



ChargePoint, Inc.
254 East Hacienda Avenue | Campbell, CA 95008 USA
+1.408.841.4500 or US toll-free +1.877.370.3802

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California Air Resources Board
1001 I Street
Sacramento, CA 95814

ChargePoint Comments on the July 7, 2022 LCFS Public Workshop

ChargePoint would like to thank the California Air Resources Board (CARB) for hosting the public workshop on potential changes to the Low Carbon Fuel Standard (LCFS) on July 7 and the opportunity to provide comment. ChargePoint is one of the world's largest EV charging networks and solution providers with more than 180,000 Level 2 and direct current fast charging (DCFC) stations on its network. ChargePoint designs, manufactures, and sells networked charging solutions and works with major employers, municipalities, utilities, fleet operators, real estate developers, and investors to deploy and operate charging stations across North America and Europe to enable the electrification of transportation.

ChargePoint is a strong supporter of the LCFS and its ability to attract investment in clean energy and infrastructure to bring about emissions reductions in the transportation sector. The issues raised in the July 7 workshop are critical to the success of the program going forward. The LCFS market, as it is currently designed, is in a state of significant oversupply. Bloomberg New Energy Finance projects that existing and announced capacity in renewable diesel is on track to saturate California's diesel pool by 2025¹. This is a testament to the efficacy of the LCFS; however, it also creates risk to the program's and state's long-term climate goals in the form of diminishing incentive to invest. The LCFS is in need of updating and strengthening to attract the next wave of investment in clean fuel. Other changes to the program related to electric vehicle (EV) charging crediting could unlock further investment in electrification, as we touch on below. We look forward to working with CARB on these issues over the course of the ensuing rulemaking.

(1) Adjustments to the carbon intensity (CI) schedule

As noted above, the credit market is currently in a state of growing oversupply and sentiment is that the market is only getting longer. Credit prices in the spot market have fallen from a peak of around \$200/credit in Q1 2021 to ~\$80/credit today. This is a testament to the LCFS's ability to bring low-carbon fuel to market, however with credit prices and forward outlooks where they are today this is suppressing new investment in clean fuel and infrastructure. For typical non-residential charging stations, the slide in credit prices has led to significantly lower LCFS valuations and higher investor discounting which has stalled investment. The LCFS has been a powerful tool to date in initiating the transition to low-carbon transportation in California, but the LCFS must now be strengthened to usher in the next wave of investment needed to meet California's mid and long-term climate goals.

We believe that scenario B (30% CI reduction target in 2030) is commercially feasible and will inject confidence in the credit market and new investment in EVs and charging infrastructure. We do not believe that a 25% target in 2030 will offset the significant oversupply in the market today and into the future². With a current bank of over 10 million credits and growing at a rate of 750,000 credits per quarter over the past year, a credit clearance market, and a means to pull credits forward if necessary, CARB has put the mechanisms in place to allow for more aggressive target setting, which is needed to accomplish program objectives.

¹ BNEF LCFS Scenario Tool, dated July 4, 2022

² This does not account for added deficits resulting from bringing intrastate jet fuel under obligation



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Beyond 2030, CARB should signal its intent to align the program with the state’s long-term climate goals, however setting specific post-2030 CI targets at this time may be premature.

(2) **Re-classify multifamily charging as non-residential**

Here we reiterate the case to re-classify multifamily charging as non-residential to increase investment in this segment. Deploying charging infrastructure in multifamily housing has traditionally been more difficult than other sectors (commercial, single family, etc.). Multifamily installations are more costly than single family, while the sector is typically more cost constrained. Installing sufficient charging at multifamily locations, however, will be critical to transitioning this driver base to electric and meeting the State’s ZEV goals. This design lends itself better to the electrification of transportation network companies (TNCs) as well by enabling TNC stakeholders to plan for and leverage multi-family credits in electrification plans. This design change would align California’s LCFS to the other west coast clean fuels markets as well³.

With the extension of 30D, combined with the Clean Fuels Reward and California’s other income-based EV incentives, treating multi-family as non-residential in the LCFS maximizes benefits to this driver group. LCFS credits resulting from the reclassification of multi-family will be complementary to these policies by incentivizing owner, landlords and developers to invest in and install charging stations which will. Financing models that have emerged around non-residential charging under the LCFS can then be deployed in the multifamily sector which will also accelerate deployments.

(3) **Medium and heavy duty (MHD) infrastructure credits**

ChargePoint supports an infrastructure-based crediting pathway aimed at accelerating the electrification of the MHD vehicle segment, however, the existing fast-charging infrastructure (FCI) crediting pathway and formula for public, light-duty (LD) charging is not suitable for MHD in its current form and will need considerable redesign to accommodate the more complex MHD segment. We strongly encourage CARB to take industry feedback throughout the development of this provision to ensure the design fits the MHD use case and has the type of success seen with the current FCI provision.

The following comments address specific questions raised by CARB on a MHD infrastructure crediting pathway in the July 7 workshop and flag broader design issues in need of further consideration.

(a) **What role should LCFS credits play in building out infrastructure for medium and heavy-duty (MHD) EVs? Dedicated fleet refueling or public refueling? Defining “public/private” in the MHD context.**

Fundamental to designing an infrastructure crediting pathway for MHD charging is the definition of public in the MHD context. Whereas the need for pure public charging to support LD EVs is clear, the MHD use case is more nuanced. Medium-duty fleet vehicles are intentionally not charging at public stations today because of business reasons. They are charging almost exclusively at depots and some designated non-depot locations where access is guaranteed through behind the fence charging or utilization agreements put in place with charging operators. Some of these non-depot locations may be “public” (i.e., visible and accessible on the network to all drivers) some of the time, but most are private. The heavy-duty vehicle segment is still several years out from meaningful electrification. If CARB were to restrict eligibility of a MHD infrastructure provision to public stations and apply the same definition of public used in the existing LDV FCI provision it would disqualify nearly all MHD charging today and into the future.

³ Oregon and British Columbia both classify multifamily as non-residential; Washington’s proposed rule does so too



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Currently and into the near term, MHD charging will predominantly occur at depots⁴ and non-depot shared public/private locations where offtake agreements are negotiated. Pure public MHD charging sites are unlikely to develop due to high project costs, minimal demand in the early years, merchant risk, and opportunity costs borne by conventional fuel retailers switching from conventional fueling to fueling EVs. While the economics surrounding dedicated depot charging provide more certainty, there is often still considerable uncertainty with non-depot charging even with some amount of offtake in place. This uncertainty can stall and ultimately stymie project investment. We believe it is these shared public/private non-depot locations where MHD infrastructure credits could play a significant role in removing this uncertainty and expediting site development. This would allow for faster fleet electrification and significant cost sharing as these sites would serve both public and private vehicles. To do this, CARB would have to amend the definition of public deployed under the existing LD FCI provision to include shared public/private sites.

As an example of a non-depot shared public/private location, ChargePoint is currently working with site developers, investors, and other stakeholders to explore how to develop charging hubs – strategically located sites that meet the spatial and power requirements to install large amounts of charging – to serve fleet vehicles. These sites may be located near industrial centers, major ports, or along freight corridors. The intention of these hubs is to ultimately charge multiple fleets, whose vehicles serve the public in one way or another via the movement of goods. Chargers at these sites could be made available to serve non-contracted vehicles as well, making the site shared public/private. Such sites should be eligible under a MHD infrastructure crediting pathway.

(b) Recommendations for treatment of sites capable of both LD and MHD vehicle charging?

Infrastructure at MHD sites, particularly infrastructure aimed at medium-duty vehicles (MDVs), should not be discouraged to serve LDVs in the early years if there is spare capacity since there is overlap in charging specs between L/MD and not doing so would needlessly deprive the fast-growing LD EV fleet of access to charging; however, the program should be structurally designed to incentivize MHD charging over LD charging over time. One simple way to do this would be to distinguish between LD and MD EERs for EVs (the current regulation prescribes the same EER for L/MDVs) which would provide an adder for MD charging. There are likely other ways to accomplish this as well. Without such an incentive, there is a small⁵ but potential risk that LDVs overuse these sites at the expense of MD availability.

We stress that unless carefully designed, there is a risk this provision could incentivize and reward overbuilding of sites where the MHD vehicles are still 3,4,5+ years out and sites charging predominantly LDVs get credited for MHD capacity. To mitigate this, mechanisms could be built into the provision to promote the incremental scaling of capacity additions over time, or the implicit utilization assumptions embedded in the FCI formula could escalate over time with MHDV penetration rates. The central idea being to not reward overbuilding sites that see little demand.

(c) Location, network, and physical requirements

Sites should be located in industrial districts, close to freight centers or along freight corridors, near ports, or within air quality management districts. These locations tend to be home to heavy MHD fleet traffic as well as criteria air pollution. CARB should consider how best to encourage the spacing of sites within and across

⁴ The State of Sustainable Fleets Market Brief, 2022. Gladstein, Neandross & Associates (GNA).
<https://cdn.stateofsustainablefleets.com/2022/state-of-sustainable-fleets-2022-report.pdf>.

⁵ LDVs will unlikely prefer to charge at these charging hubs in large volumes because of LDV driver preferences



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geographies while not being overly prescriptive and let the market decide where best to allocate infrastructure. To avoid incentivizing overbuilding sites with little to no utilization, MHD infrastructure credits should not amount to so much that they make a project commercially viable themselves (see subsection on Level of Support below). Infrastructure credits should help de-risk projects by stopgapping short term economics until more demand materializes.

To serve the MHD segment, eligible sites should be equipped with pull through charging and/or parking sufficient to accommodate tractor trucks without trailers. Sites should also be encouraged under the program to install lower capacity chargers where longer dwell times are preferable (e.g., overnight drayage truck charging or during mandated breaks) to manage loads and lower system costs.

All stations should be networked to enable tracking/reporting, greater visibility, and managed charging.

(d) Site caps and SMB equity

We also encourage CARB to make this provision equitable to small and medium sized businesses (SMBs). Because the overall number of these credits will be capped under the LCFS, it is possible that a small number of large companies or sites fully subscribes this provision. There should be some mechanism in place to review and cap capacity/sites at the site/applicant level to enable greater participation under the program. Encouraging more ports per site vs capacity/site will serve more vehicles.

(e) Level of support

As previously noted, MHD infrastructure credits alone should not fully finance projects. This will encourage suboptimal site locations, overbuilding, and underutilization. Infrastructure credits should complement project economics and provide confidence to investors that this provision will stopgap the risk of variable and uncertain short-term utilization. Crediting periods may need to be longer than the current 5-year term under the LDV FCI provision to accommodate higher CAPEX investments. Infrastructure investors often demand cost recovery in five years and double digit returns over time. The number of credits received per station should be a function of station uptime, same as the LDV FCI provision.

(f) Eligible capital expenses of MHD stations

All station HW and networked SW costs, site make ready and construction costs, station warranties, and onsite storage resources should be eligible for crediting. This list is not exhaustive, but rather meant as a starting point. CARB should continue to solicit industry input on qualified project costs.

(g) Closing remarks on MHD infrastructure crediting provision

Infrastructure credits for MHD charging could help accelerate MHD fleet electrification if designed correctly and we support CARB for opening up rulemaking on this topic. At this time, some design elements are still unknown and need further collaboration between CARB and stakeholders. Our comments are meant to guide thinking at a high level and flag areas where a MHD infrastructure crediting provision could potentially incentivize bad behavior. Below we've summarized a set of overarching principles that should be incorporated into the framework of a MHD infrastructure crediting provision as this continues to be built out.



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1. **Do not assume behavior matching between ICE and EV refueling.** EV fleets operate under a different set of temporal and spatial constraints than ICE fleets, so EV fleet refueling will look different than ICE refueling. A successful MHD FCI provision needs to embrace these differences to achieve policy-market fit and accelerate MHD electrification.
2. **Enable reliability and assurance.** Reliability and assurance are critical for fleet operators. To achieve this, fleets will charge at a combination of private, public, and mixed-use sites managed through private agreements and software solutions. These should not be penalized under a MHD FCI provision but rather the provision should be built around these dynamics.
3. **Design for utilization of maximum number of MHDVs.** The provision should target MHD charging but not exclude LD charging, at least in the early years. The LD EV fleet is growing much faster than MHDVs. LD charging should be allowed to utilize these charging resources if there is spare capacity/availability but MHD charging should be structurally incentivized over LD to achieve program goals. Infrastructure should be spatially distributed and greater port counts per site encouraged rather than capacity per site to serve a greater number of MHDVs.
4. **Design for scalability, don't incentivize overbuilding.** The crediting scheme should not reward overbuilding sites that go underutilized for extended periods of time, but rather scaling sites as MHDVs gain market share over time. Financial support from infrastructure credits alone should not carry a project.

Thank you for considering our comments. ChargePoint looks forward to continued participation in this rulemaking.

Sincerely,

A handwritten signature in cursive script that reads "Evan Neyland".

Evan Neyland
Senior Manager, Carbon Markets
ChargePoint