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Additional submitted attachment is included below.

BEFORE THE CALIFORNIA ENERGY COMMISSION

Workshop on Solicitation Concepts for Medium & Heavy-Duty Vehicles—Clean Transportation Program/ Alternative and Renewable Fuel and Vehicle Technology Program	Docket Number: **19-TRANS-02** **November 8, 2019**

CALSTART COMMENTS ON STAFF WORKSHOP ON MEDIUM- AND HEAVY-DUTY VEHICLE SOLICITATION CONCEPTS

Introduction

CALSTART appreciates the opportunity to comment on the Staff workshop on Heavy-Duty Zero-Emission Vehicles and Infrastructure, held on October 25th, as we greatly appreciated Staff's efforts in developing draft solicitation concepts and in presenting them at the workshop. CALSTART is a nonprofit organization that aims to accelerate the commercialization and adoption of clean transportation technologies. CALSTART represents over 220 organizational members including vehicle and component manufacturers, transit agencies, goods movement operators, large commercial fleets, such as Pepsi-Co and Fed-Ex, utilities (including California's major utilities), and electric vehicle service providers. Many of our members are working to advance widespread adoption of zero and near-zero emission vehicles and equipment in the medium and heavy-duty vehicle, and off-road vehicles and goods movement sectors. CALSTART also the program administrator for California Air Resources Board's(CARB) Hybrid and Zero-Emission Bus and Truck Voucher Incentive Project and the new Clean Off-Road Equipment (CORE) Voucher Incentive Project , as well as managing research and fleet deployment projects across the U.S. CALSTART has also launched the "Global Drive to Zero", a partnership-based program aimed at spreading rapid commercialization of MHDV ZEVs across the world.

CALSTART commends Commissioner Monahan and Energy Commission Staff on the 2019-2020 Investment Plan Update for the Clean Transportation Program. We were extremely supportive of the proposed $30 million allocation for medium-and heavy-duty vehicles (M-HDV) and infrastructure and acknowledge that this represents a significant increase over last year's allocation for M-HDV. CALSTART has observed that the demand for charging infrastructure funding to support this rapidly transforming industry is immediate and immense. We are glad to the CEC's leadership on achieving Executive Order B-48-18 calls for significant infrastructure development of 250,000 electric vehicle chargers (including 10,000 DC fast chargers) in addition to the development of 200 hydrogen fueling stations by 2025.

CALSTART is proud to be partnering with government, industry and communities to drive this change and we work closely with state agencies, manufacturers, fuel suppliers and fleets to address important barriers by putting forth solutions that enable successful technology adoption, particularly in the medium-and heavy-duty vehicle (M-HDV) classes.

HVIP is one of the largest incentive programs for MHDVs for commercial trucks and buses.[1] HVIP, along with other state funded technology market acceleration programs such as the VW mitigation fund and the CEC's Prop 39 school bus program, presents an important opportunity to coordinate and plan for infrastructure development to successfully deploy and anticipate the growing emergence of medium- and heavy-duty zero-emission vehicles (MHDEV).

Given the state's aggressive climate and infrastructure development goals for electric and hydrogen vehicles, recent changes to HVIP funding, authorized IOU make-ready investments for MHDEVs, and the accelerating pace of transportation electrification, it is critical that public funding available from the CEC compliment other funding sources and enable successful infrastructure development. In our comments on the clean transportation investment plan we suggested that the CEC consider a comprehensive strategy for M-HDV infrastructure that is also inclusive of the yet-to-be appropriated funds from FY '18-'19**.** In particular, we suggested that:

1. Funds are spent immediately on technical assistance for large fleets to plan infrastructure
2. Infrastructure deployment funds be made available expeditiously to support those M-HDV fleets who are ready and able to install infrastructure.
3. Both types of funding would be most efficiently distributed using a block-grant program structure, rather than via individual solicitation.
4. Funds for hydrogen infrastructure should also be spent on fueling to support M-HDVs.

In these comments we will discuss how we view the present solicitation concepts as supporting these key principles and/or recommend modifications to the solicitations to more clearly support these principles.

<u>Overarching Comments on all Solicitation Concepts</u>

Fleets have immediate and immense needs for infrastructure funding to support imminent vehicle deliveries and we Encourage the CEC to consider the most efficient way to meet these needs

There are over 2,000 medium and heavy-duty ZEVs (MHD-ZEVs) "on order" in the HVIP queue, meaning that there are 2,000 distinct vehicles that will be delivered state-wide in the next few years, in

[1] Transit buses will now receive an exemption from paying state sales tax until 2024, thanks to AB 784 (Mullin) passed in 2019.

addition to the over 800 MHD-ZEVs already delivered through HVIP. Because of the extremely insufficient GGRF allocation for the HVIP program for 2020, the CARB board voted on October 24th to remove the "infrastructure plus up" for vehicle vouchers. Meaning that for any future vouchers, there is, at *a minimum* a new 20,000-30,000 funding need for chargers/ fueling infrastructure *per vehicle* moving forward. We calculate this funding shortfall to be at least $4.5 million for 2020 alone, based on the number of vehicles on the waiting list for 2020. Keep in mind that most high capacity chargers cost much more than 30,000, and, the HVIP plus-up was only designed to cover the actual hardware, and not the installation costs.

We Recommend putting the majority of the available $48 million into creating a new incentive-type program that can roll out funding quickly & efficiently using an incentive program design and/or block grant model, and which can continue from year to year, with additional funding,

Given the pace of change in this industry and the vast unfunded infrastructure needs, we strongly recommend against the Energy Commission using individual grant awards for funding for vehicle infrastructure. Pursuant to AB 8 (Perea, Statutes of 2013), the Commission is empowered to use block grants to more expeditiously provide funding, where smaller individual funds would not lend themselves well to a traditional grant solicitation, or, as the Revised Report states , when preferable because "outside organizations have more experience issuing incentives or are more familiar with the needs and opportunities of specific project types." A grant program can work well for providing large sums of funds for research-type projects where each project needs to be overseen and managed to some degree. By contrast, the CEC should be supporting present-day and real-world infrastructure needs by providing matching funds to public and private fleets to meet a backlog of funding need for infrastructure, and to meet very concrete and well known needs going forward.

For example, each of the transit districts in the state need to comply with CARB's innovative clean transit rule, which has milestones at both 2024 and 2030. Therefore, each transit agency is or will be developing a plan to turn-over almost its entire fleet to either BEV or FCEVs in the next 10 years. While installation and make-ready costs may vary greatly by location, the general quantity of new vehicles can be predicted. CARB regulations will continue rolling out over the next few years for other segments of the MHDV market, and these will create a very predictable stream of demand for infrastructure funding to support these fleets.

We encourage the CEC Staff to begin by developing proposals around what is a good and justified use of AB 118 funds to support these known/ knowable vehicle deployments. Is it fairest to spread funds evenly across all purchasers of ZEVs? Or do certain purchasers deserve more support from the CEC? Should the CEC be subsidizing the full costs of chargers or installations? Or only up to50%? 75%? We encourage staff to come to the next workshop with proposals around these principles that stakeholders could react to, as well as some quantitative analysis of what we think the total potential infrastructure demand might be, just based on adopted regulations and state goals.

We recommend that the CEC design a new *ongoing program* rather than conducting annual grant solicitations and set up a process that doesn't *require* new annual grant concept design or a new annual grant solicitation process.

The state has a fairly clear picture of how ZEVs will be adopted by the MHDV industry in the next 5-10 years. We also have a very clear picture of where vehicles are going and which sectors are leading the charge to adopt ZEVs, including projections for how many vehicles per year in different segments. Therefore, if significant funding can be put into a multi-year program, then this can provide the industry with the certainty necessary for them to make investment decisions, and determine how many vehicles they can afford to purchase for their public/ private fleet over the next 5-10 years. This would not preclude the CEC from awarding a smaller proportion of annual funds through grants to "special projects" for MHDV. We estimate that the need to make up for the HVIP infrastructure "plus up" being unavailable moving forward is at least 21 million for FY 2020. (There are nearly 850 zero-emission vehicles in the HVIP waiting list for 2020, who will not be eligible for the infrastructure funding, which would have been either 20,000 or 30,000 depending on the vehicle). Therefore, even a portion of the $48 million in funding designated for MHDVs would be a very significant "seed" for starting a new MHDV infrastructure incentive program, that could continue from year-to-year as more AB 118 funding becomes available.

While Cal-EVIP is the only present example of an infrastructure incentive program run by a third-party administrator for the CEC we observe the following potential downsides with the Cal-EVIP structure:

- First-come-first-served model has led to a few companies receiving a majority of incentives;
- Reimbursing a large % of total costs can lead to cost inflation if not closely monitored;

- Need to respond in real-time to program design issues that may arise, such as a seeming unfair distribution of funds. (The CPUC's self-generation incentive program, or SGIP, was forced to tackle a very similar issue for storage incentive funds).

We wish to offer the following ideas for overcoming these issues, which we would appreciate discussing at a future program design workshop:

- Form a program steering committee, which could consist of other state agencies, and stakeholder/ industry representatives to raise and respond to issues in real-time;
- Linking to HVIP voucher queue/ waiting list to prioritize funding;
- Consider setting annual fleet limits or max allocation per agency per year;
- Consider creating funding segments by vehicle/ fleet type.

Requiring a utility to sign a "capacity check" before you're determined eligible for funding is unrealistic and unnecessary. We understand that the CEC's goal in this requirement may be to expedite funding and ensure that grant recipients are able to spend awarded funds in a timely manner. However, generally, fleets are waiting up to a year to receive vehicles they have ordered, and so there is plenty of time to work with utilities to plan for any necessary distributions system upgrades, and they shouldn't also have to wait for funding for the project while the utility is planning to serve it. Also, in many cases, facilities will certainly need capacity upgrades—and they may not be ready to work with the utility to upgrade the system until they have certain funding for the project. So, this is a classic chicken/ egg issue and we urge Commission staff to re-consider.

Comments on Specific Solicitation Concepts:

Concept #1: Infrastructure Deployment for Vehicle Demonstrations for Freight

A new CARB program is launching this fall, funded by GGRF and focused on freight vehicles and equipment, and includes infrastructure funding for vehicle deployment. "CORE"(clean off-road equipment) will incentivize commercial technologies, so, if CEC proceeds with this solicitation concept, there may be significant potential overlap between these programs. Furthermore, CARB's board just voted to spend $40 million from the 2020 GGRF budget on pilot & demonstration projects, which could also include pre-commercial demonstrations that also include an infrastructure component. We are unsure whether there is an unmet infrastructure funding need for demonstration projects that are underway, as infrastructure is eligible for funding by existing CARB pilot & demonstration allocations. In short, we don't see that receiving funding from the CEC for *only* the infrastructure portion of a demonstration project, and not for the vehicles, would incentivize or allow additional incremental demonstration projects.

If the CEC's intention is to provide *supplemental* funding to existing demonstration projects, or to projects that may be funded by CARB in 2020, then this should be clarified. If the main purpose of this solicitation concept would be to *learn* about charging needs for pre-commercial technologies, or to learn about charging opportunities that may be pre-commercial (such as Vehicle-to-Grid for MHDVs) than that may be a worthwhile use of the CEC's funds. Either way, we would encourage clarification regarding the goal of this solicitation at a subsequent workshop.

Concept # 2: Transit & Truck Fleets, Capital Assistance for ZEV Infrastructure Deployment

This concept appears designed to support the rollout of HVIP eligible vehicles, which CALSTART strong supports. In addition to our general comments above about considering an alternate program structure (other than individual grant awards), we would recommend that this concept be further fleshed out to clarify what awards would cover. This clarification could come through a revised proposal and an additional workshop, focusing on issues such as whether to fund:

- Charging hardware only, and what % of costs? Incremental to other funding (such as through existing HVIP "plus-up" or IOU "fleet ready" program?
- Charger installation (trenching, conduit, etc) and what % of costs?
- Make-ready infrastructure: only that not paid for by the utility? Should the solicitation distinguish between investor owned-utilities (who have a total of ~$600million authorized for make-ready for MHDVs) or municipal utilities, who may or may not have funds set aside for make-ready?
- Further defining H2 fueling infrastructure-" up to the pump" –agencies using or considering H2 are typically requiring economies of scale---so perhaps this should be broken out into a separate solicitation and funded both from the MHDV designated funds and also from the H2 fueling designated funds?
- Should there be a cap for awards per vehicle? Per agency?
- Would the CEC be concerned with equal distribution of funds across different regions, as they were with Cal-EVIP?

Also, we would suggest that the solicitation discuss giving priority to those agencies/ fleets that are presently awaiting vehicle deliveries, but the CEC should consider how to ensure equitable distribution of funds.

Another idea that we would love to see the CEC encourage through the Clean Transportation Program are shared charging depots for commuter buses. LA is developing an example where three different transit agencies will share a downtown charging depot for their morning/ evening commuter routes. This will have major overall savings as the buses don't need to return to home base (potentially 30-40 miles away) to charge. And the shared infrastructure will also decrease overall costs. This is a model that would be worth of significant public agency encouragement and support.

Finally, we recommend that CEC Staff consider the significant range of charger costs based on the fleet/ vehicle needs. Fleets are installing everything from L2 chargers to 200kW chargers. These costs obviously vary dramatically. We also have observed massive variation in installation costs statewide, from less than 50k per vehicle to nearly 300k per vehicle.

On the issue of make ready costs, we recommend that CEC Staff work closely with CPUC Staff and PG&E/ SCE/ SDG&E to get a good data-set of make-ready costs per vehicle in those territories. CEC Staff should also survey Municipal utilities to understand how they are handling make-ready requests and what % of make ready they are funding vs. expecting the fleets to fund.

C**oncept # 3: ZEV Blueprints**

In our comments on the CTP, CALSTART recommended a "Technical Planning Assistance Program" to be run through a block-grant type of program structure, and to make on-going awards of smaller $ amounts to fleets, in particular public fleets, that need to contract for technical assistance to help them understand and plan for their future charging/ fueling needs. This concept, as we envisioned, seems somewhat distinct from the "Blueprints" as described in this concept, and as suggested by the presentation from the Port of Long Beach, which was more of a "community-wide electrification" plan, and not a planning process designed to create an infrastructure deployment plan. We see a planning assistance program also helping fleets, like transit agencies, to decide whether to buy battery electric vehicles or fuel-cell vehicles, or perhaps what an ideal mix of both technologies might be from an infrastructure and operations perspective. Under the ICT regulation, transit agencies across the state are required to develop individual "ZEB rollout plans". For large agencies these plans are due by July 1, 2020; and for small agencies (i.e. transit agencies with fewer than 100 vehicles in maximum annual service), these plans are due by July 1, 2023. The development of these plans is almost entirely unfunded, which creates enormous fiscal pressures on transit agencies across the state, particularly smaller agencies, who could be greatly assisted by the CEC in meeting their 2023 deadline. So, we echo the CA Transit Assn. in recommending that CEC focus part of this funding on the development of these ZEB rollout plans.

We are supportive of extending planning grants to different types of entities, including small sea-ports. We are however unsure about the Community Based partner requirement, which may make sense for private entities, but not necessarily for transit-districts, who are, by definition, community-based organizations with strong ties to their communities. Also, we wish to note that DACs are not evenly distributed throughout the state, so while benefits to a DAC could be a scoring criteria, it does

not seem a fair requirement that there must be a DAC component to the planning grant, especially if the CEC is proposing to use statewide DAC definitions.

CALSTART recommends that this planning assistance have a broad reach with limited awards to each fleet/ district/ agency, and therefore a "block grant" seems most appropriate for this purpose. Smaller transit agencies are struggling to plan for this major shift in their fleets and what resources will be required, both in financial terms and technical know-how. The same may apply to CARB's airport shuttle rule, with smaller businesses in need of greater assistance in determining their basic infrastructure needs.

We envision that an award of $50,000- $100,000 for each "site assessment grant" would allow a program administrator to evaluate energy needs, build out requirements, charging strategies, and costs. For an agency or organization with multiple sites, these amounts could be stacked to increase the overall award. We would recommend that transit agencies, who have a mandate to buy zero-emission-buses immediately, and other fleets and small businesses currently waiting to receive vouchers from HVIP, 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.

We would also encourage the CEC to come up with an incentive for districts that are close together geographically to conduct a *shared* planning process, which would obviously warrant a larger award, but where they could pool resources, hire a single consultant, and potentially this could even lead to shared charging infrastructure.

<u>Planning Grants could serve two primary purposes:</u>

1) <u>Assist Fleets with Getting to Scale</u> – Transit, school bus and truck fleets throughout the state are facing significant barriers with infrastructure deployment as many aim for 100 percent ZEVs. Barriers such as limited energy capacity, costly upgrades, space constraints, deployment lead time, and demand changes are significantly impacting a fleet's ability to successfully deploy electric vehicles. Hydrogen infrastructure development is also at nascent stages for fleets, and it is challenging to understand upfront and ongoing costs. Whether a fleet is transitioning 10 or 100 vehicles to ZEV, 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.

2) Evaluate Infrastructure Needs by Facility Type – Implementing infrastructure for zero emission vehicles (hydrogen or battery electric) varies greatly depending on the size and type of facility. Transit bus facilities for instance can have very different infrastructure requirements compared to other fleets, such as electric load, space limitations, and charging/refueling 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. Additionally, the need for significant numbers of high-capacity charging units, which some users are discovering to be more costly than expected, is causing some transit fleets to consider whether hydrogen fuel-cell buses are a more cost-effective alternative. 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.

Concept # 5

CALSTART is most supportive of the sub-concept to fund Infrastructure for long-haul truck vehicles on major corridors, such as the I-710. We find that this could compliment work we are doing in partnership with U.S. EPA Region 9, and Southern California Edison to identify alternative fuel corridors throughout California, with a specific focus on I-5, in addition to 710. It is imperative to plan infrastructure along freight corridors if we are ever going to be able to transition long-haul trucks to ZEVs.

Conclusion

Thank you for considering our comments on your draft solicitation concepts for MHD-ZEV infrastructure. We look forward to ongoing discussions with CEC Staff to further refine these concepts and ensure that AB 118 funds can be spent in a manner that offers the greatest benefit to California by helping to rapidly deploy charging and fueling infrastructure to support MHD-ZEVs.

Sincerely,

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