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ChargePoint Comments on 24-EVI-01

See attached comments.

Additional submitted attachment is included below.

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June 10, 2024

Sarah Sweet
California Energy Commission
715 P Street
Sacramento, CA 95814

RE: **ChargePoint Response to 24-EVI-01: Project Proposal Ideas and Considerations for California, Oregon, and Washington's Medium- and Heavy-Duty Joint Application for the U.S. Department of Transportation's Charging and Fueling Infrastructure Discretionary Grant Program**

Dear Sarah Sweet,

ChargePoint, Inc. (ChargePoint) respectfully submits this response to 24-EVI-01: Project Proposal Ideas and Considerations for California, Oregon, and Washington's Medium- and Heavy-Duty Joint Application for the U.S. Department of Transportation's Charging and Fueling Infrastructure Discretionary Grant Program.

The CFI Program addresses climate change by reducing carbon emissions through deployment of publicly accessible zero-emission vehicle (ZEV) charging infrastructure, helping to electrify fleets in California, Oregon, and Washington. This critical program will help create a sustainable future and improve air quality and health outcomes in communities most impacted by vehicle traffic. We offer the following response to assist the California Energy Commission (CEC) and partners with designing and submitting a winning application to the CFI Program to build a convenient, reliable, affordable, and equitable medium- and heavy-duty (MDHD) charging corridor throughout California, Oregon, and Washington.

We thank you for the opportunity to submit this response and look forward to ongoing collaboration with the CEC and its partners on the development of this application to reduce carbon emissions through the continued electrification of the west coast's transportation sector.

Sincerely,

Claire Garcia
Fleet Grant Development Manager
ChargePoint, Inc.

Background, ChargePoint:

Founded in 2007, ChargePoint is a leading global electric vehicle charging network headquartered in Campbell, California. To date, we have delivered 246 million charges, thus enabling ten billion electric miles and avoiding 410 million gallons of gasoline. At ChargePoint, EV charging is all we do, and we do it all. Passenger cars, delivery vehicles, buses, and more—we charge any EV, anywhere it goes. We have built a fully integrated portfolio of hardware, cloud services and support with the best technology in the industry. We offer solutions for home, government, multi-family, commercial, and fleet electric vehicle charging infrastructure. Additionally, ChargePoint has successfully deployed both level two and fast charging infrastructure along major highway corridors and within communities across the country while working in tandem with industry and government to enable a more accessible electric future.

ChargePoint's hardware offerings include AC or Level 2 and DC fast charging (DCFC) products, and ChargePoint provides a range of options across those charging levels for specific use cases including light duty, medium duty, and transit fleets, multi-unit dwellings, residential (multi- family and single family), destination, workplace, and more. ChargePoint's software and cloud services enable EV charging station site hosts to manage charging onsite with features like access control, charging analytics, and real-time availability. With modular design to help minimize downtime and make maintenance and repair more seamless, all products are UL-listed, and CE (EU) certified, including ENERGY STAR® certified options across both our AC and DC product portfolios.

ChargePoint's primary business model consists of selling smart charging solutions directly to businesses and organizations and offering tools that empower station owners, or site hosts, to deploy EV charging designed for their individual application and use case. ChargePoint provides charging network services and data-driven, cloud-enabled capabilities that enable site hosts to better manage their charging assets and optimize services. For example, with those network capabilities, site hosts can view data on charging station utilization, frequency and duration of charging sessions, set access controls to the stations, and set pricing for charging services. These features are designed to maximize utilization and align the EV driver experience with the specific use case associated with the specific site host. Additionally, ChargePoint has designed its network to allow other parties, such as electric utilities, the ability to access charging data and conduct load management to enable efficient EV load integration onto the electric grid.

Response

1. Please disclose your business type and vehicle class, if applicable. Are you a driver, fleet operator, truck stop operator, installer, manufacturer, utility, public agency, or other? Are you part of a small, veteran-owned, woman-owned, or minority-owned business?

ChargePoint is an EV charging infrastructure hardware and software provider. Our hardware offerings include Level 2 and DC fast charging (DCFC) products, and ChargePoint provides a range of options across those charging levels for specific use cases including light-duty, medium- and heavy-duty, and transit fleets, multi-unit dwellings, residential (multi- family and single family), destination, workplace, and more. ChargePoint's software and cloud services enable EV charging station site hosts to manage charging onsite with features like access control, charging analytics, and real-time availability. Our interest in responding to this RFI is as a charging infrastructure technology provider, and we appreciate the opportunity to provide our input in this space where we have 17 years of experience bringing convenient, reliable, affordable, and equitable charging to communities across the country.

2. Would you consider applying for CFI grant funding for site development if the tri-state agencies are awarded funding?

ChargePoint intends to support applicants to the tri-state agencies' CFI award, should they be selected, and does not expect to apply for the CFI funding directly. Rather, ChargePoint plans to assist applicants with navigating the application process, providing cost estimates to help them build their budgets and technical information on our charging equipment so that they can make the most informed decisions about their project scope. We will also connect applicants with qualified electrical contractors to build their charging infrastructure should they be selected by the tri-state agencies. ChargePoint's role in the market is as an EV charging infrastructure technology provider; thus, the scope of our services to be offered in the context of developing a MDHD corridor charging site would be to furnish EV charging infrastructure hardware and software. We may also provide professional services such as assistance with site selection, design and engineering, and charging station commissioning. However, ChargePoint would not apply directly for CFI funding, as ChargePoint generally does not play the role of charging infrastructure owner/operator or property owner.

3. Do you already operate or are you planning to use zero-emission battery electric MDHD vehicles in the next five years? Please use a 1-5 rating scale where 1= least likely and 5= most likely. Please add additional information regarding your (planned) use of zero-emission battery electric MDHD vehicles as desired.

Not applicable; ChargePoint is not a fleet owner/operator.

4. What type of MDHD ZEV public charging do you anticipate being most important in the next three years (2024-2027) – en route or overnight charging? For what purposes do you anticipate needing public charging infrastructure – drayage, last-mile, delivery, long-haul freight, other?

Both charging opportunities – en-route and overnight – are important to consider when deploying MDHD charging sites along corridors. Each one presents unique advantages that should be weighed when evaluating a potential site for charging infrastructure. En-route charging will likely be most impactful for drayage, last-mile, and delivery vehicles. Such vehicles are most likely to require opportunity charging

during their daily operations in order to meet their duty cycles. Although en-route charging provides the chance for drivers to quickly charge and then resume their travels, it also presents the challenge of increased deployment costs, power needs, and project timelines. On the other hand, overnight charging opportunities allow for the option to deploy lower powered chargers, reducing project costs, grid impacts, and construction duration. However, slower charging speeds will likely necessitate overnight charging for some vehicles, particularly HD vehicles, as longer dwell times will be needed to fully charge such vehicles. For long-haul freight trucks, this type of charging opportunity may be ideal at sites where drivers already tend to rest for longer periods of time (hotels, motels, etc.). Because vehicle turnover at these sites will be less frequent than at en-route charging sites, more stations should be installed to reduce the chance of MDHD EV drivers arriving only to find that all stations are in use.

5. From 2024-2027, what is your first priority for power level and number of charging ports for public en route charging at a station? For public overnight charging? Do you have a second or third configuration preference?

For a public en-route charging site, each port should provide power at a rate of well over 100 kW per hour at a minimum, in order to accommodate the large battery capacities of most MDHD vehicles. In the context of HD EVs in particular (Class 8, specifically), power levels of up to 350 kW or higher should be considered. This is due to the battery size of many such vehicles often being above 600 kWh. These power levels will help reduce the amount of time it takes to charge a MDHD EV and will allow for multiple vehicles to be charged simultaneously at a single site. At the stated power levels, approximately 10-20 charging ports should be deployed at each en-route charging site to reduce the chance of MDHD EV drivers being faced with long wait times to charge.

For public overnight charging, charger power levels can be significantly lower, as vehicles will dwell at such sites for substantially longer times. Chargers capable of dispensing 50-100 kW could be considered for these sites because vehicles will be unused for 6 or more hours at a time. As explained in our response to question 4, because vehicle turnover at overnight charging sites will be less frequent, more ports should be installed to meet driver demand. Over 20 ports should be considered for these sites to ensure that MDHD EV drivers do not arrive at a station that is fully utilized.

6. Please identify the percentage of pull-in or pull through parking preferred and other desired station configurations at a given site. Describe the vehicle class and vocation considered when making this recommendation if it differs from the information provided in question 1.

More than half of charging stalls/parking spots at a charging site should be designed with the pull-through configuration. This is key to accommodating as many Class 8 EVs as possible, which are some of the most common long-haul freight vehicles and heaviest users of our region's freight corridors. Not only will pull-through configurations serve freight trucks and other vehicles hauling trailers and other loads, they will also support electric buses and other large EVs that may use the charging station. This design will create a seamless and convenient charging experience for MDHD EV drivers and will facilitate the safe flow of traffic around the charging site. With drivers able to simply pull through and continue on their way after charging, traffic disruptions will be minimized and potential safety hazards will be mitigated.

7. What distance should separate charging stations to support zero-emission trucks along the I-5 corridor? Provide description of typical route or use-case considered when making this

recommendation. Describe the vehicle class and vocation if it differs from the information provided in question 1.

In line with the CEC's earlier solicitation, GFO-23-602: Charging and Refueling Infrastructure for Transport in California Provided Along Targeted Highway Segments (CRITICAL PATHS), charging should be separated by a distance of less than 100 miles, preferably between 50-100 miles. In making this recommendation, it is important to consider the range capabilities of MDHD EVs today, with even the largest vehicles (Class 8) typically offering well under 400 miles of range on a single charge. With this in mind, charging sites should be less than 100 miles apart to serve the needs of the widest variety of MDHD EVs and to ease driver range anxiety. This distance will provide drivers with enough opportunities to charge to meet even the most demanding duty cycles (long-haul freight, etc.) while keeping overall project costs and deployment timelines reasonable.

8. What amenities are you seeking at a charging facility? Is there a desire for additional parking at a facility beyond charging stalls? Is there a desire for reservation options?

Availability of onsite amenities is an important factor in creating a positive charging experience for MDHD EV operators. At a minimum, each charging site's proximity to amenities such as restaurants and restrooms should be considered, but distance to lodging, entertainment, recreational facilities, and other establishments can also be included. These types of amenities will be critical at many charging sites where the length of time to charge a MDHD EV will be significantly longer than the time it takes to fuel a traditional internal combustion MDHD vehicle. Additional parking should be available at the charging site, beyond just charging stalls, because it is possible and even likely that drivers will visit the site to use the available amenities rather than to charge. To ensure there is enough space for MDHD vehicles, even those that may not be EV but whose drivers are stopping to rest, additional parking must be made available.

Individual site hosts will likely determine whether a first-come, first-served or reservation-based system is more suitable to their site depending on anticipated MHD EV traffic and other considerations. Many sites may benefit from offering a combination of first-come, first-served and reservation-based charging. At times when demand for charging is low, a first-come, first-served approach may be more conducive to facilitating ease of charging. When demand is high, a reservation-based system can be enabled to ensure everyone has a chance to access charging when needed. ChargePoint's charging software can meet this demand. If multiple drivers are planning to charge at a specific station, drivers can join a waitlist to reserve their place in line. Once the charger becomes available to a driver, they will be notified and have 15 minutes to begin their charging session. If they decide not to move forward with their charging reservation within those 15 minutes, then the station becomes available to the next waiting driver. This system can help manage the availability of chargers when demand is high.

9. If possible, provide any general cost estimates for MDHD charging stations you have designed, built, or have experience with, including charger power levels and number of chargers installed. Please provide a range of public cost share as a percentage of total project cost that would be necessary to support more public charging stations to serve zero-emission trucks along freight corridors.

As ChargePoint is not a design/build engineer, but rather a charging equipment hardware and software provider, we recommend referring to an appropriate design/build engineering firm to receive the most accurate information regarding costs related to construction, infrastructure, and installation of charging

equipment. ChargePoint works with a network of qualified firms across the country so that our customers can choose from among the most experienced businesses to install their charging stations. We anticipate assisting applicants to the tri-state agencies' CFI grant, if awarded, with identifying and selecting installers that bring the most value to their projects. This is in addition to helping them choose the correct power level and quantity of charging stations to ensure project success. Overall project costs will vary widely depending on each project's unique scope. Hardware costs will generally be greater for projects deploying higher-powered charging stations, and those deploying a larger number of chargers, while projects with less powerful chargers, such as those serving sites that offer overnight charging opportunities for drivers of MDHD EVs, will have decreased equipment and installation costs. Actual costs will vary and will depend on each site's unique situation, including available space, access to adequate utility power, and incorporation of optional equipment such as distributed energy resources (DERs).

An appropriate range of public cost share would be a minimum of 50% and up to as much as 80% of total project cost. Although 50% would be closer to previous CEC solicitations related to this topic, more generous funding levels of up to 80% are more aligned with standard federal cost shares for such projects. An 80% federal cost share was used for the 2023 round of CFI and is currently being used for the 2024 round. This level of funding is adequate for creating demand for public funding and thus interest from private match share providers. This will increase the dollar-for-dollar investment in public charging projects and is necessary to scale deployments of MDHD charging sites along priority freight corridors.

10. Use the maps under the "Corridor Segments" section below to identify locations within the National Zero-Emission Freight Corridor Strategy hubs along I-5 (identified in the map segments below) you anticipate needing EV charging in the next three years (2024-2027). You may identify sites where you plan to or would be interested in building charging stations or where you would like to see charging as a consumer. Please detail preferred locations across California, Oregon, and Washington. For each location, please provide desired site characteristics including number of chargers, power levels, type of charging desired (overnight or en route), and vehicle class and vocation if the information differs across locations or differs from the information provided in the questions above.

Along the Corridor Segments identified in the RFI, charging should be located at sites where there is a current lack of existing charging opportunities. This information can be identified using the Department of Energy's Alternative Fuels Data Center (AFDC) which presents publicly available data on charging stations open to the public. Other target sites should be located near areas with particularly high MDHD vehicle traffic, such as ports, warehouses, and intermodal facilities. Although these sites may be closer to existing charging stations, the level of current and future MDHD EV traffic in these areas necessitates additional charging opportunities to reduce the chance of charging demand exceeding available stations. Each site's characteristics, including number of chargers, power levels, types of charging, and vehicle class/vocation served will depend on the unique needs of each location, but general guidance has been discussed further in our responses to questions 5 and 6.

11. If you represent a utility, please use the maps under the "Corridor Segments" section below to identify locations within the National Zero-Emission Freight Corridor Strategy hubs along I-5 (identified in the map segments below) where there may be capacity for 5 megawatts or more of power in the next five years. This information may be considered in the development for future Requests for Proposals.

Not applicable; ChargePoint is not a utility.