air quality standards.<sup>31</sup>

The Ozone Transport Commission (OTC), which was formed under the Clean Air Act to address ozone pollution in the Northeast and which New York belongs to, has determined that the state will likely fail to meet the ozone standard by the mandatory deadline.<sup>32</sup> On-road vehicles “emit a substantial portion” of the pollutants that form ozone, and, because of ongoing compliance issues, DEC has found that “[i]t is essential” to “continue to adopt stringent mobile source emissions standards to protect human health and the environment.”<sup>33</sup> Previous mobile source regulations have proven to be “highly effective at lowering peak ozone concentrations across the eastern U.S.,” but additional reductions will be required to achieve the 2008 and 2015 standards.<sup>34</sup> Moreover, the OTC identifies MHDVs as a “major and growing contributor” of ozone levels and issued a formal statement in support of “accelerat[ing] widespread adoption of zero emission [MHDVs] as a regional air quality strategy.”<sup>35</sup>

The science is “[v]ery strong” that NO<sub>x</sub> is the most significant contributor to high ozone throughout the Northeast.<sup>36</sup> Mobile sources account for nearly two-thirds of statewide NO<sub>x</sub> emissions. MHDVs have a disproportionate emissions impact as they make up less than 10% of on-road vehicles in New York but are responsible for 29% of mobile source NO<sub>x</sub> pollution. DEC has acknowledged the “severity of New York’s air quality problems” and recognized the need to “maintain compliance with recent improvements in California [mobile source emission] standards in order to achieve the reductions necessary for the attainment of” the ozone standard.<sup>37</sup>

Importantly, air pollution can cause severe public health impacts even in areas that are in compliance with air quality standards. For example, one study estimated that in the U.S. nearly 200,000 premature deaths are caused by exposure to PM<sub>2.5</sub> each year, even in areas that meet federal air quality standards.<sup>38</sup> In New York State, which is currently in attainment of the federal PM<sub>2.5</sub> standard, the study nevertheless estimates nearly 11,000 premature deaths each year due to PM<sub>2.5</sub> exposure.<sup>39</sup> Other studies confirm the impact of air pollution in New York, and the outsize contribution of MHDVs. A health burden

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<sup>30</sup> See American Lung Ass’n, Ozone, <https://www.lung.org/clean-air/outdoors/what-makes-air-unhealthy/ozone> (last updated Apr. 20, 2020).

<sup>31</sup> See 42 U.S.C. § 7410(2).

<sup>32</sup> See Letter from Terrence Gray, Ozone Transport Commission, to Andrew Wheeler, Administrator, U.S. Environmental Protection Agency at 1 (June 5, 2020), [https://www.epa.gov/sites/production/files/2020-06/documents/20200605\\_otc\\_184c\\_recommendation\\_to\\_epa\\_w\\_attachments\\_and\\_cvr\\_ltrr-final.pdf](https://www.epa.gov/sites/production/files/2020-06/documents/20200605_otc_184c_recommendation_to_epa_w_attachments_and_cvr_ltrr-final.pdf) (OTC Letter).

<sup>33</sup> Low Emission Vehicle Greenhouse Gas Standards, 41 N.Y. State Register (proposed Jan. 9, 2019) (LEV GHG Proposal), <https://bit.ly/38nGSpR>.

<sup>34</sup> OTC Letter at 2.

<sup>35</sup> OTC, Statement of the Ozone Transport Commission Regarding the Need to Accelerate Electrification of Medium- and Heavy-Duty Vehicles (adopted June 2, 2020), [https://otcair.org/upload/Documents/Formal%20Actions/OTC%20Statement%20on%20MHD%20ZEVs\\_20200602.pdf](https://otcair.org/upload/Documents/Formal%20Actions/OTC%20Statement%20on%20MHD%20ZEVs_20200602.pdf).

<sup>36</sup> Tad Aburn, OTC, OTC/MANE-VU Stakeholder Webinar at slide 4 (Mar. 30, 2020), [https://otcair.org/upload/Documents/Meeting%20Materials/OTC-MANEVU%20MSC\\_Stakeholder\\_Presentation%20Final%2020200330.pdf](https://otcair.org/upload/Documents/Meeting%20Materials/OTC-MANEVU%20MSC_Stakeholder_Presentation%20Final%2020200330.pdf).

<sup>37</sup> LEV GHG Proposal.

<sup>38</sup> Benjamin Bowe et al., *Burden of Cause-Specific Mortality Associated with PM<sub>2.5</sub> Air Pollution in the United States*, 2 JAMA Network Open 1, 1 (2019), <https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2755672>.

<sup>39</sup> See Bowe et al. 2019, Supplementary Online Content, <https://bit.ly/3qw7drN>.

assessment found that PM<sub>2.5</sub> emissions from all on-road vehicles in the New York City region contributes 320 annual deaths in New York City, which amounts to 0.7% of all deaths in the City each year.<sup>40</sup> Truck and bus emissions account for a majority of that impact, causing 170 premature deaths in New York City each year despite accounting for just 6% of vehicle miles traveled. Acute exposure to PM<sub>2.5</sub> emissions from trucks and buses caused an additional 460 hospitalizations and emergency room visits each year, far exceeding the contribution from cars. Moreover, these impacts are not evenly distributed throughout the City, with more of the burden falling on residents in low-income neighborhoods.

Directly exposed communities suffer uniquely from the impact of vehicle tailpipe emissions. For example, a recent review by the federal National Toxicology Program concluded that residing in heavily trafficked areas or near major roads can lead to elevated exposures to PM<sub>2.5</sub> and nitrogen dioxide, and that such exposures are hazardous to pregnant women and “may have significant adverse health effects in the developing offspring.”<sup>41</sup>

Air pollution levels are highest within a few hundred feet of major roadways or facilities with significant vehicle volumes, like ports and rail yards. People who live, work, or go to school near such areas “have an increased incidence and severity of health problems associated with air pollution exposures related to roadway traffic” like asthma, cardiovascular disease, childhood leukemia, and premature death.<sup>42</sup> The number of trucks at a given location—not total traffic volume—is the biggest influence in localized concentrations of NO<sub>x</sub> and particulate matter in some urban settings.<sup>43</sup> This finding led to the conclusion that the best way to improve air quality near roadways is through more stringent regulations on heavy-duty vehicles.<sup>44</sup>

Given the range of pollutants associated with vehicle tailpipe emissions, it is unsurprising that they are associated with a broad range of adverse health effects. A 2010 comprehensive review concluded that exposure to traffic-related air pollution causes flare ups of asthma symptoms, and is associated with new childhood asthma cases, impaired lung function, and cardiovascular problems.<sup>45</sup> One study found that PM<sub>2.5</sub> exposures can increase the risk of death from nine distinct causes, including cardiovascular disease, chronic kidney disease, lung cancer, and pneumonia.<sup>46</sup> PM<sub>2.5</sub> can also aggravate asthma symptoms and is associated with several other nonfatal respiratory and cardiovascular issues.<sup>47</sup> Ozone causes numerous health effects, even at relatively low levels, with well-established short-term and long-term effects on the respiratory system such as asthma onset.<sup>48</sup>

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<sup>40</sup> Iyad Kheirbeck et al., *The Contribution of Motor Vehicle Emissions to Ambient Fine Particulate Matter Public Health Impacts in New York City: a Health Burden Assessment*, 15 *Envtl. Health* 1, 5-8 (2016), [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5002106/pdf/12940\\_2016\\_Article\\_172.pdf](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5002106/pdf/12940_2016_Article_172.pdf).

<sup>41</sup> Nat'l Toxicology Program, NTP Monograph 07, NTP Monograph on the Systematic Review of Traffic-Related Air Pollution and Hypertensive Disorders of Pregnancy at 75 (2019), [https://ntp.niehs.nih.gov/ntp/ohat/trap/mgraph/trap\\_final\\_508.pdf](https://ntp.niehs.nih.gov/ntp/ohat/trap/mgraph/trap_final_508.pdf).

<sup>42</sup> EPA, *Near Roadway Air Pollution and Health: Frequently Asked Questions at 2*, [https://www.epa.gov/sites/production/files/2015-11/documents/420f14044\\_0.pdf](https://www.epa.gov/sites/production/files/2015-11/documents/420f14044_0.pdf) (2014).

<sup>43</sup> Jonathan M. Wang et al., *Near-Road Air Pollutant Measurements: Accounting for Inter-Site Variability Using Emission Factors*, 52 *Env. Sci. Tech.* 9495, 9502 (2018).

<sup>44</sup> *Id.*

<sup>45</sup> Health Effects Institute, 2010 at xv.

<sup>46</sup> Bowe et al. 2019.

<sup>47</sup> See New York State Dep't of Health, *Fine Particles (PM<sub>2.5</sub>) Questions and Answers*, [https://www.health.ny.gov/environmental/indoors/air/pmq\\_a.htm](https://www.health.ny.gov/environmental/indoors/air/pmq_a.htm) (last updated Feb. 2018).

<sup>48</sup> See EPA, *Health Effects of Ozone Pollution*, <https://www.epa.gov/ground-level-ozone-pollution/health-effects-ozone-pollution> (last updated Jan. 14, 2021); Health Effects Inst., *Ozone and Oxidants*, <https://www.healtheffects.org/air-pollution/ozone-and-oxidants> (last visited Mar. 5, 2021).

The latest data from the U.S. Environmental Protection Agency (EPA) data show that, in 2017, heavy-duty vehicles emitted almost 1,800 tons of PM<sub>2.5</sub>. New York State meets the current PM<sub>2.5</sub> standard, set in 2012, but could be in jeopardy of violating a future, lower standard. In fact, New York State has repeatedly called on EPA to strengthen the current PM<sub>2.5</sub> standard, and has even filed a lawsuit challenging EPA's failure to do so.<sup>49</sup> Recent research shows widespread health impacts from PM<sub>2.5</sub> even in areas that meet current health standards.<sup>50</sup>

### Air Pollution Disproportionately Burdens Communities of Color

Vehicle pollution has an outsized impact on communities of color throughout the country and within New York State. One study found that the burden of PM<sub>2.5</sub> pollution is felt disproportionately in Black communities, with the authors concluding that “pollution itself does discriminate.”<sup>51</sup> Another analysis found that, despite a significant decrease in air pollution nationally over the last forty years, relative disparities in air quality along racial and income lines have been “notably persistent.”<sup>52</sup> Studies have quantified the “pollution burden” faced by Blacks and other people of color, demonstrating the asymmetrical pattern of exposures that remains.<sup>53</sup>

Exposure to vehicle tailpipe emissions are a major reason for this disparity. Due to a long history of racially-motivated zoning, transportation, and land use decisions, people of color are much more likely to live near trucking corridors and major highways. A new study by the New York City Environmental Justice Alliance used hyper-local monitoring for PM<sub>2.5</sub> and identified several air pollution “hot spots” mostly near heavily trafficked facilities and corridors in the Bronx and Brooklyn, with some measured levels exceeding those registered at official monitors by a factor of twenty.<sup>54</sup> This finding confirms prior studies showing that the impact of air pollution near Hunts Point in the Bronx “varies across the community as a function of large truck traffic.”<sup>55</sup>

According to recent analysis done by the Union of Concerned Scientists, approximately 2.7 million Latino residents, 2 million African American residents, and 1.2 million Asian American residents in New York state experience above-average concentrations of PM<sub>2.5</sub> from transportation, representing 74% of the state's Black and

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<sup>49</sup> See Complaint, State of California et al. v. U.S. EPA, Case No. 21-1014 (D.C. Cir. filed Jan. 13, 2021), [https://www.epa.gov/sites/production/files/2021-01/documents/states\\_21-1014\\_pfr\\_01132021.pdf](https://www.epa.gov/sites/production/files/2021-01/documents/states_21-1014_pfr_01132021.pdf); Comments of the Attorneys General of New York et al. (Nov. 20, 2020),

<https://oag.ca.gov/sites/default/files/2020%2011%2020%20PM%20supplemental%20comments%20with%20studies.pdf>; Letitia James, New York Attorney General, Attorney General James Continues Fight Against Trump Admin For Clean Air (Nov. 13, 2019), <https://ag.ny.gov/press-release/2019/attorney-general-james-continues-fight-against-trump-admin-clean-air>.

<sup>50</sup> Benjamin Bowe et al., Burden of Cause-Specific Mortality Associated with PM<sub>2.5</sub> Air Pollution in the United States, 2 JAMA Network Open 1, 1 (2019), <https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2755672>.

<sup>51</sup> Rosie McCall, *Around 200,000 Americans Die Every Year from Air Pollution that Meets EPA Standard*, Newsweek, Nov. 11, 2019, <https://www.newsweek.com/200000-americans-die-every-year-air-pollution-that-meets-epa-standard-1473187>.

<sup>52</sup> Jonathan Colmer et al., *Disparities in PM<sub>2.5</sub> Air Pollution in the United States*, 369 Science 575, 577 (2020).

<sup>53</sup> Tessum et al., Inequity in consumption of goods and services add to radical ethnic disparities in air pollution exposure, Proceedings of the National Academy of Sciences (2019), <https://doi.org/10.1073/pnas.1818859116>.

<sup>54</sup> See New York City Environmental Justice Alliance, Community Air Mapping Project for Environmental Justice at 5 (2021), <https://www.nyc-eja.org/wp-content/uploads/2021/02/CAMP-EJ-2020-Report-Final-021821-Reduced.pdf>.

<sup>55</sup> T. Suvendrini Lena et al., *Elemental Carbon and PM<sub>2.5</sub> Levels in an Urban Community Heavily Impacted by Truck Traffic*, 110 Env'tl. Health Perspectives 1009, 1009 (2002), <https://ehp.niehs.nih.gov/doi/pdf/10.1289/ehp.021101009>.

Latino residents and 80% of the state's Asian American residents.<sup>56</sup> By contrast, more than two-thirds of white residents live in areas with transportation pollution well below the state average. BIPOC New Yorkers are, on average, exposed to 72%-100% more PM2.5 than white residents.<sup>57</sup> The most polluted census tract in the entire Northeast and Mid-Atlantic region is in the West Bronx, which is home almost entirely to Latino and Black residents.<sup>58</sup>

### Diesel Emissions are Especially Hazardous

Out of all sources within the transportation sector, perhaps the greatest health risk comes from diesel exhaust. Many medium-duty (class 2b-3) and nearly all heavy-duty (class 4-8) vehicles on the road today are diesel-powered. Diesel exhaust is a known carcinogen.<sup>59</sup> Thousands of chemicals are present in the gas or particle phases of diesel exhaust. The International Agency for Research on Cancer has identified 35 different components of diesel exhaust emissions that are currently deemed to be known, probably, or possible carcinogens.<sup>60</sup> A study in California found that total cancer risk from toxic air pollution is mostly driven by exposures to diesel particulate matter, which accounts for over 70% of aggregate cancer risk from all air contaminants.<sup>61</sup>

Diesel engines are also responsible for a disproportionate share of the overall health impact from vehicle tailpipe emissions. The ICCT study referenced above broke down the overall impacts from the transportation sector and found that, worldwide, “on-road diesel vehicles were the leading contributor to transportation health damages” in the U.S. and other developed countries.<sup>62</sup> Within the U.S., 43% of traffic-attributable mortality was caused by on-road diesel sources (with another 24% caused by non-road diesel sources).<sup>63</sup> Between 2010 and 2015, mortality associated with on-road diesel emissions increased while mortality from on-road non-diesel emissions fell 9%.<sup>64</sup>

As discussed above, diesel engines produce large amounts of NOx and PM2.5, both of which increase the risk of severe human health impacts, including asthma attacks, heart attacks, lung cancer, and premature deaths. And heavy-duty vehicles in particular make up a large share of that pollution. Despite comprising only about 10 percent of the transportation sector, heavy-duty vehicles are responsible for about 45% of on-road NOx emissions and 57% of on-road PM2.5 emissions nationwide, and an even larger share in some heavily polluted communities.<sup>65</sup> Diesel engines contribute an even larger share of black carbon, which is a strong contributor to climate change and is also linked to adverse

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<sup>56</sup> Pinto de Moura et al., Union of Concerned Scientists, Inequitable Exposure to Air Pollution from Vehicles in the Northeast and Mid-Atlantic (2019), <https://www.ucsusa.org/resources/inequitable-exposure-air-pollution-vehicles>.

<sup>57</sup> *Id.*

<sup>58</sup> *Id.* at 2.

<sup>59</sup> International Agency for Research on Cancer, World Health Organization, IARC: Diesel Engine Exhaust Carcinogenic (June 12, 2012), [https://templatelab.com/iarc\\_press\\_release\\_213\\_E/](https://templatelab.com/iarc_press_release_213_E/).

<sup>60</sup> American Public Health Association, Preventing Environmental and Occupational Health Effects of Diesel Exhaust (2014), <https://www.apha.org/policies-and-advocacy/public-health-policy-statements/policy-database/2015/01/28/12/14/preventing-health-effects-of-diesel-exhaust>.

<sup>61</sup> Propper et al., *Ambient and Emission Trends of Toxic Air Contaminants in California*, 49 *Env'tl. Sci. & Tech.* 11,329, 11,336 (2015).

<sup>62</sup> ICCT, 2019 at 18.

<sup>63</sup> *Id.* at 19 tbl. 4.

<sup>64</sup> *Id.* at 16.

<sup>65</sup> Union of Concerned Scientists, Ready for Work: Now is the Time for Heavy-Duty Electric Vehicles (Dec. 2019) at 2, <https://www.ucsusa.org/sites/default/files/2019-12/ReadyforWorkFullReport.pdf>

cardiovascular health effects. Nationally, 52% of black carbon is emitted by mobile sources, and 93% of that total comes from diesel vehicles.<sup>66</sup>

Eliminating exposure to diesel exhaust would significantly improve public health. Each gallon of diesel fuel burned by vehicles was found to impose \$4.80 in total environmental and public health costs - a full dollar higher than that of gasoline, owing largely to the greater black carbon emissions from diesel emissions.<sup>67</sup> Most MHDVs are diesel-powered and nationally, millions of legacy diesel engines from before EPA regulations were phased in are still on the road.<sup>68</sup> Noting “diesel engine and equipment lifetimes of 20 to 30 years and millions of older (pre-2007) diesel engines still in use,” the American Public Health Association declared that “the air pollution from these older engines remains a major public health problem.”<sup>69</sup>

### MHDV Emissions Contribute to New York’s Asthma “Epidemic”

MHDV emissions are linked to increased incidence of asthma and exacerbation of asthma symptoms. The New York State Department of Health has found that asthma rates are actually trending up, and that asthma “remains an epidemic in New York with significant public health and financial consequences.”<sup>70</sup> Asthma costs New Yorkers \$1.3B each year, based on direct medical costs and lost productivity.<sup>71</sup> Asthma prevalence and hospitalizations exceed national rates across all age groups, show disparities along racial lines, and are on upward trend.<sup>72</sup> The DOH acknowledges the “well documented” link between air pollutants like ozone and PM2.5 and asthma symptoms.<sup>73</sup>

In New York City, exposure to ozone and PM2.5 leads to almost 12,000 asthma emergency department visits per year, including 4,200 ED visits for children under 18. A modest decrement of 10% in ozone levels would avoid nearly 1,000 asthma emergency department visits, while a similar reduction in PM2.5 levels would avoid 1,430 asthma emergency department visits.<sup>74</sup> Previous studies have linked localized air pollution levels within New York City to patterns of truck traffic.<sup>75</sup> In Albany, Department of Health data confirms a substantial discrepancy in asthma hospitalization rates between the South End neighborhood, which experiences “heavy truck and other diesel vehicle traffic, train traffic and activities at the Port of Albany,” and similar neighborhoods further from the Port.<sup>76</sup> In Buffalo, asthma rates are four times the national average in neighborhoods adjacent to the Peace Bridge and the huge volumes of traffic that traverse it.<sup>77</sup>

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<sup>66</sup> EPA, Report to Congress on Black Carbon at 1-4, 85 (2012), <https://www3.epa.gov/airquality/blackcarbon/2012report/fullreport.pdf>.

<sup>67</sup> Shindell, *The Social Cost of Atmospheric Releases* (2015).

<sup>68</sup> EPA, DERA Fourth Report to Congress at 1, 24 (2019), <https://www.epa.gov/sites/production/files/2019-07/documents/420r19005.pdf>.

<sup>69</sup> American Public Health Association, 2014.

<sup>70</sup> New York State Dep’t of Health, New York State Asthma Surveillance Summary Report at 16 (2013).

<sup>71</sup> Thomas P. DiNapoli, New York State Comptroller, The Prevalence and Cost of Asthma in New York State at 1 (2014).

<sup>72</sup> NYSDOH Asthma Surveillance Report at 16-17.

<sup>73</sup> *Id.* at 222-229.

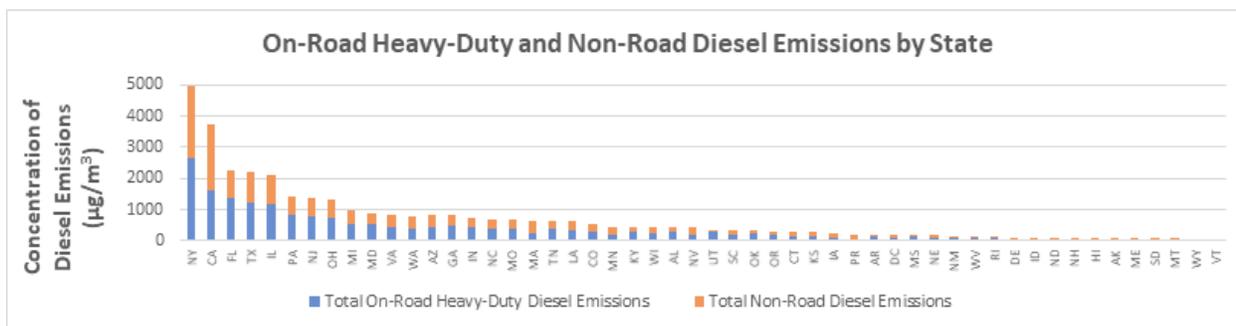
<sup>74</sup> <https://www1.nyc.gov/assets/doh/downloads/pdf/eode/eode-air-quality-impact.pdf>

<sup>75</sup> See Lena et al., 2002.

<sup>76</sup> New York State Dep’t of Health, Information Sheet: Albany South End Community Health Outcome Review (2019), [https://health.ny.gov/environmental/investigations/albany\\_south\\_end/southend\\_fact\\_sheet.pdf](https://health.ny.gov/environmental/investigations/albany_south_end/southend_fact_sheet.pdf).

<sup>77</sup> Dan Telvock, *Asthma Plagues Peace Bridge Neighborhood*, Investigative Post, May 25, 2013, <https://www.investigativepost.org/2013/05/25/asthma-epidemic-near-peace-bridge/>.

Diesel emissions in particular have an astounding impact in New York State. EPA has found that short-term exposures can exacerbate asthma symptoms and diesel exhaust is a “chronic respiratory hazard to humans.”<sup>78</sup> EPA data show that New York State has the most diesel emissions from vehicles and the highest total respiratory hazard associated with diesel exposure nationwide.<sup>79</sup> And the problem affects most New Yorkers. In fact, 87% of New Yorkers live in one of the state’s 22 counties that exceed EPA’s respiratory hazard index benchmark of 1.0, which EPA uses to conclude that diesel emissions are considered a “regional driver of adverse health effects.”<sup>80</sup> Over 17 million New Yorkers are exposed to harmful levels of diesel every day, almost all of which comes from MHDVs. These adverse health effects are evident in the fact that New York’s asthma rates are roughly double the levels targeted in the Healthy People 2020 objectives set by the U.S. Department of Health and Human Services, and asthma mortality rates are 2-3 times the target levels.<sup>81</sup>



**Figure 1: Diesel Emissions from Heavy-Duty and Non-Road Sources by State, 2017<sup>82</sup>**

While almost all New Yorkers are at risk, urban centers in particular are at the greatest risk and suffer the greatest impact from diesel linked to MHDVs. Four of New York City’s five boroughs are among the *top six* counties most impacted by diesel emissions from MHDVs in the country, and the city ranks ninth out of all cities in the world with over 500 new childhood asthma cases caused by vehicular traffic each year.<sup>83</sup> Diesel emissions also disproportionately impact environmental justice communities, with 96% of official “potential environmental justice areas” located in the 22 counties where diesel emissions exceed EPA’s hazard index of 1. A recent DEC study of one such potential environmental justice area, the South End neighborhood of Albany, found that diesel trucks and buses are the predominant source of local air pollution.<sup>84</sup> Residents and workers in the South End are

<sup>78</sup> EPA, Health Assessment Document for Diesel Engine Exhaust at 1-4 (2002).

<sup>79</sup> These numbers are based on an analysis of EPA’s 2014 National Air Toxics Assessment results for diesel. Data is available at: <https://www.epa.gov/national-air-toxics-assessment/2014-nata-assessment-results>.

<sup>80</sup> EPA’s National Air Toxics Assessment calculates “hazard indices” for health effects associated with mobile sources. When the “hazard index” value for a given pollutant is greater than 1 and where the number of people exposed exceeds 10,000, EPA considers that pollutant a “regional driver of noncancer health effects.” EPA, Technical Support Document – EPA’s 2014 National Air Toxics Assessment at 136-37 (2018), [https://www.epa.gov/sites/production/files/2018-09/documents/2014\\_nata\\_technical\\_support\\_document.pdf](https://www.epa.gov/sites/production/files/2018-09/documents/2014_nata_technical_support_document.pdf). The hazard index associated with diesel exposure in New York State is over 500.

<sup>81</sup> New York State Dep’t of Health, New York State Asthma Surveillance Summary Report at 16 (2013), [https://www.health.ny.gov/statistics/ny\\_asthma/pdf/2013\\_asthma\\_surveillance\\_summary\\_report.pdf](https://www.health.ny.gov/statistics/ny_asthma/pdf/2013_asthma_surveillance_summary_report.pdf).

<sup>82</sup> Data is from EPA 2014 National Air Toxics Assessment.

<sup>83</sup> Damian Carrington, *Vehicle Pollution ‘Results in 4M Child Asthma Cases a Year,’* The Guardian, Apr. 10, 2019, <https://www.theguardian.com/environment/2019/apr/10/vehicle-pollution-results-in-4m-child-asthma-cases-a-year>.

<sup>84</sup> DEC, Albany South End Community Air Quality Study Summary (Oct. 2019), [https://www.dec.ny.gov/docs/air\\_pdf/albanysouthendsummary.pdf](https://www.dec.ny.gov/docs/air_pdf/albanysouthendsummary.pdf).

**Table 1: Counties in New York with “Respiratory Hazard Index” Greater Than 1**

<b>County</b>	<b>Total Diesel Concentration (µg/m³)</b>	<b>National Rank*</b>	<b>Respiratory Hazard from Diesel Exposures</b>	<b>National Rank*</b>	<b>% of Diesel Emissions from Heavy-Duty On-Road and Non-Road Sources</b>
<b>Kings</b>	1432.595251	2	140.8757356	3	97.7%
<b>Queens</b>	1091.71821	4	108.7096782	4	98.0%
<b>New York</b>	672.9322125	5	64.7981925	5	97.2%
<b>Bronx</b>	633.6271157	7	62.89214918	7	98.1%
<b>Nassau</b>	233.07191	16	24.07416941	15	96.5%
<b>Westchester</b>	176.6038926	28	17.99674338	25	95.7%
<b>Suffolk</b>	161.8138505	33	16.69334562	31	94.6%
<b>Richmond</b>	115.414424	47	11.55965112	46	98.5%
<b>Erie</b>	102.0049479	52	10.59244219	50	98.3%
<b>Monroe</b>	77.27435276	69	7.580984267	69	98.0%
<b>Onondaga</b>	62.20167826	83	6.438173561	80	98.4%
<b>Albany</b>	32.46177863	131	3.363893061	127	95.5%
<b>Rockland</b>	31.71510112	133	3.357176553	128	94.3%
<b>Orange</b>	23.85031333	155	2.490091155	154	95.7%
<b>Dutchess</b>	23.37733339	158	2.343484283	161	95.3%
<b>Oneida</b>	20.77534099	170	2.042689232	174	97.7%
<b>Broome</b>	15.80451056	200	1.682234132	196	97.8%
<b>Schenectady</b>	14.80531902	210	1.527139403	207	97.7%
<b>Niagara</b>	13.18650139	227	1.387972902	222	97.9%
<b>Saratoga</b>	12.31479633	235	1.268468609	234	97.3%
<b>Rensselaer</b>	11.64854975	242	1.240143519	239	96.9%
<b>Ulster</b>	11.39151825	246	1.168478878	247	95.3%

\* - Out of 1,881 counties with diesel emissions recorded in EPA’s National Air Toxics Assessment

exposed to six times the volume of truck and bus traffic compared to other parts of the city,<sup>85</sup> and the neighborhood's asthma rates are more than three times the statewide rate and almost four times the rate in Albany County.<sup>86</sup> DEC concluded that reducing diesel truck and bus emissions in the South End “would have the greatest benefit in improving neighborhood air quality,”<sup>87</sup> corroborating the findings of numerous other researchers and underscoring the urgency in adopting the ACT and HDO rules.

New mobile source emission standards would bring New York one step closer to an equitable future, as diesel pollution is overwhelmingly concentrated in low-income communities and communities of color. Zero-emission MHDVs powered by clean energy can help reduce transportation emissions in communities overburdened by toxic air pollution and increase access to clean transportation. Further, new standards will benefit air quality locally and throughout the region.<sup>88</sup> Vehicle emissions in New York “significantly impact” air quality in regions downwind, accounting for several parts per billion of ozone, up to nearly 7% of the 75 ppb standard, in neighboring states.<sup>89</sup> Vehicle emissions are 25% of the state's contribution to neighboring states' ozone pollution.<sup>90</sup> A majority of these emissions come from diesel engines,<sup>91</sup> the bulk of which are MHDVs.

### **ACT and HDO Rules will Accelerate the Transition to Zero-Emission Truck and Bus Fleets.**

The ACT rule will support New York's clean transportation targets by advancing New York's zero-emission truck and bus market and laying the groundwork for future policies. Importantly, the rule applies only to manufacturers, and will require that 55% of Class 2b-3 sales, 75% of Class 4-8 sales, and 40% of tractor sales be ZEVs by 2035.<sup>92</sup> Adopting the rule would also increase zero-emission truck availability on the East Coast at a stage where market options are limited, making it easier for fleet owners to transition to ZEVs. The benefits to New Yorkers will be considerable. California's calculations show a net benefit exceeding \$11B through 2050 from adopting the ACT rule, in improved health outcomes, climate benefits, and cost savings.<sup>93</sup> Meanwhile, the emission reduction benefits from the HDO rule in California are projected to amount to \$36 billion in statewide health benefits from 3,900 avoided premature deaths and 3,150 hospitalizations from 2022 to 2050.<sup>94</sup>

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<sup>85</sup> DEC, Albany South End Community Air Quality Study – Traffic-Related Air Pollution (TRAP) Results at 1 (2019), [https://www.dec.ny.gov/docs/air\\_pdf/albanysouthendtrap.pdf](https://www.dec.ny.gov/docs/air_pdf/albanysouthendtrap.pdf).

<sup>86</sup> NYSDOH 2013 at 77, 79.

<sup>87</sup> DEC, Albany South End Community Air Quality Study: High-Emitting Vehicles (HEVs) at 1 (2019), [https://www.dec.ny.gov/docs/air\\_pdf/albanysouthendhev.pdf](https://www.dec.ny.gov/docs/air_pdf/albanysouthendhev.pdf).

<sup>88</sup> See DEC, Proposed New York State Implementation Plan Revision: Transport Supplement for the 2008 Ozone Nat'l Ambient Air Quality Standards at 2 (2018), [http://www.dec.ny.gov/docs/air\\_pdf/sipprop2008o3trans.pdf](http://www.dec.ny.gov/docs/air_pdf/sipprop2008o3trans.pdf) (DEC 2018 Transport Supplement).

<sup>89</sup> *Id.* at 3 (“Emissions from New York's mobile onroad sector itself significantly impact downwind monitors, with 2023 contributions as high as 4.640 ppb at the Greenwich, CT monitor based on OTC/MDE modeling.”).

<sup>90</sup> See *id.*, Apps. B & C.

<sup>91</sup> *Id.* at 3.

<sup>92</sup> See California Air Resources Bd., Advanced Clean Trucks: Accelerating Zero-Emission Truck Markets at 1 (2020), [https://ww2.arb.ca.gov/sites/default/files/2020-06/200625factsheet\\_ADA.pdf](https://ww2.arb.ca.gov/sites/default/files/2020-06/200625factsheet_ADA.pdf).

<sup>93</sup> See Claire Buysse & Ben Sharpe, Int'l Council on Clean Transportation, California's Advanced Clean Trucks Regulation (2020), <https://theicct.org/sites/default/files/publications/CA-HDV-EV-policy-update-jul212020.pdf>.

<sup>94</sup> California Air Resources Board, *Public Hearing to Consider the Proposed Heavy-Duty Engine and Vehicle Omnibus Regulation and Associated Amendments, Staff Report - Initial Statement of Reasons*, <https://ww3.arb.ca.gov/regact/2020/hdomnibuslownox/isor.pdf>

Notably, the technology for MHDV electrification is available, but standards like the ACT are urgently needed to increase vehicle availability and to spur manufacturers to make new models for a wider range of applications. The demand is here; what New York needs is a reliable supply of zero-emission MHDVs. There is a growing consensus that even in the MHDV sector, “the trucking industry’s long-term future is zero-emission vehicles.”<sup>95</sup> In a recent survey of 300 fleet managers, there was near unanimous agreement that ZEVs were the “inevitable future” of commercial fleets.<sup>96</sup> New York State has been identified as among the regions with the “highest potential for electric truck deployments.”<sup>97</sup>

Though the ACT rule is the foundational policy for achieving a zero-emission MHDV sector, the transition to 100% clean trucks won’t happen overnight. It’s vital to address pollution from combustion trucks in the meantime, especially because diesel pollution – which is linked to respiratory illnesses and premature deaths – is concentrated in communities historically overburdened by transportation pollution. The HDO rule will tighten NOx standards and makes particulate matter controls more stringent to prevent backsliding. The rule is expected to cut NOx emissions for new internal combustion truck engines by as much as 90%. Finally, the HDO rule extends manufacturer warranties, which will save fleet owners money on repairs, and will require cleaner operation throughout various driving conditions. By drastically reducing tailpipe emissions from new internal combustion MHDVs sold before the market is fully electrified, the HDO rule is a critical component of any state’s strategy towards a zero-emission transportation sector.

### **The ACT and HDO Rules are Technologically and Economically Feasible in New York.**

Several types of MHDVs are well-suited for electrification today, including regional haul trucking, urban delivery, and certain vehicles used at ports. This relatively widespread suitability is evidenced in a recent report, which recommends that fleets operating regional haul routes in New York State and other high-priority regions “should immediately begin planning for electric deployments.”<sup>98</sup> In general, applications with relatively low mileage, predictable routes, and that return to a fixed location can be electrified with existing technology. And ZEV technology is advancing quickly, opening up opportunities to electrify even the largest vehicles with the most demanding duty cycles as soon as 2030.<sup>99</sup>

Model availability is expanding for zero-emission trucks and buses across every weight class and duty cycle. In 2022, there will be over 100 zero-emission truck and bus models on the market, covering a wide range of applications. Moreover, the vehicles entering the market will be attractive across a wide range of operational parameters. While total lifetime costs are a significant consideration for commercial fleets, there are a number of attributes that influence purchasing decisions. A study compared ZEV technology with diesel

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<sup>95</sup> Jessie Lund & Mike Roeth, Rocky Mountain Institute, High-Potential Regions for Electric Truck Deployment at 11 (2020), <https://rmi.org/insight/high-potential-regions-for-electric-truck-deployments>.

<sup>96</sup> Jim Stinson, *Electric Trucks are the ‘Inevitable Future,’ Fleets Say*, Utility Dive, May 19, 2020, <https://www.utilitydive.com/news/Electric-Class-8-trucks-CARB-2020-coronavirus/578211/?for-guid=63e868fa-1cf5-4fa7-b26b-b327793d1d86>.

<sup>97</sup> Lund & Roeth at 9.

<sup>98</sup> *Id.* at 9.

<sup>99</sup> See Gabel Assocs., Full Market Electrification in New Jersey (2020) (“NJ Electrification Study”), <http://www.chargevc.org/wp-content/uploads/2020/10/ChargeVC-Full-Market-Electrification-Study-FINAL-Oct-7-2020.pdf>.

across 22 distinct parameters and found that ZEVs will be competitive for a majority of those parameters by 2025 in class 3 through 6 trucks and by 2030 in class 7 and 8 trucks.<sup>100</sup>

New York has already developed mechanisms to support fleet owners in transitioning to electric trucks, and there are opportunities to develop more. State incentives such as the NY Truck Voucher Incentive Program help shift the economics further in favor of ZEVs for all fleets. We encourage New York to pursue rate design reforms for commercial electricity rates as well, which can further reduce costs and drive deeper cost savings. As an example, San Diego Gas & Electric will soon roll out a new rate designed specifically for MHDV fleets that, by eliminating demand charges, could save fleets as much as 50% on fuel costs compared to diesel.<sup>101</sup>

It has been estimated in California that the savings realized by fleet owners and consumers who choose electric options will be largely reinvested and directed toward local, labor-intensive services, providing a boost to regional economies.<sup>102</sup> Furthermore, the process of building out charging infrastructure is likely to support high-quality jobs—that should include skills training and good wages and benefits—and boost the state’s economy. Electric trucks and buses can also act as batteries on wheels when off-duty, unlocking new opportunities for grid stabilization and resiliency. As economic returns and other benefits become evident, demand for MHDV ZEVs is expected to swell, making it crucial that New York ensure that sufficient quantities and types of ZEVs are available.

The economic case for transitioning to ZEVs will only become more favorable. Due to significant fuel and maintenance cost savings some electric trucks are financially appealing today on a total cost of ownership (TCO) basis relative to their fossil fuel counterparts. Many medium-duty vehicles have already achieved TCO parity, and heavy-duty short-haul vehicles are predicted to achieve parity by 2025, without incentives.<sup>103</sup> Multiple studies confirm that most MHDV ZEV segments will reach TCO parity with diesel vehicles by the end of the decade,<sup>104</sup> particularly as battery prices continue to decline.<sup>105</sup> In the long-term, the cost savings from transitioning to zero-emissions MHDVs are likely to outweigh the incremental cost premium nearly 4 to 1.<sup>106</sup> Factoring in the public health benefits from a drastic reduction in MHDV emissions, and New York could be expected to reap tens of billions in total benefits through 2050.<sup>107</sup>

Moreover, the ACT rule contains numerous provisions to ease compliance, especially in the rule’s early years. Fundamentally, the ACT rule works as a credit and deficit accounting system across the different MHDV classes. Manufacturers can apply credits in

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<sup>100</sup> North American Council for Freight Efficiency, Guidance Report: Electric Trucks-Where They Make Sense at 13-14 (2018).

<sup>101</sup> San Diego Gas & Electric, Save Money With SDG&E’s Lowest EV Charging Rates (2021), <https://www.sdge.com/sites/default/files/documents/SDGE.PYDFP%20-%20EVHP%20Fact%20Sheet%202021.pdf>.

<sup>102</sup> David Roland-Holst et al., Exploring Economic Impacts in Long-Term California Energy Scenarios (2018), <https://ww2.energy.ca.gov/2018publications/CEC-500-2018-013/CEC-500-2018-013.pdf>.

<sup>103</sup> North American Council for Freight Efficiency, Electric Trucks: Where They Make Sense (May 2019) at 13-14, <https://nacfe.org/emergingtechnology/electric-trucks/>.

<sup>104</sup> See CALSTART & FIER Automotive and Mobility, Moving Zero-Emission Freight Toward Commercialization at 27 (2020), <https://globaldrivetozero.org/site/wp-content/uploads/2020/12/Moving-Zero-Emission-Freight-Toward-Commercialization.pdf>; ICF, Comparison of Medium- and Heavy-Duty Technologies in California, Executive Summary at 4 (2019), [https://www.caletc.com/assets/files/ICF-Truck-Report\\_Final\\_December-2019.pdf](https://www.caletc.com/assets/files/ICF-Truck-Report_Final_December-2019.pdf).

<sup>105</sup> Energy Innovation & Environmental Defense Fund, Clean Trucks, Big Bucks at 3 (2020), [https://energyinnovation.org/wp-content/uploads/2020/06/Clean-Trucks-Big-Bucks\\_June\\_17\\_2020.pdf/](https://energyinnovation.org/wp-content/uploads/2020/06/Clean-Trucks-Big-Bucks_June_17_2020.pdf/).

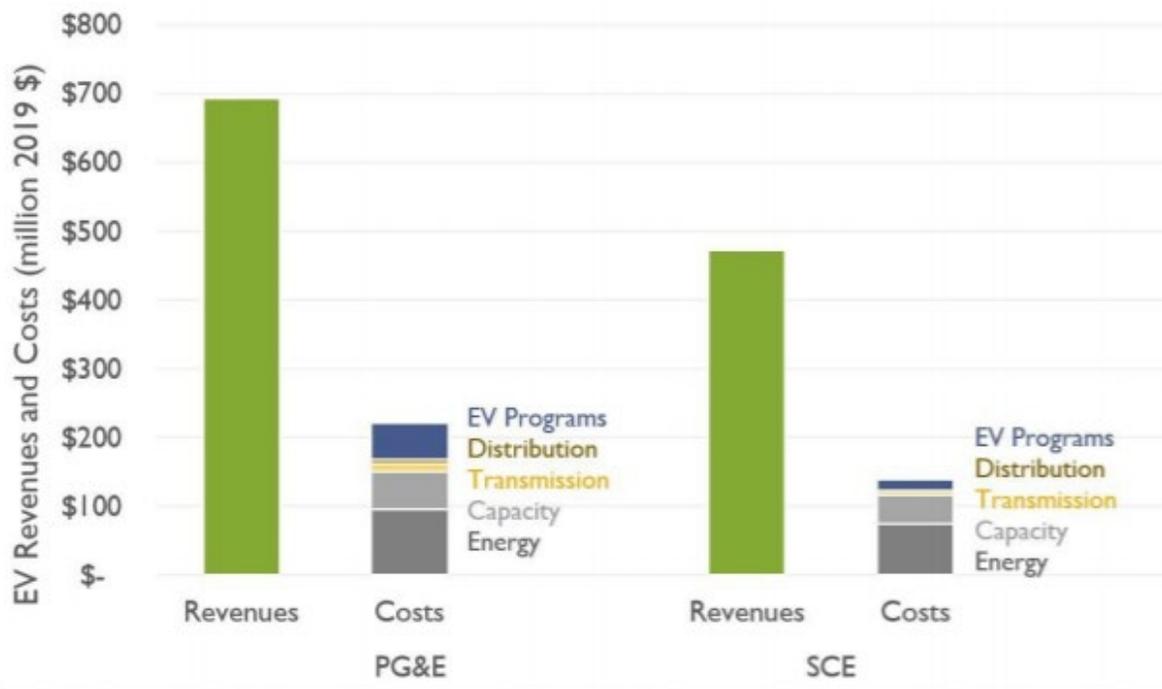
<sup>106</sup> See NJ Electrification Study at 87.

<sup>107</sup> See *id.* at 87-89 (finding \$88B-99B in net benefits from fully electrifying all classes of vehicles in New Jersey).

one class towards deficits in another that might be more challenging to electrify in the near-term.

The ACT rule also includes a one-time reporting requirement for some large MHDV fleet owners, which will provide DEC with critical information about MHDV operating parameters, including VMT, length of ownership, and fueling patterns. Collecting this information will enhance transparency and will provide vital information to inform future decarbonization policies.

Finally, New York’s grid will not impede fleet electrification. While transportation electrification increases electric load, the evidence to date indicates that the increased revenue generated far outstrips the cost of serving this new load, putting downward pressure on electric rates to the benefit of all electric customers. Empirical data from 2012 to 2019 for the utility service territories with the nation’s highest EV penetrations, Pacific Gas & Electric (PG&E) and Southern California Edison (SCE), found that EV drivers contributed an estimated \$800 million in cumulative net revenue—even when including utility expenditures to support EV programs.<sup>108</sup>



**Figure 2: PG&E and SCE Revenues and Costs of EV Charging, 2012-2019<sup>109</sup>**

With revenue decoupling and rate designs that encourage EV charging when marginal costs to the utility are low, transportation electrification has resulted in downward pressure on rates for all utility customers in those service areas. These benefits can be maximized and

<sup>108</sup> Synapse Energy Economics, Electric Vehicles Are Driving Electric Rates Down at 3 (2020), [https://www.synapse-energy.com/sites/default/files/EV\\_Impacts\\_June\\_2020\\_18-122.pdf](https://www.synapse-energy.com/sites/default/files/EV_Impacts_June_2020_18-122.pdf).

<sup>109</sup> *Id.*

grid upgrades to support EV deployment (e.g., additional transformers and capacity) can be further minimized through effective management of new EV load.<sup>110</sup>

### **New York Has Clear Authority to Adopt the ACT and HDO Rules and Should Not Delay.**

New York can adopt these and other California mobile source standards because it has nonattainment and maintenance plan provisions approved by the U.S. Environmental Protection Agency (EPA). Clean Air Act Part D, Section 177 specifies, “any State *which has plan provisions approved under this part* may adopt and enforce for any model year [California] standards relating to control of emissions from new motor vehicles or new motor vehicle engines.”<sup>111</sup> “Plan provisions approved under this part” applies both to nonattainment plan provisions and maintenance plan provisions, both of which EPA approves under Clean Air Act Part D.<sup>112</sup> Because EPA has approved multiple New York nonattainment and maintenance plan provisions,<sup>113</sup> New York satisfies the threshold requirement of Section 177 to adopt the California Standards.

Given the urgency of the climate crisis, the need to move forward quickly to reduce emissions, and the acute public health need to reduce pollution from diesel trucks, New York should not delay moving forward with the rulemaking process. The state has built in ample time for a rulemaking process that is finalized by the end of 2021. This would ensure the state meets the two-year lead time requirement under Section 177 for the 2025 model year, which can start as early as January 2, 2024.

### **Even with the ACT and HDO Rules, Additional Policies are Needed to Achieve State Targets. Such Policies Must Advance Vehicle Electrification Whenever Possible.**

To achieve the bold GHG reduction commitments in the CLCPA, it will be necessary to rapidly accelerate the deployment of ZEVs, including MDHVs. Even with the ACT rule and 100% light-duty ZEV sales in place, preliminary modeling shows that GHG emissions from transportation will only be reduced by 55% in 2050 compared to a reference case scenario.<sup>114</sup> Fully implemented, the ACT rule will still allow 25-60% of sales to be combustion engines in certain segments. New York should view adoption of the ACT rule as a necessary first step in achieving the transformative changes necessary to decarbonize the transportation sector, but not the only strategy. We must strive for 100% ZEV sales across MHDVs where feasible, and take bold actions to get there.

One way for New York to start this transformation is to “lead by example,” in line with the MHDV ZEV MOU, which affirms the state’s commitment to “progressing toward electrification of [its] government and quasi-governmental agency fleets.”<sup>115</sup> New York should convert all state MHDV fleets to zero-emission vehicles where feasible, as soon as

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<sup>110</sup> Pamela MacDougall, *Steering EV Integration Forward*, NRDC, June 2019, available at <https://www.nrdc.org/experts/pamela-macdougall/steering-ev-integration-forward>.

<sup>111</sup> 42 U.S.C. § 7507 (emphasis added).

<sup>112</sup> See *id.* §§ 7502(c), 7505a (concerning nonattainment and maintenance plans, respectively, both under Part D); see also *Am. Auto. Mfrs. Ass’n v. Comm’r, Massachusetts Dep’t of Envtl. Prot.*, 31 F.3d 18, 23 n.2 (1st Cir. 1994) (correctly explaining that Section 177 says that “any State which has plan provisions [for the attainment and maintenance of the NAAQS] may adopt and enforce for any model year standards . . .” (paraphrasing in original)).

<sup>113</sup> EPA, New York Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants (as of March 9, 2021), [https://www3.epa.gov/airquality/greenbook/anayo\\_ny.html](https://www3.epa.gov/airquality/greenbook/anayo_ny.html).

<sup>114</sup> New York Climate Action Council, *supra* note 18, at slide 20.

<sup>115</sup> MOU at § 5.

possible, and work with cities and counties to do the same. Several municipalities will require all vehicle purchases to be electric by 2030, and the state should be able to meet a similar timeline. In addition, once it is finalized, New York should adopt California's forthcoming Advanced Clean Fleets rule, which supports the state's goal of achieving a zero-emission truck and bus fleet by 2045 statewide and serves as a vital complement to the ACT rule.<sup>116</sup>

And while implementing the ACT and HDO rules will lead to a boost in clean energy jobs, the state must ensure that workers in affected industries do not shoulder the short-term costs of transitioning to a zero-emissions transportation sector, and that new workers in the zero-emissions transportation sector can expect good wages and benefits. New York must also continue its efforts to ensure that the new jobs created by this transition offer good, family sustaining wages and benefits.

### Prioritizing Emission Reductions in Environmental Justice Communities

As DEC moves forward with these regulations, the state should develop a strategy to accelerate fleet turnover to the maximum extent practical. In particular, DEC should develop a plan to identify where the dirtiest diesel engines are still operating and target incentives and other activities to get those vehicles off the road. Such a policy offers an opportunity to reverse the legacy of environmental injustice in New York State. Additional targeted strategies will be needed to ensure that the communities most harmed by transportation pollution are prioritized in statewide emissions reduction efforts, in line with the CLCPA.

- **Electrifying Ports, Warehouses, Distribution Centers, Depots, and Other Freight Hubs.** New York State should target infrastructure build out, ZEV incentives, and other state policies and resources to accelerate the phase-out of all diesel and fossil fuel-powered vehicles in facilities with significant MHDV volumes. The cumulative impact of emissions from such facilities adversely impact workers, residents, and children who attend school close by. Prioritizing electrification in these locations is one of the most important ways to address the systematic inequities inherent in our current transportation system. DEC should follow the lead of the South Coast Air Quality Management District in California by using authority under the Clean Air Act to establish an "Indirect Source Rule" to limit emissions from such facilities.<sup>117</sup> DEC should also collaborate with stakeholders to develop zero-emissions ports and distribution centers, modeled on the Port of Long Beach's Zero-Emissions Terminal Equipment Transition Project.<sup>118</sup>
- **Low and No-Emission Zones.** DEC should identify areas overburdened with MHDV emissions and develop model rules to create low-emissions or zero-emission zones to encourage rapid ZEV deployment in these areas. Such policies could be modeled after those implemented at the Ports of Los Angeles and Long Beach, which will impose fees on diesel and natural gas trucks accessing the ports, while exempting ZEVs.

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<sup>116</sup> Cal. Air Resources Bd., *Advanced Clean Fleets*, <https://ww2.arb.ca.gov/our-work/programs/advanced-clean-fleets/about> (last accessed Mar. 9, 2021).

<sup>117</sup> See 42 U.S.C. § 7410(a)(5); South Coast Air Quality Mgmt. Dist., Draft Staff Report: Proposed Rule 2305 – Warehouse Indirect Source Rule (2021), [http://www.aqmd.gov/docs/default-source/planning/fbmsm-docs/pr2305\\_draft-staff-report\\_03032021.pdf?sfvrsn=8](http://www.aqmd.gov/docs/default-source/planning/fbmsm-docs/pr2305_draft-staff-report_03032021.pdf?sfvrsn=8).

<sup>118</sup> Port of Long Beach, Fact Sheet: Zero-Emissions Terminal Equipment Transition Project (2018), [https://sustainableworldports.org/wp-content/uploads/CECZeroEmissionsTerminalEquipmentTransitionFactSheet\\_8\\_10\\_18.pdf](https://sustainableworldports.org/wp-content/uploads/CECZeroEmissionsTerminalEquipmentTransitionFactSheet_8_10_18.pdf).

- **Adopting Other California Vehicle Emission Standards.** California has adopted or is planning to adopt emission standards for a range of other vehicle segments not covered by their standards for on-road light-duty vehicles and MHDVs. Examples include drayage trucks serving ports and railyards, cargo handling equipment, and transport refrigeration units. These rules could have a significant impact on air quality and public health in some of the most heavily impacted communities in New York State. DEC should join New Jersey, which has already expressed intent to adopt emission standards for some of these segments.

Electrifying the full fleet of MHDV segments presents a significant opportunity to achieve meaningful public health improvements in disadvantaged and heavily impacted communities throughout the state. Doing so would yield billions of dollars in reduced health costs and improved health outcomes.<sup>119</sup> Our groups look forward to working with your agency to develop these additional and supporting policies.

## **Conclusion**

Thank you for the opportunity to provide comments on these important rules. We encourage the state to act quickly. Given the slow rate of vehicle turnover, any delay in moving forward with adopting California's truck emission standards will compound the challenges in achieving New York's landmark climate commitments. Therefore, in order to maximize benefits and ease the transition into the ACT's sales requirements, New York should adopt these regulations by the end of 2021.

Sincerely,

ALIGN

American Lung Association

Earthjustice

Jobs to Move America

Natural Resources Defense Council

New Yorkers for Clean Power

Sierra Club

Tri-State Transportation Campaign

Union of Concerned Scientists

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<sup>119</sup> See Am. Lung Ass'n, Benefits of a Nationwide Transition to EVs (2020), <https://www.lung.org/getmedia/99cc945c-47f2-4ba9-ba59-14c311ca332a/electric-vehicle-report.pdf>.