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CALSTART Comments on Revised 2018-19 Investment Plan

Additional submitted attachment is included below.

TO: California Energy Commission
FROM: Ryan Schuchard, Policy Director
DATE: March 14, 2018
RE: 2018-19 ARFVTP Investment Plan should include major investments in MHD ZEV infrastructure and establish new block grant to implement

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CALSTART appreciates this opportunity to provide comments to the California Energy Commission (Commission) on the *2018-2019 Investment Plan Update for the Alternative and Renewable Fuel and Vehicle Technology Program* (Plan), revised March 5, 2018.[1]

We are pleased that since the previous update to the plan, Governor Brown has issued Executive Order, B-48-18, which calls for 250,000 electric vehicle charging stations by 2025 to curb pollution from cars and trucks. And we are encouraged that in support of the order, the Commission's overall budget and focus within the Plan has significantly increased for Zero Emission Vehicles (ZEV) infrastructure, with $235 million for this category.

As the Commission develops its plan for ZEV infrastructure, it is important to recognize that one of the state's most concentrated sources of greenhouse gas emissions, which the state must reduce 40% below 1990 levels by 2030, is medium- and heavy-duty (MHD) vehicles. In turn, sister agencies to the Commission, such as the California Air Resources Board (CARB), are seeking to develop or enhance new regulations that promote MHD ZEVs. Such regulations include the Clean Transit Rule, Advanced Clean Trucks Rule, Zero Emission Airport Shuttle Bus Rule, Sustainable Freight Action Plan, Low Carbon Fuel Standard, and Clean Air Action Plan for the Port of Los Angeles/Long Beach.

In order for California's portfolio of MHD ZEV programs to work, the state needs to significantly expand and scale-up infrastructure for MHD ZEVs, which are currently only nascent. A lack of sufficient infrastructure for MHD ZEVs is currently inhibiting vehicle adoption by fleets, even in early-mover markets. Key current "gaps" include:

- High cost and low number of validated solutions for vehicle charging to power MHD electric vehicles in meaningful numbers (i.e. beyond a small handful of pilot vehicles per fleet);
- High cost of grid transmission and distribution upgrades that fleet operators who wish to deploy MHD electric vehicles are currently responsible for;
- High cost of hydrogen fueling infrastructure in general;
- Inadequate MHD-specific rate offerings from utilities with options to address the costs and complexity of very high demand charges;
- Lack of open, interoperable charging protocols and systems; and
- Lack of familiarity and understanding about charging best practices that service varying types of fleet operations.

California's large Investor-Owned Utilities (IOUs) have begun taking steps to address these issues in the California Public Utilities Commission's (CPUC) SB 350 proceeding.

[1] Available at http://energy.ca.gov/altfuels/2017-ALT-01/documents/

Namely, PG&E, SCE, and SDG&E have collectively sought approval to rate-base around $1.1 Billion for MHD electric vehicle infrastructure over the past year.

However, the utilities' SB 350 proposals are only part of the solution, for a few reasons. First, the proposals focus mainly on basic grid upgrades, rather than development of innovative charging systems at the vehicle end. Also, the proposed investments are confined only to the three largest IOUs' territories, where the utilities are targeting urban and high-utilization applications first. Furthermore, the investments focus purely on battery-electric charging infrastructure and do not address hydrogen or fuel cell vehicles. Finally, it is likely to take 2-3 years from now before the expenditures that are approved become fully translated into "steel in the ground" (note that the SDG&E proposal is about a year behind the other two).

Therefore, it is appropriate that the Plan indicates an interest in making funding allocations which are focused on ZEV infrastructure for MHD vehicles (pp. 41-44).

Given the importance of MHD vehicle infrastructure to California's climate goals and the continued gaps in investment, we believe that the Commission has an opportunity to develop a program that would focus on deploying solutions in key areas where innovation and technology diffusion is needed for MHD ZEVs in support of California's ambitious goals. This could fulfill a critical need that is germane to the Commission's expertise and not being addressed by any other agencies or sources of funding.

With this in mind, we propose that the Commission design a block grant for MHD ZEV infrastructure to specifically tackle the above issues.

The Commission has extensive expertise in infrastructure deployment for near-zero-emission and zero-emission MHD vehicles. This has been showcased through the Commission's 10 years of administering the Advanced and Renewable Fuel and Vehicle Technology Program, which has deployed innovative infrastructure technologies. Despite CARB's and the CPUC's work to electrify the transportation sector, they do not have the same breadth of experience and depth of knowledge with infrastructure technologies and deployment strategies, especially in the MHD vehicle sector. As a result, the Commission is the agency best suited to design and implement such a program.

The types of projects the Commission could demonstrate and collect data include, but are not limited, to helping fleets identify strategies that harness solar power and use on-site storage; demonstrating on-site zero-emission power generation via a stationary fuel cell; testing various on-board and off-board chargers to determine which technologies best service various vehicles, duty-cycles, etc. and developing systems to reduce demand charges and help zero-emission MHD vehicles address over-generation on the grid.

With this in mind, CALSTART proposes for the Commission to establish a new block grant program to address this topic in early 2018. An initial $15 million block grant Commercial ZEV Infrastructure program (CZIP) would complement the Commission's light-duty EV charging infrastructure block grant. Such a MHD vehicle block grant would also be consistent with the Governor's recent executive order which specifically calls out the need to address pollution from trucks.

In general, CZIP would provide funding for a portfolio of demonstrations, pilot projects, commercial incentives, and assistance that could include:

1. **Demonstrations and Pilots to Identify Strategies for Getting Fleets to Scale:** The program could include demonstration project funding to identify strategies to mitigate peak load issues and allow commercial fleets to deploy MHD EVs at large scale in all utility territories, including those of IOUs and publicly-owned utilities. It could also include pilot project funding to deploy infrastructure tech into commercial fleets and prove at full scale, focusing in areas outside of what is covered in the ongoing CPUC proceeding (i.e. outside of large IOU territories).
2. **Commercial Incentives to Accelerate Market Adoption:** The program could include incentive funding for the build-out of innovative large, behind-the-meter EVSE systems for commercial fleets. This focus would complement programs funding piece-by-piece equipment such as HVIP and through some IOUs. The program could also include funding for grid power supply upgrades outside of IOU territories in targeted cases (i.e. relatively high-ROI, strategic projects). In sum, the commercial incentives element of the program would provide a cost-effective and time-efficient process for defraying the high cost of installing EV chargers at commercial facilities.
3. **Technical Assistance to help needy fleets identify the best potential solutions:** The program would provide technical assistance to smaller and less sophisticated fleets in all utility territories.
4. **Diffusion of learning and best practices:** The program, through its administrator, would identify a means to facilitate shared learnings and best practices among fleets operators, suppliers, service providers, and manufacturers. Whether leveraging an existing conference or conducting a separate one, a CEC branded annual meeting involving the key practitioners should be organized. The program manager would also develop case studies and publish analyses that would help fleets stay on top of the latest developments and technologies.

As always, CALSTART appreciates the opportunity to provide comment to the Commission and stands ready to work with Commission to further develop the concepts proposed here and to successfully implement the Plan.