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CALSTART comments on CEC Investment Plan

Please see Attached Comments of CALSTART

Additional submitted attachment is included below.

BEFORE THE CALIFORNIA ENERGY COMMISSION

2020-2021 Investment Plan Update for the Clean Transportation Program/ Alternative and Renewable Fuel and Vehicle Technology Program

Docket Number: **19-ALT-01**

CALSTART COMMENTS ON INVESTMENT PLAN UPDATE

Introduction

CALSTART commends Commissioner Monahan and Energy Commission Staff on the 2020-2021 Investment Plan Update for the Clean Transportation Program. We are extremely supportive of the proposed \$20 million allocation for medium-and heavy-duty vehicles (M-HDV) & infrastructure for 2020-2021, and especially the total of \$134.8 for the four-year period through 2023. This represents a very significant increase in funding over the past four-year period. CALSTART has observed that the demand for incentives to fund M-HDV fueling/ charging infrastructure is immediate and immense.

We are very pleased to see the following proposals in the Draft Investment Plan:

1. Developing a streamlined, continuous incentive project for medium- and heavy-duty charging infrastructure
2. Providing targeted capital assistance to install transit zero-emission fueling infrastructure (in other words, “make-ready” equipment and infrastructure for battery charging systems and hydrogen fueling equipment) throughout the state where transit buses operate;
3. Providing funding to support the construction and installation of hydrogen refueling infrastructure specifically for medium- and heavy-duty FCEVs;
4. Assisting medium- and heavy-duty fleets with technical assistance incentives for infrastructure planning and development.
5. Continuation of the CaleVIP program, with a focus on DC-Fast Charging, as well as potential new statewide campaigns

We also suggest the following be added to the investment plan:

6. Consider including alternative fuel vehicle corridors as an additional area of focus for the CTP investment plan

Each of the proposals we support or propose are consistent with programs CALSTART advocated for in last year's CTP investment plan, as well as during the Staff-led workshops focused on M-HDV infrastructure solicitations. CALSTART is very pleased to see the inclusion of the proposed M-HDV programs and find them responsive to the current industry needs to accelerate infrastructure planning and deployment.

The state's infrastructure development goals for electric and hydrogen vehicles, captured in Executive Order B-48-18, call for significant infrastructure development--250,000 electric vehicle chargers (including 10,000 DC fast chargers) in addition to the development of 200 hydrogen fueling stations by 2025. Additionally, SB350 calls for accelerating pace of transportation electrification through major utility investments for MHDEVs, and it is critical that solutions are developed by the Commission through this program to enable successful infrastructure development.

1. CALSTART strongly supports the development of a streamlined, continuous incentive project for medium- and heavy-duty charging infrastructure.

Commercial fleets continue to identify infrastructure planning and development costs to be the top barriers to MHD- zero-emission vehicle (ZEV) deployment. To help build industry confidence and to further support advanced vehicle adoption, the Commission needs to signal a continuous and significant stream of funding for ZEV infrastructure that complement the state's vehicle incentive programs. Although the state's major investment owned utilities are implementing incentive programs to support MHD-ZEV deployment, most incentives are going toward make-ready and may not provide adequate incentives to help cover charging equipment hardware and software costs on the customer side of the meter. Additionally, there are utilities in the state that do not offer infrastructure incentives to fleets.

It is crucial that incentives for infrastructure are available to fleets to support successful fleet deployment and should be available in parallel with vehicle incentive programs. The Commission is the appropriate agency to provide incentives through a *streamlined, continuous program* to help fleets pay for the "customer side of the meter" charging infrastructure, as well as the software necessary for managed and smart charging. This type of ongoing, continuous funding is critical to help fleets speed their adoption of MHD-ZEVs. CALSTART supports the strategy of administering these funds through a Block Grant similar to the funding structure of the CALeVIP program, to enable the efficient and timely award and dissemination of funds. This grant model will expeditiously support voucher incentive programs that apply 'point of sale' discounts off the price of a medium- and heavy-duty technology. It is critical that as commercial fleets seek investments for vehicles, that subsidies are readily available to support infrastructure development and deployment on a parallel track.

CALSTART is proud to be a partner in working with government, industry and communities to drive the advancement of zero-emission vehicles and the charging/refueling infrastructure needed to support them. In the role as administrator of the California Air Resources Board's (CARB) Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP), CALSTART works closely with state agencies, manufacturers, fuel suppliers and fleets to address important barriers to ZEV deployment by putting forth solutions that enable successful technology adoption. CALSTART has processed over 9,200 voucher requests since 2010, of which over 5,000 have been redeemed as of February 2020. These include deployed medium and heavy-duty hybrid, battery electric, hydrogen fuel cell, and Low NOx natural gas vehicles benefitting over 1,250 fleets. *Currently*, there are 4,700 unredeemed vouchers, 2,500 of which are battery-electric—these represent vehicles that have been approved for funding but have not yet been delivered to the customer. For the 2,500 approved battery-electric vehicle vouchers alone, we anticipate a need of at least \$75 million in funding to support deployment of necessary *customer-side* (not make-ready) charging infrastructure. This estimate assumes average costs of needed hardware and software for each battery electric vehicle, and does not take into account other site-specific construction costs. This estimate *does not capture* the thousands of vehicles that will hopefully receive vouchers in FY '20-'21.

2. CALSTART strongly supports targeted capital assistance to install zero-emission fueling infrastructure for transit properties.

CALSTART strongly supports Staff's proposal to provide capital assistance to transit properties for the deployment of zero-emission infrastructure. California currently has 227 transit agencies, and all transit agencies will be required to meet the initial phase of requirements of the Innovative Clean Transit (ICT) Regulation by either 2023 or 2026¹. Over an aggressive timeline, big and small transit fleets will be required to operate a 100% zero-emission bus fleet by 2040 to help California meet critical greenhouse gas emission reduction goals. This regulation will require significant investment in infrastructure to successfully enable fleets to meet the respective timelines. Infrastructure development costs vary greatly by transit property and depend on size of the fleet and lot, access to grid and capacity, number of chargers and configuration, and required make-ready and construction costs. Infrastructure costs remain to be one of the biggest barriers to technology adoption and, as transit agencies face future zero-emission fleet requirements, assistance is needed to help them address the high and unexpected costs.

¹ Large transit agencies will be required, by 2023, to have ¼ of all bus purchases by zero-emission. Small agencies will be required to meet this milestone by 2026.

3. CALSTART supports providing funding to support the construction and installation of hydrogen refueling infrastructure specifically for medium- and heavy-duty FCEVs.

To date, we understand that all of the COMMISSION's funding for hydrogen fueling stations has been appropriated to stations that do not support M-HDVs. Simultaneously, many transit fleets in the state have already adopted hydrogen fuel-cell vehicles and have installed fueling infrastructure without assistance from the Commission. Hydrogen fuel cell technology for medium and heavy-duty trucks and buses offer extended range and durability for longer distances and operations, and as such, many more fleets are considering the purchase of hydrogen buses and trucks. For long-distance hauling in particular, hydrogen fuel-cell trucks will be a critical technology to break our dependence on fossil fuels. Therefore, the should comprehensively develop a strategy to support M-HDV hydrogen fueling, especially for transit fleets as well as for long-distance truck fleets traversing key freight corridors. This could include funding for public hydrogen fueling stations for trucks, as well as shared fueling on transit properties that might be accessible to other fleets.

There are new medium- and heavy-duty on-road vehicle technologies that are showing great potential for zero-emission regional and long-haul transportation for goods movement, such as vehicles being developed by Nikola and Toyota. Although forecasting suggests increased adoption of fuel cell technologies, there continues to be a significant gap in fuel availability. Fuel cost and availability continues to be an adoption barrier and requires important market enablers to promote technology adoption, reduce fuel costs and build out reliable infrastructure to serve the on-road sector. Similarly, H2 fuel cell technology can help provide power solutions to the freight and off-road sectors, such as port marine equipment and energy storage.

CALSTART recommends the development of a Hydrogen Refueling Station Development and Technology Demonstration Program that would encourage public/private partnerships to build and expand refueling stations for hydrogen. The Program would encourage the production of renewable hydrogen and would seek to benefit both the on-road and off-road transportation sectors.

Through its alternative fuel corridor project work, CALSTART has evaluated for and sought input in the need and development of infrastructure incentives to support the development of hydrogen refueling along key freight transportation corridors in California like Interstate 5. Locating hydrogen refueling along corridors enables the adoption of fuel cell trucks that can support long-haul distances.

4. Providing medium- and heavy-duty fleets with technical assistance incentives for infrastructure planning and readiness is a critical immediate need.

CALSTART is pleased to see the investment plan call out incentives for technical assistance for fleets and encourages the Commission to move funds to fleets as quickly as possible to meet their

planning needs . Infrastructure planning assistance or “site assessment grants” would allow a fleet to evaluate energy needs, build out requirements, charging strategies and costs. For large fleets, these may go well beyond a “site assessment” to more of a planning blue-print or roadmap that covers multiple sites where their vehicles might charge or fuel. CALSTART recommends that transit fleets regulated by CARB under the Innovative Clean Transit rule, as well as fleets receiving voucher incentives from HVIP and other MHD EV incentive programs be given priority to receive these planning grants. The amount could vary based on the number of vehicles in the fleet and other factors that may add complexity to the planning process. Pursuant to AB 8 (Perea, Statutes of 2013), the Commission is empowered to use block grants to more expeditiously provide funding, and given that these planning grants may be relatively small in individual award amounts, it may not be efficient to award them through a separate solicitation, but rather they might want to be subsumed into the larger “continuous” program administered through a block-grant structure.

These planning grants could assist fleets with scaling up ZEV adoption. Barriers such as limited energy capacity, costly upgrades, space constraints, deployment lead time, and demand charges are significantly impacting fleets’ abilities to successfully deploy electric vehicles. Whether a fleet is transitioning 10 or 100 vehicles to electric, important guidance and technical support is required to help a fleet understand the necessary steps while receiving ongoing support to see a project through to completion. Most fleet managers today are not informed on electric fleet deployment and are only familiar with deploying a conventionally fueled fleet. As fleet electrification continues to grow, technical assistance is required in these early deployment stages while training becomes more prevalent and best practices are shared more broadly with the industry.

The complexity of planning & installing infrastructure for MHD-ZEVs can vary depending on the size and type of facility. Transit bus facilities for instance can have different infrastructure requirements such as energy load, space and charging configuration. Freight facilities for example may electrify a variety of vehicles and equipment and may have to factor in energy management, different charging scenarios, and energy storage. Although transit and freight facilities may differ, both may require similar upgrades and smart charging solutions to be cost effective and efficient. Because of the diverse and dynamic nature of infrastructure planning for each facility, it is important that fleet and equipment managers are provided technical planning assistance to effectively plan for vehicle and equipment integration.

5. Continuation of the CALeVIP Program, with a focus on DC-FC build-out and consideration of new investments in statewide campaigns for airports and workplace charging

CALSTART acknowledges the critical nature of the CaleVIP program to building out the infrastructure network necessary to support the state’s EV deployment goals and GHG reduction

mandates. Going forward, the Investment Plan should balance providing certainty while at the same time maintaining flexibility to re-allocate funding as the light-duty EV market continues to develop. Closely monitoring progress toward closing the infrastructure gap will be crucial, as further identified by the Charging Infrastructure Assessment.

As Energy Commission staff notes in the investment plan, a projected 3,600 charger gap will still exist for DCFC in 2025, even when all CalLeVIP program funding is taken into account. We agree with EVGo, Tesla, and others, that fast charging infrastructure is critical to reaching the state's increasing population of EV drivers and is especially crucial for drivers without reliable access to charging at home or in the workplace, as well as for residents of multi-unit dwellings who rely on public charging for the majority of their charging needs. DC-FC is also critical for drivers utilizing key transit corridors, as well as light duty vehicle (LDV) fleets, including car sharing and ride sharing applications. We do wish to echo the question/ concern posed by Tesla that it is unclear from the information provided in tables in the investment plan for DC-FC, but it appears that the DCFC connector count does not include Tesla's Supercharger network.

CALeVIP is critical for increasing the number of fast chargers to propel the state toward its goal of 10,000 fast chargers by 2025. Given the importance of DC-FC, we encourage the Commission staff to clarify what proportion of light duty funding will be specifically targeting DCFC deployments through programs such as CALeVIP. Finally, we echo the comments of CALSTART members, such as EV-Go, who have urged the Commission to consider whether the CalLeVIP reservation process should be reformed, especially given the very high attrition rate, now that the Commission has a few years of experience with rolling out the program to various regions in the state.

Consider new Light Duty Charging Campaigns

Relative to light-duty electric vehicle infrastructure, the Commission is making progress by funding charging stations in targeted counties and regions around the state. Outside of those efforts, the Commission should strongly consider investing in new campaigns with a statewide focus on outreach to key commercial sectors and employers. We recommend that funds be allocated to support the following two areas: airports, and workplace charging outreach.

To boost EV sales, all stakeholders and the state working together can do a better job of not only providing more charging opportunities, but also giving current and prospective EV drivers the sense that the market is growing and that charging is ubiquitous. California airports could play a leading role in this regard. CALSTART urges the Commission to consider an effort that results in 20 percent of all parking spaces at airports being dedicated to, and identified as, an EV charging spot. The experience of going into

an airport parking lot would change for many. Presently, for most EV drivers it's often a frustrating experience to be able to charge at on-airport parking lots. The leading California airports could change the situation by working with the Commission and working to make 20 percent of their spaces available. What's fortunate for almost all airports is that they have significant amounts of electric capacity in parking garages/ surface lots, and the cost of installing chargers would be relatively in-expensive, especially as airport parking lots would be one of the best uses of Level 1 chargers, particularly in the "daily" parking lots. The Commission could work with a contractor to help coordinate and lead this effort in California and its leading airports.

Workplace charging is another area where a new statewide outreach campaign to major employers would be beneficial. Governor Edmund G. Brown, Jr. did a great job of increasing awareness about the importance of workplace charging and getting companies to install chargers. Not only do workplaces provide important charging opportunities for renters, they also serve as a "second showroom", helping to increase awareness among EV owners and their work colleagues. A renewed statewide campaign to encourage employers is needed to boost this important market segment. Developing a new program, including an information clearinghouse that would acknowledge the leadership of employers and also help facilitate best practice information could be very beneficial. A renewed statewide effort hopefully could involve the Governor, other local officials, hundreds of new employers.

6. Consider including funding to implement Alternative Fuel Corridors Projects

An additional category that CALSTART encourages the Commission to consider as part of future investments would be supporting the development and expansion of Alternative Fuel Corridors. In order to advance the deployment of medium- and heavy-duty clean vehicle technologies along California's busy and heavy-traversed corridors, investments are needed to develop publicly accessible charging and refueling stations along highways to support regional and long-haul zero-emission transportation. In partnership with the United States Environmental Protection Agency (EPA) Regional Offices 9 and 10 and West Coast Collaborative (WCC), CALSTART led a public-private partnership between federal, state, local, and tribal governments, as well as the private sector, academia, and environmental groups, to evaluate infrastructure needs along transportation corridors in California, Oregon and Washington.

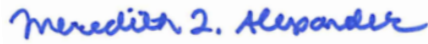
Through the Alternative Fuel Infrastructure Corridor Coalition (AFICC), CALSTART conducted an industry survey that identified 147 potential locations in need of infrastructure to advance medium- and heavy-duty vehicle technologies, 62 of which were zero-emission infrastructure (charging/refueling). Though the results of AFICC's survey and industry engagement only scratch the surface of needed investments for infrastructure, the multi-stakeholder collaborative effort demonstrated the value of

supporting infrastructure development along corridors to advance clean transportation in the region.

Conclusion

We applaud the time, effort, and analysis that the Commission Staff put into the development of this investment plan and find that it is one of the most strategic and forward-looking to date. CALSTART looks forward to supporting the Commission’s efforts to advance zero-emission vehicles in California by helping fleets to plan for and install the necessary infrastructure for this transition. CALSTART appreciates the opportunity to provide comments to the Commission and stands ready to work with Staff to further develop the concepts proposed here and to successfully implement the Investment Plan.

Sincerely,



Meredith Alexander
Policy Director
CALSTART
Malexander@calstart.org



Alycia Gilde
Sr. Director, Fuels & Infrastructure
CALSTART
agilde@calstart.org