



September 16, 2019

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**Clean Transportation
Technologies and Solutions**

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VIA ELECTRONIC MAIL

RE: Comments of CALSTART on New Jersey 2019 Draft Energy Master Plan

To whom it may concern:

CALSTART is pleased to offer its comments in response to the Draft 2019 New Jersey Energy Master Plan (EMP).¹ CALSTART applauds the Board of Public Utilities (BPU) for taking on this important planning exercise and for recognizing the need for deep and broad action across sectors. The below comments relate to Strategy 1 (Reducing Energy Consumption and Emissions from the Transportation Sector).

CALSTART appreciates the opportunity to participate in this ambitious and timely effort and hopes to remain actively engaged with the Murphy Administration and the BPU as New Jersey finalizes and implements the EMP in late 2019 and beyond.

I. Background

CALSTART is a national not-for-profit organization with a worldwide member base that presently consists of more than 220 firms, fleets, and agencies that are dedicated to supporting a growing high-tech, clean transportation industry that cleans the air, creates jobs, cuts imported oil and reduces global warming emissions. CALSTART provides services and consulting to spur advanced transportation technologies, fuels, systems and the companies that make them. CALSTART has offices located in California, Colorado, Michigan, and New York.

CALSTART has maintained a Northeast regional office in Brooklyn, NY since 2013. Since that time, CALSTART has specialized in administering programs that facilitate the adoption of cleaner, more efficient vehicle technologies throughout the region. CALSTART has established itself as a trusted broker in the Northeast between government agencies and the clean transportation industry, including through its leadership role in the Northeast Diesel Collaborative convened by United States Environmental Protection Agency Regions 1 and 2 and the air agencies of states in those regions.²

¹ New Jersey Board of Public Utilities. Draft 2019 New Jersey Energy Master Plan. Released June 10, 2019. <https://nj.gov/emp/pdf/Draft%202019%20EMP%20Final.pdf>

² See, for instance, CALSTART presentations listed on the Northeast Diesel Collaborative website: <https://northeastdiesel.org/>

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CALSTART is a recognized authority with respect to workplace electric vehicle (EV) charging programs and the commercialization of zero- and near-zero-emission technologies for medium- and heavy-duty vehicles. In late 2018, CALSTART launched the Global Commercial Vehicle Drive to Zero Program,³ a worldwide, collaborative program to support the rapid transformation of people and goods movement to advanced clean technologies in key cities and regions. This strategy was developed by CALSTART in conjunction with the California Air Resources Board and industry. Drive to Zero connects regions together to develop and share actions (policies, incentives, investments) that encourage faster adoption and drive global demand for similar vehicles and components.

II. Responses to Questions for Requested Feedback

Strategy 1: Reduce Energy Consumption and Emissions from the Transportation Sector

1) In considering the policy mechanisms suggested in Strategy 1, how should the state seek to implement the policies to reduce transportation-related emissions? What policy mechanisms have we missed?

CALSTART applauds the BPU for identifying transportation as the leading sector of opportunity for achieving emissions reductions toward New Jersey's medium- and long-range climate goals. Furthermore, the items identified and discussed in Strategy 1 are comprehensive in their coverage of transportation emissions sources and incorporate a broad range of initiatives and policy mechanisms that can reduce emissions from a variety of sources.

The most promising policy levers that New Jersey can explore to curb transportation emissions are those that do not apply to specific end-uses but rather address the emissions characteristics of transportation fuels broadly. One such mechanism to achieve this end is a cap-and-trade or cap-and-invest system, such as that which is under development through the Transportation and Climate Initiative (TCI), in which New Jersey is already an active participant. Additionally, New Jersey can explore the creation of a low-carbon fuel standard (LCFS) to create a credit system based on fuel attributes and allow utilities to generate revenues from sales of electricity for electric transportation that can be used to fund additional aligned investments. Cap-and-invest and LCFS policies can exist in harmony and complement one another as distinct mechanisms that transmit different signals to the market, as they do in California, while providing additive, predictable, and long-term funding sources to ensure that clean transportation systems are kept well funded.

2) The state seeks to "lead by example" in the electrification of its fleet. What case studies, cities, states, etc. should New Jersey look to and learn from as it rolls out clean light-duty vehicles and buses?

California provides perhaps the best example at the state level of using its vehicle fleet to lead by example in the realization of transportation sector emissions

³ See <https://globaldrivetozero.org/>



reduction goals. Executive Order B-16-12 requires California state agencies to lead implementation of the state's zero-emission vehicle (ZEV) initiatives by progressively ramping up their procurement of ZEVs, from 10% of light-duty vehicle purchases in fiscal year 2014/2015 to 50% in fiscal year 2024/2025.⁴ Purchases of zero-emission medium- and heavy-duty vehicles can be credited toward light-duty procurement requirements but do not have corresponding targets of their own.

Locally, New York City's *Clean Fleet* strategy provides an instructive example of municipal efforts toward fleet decarbonization through a portfolio of strategies including electrification. Introduced in late 2015, *Clean Fleet* provides a blueprint to achieving GHG reductions of 50% of 2025 and 80% by 2035 for New York City's municipal fleet of more than 30,000 assets.⁵ Central to these objectives is the electrification of the City's nonemergency light-duty sedan fleet; initially targeting 2000 light-duty EV sedans by 2025 (50% of nonemergency sedan fleet), NYC Fleet announced in May 2019 that it had already surpassed its 2025 target and would raise the 2025 mark to 4000 EVs.⁶ *Clean Fleet* also seeks to opportunistically but aggressively reduce diesel emissions, which are its largest source of climate and air quality emissions, as viable fuels and technologies become available. NYC Fleet issued a Request for Information on emerging technologies toward this end in late 2015⁷ and has since greatly expanded its use of hybrid/anti-idling technologies to curb diesel waste in addition to heavily increasing use of biodiesel and beginning an extensive renewable diesel program⁸ to displace petroleum diesel. NYC Fleet continues investigating ZEV options for medium- and heavy-duty vehicles as market availability evolves and can meet their fleet needs functionally and economically.

3) Over what timeline should the state seek to rollover its light-duty (passenger) fleet to EV? Over what timeline should the state rollover its bus fleet? Please also consider incremental milestones.

The market for light-duty EV passenger cars is rapidly maturing; Bloomberg New Energy Finance now predicts that EVs will reach cost parity with conventional cars in 2025.⁹ New Jersey's ZEV MOU target of 330,000 EVs on the road by 2025 is a sufficiently ambitious target to use for calibrating interventions to ensure that the State is well positioned to achieve an order-of-magnitude increase in EV adoption over the next five years. With that said, the 2025 ZEV MOU target equates to a roughly 15% ZEV sales share, meaning 85% of cars sold will still use internal combustion engine (ICE) technology and that the years immediately following 2025 will become especially critical for turning over much of the remaining fleet.

⁴ https://www.dgsapps.dgs.ca.gov/documents/sam/SamPrint/new/sam_master/sam_master_File/chap4100/4121.pdf

⁵ http://www.nyc.gov/html/dcas/downloads/pdf/fleet/NYC_clean_fleet_plan.pdf

⁶ <https://www.government-fleet.com/332241/new-york-city-doubles-ev-fleet-goal-to-4k>

⁷ https://www1.nyc.gov/assets/dcas/downloads/pdf/fleet/rfi_sustainable_fleet_solutions_press_release_dec152015.pdf

⁸ <https://www1.nyc.gov/assets/dcas/downloads/pdf/fleet/Press-Release-DCAS-to-Expand-Use-of-Renewable-Diesel-in-City-Fleet-Vehicles.pdf>

⁹ <https://about.bnef.com/blog/electric-cars-reach-price-parity-2025/>



To achieve a 50% reduction in national light-duty vehicle emissions by 2030, CALSTART’s modeling indicates that ZEVs must reach at least a 40% sales share by that year and the fuel efficiency of remaining ICE vehicles on the road should average at least 40 miles per gallon (mpg) (the on-road average is currently less than 25 mpg). Accordingly, New Jersey should deepen its ZEV MOU commitment by striving for at least a 40% ZEV sales share statewide by 2030; or more likely, to ensure that national sales average 40% ZEV, more progressive states like New Jersey will possibly need to have ZEVs account for more than 50% of new car sales by 2030. The EMP is a terrific venue to advance market catalytic mechanisms such as EV purchase assistance and facilitation or provision of private and public charging infrastructure.

As for buses, many operators nationally have begun their initial round of zero-emission bus (ZEB) deployments, a testament not only to the maturity of clean bus technology but also to the conduciveness of transit bus operations to electrification—i.e., known, tractable daily mileage along fixed routes with back-to-base operation. In New Jersey, both NJ Transit and the Port Authority of New York and New Jersey have begun planning or implementation of battery electric bus programs and are learning how best to integrate this technology into their fleets.

While these early deployments will no doubt reveal opportunities for improvement in bus technology, operations, infrastructure, and planning, the technology is largely already here. Numerous leading efforts, including C40’s Green and Healthy Streets Declaration¹⁰ and California’s Innovative Clean Transit (ICT) regulation,¹¹ require transit agencies to procure only ZEBs beginning in the next decade so that they will be running fully zero-emission bus fleets by 2040. Certainly this presents difficult questions regarding how infrastructure and energy systems can support these levels of penetration, but other cities internationally—namely Shenzhen, China, which has more than 16,000 all-electric transit buses—have succeeded in turning over bus fleets to electric in relatively short timeframes.

As such, New Jersey should work closely with NJ Transit, the Port Authority, and other industry actors to evaluate the initial ZEB deployments and set an action plan for turning over the State’s bus fleet to entirely ZEB technology by 2040. Given our relationships with manufacturers and suppliers in the ZEB arena and experience with informing CA’s ICT rule in 2018, CALSTART could assist New Jersey in convening a ZEB working group that would inform this roadmap and work closely with NJ Transit and other bus operators in the state to facilitate timely achievement of the objectives set by the State.

4) How can the state work with the private sector to increase publicly-accessible EV charging infrastructure?

New Jersey’s suite of vehicle and charging incentive offerings have done well to support early EV adopters. Ensuring that EVs can proliferate into the mainstream, however, will require a robust public-access network of direct current fast chargers

¹⁰ <https://www.c40.org/other/green-and-healthy-streets>

¹¹ <https://ww2.arb.ca.gov/resources/fact-sheets/innovative-clean-transit-ict-regulation-fact-sheet>



(DCFC) to complement Level 2 charging programs like It Pay\$ to Plug In and PSEG’s existing and proposed home and workplace charging programs. A relatively dense, visible DCFC network will not only provide “in-the-wild” charging to ease range anxiety for current EV drivers, but will also enhance the perceived viability of the statewide electric vehicle supply equipment (EVSE) infrastructure for drivers who would be unlikely to consider an EV under current conditions.

To achieve rapid build-out of DCFC statewide, New Jersey should mobilize resources from utilities and the private sector by leveraging available public dollars from the ZEV infrastructure portion of its Volkswagen Appendix D allotment. Virginia¹² and Colorado¹³ are leading examples of states that took swift action to define desired outcomes with respect to public-access DCFC network build-out and then award a statewide contract to the selected EV service provider. To improve station economics while utilization rates are low, the BPU should encourage utilities to propose make-ready investments for public-access DCFC sites, as well as opening an exploration into EV rates that include demand charge reform (e.g., temporary demand charge waivers until utilization increases).

5) How can the state work with the private sector to advance the technology for medium- and heavy-duty vehicles and incentivize private sector adoption of alternative fuel vehicles?

New Jersey has an opportunity to assume a leadership position in the clean medium- and heavy-duty (MHD) vehicle market by first attracting and then accelerating deployments of commercially available alternative fuel MHD vehicles. The landscape for zero- and near-zero emission commercial vehicles is rapidly evolving and there are commercially available options for school, transit, and shuttle buses as well as cargo vans, steps vans, delivery trucks, and port equipment.¹⁴

However, because prices for these technologies remain high, production volumes remain low, and production timelines remain long, manufacturers of these vehicles generally prioritize sales in areas where supportive policies—such as purchase incentives or emissions standards—are in place to support sales. CALSTART has worked with agencies in three states—California, New York, and Illinois—to develop and administer voucher incentive programs that provide point-of-sale discounts on eligible truck and bus models for vehicle fleets. In total, these programs have facilitated the purchase of more than 7,500 all-electric, hybrid, or alternative fuel vehicles and mobilized nearly \$400 million for that purpose.

While most policy roadmaps for clean vehicles focus on light-duty EVs, the experience with voucher incentive programs validates that not only are clean MHD vehicles commercially available, but furthermore that the very presence of incentive programs can stimulate the growth of a local clean vehicle economy. In New Jersey,

¹² <https://www.governor.virginia.gov/newsroom/all-releases/2018/august/headline-828389-en.html>

¹³ <https://environmentalrecords.colorado.gov/HPRMWebDrawer/RecordView/1366535>

¹⁴ For information on commercially available zero-emission medium- and heavy-duty vehicle models, refer to CALSTART’s Zero-Emission Technology Inventory (beta version): <https://globaldrivetozero.org/resources/zero-emission-technology-inventory-preview/>



where prominent fleets like those of IKEA’s home delivery contractors, NJ Transit, the Port Authority of New York and New Jersey, and those operating within port facilities, have made commitments to integrate cleaner or zero-emission technology or are facing prospects of tighter regulations in years to come, purchase incentives in the form of a voucher program would be well received.

For these reasons, CALSTART encourages New Jersey to follow through on execution of a voucher incentive program to catalyze local growth of a clean medium- and heavy-duty vehicle market, as mentioned on page 34 of the Draft EMP. Furthermore, CALSTART is an experienced administrator and technical advisor in the establishment, design, and administration of voucher incentive programs with a presence in nearby Brooklyn, from which its staff work with New York State agencies to implement the New York Truck Voucher Incentive Program (NYTVIP), which will relaunch imminently after a hiatus since funding last expired in June 2018. A voucher incentive program is an off-the-shelf program that can be up-and-running in New Jersey in less than six months.

To complement upfront purchase incentives, New Jersey should also ensure that funding is available to assist fleets in the fueling and sustainable operation of these vehicles. California’s Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP) offers incentives of up to \$30,000 per vehicle for corresponding EVSE and up to \$100,000 per vehicle for hydrogen fueling infrastructure.¹⁵ Additional funding should also be dedicated to support small planning grants for fleets to help them plan and scale adoption of zero- and near-zero emission technologies. Finally, supporting the ability for utilities to invest in make-ready infrastructure for MHD EV fleets can erode a major barrier to commercial fleet electrification. CALSTART would be pleased to engage in further discussion about the inclusion and sequencing of elements to encourage a more comprehensive and viable turnover of public and private MHD fleets to cleaner technologies.

6) What policy mechanisms should the state develop to reduce greenhouse gas emissions at its ports?

Port facilities can be important leverage points for implementation of air policies that may otherwise lack execution pathways. Namely, while cities and states presently lack authority to institute regulations that ban particular fuels or technologies, port facilities are discrete nodes that are typically overseen by independent entities. As such, New Jersey can use its ports as focal points for environmental initiatives aimed toward improving air quality and reducing climate emissions from transportation sources.

In California, the San Pedro Bay Ports and the South Coast Air Quality Management District (SCAQMD) have embraced this strategy, implementing indirect source rules that assign freight facilities responsibility for emissions of the trucks that service them.^{16,17} This enables the Ports of Los Angeles and Long Beach, the most

¹⁵ <https://www.californiahvip.org/infrastructure/#infrastructure-incentives>

¹⁶ <http://www.cleanairactionplan.org/>

¹⁷ <https://www.sierraclub.org/press-releases/2018/05/aqmd-votes-regulate-pollution-sources-warehouses-railyards>



active in the nation,¹⁸ to promulgate rules and incentives to encourage or require the use of cleaner drayage truck technologies and establish *de facto* low-emission zones in and around the ports. Since there are far fewer freight facilities statewide than there are freight vehicles, such an indirect source approach could be an efficient and effective way to administer and enforce emissions requirements that can push freight vehicles toward cleaner technologies over time.

There is already precedent for this sort of port-centered air policy in New Jersey, in the form of the Port Authority of New York and New Jersey's (PANYNJ) Truck Replacement Program (TRP), which restricts the ability to call on PANYNJ port facilities to only drayage trucks with engine model years 2004 or newer.¹⁹ The TRP is impactful because it not only bans the oldest, least efficient diesel trucks but also provides voucher-style incentives to assist truck fleets in upgrading their fleets to newer, less polluting technology. The TRP is a proven program design that—if fully funded—can catalyze changing the complexion of drayage trucks traversing the state of New Jersey.

Similarly, the zero-emission ground support equipment (GSE) and cargo handling equipment (CHE) is evolving and improving rapidly enough to justify a similar tack being explored for airports in the state. GSE is a major source of tenant emissions within PANYNJ's ambit—responsible for an estimated 173,209 metric tons of carbon dioxide equivalent emissions at PANYNJ's airports alone in 2016.²⁰ A mix of technology-forcing regulation, active enforcement, and operator incentives to facilitate compliance would position New Jersey well to transition additional segments of off-road equipment to cleaner technology and improve air quality at and around its port facilities.

In this respect, New Jersey can follow the lead of California, which has recently announced a new program, called Clean Off-Road Equipment Voucher Incentive Project (CORE), designed as an analogous initiative to its on-road counterpart but targeting assistance to off-road fleets, namely port operators.²¹

III. Conclusion

CALSTART is pleased to offer its suggestions in response to the strategies and questions posed by the BPU as it seeks to accelerate market transformation for clean transportation in New Jersey. We hope to be a resource to the BPU and partner agencies and look forward to the release of the final plan later this year.

¹⁸ <https://www.inboundlogistics.com/cms/article/top-10-us-container-ports/>

¹⁹ <https://www.panynj.gov/truckers-resources/truck-replacement.html>

²⁰ <https://www.panynj.gov/about/pdf/EY2016-Report-Final.pdf> at 47

²¹ <https://ww2.arb.ca.gov/our-work/programs/clean-off-road-equipment-voucher-incentive-project>



Sincerely,

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