



June 22, 2023

Eric Adams  
Mayor of the City of New York  
City Hall  
New York, NY 10007

Dear Mayor Adams,

We very much appreciate your leadership in combatting climate change and protecting the health of New Yorkers. In that spirit, the undersigned urge you to continue your efforts to curb greenhouse gas emissions by supporting bold new legislation to make New York City’s transportation fleet emission-free. The ZEV (Zero-Emission Vehicle) for NYC Act ([Int. 0279-2022](#)) would be trailblazing in improving air quality for all New Yorkers while strengthening NYC’s standing as a leading business center of sustainability. We urge the NYC Council to pass the bill without further delay and request, Mayor Adams, your enthusiastic support so that you can build on your climate legacy with this first-of-its-kind municipal transportation law. Now is the time for action.

### Overview

A little over a year ago, Majority Leader Powers introduced the ZEV for NYC Act. If passed, it would require NYC to transition to a cleaner and more efficient and equitable municipal ZEV fleet by July 1, 2035. In addition, the bill outlines purchasing deadlines as a means of achieving a total transition by 2035: NYC must start purchasing only zero-emission light-duty and medium-duty vehicles and heavy-duty vehicles starting July 1, 2030. Given the criticality of protecting the health of NYC children, we urge the City to include school buses in the earlier purchasing deadline. The bill allows NYC to continue to purchase non-ZEV vehicles in specialized circumstances. The NYC Council recognizes the critical importance of this bill. The ZEV for NYC Act has overwhelming support: 40 out of 51 council members are sponsors. At the December 15, 2022, hearing, fifteen advocacy groups and five NYC-based companies that focus on sustainability expressed vigorous support for the bill.

If passed, this bill would represent the first time NYC has taken a comprehensive approach to its three largest sources of greenhouse gas emissions: buildings, transportation, and food waste. Zeroing our emissions from the city’s vast fleet of vehicles would significantly complement the Climate Mobilization Act of 2019 (Local Law 97) and the Administration’s recent focus on reducing food-related emissions. The bill would accelerate the deployment of electric vehicle charging infrastructure, a step NYC must take to significantly reduce emissions.

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By eliminating harmful pollution from the city's fleet of medium-duty and heavy-duty trucks, the bill would reduce the respiratory health issues that afflict so many New Yorkers, especially those in environmental justice communities where localized pollution has historically been and continues to be disproportionate. Each year, fine particulate pollution from vehicles on NYC's roads is responsible for an estimated 260 premature deaths and 720 emergency room visits. Around 65 percent of these lives lost can be attributed to fine particulate emissions from trucks and buses, despite those vehicles accounting for just six percent of annual vehicle miles traveled on city streets.<sup>1</sup> According to New York City Department of Health research, people living in the city's poorest neighborhoods experience over eight times the number of emergency room visits from vehicle pollution compared to more affluent neighborhoods.<sup>2</sup>

The bill would also establish New York City as a leading business center of sustainability, strengthening the business models of companies already established and helping to attract new ones. A total of \$2.8 trillion will be invested in global energy supplies in 2023, with clean energy investments comprising \$1.7 trillion (61 percent). The International Energy Agency (IEA) Executive Director, Fatih Birol commented: "A new global clean energy economy is emerging. There has been a substantial increase in a short period of time — I would consider this to be a dramatic shift." The ZEV for NYC Act better positions NYC to compete for these unprecedented investments.<sup>3</sup>

The bill is affordable. In all classes of vehicles, NYC would see reduced fleetwide expenditures from operating ZEVs, as their fuel and maintenance costs are much lower than comparable traditional internal combustion engine (ICE) vehicles. Merchants Fleet, which has been using 150 GM BrightDrop vans, saves \$10,000 - \$12,000 per year per van because the cost of fuel and maintenance is so much lower with 100% electric vehicles.<sup>4</sup> For now, the initial purchase price of ZEVs can be higher than comparable ICE vehicles, but battery technologies are advancing quickly, and thus the initial price difference is narrowing quickly. In April, the average price of a light-duty vehicle was \$48,275<sup>5</sup> versus the \$27,495 MSRP of an all-electric Chevy Bolt. Upfront price parity has nearly occurred for light-duty vehicles. In January, the International Council on Clean Transportation released a report stating that even before IRA incentives are applied, ZEVs are projected to reach retail price parity prior to 2030 for Class 4–5 and Class 6–7 rigid trucks, refuse trucks, and transit buses — NYC's most prevalent heavy-duty vehicles.<sup>6</sup> NYC may be able to fund the initial price difference via state and federal programs, such as the significant purchase incentives provided in the Inflation Reduction Act.<sup>7</sup> In addition, NYC could choose to finance the incremental costs of buying ZEVs via issuing green bonds. New York City is a leading center of sustainability in finance; any number of NYC-based banks would be eager to assist. Finance is not a constraint.

Mayor Adams, "Get Stuff Done" is your clarion call for improving the lives of New Yorkers through meaningful and immediate action. Now is the time to pass the ZEV for NYC Act as proposed. When introducing *PlaNYC: Getting Sustainability Done* on April 20, you said that your job "is making sure we implement and execute." This is the Big Apple. Urge your team to rise to the challenge. This bill advances the fight against climate change, improves the health of New Yorkers, and strengthens NYC as a leading business center of sustainability. Let's get it done.

Sincerely,

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## Technical Discussion on ZEV for NYC Act

### Similar actions in relevant jurisdictions

While the bill is ambitious, it is neither novel nor infeasible. California recently made news with the adoption of its Advanced Clean Fleets (ACF) rule, the first regulation to require an economy-wide transition of fleets to zero-emission heavy-duty vehicles (ZE-HDVs). Notably, it includes requirements for state and municipal fleets to begin transitioning away from combustion vehicles as soon as 2025. Under the primary compliance pathway, public fleets in California are required to purchase only zero-emission models beginning in 2027. The ZEV for NYC Act (Int. 0279-2022) differs from the primary ACF public fleet pathway in that it requires vehicle turnover (in 2035) in addition to regulating vehicle acquisitions (in 2025 and 2030), but this difference would provide NYC's agencies with more certainty in the timeline and over 10 years to plan for the full transition.

Both states and municipalities have made significant strides towards cleaning their public fleets over the past decade. In 2013, Washington State Governor Jay Inslee signed ESB 5099, which required state agency and municipal fleets to begin transitioning to electric or biofuels in 2015 and 2018, respectively.<sup>8</sup> In early 2020, King County, the state's most populous county, passed legislation structurally similar to the ZEV for NYC Act that requires all municipal light-duty vehicles to transition no later than 2030 and heavy-duty vehicles by 2043.<sup>9</sup> On June 9, Governor Lombardo signed the Nevada Clean Trucks and Buses Incentive Program into law. This program will incentivize the adoption of zero-emission medium- and heavy-duty vehicles.<sup>10</sup> The program will be funded by using a portion of the proceeds allocated to Nevada by the federal government's Carbon Reduction Program, which takes effect in January 2024.

While these policies represented a step in the right direction, the market and technology for ZE-HDVs have far outpaced their ambition. The timeline proposed in the current version of the ZEV for NYC Act is ambitious only in the sense that it surpasses the commitments of other jurisdictions — today's ZE-HDV availability and timeline both support the timeline laid out in the bill.

### Zero-emission heavy-duty vehicles are available

As seen with zero-emission passenger vehicles, the availability of zero-emission medium- and heavy-duty vehicles has increased significantly over the past several years. In the U.S. and Canada, over 180 models of zero-emission medium- and heavy-duty trucks and coach, school, and shuttle buses are available on the market, according to CALSTART's Zero-Emission Technology Inventory (ZETI).<sup>11</sup> While buses make up the lion's share of currently deployed zero-emission heavy-duty vehicles in the US, the vehicle types with the most significant growth in availability are tractor trucks and cargo vans, which had a 75 percent and 230 percent increase respectively from 2021 to 2023.

Truck manufacturers are taking note of this trend and several of the largest players have committed to fully transitioning to electric trucks. Daimler, the largest Class 7 and 8 truck manufacturer in the US, committed to 100-percent zero-emission sales by 2040 and Volvo Trucks has a similar goal set for 2040.<sup>12, 13</sup> There is no doubt that the market is heading towards a fully zero-emission paradigm, but highly visible actions like this bill would help to accelerate this vital paradigm shift. In 2022 alone, 3,510 ZE-HDVs were deployed across the country, surpassing deployments of the previous five years (2017–2021) combined.<sup>14</sup>

### Zero-emission heavy-duty vehicles are cost-effective

The most prominent vehicles in the city's heavy-duty fleet — refuse collection trucks, vocational trucks, and work trucks and vans — overlap well with both the ZE-HDV types growing fastest *and* those that are seeing the

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swiftest decline in purchase prices. For example, the International Council on Clean Transportation (ICCT) estimates that zero-emission models of both refuse trucks and medium to large rigid trucks will have the most favorable upfront purchase price by the end of the decade, even when not considering the incentives provided in the Inflation Reduction Act. The ICCT forecasts that only one type of heavy-duty vehicle, the long-haul tractor truck, will not reach price parity with conventional ICE long-haul tractor trucks by 2035 (see Table 1).

In its June 2023 Notice of Proposed Rulemaking on implementing Section 6417 of the IRA, the IRS confirmed that certain entities without tax liabilities, including local governments, are eligible for the significant incentives provided in the law.<sup>15</sup> These include up to \$40,000 for the purchase of zero-emission medium- and heavy-duty vehicles in section 45W, as well as significant incentives for installing charging infrastructure under section 30C at up to \$100,000 per charger.

Table 1: Estimated dates of retail price parity between heavy-duty battery-electric vehicles (BEVs)<sup>16</sup> and diesel<sup>17</sup>

Heavy-Duty Vehicle Type	Year of retail price parity of BEV versus ICE before applying incentives	Year of retail price parity of BEV versus ICE after applying incentives
Rigid truck (Class 4-5)	2029	Now
Rigid truck (Class 6-7)	2028	Now
Rigid truck (Class 8)	2033	2027
Short-haul tractor truck	2035	2028
Long-haul tractor truck	After 2035 (BEV price 34% higher in 2035)	After 2035 (IRA incentives sunset in 2032)
Refuse truck	2026	Now
Small bus (Class 4-5)	After 2035 (BEV price only 8% higher in 2035)	2024
Transit bus (Class 6-8)	2027	2025
School bus (Class 6-8)	After 2035 (BEV price only 5% higher in 2035)	2025
Other bus (Class 6-8)	2030	2028

Today, many models of ZE-HDVs have a preferred *total-cost of ownership* compared to their combustion counterparts, due in large part to fuel and maintenance savings. Table 2 presents findings of the California Air Resources Board (CARB):

Table 2: Estimated dates of total-cost preference for heavy-duty BEVs over diesel<sup>18</sup>

Heavy-Duty Vehicle Type	ZEV Total-Cost Preference
Delivery Truck (Class 4-5)	2025
Large Box Truck (Class 6-7)	2025
Refuse Truck (Class 8)	2025
Day Cab Tractor (Class 7-8)	2025

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*Note: The zero-emission versions of the city's most-utilized heavy-duty vehicle types all show a favorable total-cost of ownership and upfront purchase price around mid-decade. Total-cost estimates in this figure include infrastructure installation costs and revenue generated from California's Low-Carbon Fuel Standard.*

On June 8, BloombergNEF (BNEF) released its Electric Vehicle Outlook 2023 report. BNEF stated: "The economics of electric heavy trucks improve rapidly throughout the 2020s and become as cheap as diesel equivalents even for long-haul applications."<sup>19</sup> Regarding price parity with ICE vehicles, EV price parity is getting closer. EVs will reach up-front price parity with comparable combustion vehicles, without subsidies, by the end of the decade in most segments.<sup>20</sup>

### Charging infrastructure

Regarding vehicle charging, the city is already ahead of the game. In addition to the city's nearly 40 fleet repair locations, city agencies currently operate over 400 in-house fueling and 400 separate electric vehicle charging locations, according to the Department of Citywide Administrative Services.<sup>21</sup> This puts the city fleet in a good position to support an accelerated transition to ZE-HDVs.

Charging infrastructure deployment and technology is often seen as the leading constraint that limits accelerated fleet electrification. The vast majority of vehicles in a future fully electrified city fleet will likely use charging technology and equipment available today, and this is also true for the larger vehicles. As with commercial heavy-duty vehicles, many public fleet vehicles operate on fixed routes, within a limited range, and during a set timescale. Vocational vehicles and school buses would typically operate only during business hours and could be charged overnight using existing Level 2 and 3 charging technology. With over 1,600 charging ports at over 1,000 charging stations already installed, the City is ahead of the game.<sup>22</sup>

However, vehicles used more sporadically or during emergency situations would need the ability to charge quickly. Thankfully, as with ZE-HDV models, charging technology is also developing rapidly. Tesla recently rolled out its Megacharger for several fleets in California, which is reported to charge the Tesla Semi from zero to 70 percent (around 400 miles of range) in 30 minutes — faster than what is reported for Ford's Mustang Mach-E currently used by NYPD.<sup>23</sup> What's more, CharIN recently rolled out a new global standard for quickly charging ZE-HDVs, known as the Megawatt Charging Standard. This standard, comparable to the Combined Charging Standard for light-duty vehicles, is ushering the development of chargers capable of fueling even the largest ZE-HDVs in minutes.<sup>24</sup> However, as indicated above, the ways that vehicles are often used means that megawatt charging capacity will be unnecessary in most NYC charging applications.

Electrifying the city's fleet of emergency vehicles, if done correctly, can add significant resilience to the city's ability to respond to emergencies and disasters — even when the electricity is out. Although gas stations do not work during power outages, EV charging depots can be outfitted with backup energy storage systems to allow for charging in worst-case scenarios. Companies like ADS-TEC Energy and Moxion are producing both stationary and mobile battery storage systems that can ensure resiliency during emergencies and reduce EV fueling costs when electricity prices are high.

### Leverage the private sector

How can NYC meet the ZEV for NYC Act's July 1, 2035, deadline? By leveraging the private sector as much as possible to accelerate the deployment of charging infrastructure and battery storage facilities. Many large international companies, including ABB, Cummins, and Siemens offer heavy-duty vehicle charging solutions to businesses and government. The leading North America ZEV bus manufacturer, Proterra, also specializes in charging infrastructure, providing "a turn-key solution and a complete energy ecosystem for medium- and

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heavy-duty electric fleets.” (Both the MTA and Port Authority use Proterra buses.) Ford and GM offer light-duty and medium-duty vehicle charging solutions. Charging network providers, including Blink, ChargePoint, EVConnect, EVGo, and Electrify America, all provide charging infrastructure solutions. And perhaps most notably, mobility and energy storage companies headquartered in NYC, including Charge Enterprises, Gravity, Ideanomics, NineDot Energy, and Revel, offer charging or energy storage solutions that NYC could leverage. In addition, on May 18 the U.S. DOE announced the ChargeX Consortium, an organization consisting of many of the above companies and three DOE national labs.<sup>25</sup> Its mission is to improve the quality of the nation’s public charging infrastructure. NYC could choose to join this consortium.

### More on environmental benefits

In March, the UN finalized the Synthesis Report of the IPCC Sixth Assessment Report (AR6).<sup>26</sup> Its findings are stark: “All global modelled pathways that limit warming to 1.5 °C (>50%) with no or limited overshoot, and those that limit warming to 2 °C (>67%), involve rapid and deep and, in most cases, immediate greenhouse gas emissions reductions in all sectors this decade.” As a leading international city and indeed as the seat of the UN, we believe New York City has a moral responsibility to lead from the front in tackling climate change.

As referenced earlier, NYC has the highest density of primary particulate matter (PM<sub>2.5</sub>) emissions among large U.S. cities. Concentrated emissions from diesel truck pollution have outsized impact in environmental justice neighborhoods.<sup>27</sup> However, the ZEV for NYC Act, especially if it galvanizes the private sector to similarly accelerate deployment of ZEVs, would improve NYC health outcomes, as California is now experiencing. In February, the Keck School of Medicine of USC released a study showing that in California EVs have generated real world reductions in respiratory problems: for every additional 20 ZEVs per 1,000 people occurring in a specific zip code, there was a 3.2% drop in the rate of asthma-related emergency visits.<sup>28</sup> The American Lung Association has determined that a transition to 100 percent zero-emission new passenger vehicle sales by 2035, coupled with non-combustion electricity generation, would result in 89,300 fewer premature deaths and 2.2 million fewer asthma attacks by 2050.<sup>29</sup> California leads the nation in ZEV adoption. For NYC residents to also gain the benefits California is experiencing and that the American Lung Association forecasted, NYC and NY State need to pick up the pace and step on the gas — or rather electrons.

The ZEV for NYC Act would affect 30,000 vehicles, the nation’s largest municipal fleet, vehicles that are in constant use nearly exclusively within city boundaries. Consequently, the Act would directly reduce pollution in NYC. In addition, it would act as a catalyst, causing businesses and residents in NYC and across NY State to purchase more ZEVs. Enacted in 2019, the Climate Mobilization Act, or Local Law 97, is an example of NYC’s influence. NYC’s Local Law 97 paved the way for legislators in Albany to support provisions in the 2023-2024 State Budget that prohibit natural gas and other fossil fuels in most new buildings: in 2026 for smaller buildings and 2029 for larger ones. Similarly, enactment of the ZEV for NYC Act would accelerate ZEV adoption in the New York metropolitan area and across New York State. What NYC does matters locally, regionally, nationally, and internationally.

### PlaNYC doesn’t directly confront the root of the transportation emissions problem

On April 20, 2023, the Administration released: “PlaNYC: Getting Sustainability Done.”

We certainly agree with how PlaNYC characterizes the emissions problem: “Currently, 90% of goods destined for the five boroughs are transported by truck, and almost all of the trucks are diesel-powered. The resulting air pollution impacts local health and exacerbates the global climate crisis. Our reliance on diesel trucks disproportionately burdens low-income communities of color adjacent to the city’s industrial areas, which are now home to a growing concentration of last-mile delivery facilities.”



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However, the proposed solutions represent incremental improvements, and consequently they do not fully recognize the severity of both the climate crisis and the prevalence of pollution-related respiratory illness. PlaNYC's solution calls for an end to unlawful truck idling. The U.S. EPA has created the New York City Cycle (NYCC) for emissions testing that features low-speed stop-and-go traffic conditions. NYCC's maximum speed is 27.7 mph, and the median speed is 3.9 mph. Still, per the cycle the vehicle is moving 65% of the time.<sup>30</sup> Reducing unlawful idling is helpful, but at most NYC is addressing a small fraction of the problem. By contrast, all-electric vehicles are ideal for eliminating the emissions associated with idling (whether lawful or unlawful) plus stop-and-go traffic conditions, given their high efficiencies and lack of tailpipe emissions.<sup>31</sup>

Second, PlaNYC states: "The City will explore ways to incentivize the use of low- and low/zero-emission trucks through the piloting of low-emission freight zones in areas with the highest concentration of truck traffic and the worst public health outcomes. The City will study a range of pricing, regulatory, and incentive options, and pilot a program to benefit one or more environmental justice communities by 2027."

Rather than focusing primarily on unlawful idling and conducting pilot a pilot program, NYC should concentrate most of its efforts directly on the root of the problem: getting diesel trucks off the road as soon as possible, leading by example with the municipal fleet.

ZEV for NYC Act calls for NYC to make meaningful progress starting now — transitioning the City's entire fleet to ZEVs by July 1, 2035. Some in the administration are asking that the deadline for heavy-duty trucks be extended to 2040. Of course, a later deadline would be more comfortable, but it would not be an example of "getting stuff done." We agree, DCAS and other agencies would need to pick up the pace of electrification. Other governments and companies have achieved this transition. By 2020, Shenzhen, China converted its entire fleet of 16,000 buses to ZEVs. In China overall, sales of zero-emission buses reached 91 percent in 2022.<sup>32</sup> During the first quarter, sales of electric city buses in Europe exceeded the sales of diesel buses.<sup>33</sup> By the end of this year, Santiago, Chile aims to have a fleet of over 1,700 zero-emission buses in service. In New York City, IKEA converted its fleet of last-mile delivery vehicles to ZEVs by May 2021. Similarly, Loomis has committed to convert its fleet of armored vehicles to ZEVs by 2025. Tens of private sector companies, some headquartered in NYC, are eager to help NYC deploy charging and energy storage infrastructure. If NYC leads by example, then it would have the moral authority to persuade the largest idling offenders, including LabQ Clinical Diagnostics, Amazon, Con Edison, Verizon, and Merchants Automotive Group, to convert their fleets to ZEVs on a similar schedule.

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<sup>1</sup> Iyad Kheirba et al., "The contribution of motor vehicle emissions to ambient fine particulate matter health impacts in New York City: a health burden assessment," *Environmental Health*, 26 August 2016, 15 Article Number: 89, p. 5, <https://ehjournal.biomedcentral.com/articles/10.1186/s12940-016-0172-6>

<sup>2</sup> Ibid., p.6.

<sup>3</sup> Will Horner, "Solar-Power Investment to Exceed Oil for First Time. IEA Says," *The Wall Street Journal*, May 25, 2023, <https://www.wsj.com/livecoverage/stock-market-today-dow-jones-05-25-2023/card/solar-power-investment-to-exceed-oil-for-first-time-iea-says-LP02EsDz47BRaveygkFG>

<sup>4</sup> Neal E. Boudette, "Electric Vans, Delayed by Production Problems, Find Eager Buyers," *The New York Times*, May 16, 2023, <https://www.nytimes.com/2023/05/16/business/energy-environment/electric-vehicle-delivery-vans.html?searchResultPosition=7>

<sup>5</sup> René Valdes, "When Will New Car Prices Drop?" Kelly Blue Book website, <https://www.kbb.com/car-advice/when-will-car-prices-drop/>

<sup>6</sup> Please refer to Table 1.

<sup>7</sup> See section "Zero-emission heavy-duty vehicles are cost-effective" in this letter.

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- <sup>8</sup> Section 43.19.648, Revised Code of Washington, <https://app.leg.wa.gov/rcw/default.aspx?cite=43.19.648>
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- <sup>11</sup> Global Drive to Zero, “Zero-Emission Technology Inventory,” accessed May 2023, <https://globaldrivetozero.org/tools/zeti/>
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- <sup>15</sup> Notice of Proposed Rulemaking for Section 6417 Elective Payment of Applicable Credits, Fed. Reg. 101607 23, to be codified at 26 CFR Parts 1 and 301, <https://www.federalregister.gov/public-inspection/2023-12798/section-6417-elective-payment-of-applicable-credits>
- <sup>16</sup> The ZEV category of vehicles includes BEVs and hydrogen fuel cell electric vehicles (FCEVs).
- <sup>17</sup> Peter Slowik et al., “Analyzing the Impact of the Inflation Reduction Act on Electric Vehicle Update in the United States,” *The International Council on Clean Transportation*, January 2023, <https://theicct.org/publication/ira-impact-evs-us-jan23/>
- <sup>18</sup> California Air Resources Board, “Draft Advanced Clean Fleets Total Cost of Ownership Discussion Document,” September 2021, [https://ww2.arb.ca.gov/sites/default/files/2021-08/210909costdoc\\_ADA.pdf](https://ww2.arb.ca.gov/sites/default/files/2021-08/210909costdoc_ADA.pdf)
- <sup>19</sup> “Electric Vehicle Outlook 2023,” Bloomberg NEF, June 2023, p. 3, <https://about.bnef.com/electric-vehicle-outlook/>.
- <sup>20</sup> *Ibid.*, p. 8.
- <sup>21</sup> New York City Department of Citywide Administrative Services, Fleet Management webpage, accessed May 2023, <https://www.nyc.gov/site/dcas/agencies/fleet-services.page>
- <sup>22</sup> New York City Department of Citywide Administrative Services, Fleet Sustainability webpage, accessed June 2023, <https://www.nyc.gov/site/dcas/agencies/fleet-sustainability.page>
- <sup>23</sup> Simon Alvarez, “Tesla Semi production specs: powertrain, battery, Megacharger output, and more,” *Teslarati.com*, January 26, 2023, <https://www.teslarati.com/tesla-semi-production-specs-released/>
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