DOCKETED	
Docket Number:	19-TRAN-02
Project Title:	Medium- and Heavy-Duty Zero-Emission Vehicles and Infrastructure
TN #:	242385
Document Title:	TravelCenters of America Comments on MDHD Funding Allocation Workshop
Description:	N/A
Filer:	System
Organization:	TravelCenters of America
Submitter Role:	Public
Submission Date:	3/18/2022 4:15:22 PM
Docketed Date:	3/18/2022

Comment Received From: John Thomas
Submitted On: 3/18/2022
Docket Number: 19-TRAN-02

TravelCenters of America Comments on MDHD Funding Allocation Workshop

Additional submitted attachment is included below.

March 18, 2022

California Energy Commission
Re: Docket No: 19-TRAN-02
1516 Ninth Street
Sacramento, CA 95814

RE: Docket: 19-TRAN-02 - CEC Medium- and Heavy-Duty Zero-Emission Vehicle Infrastructure Funding Allocation Workshop

Dear Commissioners and Energy Commission Staff:

TravelCenters of America (TA) appreciates the opportunity to provide feedback on the CEC Medium- and Heavy-Duty Zero-Emission Vehicle Infrastructure Funding Allocation Proposed Concepts and Questions presented at the February 28, 2022 workshop. We take this opportunity to sincerely thank California Energy Commission (CEC) staff for this thoughtful proposal to support the development and demonstration of innovative charging infrastructure solutions for light, medium, and heavy-duty vehicles.

TA is the nation's largest publicly traded full-service travel center network. Its customers are professional drivers and highway motorists, including most of the largest fleet companies in the nation. TA's specialized business unit, eTA, is TA's commitment to sustainability, trough adding sustainable energy options for professional drivers and motorists, while leveraging alternative energy to support its own operations. As the transportation industry and the nation continue to address environmental concerns, eTA will generate solutions and provide support for customers and travelers increasingly adopting electrification and alternative energy vehicles, and decarbonization practices.

TA's interest to participate in Clean Transportation Program medium- and heavy-duty infrastructure deployments span nearly all of the proposed concepts and comments are detailed below:

Questions for all Concepts

- ~~What amount of grant funds would be appropriate for each project/concept?~~
- ~~Should the CEC target specific regions in the state?~~
- For infrastructure projects, should grant funds be limited to equipment-only costs?
    - The CEC's funding should provide maximum flexibility to allow match share to be obtained from multiple public and private sources. Allowing reimbursement and match funding to support engineering, design, and permitting activities may enable some applicants to better leverage co-investment from federal, state, and local agencies where such programs may be restricted to equipment-only costs. Regardless, allowable match share elements should not be restricted to infrastructure-only costs, as this may impact applicants' plans for developing larger flagship or beachhead projects.
    - Furthermore, in this post COVID "endemic" inflationary period and workforce shortage, provisions should be considered for premium pay to ensure projects are staffed and completed on time. Also, consider a provision for abnormal commodity cost escalation (e.g. steel, cement, conduit, copper wire, etc.).
- Which of the proposed concepts should take priority in being further developed?
    - We believe the CEC should prioritize funding for enhanced MDHD Blueprints, as discussed below, as well as the Large Scale Ultra-Fast Charging Stations and Truck Parking EV Charging and Hydrogen Refueling project concepts. These funding concepts provide substantial opportunity to expand

MDHD ZEV readiness and technology advances across a greater range of fleets, geographies, and industry sectors.

Hydrogen Refueling

- What amount of grant funds would be appropriate for each project/concept?
    - We would encourage the CEC to consider allocating grant funds in buckets/tranches based upon the daily volume proposed to be dispensed from any CEC-funded hydrogen refueling stations and whether the stations will be used for light-, medium-, and/or heavy-duty vehicles and equipment.. It may also be appropriate to increase funding for the initial deployments of medium- and heavy-duty hydrogen refueling stations to support development of initial hydrogen refueling networks around major goods movement hubs and corridors.
    - Due to known underutilization in the early years, private industry is hesitant to commit to investments unless a payback in a reasonable period of time can be demonstrated. A 70-80% subsidy of early stage projects assures that private industry can match the balance and support the project until a break even point is realized in year 5-8.
- Should the CEC target specific regions in the state?
    - For light-duty hydrogen refueling, the CEC should continue to target underserved regions, those lacking hydrogen refueling infrastructure within 50 miles, and those regions demonstrating or forecasting substantially higher demand than currently available.
- Is there interest in developing such projects?
    - Yes. There is substantial interest to develop hydrogen refueling infrastructure, particularly around major goods movement hubs and corridors, many of which would be excluded under the map included in the CEC's workshop presentation.
- Should a MD/HD fueling component be optional or required? At what minimum daily capacity and number of fueling positions?
    - Additional consideration or preference should be given to those projects proposing to include MD/HD fueling positions. For facilities falling near or along major goods movement hubs and corridors, it may be appropriate to require the inclusion of MD/HD fueling positions. We estimate a minimum of 400 kg/day/fueling position should be sufficient to initiate the greater utilization of hydrogen in MD/HD vehicle applications.
- Conformance to which MD/HD fueling protocols should be required?
    - Without sacrificing safety, flexibility should be offered to applicants to allow for proposals advancing innovation in the MD/HD hydrogen fuel cell vehicle and equipment fueling sector.
- What amount of grant funds per station is appropriate for a station that has both LD and MD/HD components?
    - It has been shown to cost a private company approximately $10 million for a total system cost on an existing site to store and dispense 4000 kg / day. It will be years before realizing a payback, so a 50 % match of this amount will catalyze the industry.
- Should grant funding be limited to equipment costs, or should it be for all CEC budget categories (i.e., labor, subcontracts, indirect costs)?
    - Allowing for more eligible costs will increase the ability for applicants to leverage funding from multiple sources to mitigate the total Capital Expenditures for developing the renewable hydrogen ecosystem. At minimum, we recommend including design, engineering, permitting, and construction activities as eligible match share.
- Should this concept include support for onsite, direct renewable hydrogen production? Which production technologies should be eligible, at what minimum production capacity, and at what funding level?

- If eligible, the CEC should only fund projects committed to producing hydrogen on-site with a maximum carbon intensity of 0 gCO2e/MJ. This would provide site hosts a selection of technology pathways while ensuring the growth of the state's renewable hydrogen capacity.

Truck Parking EV Charging and Hydrogen Refueling

- Should the CEC target specific regions in the state?
  - The CEC should target major goods movement hubs and corridors, including aligning with the FHWA's Alternative Fuels Corridors, to increase the likelihood that awardees may also secure federal funding to develop these projects.
  - Perhaps a data mining exercise can be conducted to reveal where current truck parking infractions occur as a result of drivers, with good intentions, are trying to comply with Jason's law. This would enable a laser focus on the locations that sorely need a solution to be provided.
- What types of entities should be eligible to apply?
  - Applicant eligibility should be unrestricted to enable greater competition.
- What amount of grant funds would be appropriate for this type of project?
  - We would recommend having tiers of awards in recognition of the variability in pricing among charging infrastructure, hydrogen refueling infrastructure, and truck stop electrification for eTRUs.
- What would be the best way to integrate truck parking charging and refueling with a freight corridor?
  - Coordination with Caltrans and alignment with the West Coast Clean Transit Corridor Initiative could expedite project delivery, particularly by aligning with major federal funding opportunities.
  - A triangulation survey with entities owning vacant land in zones (or rezoning with relative ease) tying to the actual truck space parking shortage would serve to accelerate a practical solution to the 5000 spot parking shortage.
- Which geographic locations should be targeted for these funds?
  - The CEC should target major goods movement hubs and corridors, including aligning with the FHWA's Alternative Fuels Corridors, to increase the likelihood that awardees may also secure federal funding to develop these projects.

Warehouse and Regional Trucking

- How can we best provide refueling/charging options for warehouse and regional fleets?
  - Voucher and rebate programs have historically functioned smoothly considering their limited funding and high demand. It may be appropriate to provide for carveouts for projects actively applying to or having secured federal cost share. Where being operated as a discretionary grant, the CEC should consider implementing a 2-Phase proposal process to reduce the risk and administrative burden upon prospective applicants.
- Is depot charging/home-base charging sufficient or is public charging or opportunity/destination charging necessary?
  - Opportunity/Destination Charging is necessary to support greater and earlier adoption of zero-emission MDHD technologies across a diversity of fleets and trucking applications. Providing funding for Opportunity/Destination Charging will provide fleets and owner-operators operational resilience across greater distances, alleviate range anxiety, and increase cargo capacities by reducing the sizing of battery packs and storage tanks which account for a significant portion of vehicle weight.
- Should geographic areas be targeted for these funds?
  - The CEC should target major goods movement hubs and corridors, including aligning with the FHWA's Alternative Fuels Corridors, to increase the likelihood that awardees may also secure or benefit from federal funding to develop these projects.

- Should infrastructure be shared between organizations/businesses?
    - Wherever feasible, the CEC should look to maximize the deployment of shared infrastructure to deliver incentives that promote greater adoption by a diversity of fleets and fleet operators.
- What amount of grant funds would be appropriate for this type of project?
    - The CEC should consider making this concept its largest investment category due to the critical role expanding public access to MDHD ZEV charging/refueling infrastructure plays in enabling increased ZEV technology adoption.

Innovative EV Charging and Hydrogen Refueling Technologies

- What amount of grant funds would be appropriate for each project/concept?
    - Due to initial low utilization, a match similar to the Federal IIJA funds of 70-80% per site would remove any hesitation of private industry to proceed with a base case execution of at least 4 DC fast chargers per site and H2 infrastructure.
- Should the CEC target specific regions in the state?
    - The CEC should target major goods movement hubs and corridors, including aligning with the FHWA's Alternative Fuels Corridors, to increase the likelihood that awardees may also secure federal funding to develop these projects.
- What changes or improvements should be made to the design of the BESTFIT solicitation?
- Is a maximum award of $2M the right amount?
    - For EV charging yes – that is a reasonable share in a PPP construct; but hydrogen infrastructure is more expensive as noted above with roughly $2.5 million / ton required
- Should we have a 2-phase application process (initial 5-page abstract, followed by a full application if the abstract passes)?

    - We encourage the CEC to have a 2-phase application process for this and most other project concepts. This reduces the burden of application development for technology developers, early-stage companies, and fleet and site operators. Importantly, the 2-phase process also provides prospective applicants with valuable feedback that enables project developers to propose more innovative, multi-faceted projects that advance multiple state goals and objectives.
- Should the 2 areas of focus remain the same as the original BESTFIT, or are there other challenges we should consider addressing?
- Which subconcepts should be integrated into a MD/HD BESTFIT opportunity?
- Should there be an increased focus on innovative hydrogen refueling stations in MD/HD BESTFIT?
    - We would be supportive of an increased focus on innovative hydrogen refueling stations and technologies. There remain many challenges to unlocking renewable hydrogen transportation ecosystems that the CEC is well-positioned to support. Additionally, this increased focus could be signaled in advance of the Department of Energy's Hydrogen Hubs funding opportunity closes to enable applicants to demonstrate the CEC's interest in committing funds that could be allocable as match share to attract and secure substantial federal investment for California.

Mobility-as-a-Service Models

- Should the CEC target specific regions in the state?
    - The CEC should target major goods movement hubs and corridors, including aligning with the FHWA's Alternative Fuels Corridors, to increase the likelihood that awardees may also secure federal funding to develop these projects.
- What current models exist and how could they be innovated/improved?

- There are several autonomous vehicle solutions being postulated by private industry for both passenger vehicle and commercial freight industries. Arguably, these non-human driven vehicles will still require recharging/refueling and service operations. Wireless charging technologies are evolving and autonomous vehicle sensor "cleaning" and "ready to roll" safety checks will have to be performed and modeled in logistics uptime and improved throughput calculations.

- How can this concept specifically target the drayage sector, which is heavily composed of independent owner operators (IOOs), who may be unable to purchase ZEVs or finance their own infrastructure upfront?
  - Favorable lease models and / or HVIP kind approaches seem to be attractive and effective.
- What component of these models would be the most advantageous for the CEC to fund (ex. construction of ZEV infrastructure)?
- Is there a pool of existing infrastructure-based service providers?
- What amount of grant funds would be appropriate for this type of project?

Large Scale Ultra-Fast Charging Stations

- What amount of grant funds would be appropriate for each project/concept?
  - In alignment with the West Coast Clean Transit Corridor Initiative, we would recommend funding up to 50% of eligible project costs with minimum awards of $2,000,000, ideally funding up to $5.000,000 or more for larger, high-power deployments.
- Should the CEC target specific regions in the state?
  - The CEC should target major goods movement hubs and corridors, including aligning with the FHWA's Alternative Fuels Corridors, to increase the likelihood that awardees may also secure federal funding to develop these projects.
- What defines a site as large scale? How many chargers/outlets would be the minimum?
  - Defining a site as large scale may most appropriately be defined by the aggregated charging capacity of the facility. For projects deploying only CCS1.0 charging, facilities should propose a minimum of 1.5 MW of cumulative charging capacity with a blend of charging powers such that 2/3 of the electric trucks can be charged at 350 kW levels, 1/3 at 500 kw levels at a minimum of 20 ports. When 1 MW CharIn "MCS" charging is proven to be available and effective, a minimum of 10 outlets/ports. For those projects deploying both CCS1.0 and MCS charging, facilities should propose a minimum of 3.0 MW of cumulative charging capacity.
- What is the industry accepted minimum for ultra-fast charging?
  - We believe that the current industry accepted minimum power delivery for ultra-fast charging will be a moving target as battery technologies advance and higher-voltage architectures gain greater adoption. Thus, we believe current MD/HD ultra-fast charging is targeting 350 kW or greater. Within five years, we expect the definition to evolve to encompass 500 kW or greater charging capacities and may even come to be exclusively reserved to megawatt-scale charging.
- How many entities would be able to apply to this sort of solicitation, due to the large scale?
  - Due to the likelihood of immense competition for this funding, we recommend the CEC develop a 2-phase process for proposals. Additionally, it may be advisable that lead applicants be restricted to government agencies and relevant, qualified non-profits or community-based organizations to ensure proposals have community benefit and support to advance transportation and energy equity.

MD/HD Blueprint Planning Documents

- Is there interest to have the CEC fund more blueprint documents?

- Yes. We recommend the CEC increase funding for Blueprint documents, both Phase 1 and Phase 2. Yet, Phase 2 proposals should not be limited to only those organizations having completed a Phase 1 CEC Blueprint as there are many qualified organizations advanced in demonstrating ZEVs and ZEV charging/refueling infrastructure that could use additional support to expand and advance planning for large-scale short- and long-term infrastructure capacity deployments. The CEC could utilize this future Blueprint program as match share to attract federal investment (e.g., via a RAISE Planning Grant) that would be re-granted to a larger share of awardees.

- Should the blueprints be targeted to a specific geographical area? Nonattainment areas, disadvantaged communities, low-income communities?
  - The CEC should target major goods movement hubs and corridors, including aligning with the FHWA's Alternative Fuels Corridors, to increase the likelihood that awardees may also secure federal funding to further develop these projects.
- What is the reasonable cost for a blueprint?
  - Phase 1 Blueprints are seeming to be appropriately funded at $200,000 per project. Phase 2 proposals should be expanded to a minimum of $500,000 per large-scale facility and include all pre-construction activities as eligible costs in alignment with the Department of Transportation's primary infrastructure funding programs, e.g., RAISE Planning Grants, etc.
- Is additional technical assistance needed after a blueprint or planning is complete to expedite project implementation?
  - Yes. As discussed above, Phase 2 Blueprints should be seriously considered by the CEC. Utilities are limited in their ability to rapidly process and plan for future large-scale infrastructure deployments which necessitates significant additional investment by site hosts and project developers to enable rapid project delivery. Moreover, funding a broader array of Blueprint activities would increase the ability for awardees to leverage these CEC dollars and better compete to attract federal co-investment.
- What kind of technical assistance?
  - Blueprints should maintain their requirement to include substantial focus on engagement with communities, industry, and community-based organizations to ensure alignment with critical needs of nearby communities and industry. We recommend the CEC expand Blueprints to include pre-construction activities—including design, engineering, permitting, and environmental review—as eligible costs or match share.
- How would the additional technical assistance affect ZEV infrastructure timelines?
  - This additional support will enable the CEC to support earlier project delivery by enabling projects to clear CEQA and NEPA earlier, reduce investment risk during the pre-construction phase, and increase the ability of awardees to attract additional co-investment.

Infrastructure Concepts to Complement CARB Demonstration and Pilot Project Concepts

- Should the CEC target specific regions in the state?
  - The CEC should target major goods movement hubs and corridors as well as major key agricultural regions in alignment with CARB's proposed beachhead project foci.
- As this may be a joint funding opportunity with CARB, is there interest in having potential funding opportunities be administered by a third-party implementer?
  - We would be concerned about the potential for conflicts of interest that may arise under third-party administration of a joint discretionary grant funding opportunity. Third-party administration may be more equitably implemented by developing an advisory board or committee representing a

diversity of—among others—government agencies, communities, industry organizations, and geographies.

- What amount of grant funds would be appropriate for these types of projects?
    - CARB's Beachhead projects have generally ranged from $25,000,000 to $100,000,000 in total project scope. Assuming a minimum cost share of 50%, we would recommend the CEC consider making maximum awards of $10,000,000-$20,000,000.
- What are the best scoring criteria that should be used to determine which entities should be awarded funding?
    - Scoring criteria should be aligned to maximize rapid deployment of safe, future-proofed infrastructure capacity that aligns with industry and community needs while driving substantial emissions reductions. Primary scoring criteria should prioritize charging capacity and the carbon-intensity of fuels and energy proposed to be dispensed. Alignment with community and industry needs as well as supporting workforce development should also receive substantial preference to drive greater benefit for all Californians and build up the clean transportation workforce of tomorrow.
- How do we best serve the needs of surrounding communities?
    - The CEC and prospective applicants should continue coordinating with local AB 617 groups, local Air Districts, community-based organizations, and Clean Cities groups to understand the needs of Californians. Additionally, the CEC and prospective applicants should work to understand local and regional workforce development needs and opportunities through coordination with local trade schools, community colleges, and universities, Chambers of Commerce, and economic development agencies.3

Sincerely,

John Thomas
SVP Sustainability and Alternative Energy
TravelCenters of America