DOCKETED	
Docket Number:	19-TRAN-02
Project Title:	Medium- and Heavy-Duty Zero-Emission Vehicles and Infrastructure
TN #:	242396
Document Title:	Los Angeles Cleantech Incubator Comments on MHD ZEV Infrastructure Funding Plan and Solicitations
Description:	N/A
Filer:	System
Organization:	Los Angeles Cleantech Incubator
Submitter Role:	Public
Submission Date:	3/18/2022 4:35:54 PM
Docketed Date:	3/18/2022

Comment Received From: Los Angeles Cleantech Incubator
Submitted On: 3/18/2022
Docket Number: 19-TRAN-02

Los Angeles Cleantech Incubator Comments on MHD ZEV Infrastructure Funding Plan and Solicitations

Additional submitted attachment is included below.

March 18, 2022

Hannon Rasool
Deputy Director, Fuels and Transportation Divison
California Energy Commission
715 P Street
Sacramento CA, 95814

Subject: Comments on Staff Workshop on Funding Allocations for Future Medium and Heavy Duty Charging and Refueling Infrastructure Projects

Dear Mr. Rasool:

On behalf of the Los Angeles Cleantech Incubator (LACI), thank you for the opportunity to provide comment on the drafting of funding allocations for California Energy Commission's Fiscal Year 2022-2023 Funding Plan (FY '22-'23 Plan). LACI is encouraged to see the sizable commitment of $1.365B between the 2021-2023 Clean Transportation Program and General Fund funding to zero emission transportation, and we look forward to supporting the CEC to ensure rapid progress towards regional and state transportation electrification goals.

LACI and the Transportation Electrification Partnership

LACI is a nonprofit organization that is creating an inclusive green economy by unlocking innovation through working with startups to accelerate the commercialization of clean technologies; transforming markets through partnerships with policymakers, innovators and market leaders; and enhancing communities through workforce development, pilots and other programs.

LACI created and convenes the Transportation Electrification Partnership (TEP), which is an unprecedented regional public-private collaboration to accelerate deep reductions in climate and air pollution by the time of the 2028 Olympic and Paralympic Games by pursuing bold targets, pilots, initiatives, and policies that are equity-driven, create quality jobs, and grow the economy. In TEP's *Zero Emissions 2028 Roadmap 2.0*, we detail specific targets for the electrification of light, medium and heavy-duty vehicles—as well as the deployment of charging infrastructure—needed to create the zero emissions transportation future we want and need for the greater LA region and, ultimately, all of California. Specifically, we are working to achieving the following targets in LA County by 2028:

- 30% of all light-duty private vehicles on the road are electric, with 80% electric sales;
- 100% of shared cars are electric
- 84,000 public and workplace chargers available to support these vehicles;
- 100% of buses in the Los Angeles County Metropolitan Transportation Authority and Los Angeles Department of Transportation fleets are electric;
- 60% of medium-duty delivery trucks electric;
- 40% of short haul and drayage trucks zero emissions;
- 5% of long haul trucks zero emissions;
- Up to 95,000 chargers for goods movement.

Achieving these bold goals—and advancing the State's overarching climate and air quality goals—will take the integrated work of all TEP members and many others, and will require strong and consistent support from the State, including CEC's Clean Transportation Program incentives.

As work towards achieving these goals, LACI and TEP are working to identify and prioritize the types of zero emission transportation pilot projects that can be most impactful and can be most readily scaled through supportive policies. LACI is pleased to see several of the concepts we are exploring reflected in the CEC's proposed solicitations, specifically: School District Vehicle Grid Integration Concept, Mobility-as-a-Service, and the M/HD Loan Pilot. Drawing on this analysis, LACI respectfully offers solicitation-specific recommendations on the proposals in CEC's Medium-and-Heavy Duty ZEV Infrastructure Funding Allocation Workshop, as well as an unsolicited proposal for the CEC's approach to funding drayage truck infrastructure.

Zero Emission Drayage Infrastructure Investment

The CEC's commitment to zero emission drayage trucks and associated infrastructure comes at a critical time, based on technological availability, fleet preparedness, and regulatory developments. In 2018, LACI conducted an RFI on M/HD ZEV technology in coordination with POLA, POLB, CARB and the CEC to understand the state of technology as well as near-term plans for production and deployment, with a focus on impacts on the drayage market. Based on information submitted by nearly 40 industry players, the RFI , partners identified, and the CEC reiterates in this funding plan, that the infrastructure needed to support battery-electric trucks requires immediate investment given the time required to deploy the high-powered charging.

Given this need to quickly deploy public and private charging infrastructure to achieve our state and regional goals of 100% zero-emission drayage trucks by 2035, the CEC should consider allocating portions of the General Fund funding as block grants directly to regional public agencies and non-profit organizations connected to port communities. This will accomplish multiple goals of the CEC and the local port communities. One, air districts should be able to get funding into transformative projects at a quicker rate than a statewide agency could. Second, the air districts will know technologically what and geographically where the funding is needed. By delegating the grant provision capacity to air districts, the CEC can spend the money more quickly and with a higher degree of precision based on regional needs.

As for funding amounts and structure, the **CEC should support the legislative request for at least $100M for charging infrastructure along specific goods movement corridors that handle disproportionate amounts of freight, such as the I-710 and adjoining logistics network.** Further, the CEC should ensure these block grants are structured in a manner that prioritizes both regions that can provide match funding to leverage the CEC's investment and holistic project and equity considerations instead of a first-come, first-served disbursement. Lastly, in order for impacted communities to receive the most immediate benefits, the CEC should focus exclusively on charging infrastructure, given battery-electric trucks present ability for faster, sustainable deployments when compared to hydrogen fuel cell trucks (more below).

Hydrogen Refueling Concept

Specific to the proposed concept, the CEC should not seek to co-locate light-duty hydrogen vehicles with medium-and-heavy duty (M/HD) vehicles with any hydrogen refueling solicitation. Light-duty vehicles rarely fuel today in the same location as M/HD vehicles, regardless of fuel type, and designing a station to accommodate both may not adequately serve either. Green hydrogen may have uses in the long-haul transportation or industrial sector, but locations where green hydrogen will be needed for those purposes are not likely to be convenient locations for passenger cars to refuel.

More broadly, the CEC should not prioritize funding for M/HD fuel cell truck infrastructure given the leading truck manufacturers have indicated they will not produce, and hence fleets will not consider and not deploy, hydrogen fuel cell technology for at least five years. The North American Council for Freight Efficiency (NACFE) has, after extensive research across applications and OEMs in their Run on Less - Electric report, determined that heavy-duty regional haul is an application where BEV trucks are technologically mature enough *today* for fleets to make investments. The same is not said for hydrogen fuel cell trucks: large-scale series production of Volvo Group's fuel cell systems will not start until the second half of the decade; Daimler Truck does not intend to manufacture hydrogen fuel cell trucks at scale until 2027; and Hyundai will deliver just 30 trucks to North America in 2023 as part of a program that also includes the delivery of 100 battery-electric trucks. This timing aligns with the findings of the previously referenced LACI coalition RFI as well.

The CEC has the opportunity to make meaningful progress towards its heavy-duty ZEV deployment goals by prioritizing investments in BEV truck charging infrastructure that support the applications where fleets can make economically sustainable investments, namely regional haul and drayage. These investments will spur deployments today, clean the air, and get California closer to its energy and climate goals.

School District Vehicle Grid Integration Concept

LACI is supportive of the concept for School District Vehicle Grid Integration, especially the emphasis on scalability provided by having energy service providers work with multiple school districts and use off-the-shelf charger technology. Unlocking the ability for school buses to

provide bi-directional charging in the event of a power safety shutoff will be a great first step in proving out the resiliency aspects the EV transition will provide.

The solicitation will be best positioned for success if it is open to both vehicle-to-grid and vehicle-to-building integration, as either could provide the most cost-effective solution. As for eligible applications, the CEC should ensure that residents of CalEnviroScreen 4.0 disadvantaged communities (DACs) are prioritized to receive the benefits of projects as a first principle. From there, the solicitation should balance the need to prioritize schools in areas susceptible to power-safety shut-offs as well as schools with large fleets; the former to address immediate energy resiliency needs, but the latter to tackle the complexities inevitably faced during large deployments. Lastly, the CEC should shape the solicitation to elicit solutions that ultimately provide for energy savings for the school district.

Truck Parking EV Charging

LACI is highly supportive of a solicitation that looks to address the twin concerns of truck parking and overnight charging. Trucks can have a severely deleterious impact on communities if there are no adequate facilities, including parking along residential roads, congesting residential areas in search of parking, and polluting while traveling through these neighborhoods. Given the pressing need for solutions to these problems, and the expense of providing real estate as part of any solicitation response, the CEC should dedicate significant funds to this solicitation.

Though the initial title of the solicitation suggests that truck parking could be co-located with hydrogen refueling, **LACI recommends that the CEC *not* include hydrogen refueling as part of any subsequent solicitation.** A purported benefit of hydrogen fuel cell trucks is their projected ability to refuel quickly compared to battery-electric. Battery electric trucks, however, have massive economic benefits from charging overnight at a comparatively slower rate, given both the lower capital costs of installing the infrastructure, the cheaper electricity produced overnight, and the reduction of battery health harm from slower charging.

As for the eligibility preferences for the solicitation, LACI recommends that priority be considered for sites that have demonstrated potential and interest as the result of a completed CEC M/HD Blueprint. Relatedly, the CEC should have a solicitation of this nature be open to non-profit organizations and government agencies. The reasoning for these recommendations are related; many non-profit organizations and government entities across California have worked with community groups on the land-use questions involved with locating trucks and charging as a part of Blueprints, and this solicitation will be a good opportunity for local stakeholder-driven implementation of those analyses.

LACI's previous analyses of truck charging costs have shown that, inclusive of behind-the-meter and front-of-meter costs, an approximate all-in cost for an overnight Class 8 truck charger can cost $250,000-$500,000. If a true truck parking lot can hold at least 50 trucks, an entire project can cost $12.5 million - $25 million, of which the CEC should expect the private sector to fund at

least 50%. A similarly sized project for truck parking and charging for medium-duty trucks could be as little as half the cost, given the lower-powered, less expensive EVSE used.

Warehouse and Regional Haul

LACI is supportive of this solicitation concept, and the CEC should look at both depot charging for a warehouse operator's captive fleet as well as publicly accessible charging given the diversity of warehouse operations.

In situations where multiple fleets may enter the same warehouse complex, interoperability and infrastructure accessibility should be priorities. If space allows, warehouses are a logical location for providing trucks a quick charging opportunity if necessary to ensure they have enough energy to finish their shift. There must be an emphasis on interoperability too, as many different makes and models may come onto their property every day.

However, given the routing predictability, there is ample opportunity in the immediate future for warehouses serving one customer (like a retailer's distribution center) to rapidly transition to zero emission if the duty cycle permits. Accelerating these fleets' transition will have positive knock-on effects for the rest of the industry, as these will typically be larger corporate fleets with the capacity to drive scale on the manufacturer's side.

As for eligible entities, the CEC should ensure industrial park developers and other real estate entities are eligible applicants, as warehouses are often leased and these property owners are the decision makers on capital investments.

Mobility-as-a-Service Models

The ability for financing to turn high-upfront capital costs into manageable ongoing operational costs can certainly accelerate ZE transportation adoption, and LACI is supportive of this solicitation concept. Current models included truck-sharing, wrap-around leases, pay-per-mile agreements, among others; however, one of the areas for improvement across all is the ability to provide targeted outreach to the types of fleets most likely to use the service. These may be small businesses looking to use an EV van for a weekly delivery or independent owner-operators looking for an affordable transition to a zero emission option. To address this barrier, this solicitation should require both a description of an outreach plan as well as community benefit organization as a partner that is financially supported to assist in the program development or outreach.

Large Scale Ultra Fast Charging Stations

Large scale fast charging stations will be pivotal nodes in any charging network, and LACI is supportive of this concept if implemented appropriately. Similar to our recommendation to the Truck Parking solicitation, LACI would recommend allowing non-profit organizations and government agencies to be eligible entities for this solicitation given the careful land-use planning that a successful application may incorporate into an application. Additionally, given the complex permitting, technical and operational questions any application will need to address,

there should be a clear real estate partner in the application, as well as an energy technology provider.

As for the quantification 'ultra-fast charging', while there may be different peak level outputs available from chargers, the truck must also be able to accept the charge, and this may be developed at different rates by different manufacturers. Thus, just requiring that the stations integrate the CharIn Megawatt Charging Standard (MCS) should suffice for broad industry acceptance.

M/HD ZEV Infrastructure Blueprints

LACI is supportive of the CEC continuing to fund M/HD Infrastructure Blueprints, given their great value in utility coordination and multi-stakeholder alignment on what constitutes the best path forward. Incorporating fleets, community groups, governments, utilities and technology providers into planning grants can lay the ground for transformative implementations. The CEC should also continue to focus on planning in DAC and nonattainment areas as these locations deserve further attention and support.

Lastly, if the CEC were to create a clear path to implementation grants following the conclusion of the Blueprint, whether through EnerGIIZE or other fast-track grant programs, this would further incentivize effective planning and draw more demand to the Blueprint solicitation. Technical assistance may be required, but, ideally, the Blueprint project team adequately engaged technical stakeholders through the Blueprint planning, making the next implementation steps clear.

Infrastructure to Complement CARB Demonstration Concepts

If the CEC is required to fund projects with on-road emission benefits, while supporting CARB's intentions to fund off-road heavy-duty demonstration and pilot projects, the CEC should prioritize projects that make the most use of shared upstream electrical infrastructure, such as a nearby substation or high voltage distribution circuit. Intermodal facilities are likely the best candidate for projects like this, as, for instance, upgrading the electrical infrastructure to support shore-power or a battery-electric locomotive should also provide benefits to a nearby charging station for on-road intermodal trucks that visit the facility. Further, the CEC can best serve the needs of nearby communities by coordinating with the various AB 617 Steering Committees on the zero emissions projects of priority to them.

M/HD Loan Pilot

The Loan Pilot is an ideal mechanism for understanding ways to finance zero emission vehicles, a likely need going forward given the higher capital costs but lower operating costs of zero emission vehicles. Additionally, following through on a solicitation of this nature would be welcomed, given the state has fully supported exploration of loans for M/HD zero emission vehicles through the passing of SB 372. Coordinating with those instrumental in the passage of that bill, including the California Pollution Control Financing Authority and Environmental Defense Fund, will develop an effective pilot solicitation.

When considering the vehicle fleet types most in need of a loan program, the CEC should ensure outreach to truck dealerships across California, as they have the best direct knowledge of customer needs, especially the smaller fleets who may only lease vehicles.

—-

LACI appreciates the opportunity to provide this feedback on such a crucial investment strategy for California's zero emission transportation goals, and looks forward to working with the CEC further on accelerating the deployment of M/HD vehicles. Please feel free to reach me at jack@laci.org for any further information.

Sincerely,

Jack Symington

Sr. Program Manager, Transportation