



February 20th, 2024

To the California Air Resources Board:

Thank you for your innovation and dedication to making California the standard by which all other environmental policy is judged. As a developer of electric vehicle charging infrastructure and member of CalETC, Carbon Solutions Group strongly supports California's LCFS program. We consider this program to be the main lever in statewide EV adoption, as well as the model for so many emerging fuel standards across the country.

Today, CARB's progressive policies remain as crucial as ever for driving zero emissions economic development. Notably, EV sales have recently seen a significant, and surprising, slowdown. Various other recent indicators of industry trouble include Hertz announcing that it will jettison 20,000 EVs from its fleet (to which the market responded favorably) as well as media commentators warning of consumer "range anxiety" cooling interest in pure EVs. Over the last several years, low utilization rates and macro-economic factors have also resulted in EV industry burnouts and below market acquisitions by oil and gas majors.

Thus, this next round of LCFS amendments may be decisive when it comes to pushing EV adoption into the mainstream. This is especially the case regarding LD EV adoption amongst historically disenfranchised communities, which maintain the lowest utilization rates and the least financial incentive to abandon gasoline. Presently, as CARB no doubt already knows, LD EVs appear to be most utilized in higher-income homes, and often as secondary vehicles. And while we agree with CARB that EV sales will increase in the years to come, we are not confident that an increase in vehicles will, *de facto*, be evenly distributed across income types, nor that EV sales will necessarily increase linearly with throughput. EV sales and EVSE development remain on two separate, but linked, trajectories.

For the disenfranchised, several fundamental obstacles are presently at play. DCFC economics in low-income/low utilization areas often result in a high price-per-kWh of throughput, which can end up with a "pump price" greater than gasoline. This high price-per-kWh is caused by the low utilization (thus expenses are spread across fewer kWhs) as well as the fact that wear-and-tear costs are more prevalent in public charging stations (as opposed to MHDV stations which are frequented by professionally trained drivers). Perhaps most important, access to home charging is a critical factor when prospective combustion engine drivers consider EV adoption. It appears that most low-income drivers do not currently have access to L2 home charging.

In short, to reach an inflection point in which EVs become the primary mode of transport in California, we believe EVs will need to become the primary mode of transport for middle- and

low-income drivers. While EV adoption amongst the upper classes has been largely ideological in nature, EV adoption amongst those struggling paycheck-to-paycheck needs to be a purely economic decision. That decision will be based on whether sound EVSE businesses can offer price competitive charging optionality. Thus, California's stated climate goals will continue to require policy-driven economics that aggressively incentivize the installation and operation of charging infrastructure.

To that end, we are supporters of CalETC's recommendations for the present round of proposed LCFS amendments, in both LDV and MHDV categories. In addition to the group's formal recommendations, we also propose the following items for your consideration. In some cases (e.g., base credit qualification), we offer an appeal outside the scope of CalETC's position. In other cases (e.g., deficit cap and geographic restrictions), we echo CalETC's formal recommendations.

Residential: Base Credit Qualification

As per Section 95483(c)(1)(A), EDUs presently retain base credits for metered and non-metered residential charging infrastructure. We see this statute potentially undermining the larger goal of majority EV adoption.

From an economic perspective, the inability for an EVSE owner to claim a base credit eliminates a key incentive for that owner to implement charging infrastructure. Considering single-family homeownership has become cost-prohibitive for many Californians, multi-unit dwellings and rentals are particularly important. By awarding residential EVSE owners with base credits + incremental credits (whether single-family or multi-unit), we believe middle- and low-income EV adoption will significantly increase.

While we recognize that EDUs do in fact use base credit earnings to distribute zero emission rebates to disadvantaged/low-income communities, we believe that this indirect allocation does not efficiently incentivize the primary risk takers in California's LCFS—the producers of low-carbon fuel solutions. Directly incentivizing these builds is paramount when it comes to establishing a landscape in which low-income EV adoption is possible. In other words, if the charging infrastructure is not readily available, indirect rebates to drivers/homeowners may be irrelevant.

Additionally, by providing the option for aggregators to also participate in base + incremental credits (along with the EVSE owners), CARB could establish an incentive to create an efficient framework that limits the potential for individual account creation overload, while still rewarding individual residential accounts.

At minimum, awarding base + incremental credits to EVSE owners for L2 communal parking in multi-unit dwellings would make the most substantial impact in any single property category, as a communal charging option in multi-unit/rental residences can open up the opportunity for low-to-middle income drivers to adopt EVs with greater ease. Growth in communal L2 charging in multi-unit dwellings can also help support CARB's broader goal of achieving a greater volume of distributed charging points rather than fewer, congested charging points.

Yet, from the regulator's perspective, it is important to drive advances in innovative, clean infrastructure and not to merely spur adoption of existing supply chains. To that end, another element that could further justify awarding EVSE/network owners with base + incremental credits could be that the award is premised on the installation of bi-directional chargers for multi-unit and/or single-family residences. Bi-directionality is a value-add that would further both grid resilience and California's climate goals.

Residential: Metered Base Credit Qualification

As is known, in metered residential scenarios, EDUs have no access to specific charge point metering, unless the EDU operates the charge point itself or the charge point is on its own sub-meter. Therefore, EDU-qualified non-metered base credits are necessarily premised on assumptions. Because these factors are based on averages, rather than actual utilization (which can vary widely), these base credits do not rely on the best available data that accurately reflects real world utilization dynamics.

On the other hand, designated aggregators, EVSE owners, and telematics-enabled vehicle owners have access to real utilization data specific to each charge point/vehicle. This data is exact and not based on averages.

We respectfully appeal to CARB to consider awarding base + incremental credits to qualified EVSE owners/aggregators that are able to report actual, metered utilization data. This base + incremental credit qualification would prioritize best available data whenever it is available. In turn, this would likely lead to more stringent credit generation, as the metered credits would be based on *actual* utilization rather than *estimated* utilization. In this way, the aggregator/EVSE owner can be rewarded for providing CARB with the best available data.

Public-Private: Verification Requirements

By allowing designated aggregators and EVSE owners to participate in base + incremental credits, the verification process can also be optimized at a lower cost and faster speed.

CARB's proposed verification requirements (i.e., that site hosts must pay for 3rd party in-person verification) will incur significant costs and operational friction that fall outside of current industry models, in turn, severely damaging overall industry momentum. However, we believe that, by providing CARB with real utilization data, designated aggregators and EVSE owners can easily enable a purely desktop verification methodology that will 1) achieve equitable if not greater integrity at a lower economic cost than in-person site visits; and 2) efficiently eliminate potential redundancies in the process.

Regardless of the above, we also respectfully suggest a change regarding the proposed verification deferment option for entities generating less than 6,000 credits/year. Instead, we recommend that entities that generate less than 2,001 credits/year be exempted from all verification, and that those applicants with 2,001 to 6,000 credits/year be eligible for deferment of 3rd party in-person verification. Likewise, we respectfully ask CARB to further clarify that only credits subject to verification count towards the credit cap for deferment or exemption. Overall, we believe

deferral and exemption can potentially have a sizable impact in incentivizing residences to come online with charging infrastructure.

Public-Private: DCFC for Multi-Unit Dwellings

Certain L2 installations for multi-unit dwellings face logistical challenges, particularly for retrofits of existing properties. In some cases, common parking spaces are limited, leading to an undersupply of L2 charging points within the dwelling's parking lot (if such a lot even exists). In other cases, structural complexities may pose too great an obstacle for L2 installation on site.

In addition to allowing EVSE owners to retain both the base + incremental credits, one remedy to this challenge would be to incentivize DCFC infrastructure on-site, adjacent, or proximally located within five miles of a multi-unit dwelling. Proximal fast charging can compensate for cases where there is an insufficient number of L2 chargers, and still address an underserved population that is central to the broader goals of the EV industry and the State of California. FCI credits allotted to multi-unit-based/adjacent DCFC, even if not publicly accessible to non-tenants, could provide the proper incentive in this regard.

Public: FCI Parity with Hydrogen (HRI)

We believe there is a lack of equity between the proposed LD FCI program and the LD HRI program. Specifically, we strongly appeal to CARB to reconsider the allowance of REC matching to achieve 0 CI electricity in the FCI formula. Doing so, would create equal conditions for FCI and HRI, as currently only H₂ can claim 0 CI as per the proposed regulation.

Carbon Intensity Step-Down

We believe that an immediate CI step-down of at least 7% (instead of 5%) would help push the market to more significant levels of emissions reduction. Again, we believe that the next few years are a time in which to push forward ever more aggressively in meeting California's climate goals.

Public: LDV FCI—Deficit Cap

Considering the precarious economic landscape laid out above, we recommend that CARB retain the 2026-2030 deficit cap at today's 2.5% (rather than the proposed 0.5%).

To reach California's goals, as set out by ACC II, more than an 8x increase in DCFC will be required, as today's ~10,000 DCFC must reach 83,000 in the next eleven years. Likewise, ACC II calls for a dramatic increase in EV sales—with today's 20% market share needing to reach 100% in the next eleven years. However, even if this ambitious increase in EV sales is achieved, a correlating increase in DCFC is unlikely to be supported by market-driven consumer demand alone for some of the reasons laid out previously in this letter. And, conversely, if extensive charging infrastructure does not materialize, an exponential growth in EV sales may be hard to manifest on its own. Therefore, policy-driven DCFC economics will remain a necessity to reach ACC II objectives. Without strong policy-based incentives, low utilization areas (e.g., low-income, rural, etc.) will suffer the worst from a lack of DCFC infrastructure.

Within this context then, we do not believe a 0.5% cap will sufficiently incentivize DCFC to ACC II levels. Instead, a 0.5% cap would likely spur a major slowdown in DCFC development.

Public: LDV FCI—Geographic Restrictions

For similar reasons laid out above (re: maintaining a 2.5% cap), we also contend that geographic restrictions on public FCI would likely impinge on greater EV adoption, particularly among the low-income and middle-income communities that are the most important to incentivize. Geographic restrictions will likely cause investor confusion and conservatism (whether deserved or not) at a time when more capital needs to be deployed for infrastructure in low utilization locales.

In both cases (re: 2.5% and no geographic constraints), we do not project an oversupply of credits due to the self-limiting nature of FCI—in that as kWh consumption increases, the FCI credits decrease. More so, CARB’s novel acceleration mechanism should successfully buffer against significant credit devaluation.

Public: FCI Timing for LDV

As per the amendment of Subsection 95486.2(b)(4)(H): While we fully support this helpful capex multiple, we respectfully appeal to you, to qualify it for immediate application upon passage of the regulation (ca. 2024), as opposed to its stated 2026 start date. As noted above, a variety of pressing economic challenges currently face public charging infrastructure. The ability to utilize this amendment sooner than 2026 would be most efficacious in bridging and rapidly scaling up LD charging infrastructure, particularly in those low-income areas that could most benefit.

We appreciate the time and attention you have given to considering the details of this letter. We commend you on your leadership and look forward to implementing another phase of a world-changing program.

Best Regards,

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