



February 20, 2024

California Air Resources Board
1001 I Street
Sacramento, CA 95814

RE: ChargePoint Comments on Proposed Low Carbon Fuel Standard Amendments

Thank you for the opportunity to submit comments on the proposed amendments to the Low Carbon Fuel Standard (LCFS) issued on December 19, 2023. ChargePoint has reviewed the Proposed Regulation Order and appreciates the work of the California Air Resources Board (CARB) Staff to implement changes to LCFS that will advance investment in low carbon fuels and infrastructure in California.

About ChargePoint

Since 2007, ChargePoint has been committed to making it easy for businesses and drivers to go electric with one of the largest electric vehicle (EV) charging networks and a comprehensive portfolio of charging solutions. ChargePoint's cloud subscription platform and software defined charging hardware is designed internally and includes options for every charging scenario from home and multifamily to workplace, parking, hospitality, retail, corridor, and fleets of all kinds.

Summary of comments

- Expand the scope of “less intensive verification” for on-road electricity crediting to allow for networked charging stations that meet certain requirements to be pre-approved. Entities that do not meet the requirements for less intensive verification could still undergo full verification.
- Remove the exemption for dedicated parking spaces under multifamily crediting and allow owner/operators to claim credits on all stations at multifamily locations.
- Regarding the MHD-FCI provision: (1) relax the siting requirement to within 5 mi of a FHAA corridor, (2) reduce the minimum kW nameplate capacity to 200, (3) consider shortening the FCI crediting window to 7 years, and (4) roll unutilized LD-FCI capacity into the MHD-FCI provision to increase deployments.
- Take greater action to stabilize the credit market, either through supply-side intervention or more stringent carbon intensity targets. Increase the step down to 10%.
- Modify the Automatic Acceleration Mechanism (AAM) formula to trigger once the credit bank exceeds three-fifths of the prior year's deficits, instead of three-fourths.



Requirements for less intensive verification

The inclusion of on-road electricity crediting in the verification program is not a small lift and needs to be done thoughtfully. Therefore, we suggest CARB consider putting off including electricity verification in this rulemaking given the many other issues being considered. However, if CARB believes that on-road electricity reports must undergo third-party verification under the amended regulation due to largescale risk of misreporting (which to our knowledge, there is currently no evidence of), CARB should lean on existing technology, standards and relevant regulations when designing verification. To that end, we appreciate CARB's inclusion of a "less intensive verification" pathway in the proposed rules but believe that this does not go far enough. The less intensive verification pathway should be expanded to consider the following:

The EV charging network is fundamentally different than the traditional point-source liquid fuel supply network: whereas liquid fuels originate from fewer and larger sources (refineries), EV charging stations are significantly more disaggregated, where each point (or charger) in the network represents a small amount of potential fuel supply which renders physical site visits across the whole network impractical and costly. For meter accuracy assurance, CARB should instead lean on accuracy thresholds that already exist in the industry, such as those within the California Type Evaluation Program (CTEP), which require that level 2 (L2) EV charging meters meet an accuracy threshold of $\pm 1\%$ upon manufacturing and calibration and $\pm 2\%$ over its useful life, while level 3 (L3) meters must meet a $\pm 2.5\%$ accuracy upon manufacturing and calibration and $\pm 5\%$ over its useful life. The CTEP standard is already being utilized by the California Division of Measurement Standards (DMS), the entity tasked with ensuring the accuracy of commercial devices, including EV charging stations. DMS sets standards to promote fair competition and ensure consumer protection and points to the CTEP as the metrological accuracy standard that chargers installed after a certain date must meet to be used for commercial purposes. County Weights & Measures offices, under the guidance of statewide rules established by DMS, serve to enforce the standards by conducting periodic site visits to verify the accuracy of fueling stations.

Recommendation: CARB should pre-approve charging stations that meet CTEP's meter accuracy standards for participation under the less intensive verification pathway.

Pre-approval would mean exempting eligible charging station models from site visits and third-party meter testing based on that model's meter accuracy substantiation. CARB could publish a list of exempt charging station models that meet CTEP's meter accuracy standards for credit generators' reference. This is similar to the approach taken under Canada's national Clean Fuels Regulation. Otherwise, the existence of the DMS framework for assessing and enforcing charger accuracy would render additional site visits and meter



testing, even only in half of the years as currently proposed under the “less intensive verification” pathway, under the LCFS program duplicative and punitive on the industry, particularly for small owner/operators¹.

With assurances around charging station meter accuracy ensured by the accuracy standards embedded in CTEP, the final step to less intensive verification would be a “desktop” review of the data in the reports. The scope of the desktop review would be to ensure that the data in the quarterly reports submitted through the LRT matches the data that was output from the charging network. EV charging networks are underpinned by extremely accurate (down to the watt-hour), real-time data in a way that traditional liquid fuel networks are not². Networked EV charging provides a near constant stream of data that can be verified against reported charging activity.

There are a number of standards, practices, technologies and processes charging network operators adhere to to ensure the accuracy of data. For example, ChargePoint complies with several standards to ensure that the data reported by the station maintains its accuracy as it is transferred from the station to the cloud, and that any data anomalies are detected and removed before being reported. Many network operators also maintain compliance with Payment Card Industry Data Security Standards (PCI DSS) to ensure an accurate and secure environment for network transaction data. CARB could pre-approve networks that meet certain standards for use under the less intensive verification pathway, similar to pre-approving charging station models based on meter accuracy. Standards and documents required for pre-approval could include SOC2 reports and/or PCI certification.

Our recommendations for the less intensive verification pathway are not necessarily meant to be prescriptive, but rather to point out how existing technologies, best practices, and standards already widely adopted in the industry should be incorporated into the pathway. This will greatly minimize administrative costs for an industry that is still scaling. This is also the general approach taken under Canada’s national program. We urge CARB to not try and reinvent the wheel re: on-road electricity verification. Reporting entities that do not meet the requirements for less intensive verification would still be able to undergo full verification.

Credits for non-residential chargers at multi-family residential properties.

ChargePoint strongly supports the proposal to allow FSE owners to generate credits for stations installed at multifamily properties. This change will create more revenue opportunities for property owners that install chargers at multifamily locations, and

¹The cost of a non-streamlined verification will be disproportionately significant to small owner/operators since LCFS revenues will be smaller. In multifamily residential settings, physical site visits will be particularly challenging due to privacy concerns.

² Some charging networks are more robust and secure than others and we recommend some level of minimum thresholds in order to qualify for the less intensive verification pathway, as we touch on below.



critically, incentivize more deployment of chargers for residents of multifamily homes, a market segment that has historically lacked investment.

Recommendation: remove the exemption for dedicated parking spaces and allow owner/operators to claim credits at all multifamily locations.

While we fully support the proposal to treat multifamily crediting the same as non-residential, we do not agree with the proposal to treat chargers in dedicated parking spaces differently. Not only will the exclusion of restricted parking spaces be extremely difficult to track, but it also arbitrarily distinguishes credit generation based on a residence's parking arrangement. Recent analysis by the CEC indicates that expanding the range of charging options available in the parking lots of multifamily housing will ensure charging is not a barrier to EV adoption.³ Increasing home charger access for residents of multifamily homes must be a priority to equitably meet the routine charging needs of more EV drivers, and for this reason, we strongly support this change by CARB.

Residents of multifamily housing are generally not able to install conventional home charging without financial assistance from the building owner. This is because charger installation at multi-family properties often requires upgrades to shared electrical panels and running conduit across common parking areas. A single household of a multifamily residence is generally unable or unwilling to shoulder the high cost of charger installation themselves. In other words, there is a "split incentive" affecting multifamily properties in which a property owner must pay for and organize installation, while the chargers may only benefit the fraction of residents who drive EVs at the time of the upgrade.

In fact, there is a case to be made that chargers in dedicated multifamily residential parking places may have the most impact on those residents switching to electric and should therefore be supported by the LCFS through the ability to generate value from credit generation. This is especially true considering CARB's proposal to redirect funds from the Clean Fuel Reward (CFR) program towards MHD EVs (which we also strongly support). Whereas before, CFR value was generated by residential (including multifamily) charging so it made sense to return some of that value to individual EV drivers via LD EV rebates. If CFR value will now go towards MHD EV rebates, it only seems right to allow owner/operators of multifamily chargers to retain the value of the LCFS which can help finance or buy down the cost of the station.

Medium and heavy duty (MHD) Fast Charging Infrastructure (FCI) credits

ChargePoint strongly supports the addition of the MHD FCI provision. While the passage of the Advanced Clean Fleets and Advanced Clean Trucks regulations are expected to create greater demand for MHD EVs, infrastructure development to support these vehicles remains

³ California Energy Commission, Assembly Bill 2127 Electric Vehicle Charging Infrastructure Assessment ("AB2127 Report") at 48.



economically challenging due to the lack of MHD vehicles on the road today and the expectation that it will take time for the market to grow. The expansion of FCI credits for both private and shared MHD FCI is a much-needed intervention to commercialize charging infrastructure and help stimulate investment for this segment. ChargePoint also appreciates the inclusion of shared private fleet chargers in this program. Nonetheless, a few revisions to the rules for MHD FCI credits will allow the program to support the nascent MHD refueling market more effectively.

Charging hubs for MHD vehicles are likely to require several megawatts of power for each site. These projects will in most cases require significant distribution grid upgrades by the utility. Due to the complex factors that inform site selection for MHD charging sites, including but not limited to access to travel corridors, proximity to vehicle routes, distribution grid capacity, and land acquisition, it remains unclear which locations will be the most efficient to locate private or shared MHD charging hubs. For this reason, overly narrow location requirements for MHD FCI sites may impede development by eliminating projects that would otherwise be ideal due to ample grid capacity. While we understand CARB's intent for the FCI program to focus charger deployment in alternative fuel corridors for the purposes of accessibility and equity, station owners and drivers would benefit from less stringent geographic limitation.

Recommendation: relax the geographic siting requirement to 5 mi from a FHAA fuel corridor to provide flexibility for site selection.

The amendment proposal establishes a minimum power level of 250 kW for chargers serving sites that receive MHD FCI credits. The minimum power level established for MHD-FCI sites should consider *today's* MHD fleet needs, as well as the anticipated needs of the future. For most MD vehicles on the road today, 200 kW is more than sufficient for the vehicle's needs and helps lower overall system costs (relative to 250 kW or greater). Therefore, ChargePoint recommends that CARB reduce the minimum power level for each charger serving MHD FCI to 200 kW, as this minimum is sufficient to meet the market where it is today, as well as accommodate the needs of coming MHD vehicles.

Recommendation: reduce the minimum kW eligibility requirement to 200 from 250.

Regarding the MHD-FCI crediting window, while some sites will need a 10-year window to recoup capital costs, a longer window could encourage overbuilding and disincentivize utilization in the short to mid-term, both of which are not ideal for the market. We believe a crediting window closer to 7 years will suffice for the majority of projects and encourage sites to build for utilization sooner rather than later. This should also free up more capacity under the MHD-FCI cap sooner which will open up capacity for more sites over time.

Recommendation: consider shortening the MHD-FCI crediting window to 7 years.



The CEC reports that as of 2023, California has over 9,000 DCFC ports in operation and is ahead of schedule to meet its port deployment target of 10,000 ports by 2025.⁴ ChargePoint believes LD FCI revenue has successfully accelerated investment in the market for public DCFC and is partly responsible for the state's success in this segment. When paired with the continued growth of LD EV sales in California, it seems clear that continued investment in LD-FCI can sustain itself without greater support from FCI credits. By contrast, the MHD segment would benefit from greater FCI support because it is underdeveloped relative to the state's goals. The CEC estimates that by 2030, California's 155,000 MHD EVs will need about 114,500 public and shared chargers.⁵

To further accelerate the market for MHD electrification, **we recommend CARB rollover any unused LD-FCI credits into the MHD cap to allow for greater investment/deployments in this segment (more on this below).**

Revised Clean Fuel Reward Program

ChargePoint supports the proposal to redirect funds from the CFR program to make MHD EVs more cost-effective. The current framework of allocating CFR funds towards LD EV rebates has long since lost efficacy as the rebate amount is not salient to prospective EV drivers to the point where it induces additional purchases. ChargePoint is pleased to see this change as the current state of the MHD EV market is more in need of funding than the LD segment.

Light duty FCI credits

The proposed regulation establishes a transition plan to reduce FCI crediting available for LD DCFC applicants. Among other changes, the proposal amends the cap for LD FCI credits to 0.5% of prior quarter deficits, a reduction from the previous cap of 2.5%. ChargePoint supports this change and agrees that LD-FCI credits should be capped to no more than 0.5% to focus infrastructure crediting on the more nascent MHD EV market. As discussed previously, ChargePoint believes MHD-FCI should be the priority and recommends CARB consider further reduction in the availability of LD-FCI credits in favor of a higher cap on MHD-FCI credits.

Should the LD-FCI pathway remain open beyond 2025, ChargePoint believes it would be premature to limit eligibility to stations with a nameplate capacity of 150 kW or more in light of the other proposed changes to the pathway. A station capacity minimum of 150 kW combined with the change to how FCI charging capacity is calculated as well as the extension of the crediting timeline to 10 years will together incentivize overbuilding sites without regard to utilization solely because of FCI credits.

⁴ AB2127 Report at 3.

⁵ AB2127 Report at 2.



New carbon intensity benchmarks

In the weeks following CARB's release of its amendment package in mid-December, the spot market for credit prices declined ~20% (falling from \$70/credit to a low of \$57/credit). In that time, the market incorporated CARB's proposal of a 30% carbon intensity (CI) target by 2030, along with the proposed changes to the supply side, and determined that this market will continue to be oversupplied. Without more ambitious CI targets and/or clearer steps to curb biofuel production with uncertain greenhouse gas benefits (Murphy & Wook, 2024)⁶, it is apparent that this market will continue to be oversupplied and credit prices will remain low for the foreseeable future.

In prior conversations with CARB staff, we have come away with the understanding that CARB assumes the LCFS program, and the potential revenue it affords, does not factor into investment decisions for EV project operators (fleets, charging operators, etc.) and therefore investment in EVs and charging infrastructure is agnostic to LCFS credit prices. We do not agree with this assumption. Advanced Clean Cars, Advanced Clean Trucks, and Advanced Clean Fleets do not directly address or fund charging infrastructure. The LCFS program can, and often does, provide an important revenue stream for EV project operators and can be the difference between a project penciling or not. Project developers, operators, and investors in the EV space operate similarly as those in other spaces: they evaluate all available costs and revenues when assessing a potential project and often make decisions based on expected net cashflows. The difference between expected 5-year LCFS revenues on a L2 station with roughly average utilization in a world where credit prices hover in the ~\$60/credit range vs ~\$150/credit is significant. In the former, expected 5-yr LCFS revenues do not amount to enough to influence the business case, whereas in the latter, LCFS revenues offset a significant portion of the cost of the station and can even be leveraged for project financing.

As electrification has the most potential for long-term deep decarbonization of transportation, we urge CARB to account for the impact that sustained low credit prices may have on transportation electrification investments. Without clearer steps to limit crop-based biofuels – or specific carve outs for on-road electricity credits, like how some state Renewable Portfolio Standards set specific carve outs for solar – investments in charging infrastructure and electric fleets will be crowded out under the program by the continued surplus of biofuel credits in the market.

⁶ Murphy, Colin & Ro, Jin Wook. Updated Fuel Portfolio Scenario Modeling to Inform 2024 Low Carbon Fuel Standard Rulemaking (Draft). University of California Davis Policy Institute for Energy, Environment, and Economy.



Recommendation: in lieu of some sort of cap on crop-based biofuels, we believe the 2030 CI target needs to be increased to 32.5% to 35% and the stepdown needs to be increased to 10% to raise price expectations to the level needed to usher in more investment.

Automatic Acceleration Mechanism (AAM)

ChargePoint supports the proposal to establish the AAM but recommends that CARB make the mechanism stronger. As proposed, the AAM would not have been triggered in any of the years after the 2018 amendments. These years include 2022, a year when the credit market price declined by ~50%.⁷ The AAM should be designed specifically to counteract this type of negative price movement, so a mechanism that would not have reacted in 2022 is not strong enough.

To strengthen the mechanism, we recommend that ARB amend the first condition of the AAM to be reached when the cumulative credit bank is greater than three-fifths of the deficits generated over the same calendar year rather than the current condition set at three-fourths. With this update the AAM would have been triggered in 2022 but not any of the other years following the 2018 amendments. Since these other years saw price increases or modest declines, the new threshold suggests a balanced mechanism that reacts only to large price decreases.

Conclusion

ChargePoint appreciates the opportunity to submit comments to CARB on the Proposed Regulation. We stand ready to work with CARB Staff to implement the changes discussed in these comments, particularly to ensure that the process of verification is administratively efficient for the on-road charging market.

Respectfully,

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⁷ LCFS data dashboard; <https://ww2.arb.ca.gov/resources/documents/lcfs-data-dashboard>