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CALSTART and RMI Comments - 19-TRAN-02, MDHD ZEV Public Charging

Additional submitted attachment is included below.

February 7, 2025

To: Elizabeth John, Branch Manager, Commercial and Industrial ZEV Technologies and Infrastructure Branch, California Energy Commission; and California Energy Commissioners;

RE: Docket No. 19-TRAN-02; MDHD ZEV Public Charging
Submitted via docket@energy.ca.gov and CEC e-commenting feature.

On behalf of CALSTART and RMI, we thank the California Energy Commission ("CEC" or "Commission") for the opportunity to respond to its request for information regarding Medium- and Heavy-Duty Zero-Emission Vehicle Public Charging.

We believe that if California wants the Advanced Clean Truck regulation ("ACT") to succeed and to reach its climate and environmental goals, then its charging programs should be aligned with the needs of the industry it is requiring to electrify. In the below responses, we attempt to make clear that: the needs of that industry are such that restricted access charging is critical to make charging sites work for commercial vehicle fleets, and in fact is needed more than "free-range," unrestricted access to public charging, or charging which would be required to be open to the general public. So, to support ACT and related state goals, CEC needs to accommodate restricted charging operations within its definitions of public charging, and reorient its overall approach to deploying charging infrastructure to accommodate site business models which involved restricted access, including shared depot charging or hybrid public-private public charging sites.

Our organizations are committed not only to the rapid deployment of infrastructure which can support the adoption of clean Medium-Duty and Heavy-Duty vehicles (MDHD vehicles or MHDVs), but also critically to the coordination and targeted implementation of vehicles to maximize the potential support for technology adoption and operational integration of these technologies. We believe there exists a robust role for the CEC not just to backstop essential regulations with minimal effort, but also to maximally reduce technology transition costs, and efficiently spend limited public dollars, by taking targeted measures to accelerate technology adoption.

In clarifying terms like "public charging" or "public and shared charging" in response to the RFI below, we seek to guide CEC infrastructure deployment planning to be better aligned with industry. We do so on the basis of extensive research throughout long histories of transportation and clean technology development, together with extensive consideration of industry views on the matter of charging site business models and operations which we have undertaken in working groups and dedicated meetings on this topic since at least 2020 (and particularly throughout 2023 to 2025). Many of our comments on how, properly defined, controlled access sites which restrict access to the general public, nevertheless precisely deliver public benefits and bring the state closer to its climate goals, involve the points outlined in CALSTART's "Shared Charging for Market Acceleration" white paper, available at https://calstart.org/shared-charging/, which we urge the CEC to consider.

We also believe updating definitions is an iterative process. We also believe this is an iterative process and appreciate the responsiveness of the CEC to the challenges involved in charging infrastructure network design, and the integration of the transportation and energy sector more broadly.

RFI questions are listed below in bold, and responses are noted after these questions.

Best,

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and

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1. What does the CEC need to consider when developing "public" / en route charging eligibility criteria for CEC funding opportunities?

Point 1: Revising how the CEC uses categorization of charging sites to direct charging infrastructure support to specific vehicle markets to increase the "availability" of infrastructure

In considering how funding is tied to infrastructure support for specific vehicle use cases and categories, we wish for the CEC to remove distinctions which can cause confusion and unnecessary multiplication of categories or "types" of charging, e.g. "public," "en route," "depot," etc. We recommend the CEC to target travel markets as well as vehicle market segments and vocations in this direction; to conceive of goals and performance metrics around achieving high asset utilization as well as simple number of ports deployed; to adopt a simple distinction between controlled and uncontrolled access conditions, and to acknowledge most charging will only be used in the commercial vehicle space under controlled access conditions; and to rethink the definition of "public" charging and how CEC establishes categories of eligible charging infrastructure for funding in the light of these recommendations.

The CEC should consider its role in advancing specific market dynamics within evolving markets to prioritize market development avenues. It should go above and beyond in determining if certain conceptions of categories which straightforwardly seem to achieve outcomes in alignment with state goals, really in fact will achieve this, or whether there exist emerging or untapped dynamics in the market. In other words, not only should the CEC plan to deploy infrastructure to support a certain number of technology adoption decisions which would support state goals, but it should do this efficiently, trying to remove technology transition cost penalties which would be incurred if the deployments do not match the needs of fleets now. This is important in the definition of public charging, since the CEC plans on building a public network which is premised on many fleets electrifying their depots. Such an arrangement may well build a network which works eventually for new technology in 2050, but has no near-term effect on fleet decisions to adopt new technology and the travel market. And in the interest of upholding principles which inform that final network design, CEC programs may risk finding justification for shutting out solutions—such as shared charging and hybrid public-private sites—which would have otherwise made a difference to fleets and to infrastructure developers and accelerated clean vehicle adoption.

Without revising definitions, CEC funding areas and programs currently risk doing exactly this, and in the process missing opportunities to accelerate market adoption in order to achieve an ideal categorical distribution of chargers for this or that vehicle use case. We should note that a CEC program is not successful if, for instance, all of the chargers are deployed but none of the chargers are used or usable; nor if deployment of sites has been achieved and shared charging solutions or hybrid public-private sites with controlled access have been entirely excluded from public funding support. The CEC would be under-estimating the impact the availability of charging in a particular travel market can make on a fleet transition decision, irrespective of whether a certain number of chargers are available for a specific vehicle duty cycle or charging behavior pattern in the aggregate across the state. In addition, it would miss key dynamics in the freight sector driving vehicle adoption: for instance, that many carriers are dependent upon shipper

decisions regarding how much cargo they seek to ship via green solutions, and that these shippers, as much as carriers, need to be clear that infrastructure to accommodate shipments is available to a carrier—such an availability consideration is not made by counting the number of "en route" chargers to supply a certain vehicle population and certainly not by determining whether a region has sites which are first-come-first-serve through restrictions on non-public access. Confusion around what constitutes "availability" to be achieved by dedicating state funding to "public charging" is the most evident case of this broader risk, in other words.

We therefore recommend that the CEC consider how "availability" of infrastructure, the ostensible goal of many of its programs, may not just mean that a certain amount of ports are online and capable of providing power. Availability has a component of feasibility and likelihood of use regarding the end-user, which is tied up with actual dynamics of the market and the technology solutions being offered there. A port which is installed and made operational, but which has been placed on the moon (for example) is available, but it likely would not realistically help any end-user adopt electric truck technology.

To correct for this, we recommend the CEC adopt a broader conception of "availability," inclusive not only of certain vehicle charging behavior but of the needs of the travel market: specifically, to account for the rate at which charging utilization must increase to accommodate the actual usage of the assets. The metric which currently measures this in most CEC programs is "number of ports installed," with an additional geographic weighting. A more realistic key metric the CEC could be using to assess availability is "amount of utilization of infrastructure assets." Utilization rates, rather than number of ports, actually are a critical measure in assessing whether a program (or any similar program) has effectively provided enough support for clean technology adoption decisions of end-users, and whether enough capital can be outlaid and assets deployed to effectively support the rate of adoption of new technologies (or, on the other side of this, whether technology transition costs are too intensive). If the state is making ports available but none of it is used, then the "support" the state has provided would be clearly more questionable.

It follows from this that the CEC should consider "availability" much more broadly and tailor it better to measures which the market has developed around actual utilization dynamics. The CEC has already made inroads in doing this in its assumption of the stewardship of the NEVI program together with Caltrans. Decisions regarding that program are made on a systems-level basis, and at a broad scale, to support not only the vehicle segments, but the likely travel patterns of many vehicles and the types of market solutions which charging infrastructure developers have created to address this market. In this way, ports are not just deployed to "backstop" the introduction of vehicles statewide, but rather state spending increases capacity for the utilization of assets in key areas where adoption needs support.

If the CEC moves towards adopting this perspective in its other programs, its role would be clearer regarding how to address the case of public charging and public charging availability. Here, the aim of the CEC does not necessarily need to be providing a certain number of ports, determined in advance as "public" according to certain strictures and requirements; rather, while it may need to take measures to accomplish this narrow goal eventually, it also needs to provide the capacity

necessary for high utilization of assets in specific travel markets. To achieve this, many of the requirements for sites which deem a site "public" according to CEC programs are less relevant than whether infrastructure has been deployed which supports the actual composition of the travel market and how infrastructure serves it: a public good can be realized precisely when those market dynamics are well supported, and the technology transition and integration costs involved in the market are reduced as much as possible, regardless of whether a certain number of ports are or are not available, and certainly whether the sites have access restrictions or not.

The converse of all of this is, however, what the CEC risks adopting across programs. But it makes little sense to continue thinking a number of public chargers most remove any access restrictions, in order to more effectively ensure availability.

Point 2: Uncontrolled access is often a barrier to commercial vehicle asset utilization; and controlled access is not incompatible with assets delivering public benefits (in fact it actually is the means to realize them in the commercial vehicle context)

This all being acknowledged, we can then come to specific recommendations which answer the question posed here: it should make complete sense, given this broader perspective, that "public" sites:

a. Can involve restricted access to specific end-users if those users compose a market in which technology transitions are being supported;
b. Can exclude the general public, while delivering benefits to the general public and reaching state goals

Uncontrolled (or "unrestricted") access, allowing first-come-first-served refueling (as defined in the RFI preamble), may make sense in many light-duty vehicle use cases and largely within personal vehicle travel markets. However these features are fundamentally at odds with many MHDV use cases. Moreover, they are not the top priority for reducing technology transition costs for firms and ensuring high asset utilization. Furthermore, for commercial trucks, these features do not align with a functioning freight system that delivers reliable, efficient goods movement and cleaner transportation services. Put simply, the public benefits of deploying chargers for the freight sector may differ from those in light-duty travel markets. While we acknowledge that distinctions are necessary between public infrastructure for various commercial vehicle market applications (i.e., for freight, public transit, schools, and government fleets), in every case uncontrolled access to ports does not serve commercial trucks well. This fact is systematically overlooked if "availability" is conceived narrowly. The MDHD market prioritizes different customer experiences, and uncontrolled public access is far less important than predictable access to transportation services that form the market.

The problem is most pressing in the freight sector and its commercial vehicle applications: the public benefits of CEC programs supporting freight vehicles will be achieved by deploying vehicles used for moving freight—regardless of whether sites are accessible to the public. This is because of several key points:

1. Ultimately, what supports technology adoption in that market is installing assets that can achieve high utilization, not merely the fact that a port is installed and online;

2. Because the end users in the freight sector form a goods movement system that delivers greater public benefits when it operates efficiently—and ideally when it either excludes the general public or properly allocates space to avoid conflicts.

Point 3: the general public is not the target of CEC programs for MDHD infrastructure deployment; the market using the asset is

The foregoing points leave us with a clear takeaway: the general public does not need to be able to use an asset funded by a CEC program for the public benefit of that program to be realized.

This point is widely acknowledged in the freight context: it is, for instance, well understood in cases of facilities for other freight modes, such as air freight, oceangoing vessel freight, and rail freight, that the state does not need to—and in many cases does not—provide public access to goods-moving facilities for investments in these systems to yield public benefits. In many cases, it is beneficial if the general public is explicitly excluded and prohibited from certain facility access: the general public cannot access an air cargo runway, for example.

There is no difference between these systems and on-road freight facilities regarding the urgency of reducing conflicts with the general public and implementing systems that restrict public access to ensure efficient and reliable freight movement. In addition, there is no reduction in the public benefit of these systems running more efficiently or cleanly if they achieve their ends by means of excluding the general public. “Public” infrastructure here does not, and need not mean, publicly owned, accessible, or publicly operated infrastructure, in the context of our goods movement system and in the case of MDHD vehicles more generally. Focusing on public access as understood in a light-duty context would exclude infrastructure that is fundamental to the success of CEC programs. Moreover, introducing confusion about whether the general public needs access to infrastructure to realize its benefits could lead to the mistaken assumption that simply installing more ports for MHDV vehicles signifies meaningful progress toward decarbonizing the sector

CALSTART and a consortium of charging developers recently explained why the MHDV market has different requirements extensively in a whitepaper: “Shared Charging for Market Acceleration” (accessible at: https://calstart.org/shared-charging/). This paper describes at length how other charging site arrangements, which specifically are designed to achieve high utilization through controlled and managed access arrangements, clearly realize public benefits.

Summary of points in answer to Question 1 and recommendations

To sum up the broad recommendations here regarding developing eligibility criteria for MHDV infrastructure which we believe will drive better outcomes for CEC programs:

- Adopt a perspective in which market services incented by CEC programs can be understood to deliver benefits precisely because the “general public” is excluded from their use, especially for the sake of the freight system but also to ensure reduction of conflict in transit and government facilities using CEC programs. Any sharing of uses which would run contrary to this separation would be made closer to the implementation and planning

for the asset, but should not drive programmatic decisions. Market access does not equal public access, and this drives public benefit.

- Utilization of assets and reduction of technology transition and technology integration penalties and costs should be the metric the CEC plans with, over and above whether a number of ports installed cater to specific charging behaviors of vehicle market segments. Acknowledge that this can clarify public charging questions.
- What is referred to as “restricted” access (and which should be called “controlled” or “managed” access) should be recognized as a model which can more efficiently cater to industry needs and also drive asset utilization; indeed, CEC should perhaps regard it as one of the main pathways for most infrastructure to become well-utilized in the freight sector.
- The overall aim of CEC programs should be technology adoption problems in travel markets, not parking problems of specific vehicle use-cases and specific duty-cycles; and CEC programs should do the utmost not to restrict market growth essential to technology adoption and integration and the removal of costs and barriers in markets.

This implies several follow-on recommendations:

- First, we have not been speaking of “en route” charging, or charging by the specific duty cycle patterns here, and this is deliberate. In alignment with the general recommendations above, the CEC should not target specific duty cycles for carrying out its support for the market. “En route” charging, like “depot” charging, is an operational term which has emerged to describe a series of practices: it combines range considerations and refueling patterns. However, this is a highly unstable system for determining whether appropriate infrastructure has been installed, because it mainly addresses narrow constraints of the vehicle, and not the wider system and the number of business solutions for charging which are actually being offered to achieve a clean technology transition cheaply and effectively.
- Second, we focus here in our comments on freight infrastructure, and this is reflective of a more natural segmentation of the broad travel market distinctions which the CEC could start using; at the very least the CEC should not assume that public infrastructure where freight vehicles conflict with transit vehicles is an ideal outcome which drives adoption in markets or realizes public goals. The opposite could be the case: creating infrastructure that is dual purpose may just as well be counterproductive. Better understanding of business offerings is the way of assessing the value of such an arrangement. To use an analogy: just as passenger ships use completely different berths than freight shipment terminals, or air travel often uses completely separate facilities than air freight. Where this is not the case, there often needs to be a delicate, and coordinated, queuing system that is arranged through deep coordination to achieve this mixed objective, and appropriate capital planning decisions, as well as operational coordination, needs to be established well in advance of any decision to operate a facility in this way. Better understanding of this is not possible, in other words, by simply categorizing ports and what counts as “public” infrastructure—that will not determine the answer to this.
- Finally, CEC should concentrate on vital characteristics of freight operations. Truck drivers’ daily hours of service are often an operationally limiting factor. Truck fleets will make their decisions about e-trucks based on whether a route and any required charging

can still be completed within the driver's daily hours of service limit. Unlike charging for the passenger market, minimal and predictable weighting is an absolute necessity for trucking. Any public network of chargers which caters to the freight travel market must account for how there is a preference for reducing the time of the charge and its impacts on costs; as well as how firms are more competitive the more they reduce the downtime of the assets. No freight company makes unstructured decisions to refuel based on a undefined preference, and so simply having more ports available, but not usable (because of unpredictable conflicts on the site), does not necessarily solve any of its problems.

We will return to many of the above principles and points in the responses below.

2. How should the CEC plan for the state's future MDHD charging needs to both accommodate fleets that will need access to chargers while en route to a destination (similar to the diesel truck stop model where the ports are fully publicly accessible first-come-first-served) vs. fleets that need certainty that charging will be available and accessible when it comes time to charge (the reservation system model)?

As noted in answer to Question 1: the "en route" designation as used and defined here is tailored to a use case which is not calibrated to the actual needs of the freight sector. Sites with reservation systems should be considered public charging.

A first-come-first serve model can introduce the possibility of conflicts on the site, and a general unpredictability and unreliability of both the vehicle and the infrastructure asset. This would increase the potential that utilization of the asset will be low. CEC programs do not currently allow controlled access, which is counterproductive for fleets and the charging sector's economic health. CALSTART has outlined these potential costs in its paper on shared charging, cited above.

In light duty contexts, this type of requirement has led to situations where only roughly 10% asset utilization can be expected. A 2021 NYSERDA study prepared with Atlas Public Policy (*Cost and Usage Trends for Electric Vehicle Chargers*) makes this clear, and also shows (the data is longitudinal) that under uncontrolled access conditions there is no clear relationship between adoption rates of vehicles and higher utilizations of assets. Much of the charging which the state's inventory of charging needs (the AB 2127 biannual assessment) notes should be "public" can also be served by controlled access sites. In addition, and perhaps more critically, it may be possible that much of the "depot" charging that is outlined in inventories of charging needs, and is not included by CEC definitions of public charging sites, can be served with controlled access shared charging–i.e. shared depot charging.

Depot charging is often the easiest electrification model for most fleets, but it is currently a major challenge. As CALSTART has outlined in its "shared charging" paper linked above:

- Many (if not most) fleets are not landlords of facilities, but lease these

- A large majority of small fleets do not own their own facilities
- If fleets do own facilities, they often cannot negotiate with their landlord for a facility investment which would be responsive to their short-term leasing needs of the property (most leases are short-term)
- Even if the landlord is willing, or if a fleet owns their own depot, it is doubtful that many landlords, and certainly most fleets, will be in a position to develop a facility improvement planning and construction process which could build out the necessary infrastructure quickly.

These challenges often make investing in depot charging uneconomic without state funding.

We believe that sites built with third-party developers, who can specialize in delivering infrastructure to fleets at their own facilities which meets their needs rapidly and reliably, will become a major transition pathway for most small fleets –who would otherwise be inequitably barred from this transition due to facility improvement barriers–and even most large fleets, at least at first (until capital planning can align with fleet operations). In addition, we believe large fleets themselves can act as third-party developers for other fleets, sharing out their infrastructure.

Because controlled access charging is reliable charging, and because its high utilization can ensure operational expenses are sustainably amortized, it will be the major pathway forward for nearly all freight commercial vehicles. Excluding controlled access would ignore market preferences and decrease electric truck adoption.

This necessitates, in our view, a reprioritization of charging sites in the CEC funding programs:

1. The first priority for the state should be controlled access sites, which are inside depots.
2. The second priority should be controlled access sites outside of the depot (either shared or some other arrangement).
3. The third priority should be hybrid-public charging sites, where some controlled access chargers are allowed to be reserved on a site, and some other chargers are present with an uncontrolled arrangement.
4. The next priority should be uncontrolled access sites which trucks and other commercial vehicles can access.
5. The last priority should be uncontrolled sites which must be shared with the general public (here meaning any/all vehicles), and/or where the general public must be allowed to access.

We believe that by deepening the involvement of third parties in providing managed access to infrastructure, the state is more able to realize its goals of supporting widespread infrastructure development and also monitoring the system buildout.

3. Is a reservation system for use of public chargers needed to meet the needs of the trucking industry?

No one reservation system is needed. Reservation systems are needed. See comments above. The reliability requirements which fleets need, necessitate managed access through a reservation systems.

4. What reservation systems exist that could allow use by more than one trucking company?

The CEC should not require one system generally for the management of access. Third party developers and fleets acting as third-party developers each have their own software and access systems.

Requiring one standard system across all access to infrastructure needlessly interferes with the capacity to utilize the infrastructure more intensively.

In the light-duty space, and in parking management, standard platforms and reservation systems are common, because a major concern involves allowing equal access by the general public to the services provided by the infrastructure.

This requirement does not pertain to trucking market users, or any of the specialized markets (transit, government fleets) that are common in the commercial vehicle space. It is an irrelevant consideration and can be analogized to requiring that all ports should be the same size: the geography, the natural imbrication of the port and its hinterland logistics network, and the terminal operators cannot be standardized, and should not be for the goods movement system to move efficiently.

Data collection and data sharing should also be adequately conceived to be less burdensome and should not appear in the set of standard or universal requirements–again in the similar manner to parking. But, because this is not a parking problem, but a freight movement problem, these requirements should always be crafted to allow for a deepening the partnership arrangement between the state and a developer.

5. Does a "Trucking-as-a-Service" (Taas) model in which trucks are leased and guaranteed chargers by a site operator provide enough public opportunities for trucks that are not leased through the site operator?

This question appears to be asking the following: should the state consider a site "public" and advance the public good if the entire site is run through a TaaS model?

We believe the more pertinent question is: should the site be considered to advance the public good if the entire site is controlled/managed access to only a single TaaS fleet? To which we would answer, yes.

No, controlled access site should not be required to dedicate space for uncontrolled access. This adds cost and complexity without meeting a market need. The requirement, by discouraging the development of controlled access sites, could lead to less EVs and less public benefit.

6. Should there be a certain percentage of chargers available to the public at all times? Should there be a certain percentage of chargers available for reservation at all times?

Similar to the last question, the answer is no, in both cases.

Controlled access sites will be hindered by uncontrolled access generally–uncontrolled access is a threat to a reliable freight system. Queuing in the freight context not only would inconvenience vehicle operators, it would significantly hinder a critical economic function of trade and goods movement.

Chargers made available through controlled access or reservation systems serve the public good precisely by being made available to the goods movement market–and precisely by excluding access by the general public. Equity for small fleets is also not realizable by a system where fleets can't plan around predictable waiting and charging times. Uncontrolled access would put small fleets at a disadvantage.

Similarly, no chargers should be required to be available for reservation on a controlled access site. Requiring reservation chargers in a private depot is often not realistic. It could lead to depressed program participation (and therefore less e-truck adoption). Even if depots do dedicate some operational space to chargers, they have misaligned expertise and business model, which could result in unused, poorly optimized chargers that quickly become stranded assets.

7. What is the ideal reservation system or process for MDHD truck charging?

We would urge the state and CEC to not dictate a standard reservation system nor to require any standardization in the commercial space. The ideal system is one which the site developers and operators have discretion over. Major conflicts with data management, not to mention cost increases, are going to be incurred both by developers and by the state should the state elect to require one standard reservation system or even a set of standard requirements for all state funded projects.

8. If a portion of chargers must remain first-come-first-served, what ratio for reservation vs. first-come-first-served chargers would you recommend?

We urge the state not to require any such division across sites, which needlessly saddles developers with the cost of servicing uncontrolled access, and which threatens to introduce

confusion into any circulation planning for their site–even if separated. That is, this impacts their business model directly and would represent substantial state overreach regarding the implementation of its programs. Again, we urge that the state not make this a requirement, but allows this to be at the discretion of the developer. The state should be more concerned with ways to make the charger utilization increase, not with standardizing access requirements which run contrary to the very business model which can achieve state goals.

9. Which configuration would be preferred: a) A site where all chargers can be reserved but can also be used on a first-come-first- served basis if a charger is not reserved or in use? b) A site where a portion of the chargers are reservation only and another portion first- come-first-served only? In this configuration, is there an optimal percentage of chargers that are always available (not available for reservation)?

Following our answer to 8, none of these are preferred. The preference is that this determination be solely at the discretion of the developer, whose business model both choice a and b threaten directly.

10. If a truck is charging at a first-come-first-served charger at a site that also allows reservations, and a scheduled reservation arrives while the charger is still in use, what is the protocol?

Following our answers to 8 and 9, the state should not require any such arrangements which would necessitate it making a determination of any such preference system. It runs contrary to decisions which should be left to the developer's discretion. The state should again, be focused on working with the developer to understand the business model, before instituting any requirement which would threaten, as this does, to basically make it be burdened with significant costs and which could threaten its overall viability–again, as this line of thinking does.

11. The CEC's Clean Transportation Program administers public funding, which must provide a benefit to the state. How does a project with a reservation system benefit the state of California?

As noted above, and in our white paper, public benefits do not require the general public to access the infrastructure installed by CEC programs. No such requirement is made of freight infrastructure in other modes.

12. Are there driver safety or equipment protection issues that the CEC must consider when determining whether a charger should be "public"? Could a charging site be open to the public without attendees on site?

We believe the CEC should not consider publicness to be a criterion which dictates the presence or absence of safety features. Managed/controlled access would involve a circulation plan, which should conform to various safety standards present in, for instance, local building codes and/or the MUCTD.

For sites with uncontrolled access serious safety considerations should be understood to be entailed in this model. The potential for conflicts is very large, similar to those in "truck parking" sites. But again, local code and MUCTD safety standards, as well as relevant requirements for circulation planning in most instances, should address these issues. In many cases this is why freight infrastructure requires restricted or controlled access–to precisely minimize this risk. This makes uncontrolled access by the general public to most freight infrastructure a rarity. The CEC should adopt this frame of mind when considering its infrastructure for the freight sector.

Where significant conflicts may, in addition, emerge, is in sites with both controlled and uncontrolled access, if this were to be required by the CEC. This is another reason why controlled access should be seen to be the "default" form of infrastructure for CEC programs.

13. Are there standardization or communication protocol issues that the CEC needs to consider when developing "public" / en route charging eligibility criteria for CEC funding opportunities?

None that are not already addressed in NEVI requirements–again noting that we reject the general "en route" distinction as the way to view these sites (as noted in answer 2 above). The state should work with third party developers regarding data collection procedures they implement on controlled access sites.

Because controlled access sites have systems to monitor the flow of traffic and the utilization of assets, they are precisely able to provide data on the performance of these assets. This is impossible in sites with uncontrolled access.

In order to ensure high performance of assets and high utilization of assets, the CEC should look into how controlled access third party developers are able to track performance, and consider adopting performance measures which reflect their data, as well as ways to continue to pool data collection to inform their programmatic decisionmaking.

14. Please describe your optimal public charging network that is a mix of first-come-first-served and reservation systems throughout CA.

We strenuously advocate for seeking an alternative to this distinction and refer the CEC to the prioritization framework outlined in answer to Question 2.

Ideally, very few sites will be unmanaged/uncontrolled (or "first-come-first-served"); and the CEC would adopt a perspective that realistically may deliver a majority of all charging availability from third-party developed shared depot or outside-of-depot sites, through 2035. This would not necessarily be the case in the final buildout of the network, but we believe such assumptions would be more attentive to the critical issue of increasing adoption and reducing technology integration costs.

Shared sites are a viable technology integration pathway which are currently foreclosed in certain CEC planning documents, which it very well could–for reasons of barriers and equity mentioned above alone–be precisely what is most appealing to fleets and benefits the public the most.

15. Please describe your optimal site configuration. It may be 100% first-come-first served, 100% reservation system, or a combination of the two.

As noted in answer to questions 5 and 6, we believe the state should never be in a position to require expensive, and fundamentally unutilized or underutilized assets of a developer–for reasons of project cost and for reasons of equity (making it more difficult to build out sites which small fleets will use). Therefore these configuration decisions should be left to the developer.

16. If using a reservation system, please describe your optimal set of rules and parameters of how a reservation system would work.

As noted in answer to question 4, above, the state should not dictate any set of rules or parameters or any singular reservation system. To do this, the state would significantly incur costs to developers and risk shutting down an emerging market, based on the idea that equal reservation system access, as is the case in the light duty market, benefits the public. This assumption is false: the freight market needs dependable charger access, which could include behind the fence dedicated charging. Development of this charging is challenging and needs state support. Imposing major conditions on the types of charging the state will support is premature, would exclude the primary pathway for MDHD electrification, and ultimately be counterproductive to the state's decarbonization goals.