RIVIAN

California Air Resources Board
1001 I Street
Sacramento, CA 95814

August 27, 2024

SUBMITTED ELECTRONICALLY AT: www.arb.ca.gov/applications/public-comments?utm_medium=email&utm_source=govdelivery

Re: Notice of Public Availability of Modified Text and Availability of Additional Documents and Information for the Proposed Low Carbon Fuel Standard Amendments

To Chair Randolph, Honorable Members of the California Air Resources Board ("CARB"), and Staff,

Rivian Automotive, LLC, ("Rivian") appreciates the opportunity to submit 15-day comments in **strong support** of the modified text released on August 12th as part of the proposed Low Carbon Fuel Standard ("LCFS") amendments. The LCFS is a proven emissions reduction policy and a powerful enabler of transportation electrification. As an EV manufacturer and charging provider, we strongly support the policy primarily because of what it offers our customers, our business, and our industry as we work to achieve scale and profitability. To date, the policy has generated more than a billion dollars in value in support of transportation electrification and this figure is poised to grow significantly in the coming years. These are dollars that can be leveraged by the private sector and would otherwise not exist to support the state's EV transition. This is why the future of the regulation, as determined by this rulemaking, is so important.

Rivian strongly supports several key aspects of the latest modifications. We recommend finalizing this package to strengthen the 2025 carbon intensity target, make valuable changes to the regulation's infrastructure crediting provisions, and introduce an encouraging new opportunity for EV manufacturers to share in residential base credit generation. Our comments below elaborate on our support for these specific aspects of the newly modified regulation, while also suggesting minor improvements or additional changes that could be made in the interest of clarity and maximizing impact. We also reintroduce a few additional changes that the modified text does not effectuate but that merit continued discussion.

About Rivian

Founded in 2009, Rivian is an independent U.S. company headquartered in California. With over 16,000 employees across the globe, Rivian's mission is to Keep the World Adventurous Forever. Rivian's focus is the design, development, manufacture, and distribution of all-electric adventure vehicles, specifically pickups, sport utility vehicles ("SUVs"), and commercial vans. Key to the success of our mission, these vehicles will displace some of the most polluting conventional vehicles on the road today.

Rivian brought the first modern electric pickup to market in 2021 when we launched the R1T from our manufacturing facility in Normal, Illinois, followed shortly thereafter by the R1S SUV and the EDV commercial van for Amazon. The R1T and R1S provide all-electric options in segments where added utility is a necessity. The R1T has an EPA-certified range of up to 410 miles. The R1S is certified at up to 400 miles. The truck also features 11,000lbs of towing capacity, while the R1S is a seven-passenger full-sized SUV. Both are well-equipped for off-roading in a range of climates. Separately, our Class 2b commercial vans eliminate tailpipe emissions from last-mile delivery. Rivian is committed to producing 100,000 vans for our launch customer, Amazon, with more than 15,000 already in service in 800+ U.S. cities. The van is now also available for purchase by other fleet customers beyond Amazon and is eligible for HVIP support. Beyond our vehicle lineup, Rivian is also building a network of DC fast chargers across the country known as the Rivian Adventure Network ("RAN"). Fifteen RAN sites are up and running in California alone.

To Continue the LCFS' Success, Rivian Strongly Supports Key Changes Proposed in the Modified Text

The LCFS is a keystone regulation in California's portfolio of climate policies. As the 2022 Scoping Plan stated, the LCFS "is the primary mechanism for transforming California's transportation fuel pool" in service of the state's climate goals.[1] Indeed, as an electric vehicle manufacturer and charging provider, the LCFS is a priority for Rivian precisely because of the role it plays in speeding the transition toward renewable fuels in the transportation and electricity sector.

[1] CARB, *2022 Scoping Plan for Achieving Carbon Neutrality*, 190.

The LCFS has been tremendously successful, so much so that changes have become urgently necessary to ensure that the policy keeps pace with the progress made by industry toward a low-carbon transportation future. To that end, Rivian has actively participated in CARB workshops and the rulemaking process to amend and update the LCFS. We greatly appreciate the staff's commitment to this process and the time they have dedicated to this proposal and stakeholder engagement.

Rivian welcomes the modified text and this additional opportunity to provide comment. We strongly support key changes proposed by the amended language and urge CARB to finalize these changes at its hearing in November.

Finalize the Newly Proposed 2025 Carbon Intensity Benchmark

Short-term conditions in the LCFS credit market are a top concern for businesses like ours that earn credits under the program. Rivian has consistently supported a one-time stepdown in the 2025 carbon intensity ("CI") benchmark to course-correct the credit market, which currently suffers from a glut of credits stemming from a sustained period of overcompliance.

As of Q1 2024, the cumulative credit bank stood at approximately 26 million metric tons ("MT"). Moreover, the bank has grown extremely quickly over the past two years.[2] Based on the trend since the start of 2020, we estimate that the bank could total approximately 35 million MT *by the end of 2024*, immediately preceding the earliest opportunity for regulatory amendments to take effect.

We appreciate the staff's efforts to address this overcompliance with a one-time stepdown. Rivian provided extended feedback on the magnitude of the stepdown after both the ISOR and the April workshop, arguing that the previously proposed adjustments to the CI curve were not sufficient to rebalance the market.

Rivian welcomes the progress made in the newly modified amendments, which now call for a 9-percentage point stepdown in 2025. This is a big step forward and we are grateful to the staff for proposing this. Importantly, the initial market reaction to the proposal was positive. **We respectfully urge the Board to implement this change as a necessary step toward rebalancing the LCFS program and credit market.**

---

[2] California Air Resources Board, *LCFS Data Dashboard*, available at www.arb.ca.gov/resources/documents/lcfs-data-dashboard.

At the same time, we encourage the staff and the Board to continue weighing the benefits of a stepdown that is yet larger. While we welcome the 9-percentage point adjustment, the reality is that the credit bank continues to grow quickly. We find that the market could accommodate even more significant action than what has been proposed—accounting for the possibility that current modeling underestimates potential credit generation—and set the program up for success in the coming years.

We appreciate concerns about the potential risks of a larger stepdown, namely the possibility of 'over-obligating' industry and creating the conditions for an excessive runup in compliance costs. However, the policy's existing cost containment provisions adequately safeguard the market and broader public, preventing runaway increases in credit prices. In our view, there are far greater risks attached to an overly conservative adjustment to the CI benchmark curve that fails to fully rebalance the credit-to-deficit ratio, including chilled investment in EV charging networks and slower growth in EV sales.

Finalize the Proposed Changes to Residential Base Credits

Rivian finds the proposed amendments to base credit generation very encouraging, reflecting fresh thinking about this critical aspect of the LCFS. Clean fuels policies are intended to be market-based systems that create incentive structures for private sector investments by the providers and users of clean transportation fuels. In the light-duty vehicle sector, the two most important market participants are vehicle manufacturers and their customers. Consistent with the core principles of the LCFS, we have long argued that the policy should encourage the participation of these market actors and reward them for making investments in EVs that displace as much fossil fuel use as possible.

To that end, **Rivian applauds the newly proposed amendments that would—subject to certain conditions and the Executive Officer's approval—allow for EV manufacturers to share in base credit generation.** The proposed rules represent a valuable evolution of the LCFS' residential credit pathway, positioning the policy to play an even more meaningful role in the growth of California's EV market at a pivotal moment. In fact, we believe the proposal promises at least two key benefits.

1. Allowing automakers to earn a share of base credits establishes an incentive for automakers to go above and beyond minimum sales requirements. This is important for achieving climate and air quality goals on an accelerated timeline while also positioning the state to achieve its longer-term EV sales targets as the market grows into the mainstream.

2. Vehicle manufacturers enjoy close relationships with their customers and are the best positioned entities to effectively and efficiently pass through credit value in the form of market-enhancing investments. By establishing a 'menu' of investment options, the proposal establishes important flexibility in this regard while establishing clear guardrails around credit revenue spending. Whether in the form of consumer rebates, charging infrastructure investments, new spending on marketing, or other approved projects, EV makers like Rivian stand ready to reliably and impactfully invest base credit revenue for the benefit of our customers and the EV market.

For these reasons, **we strongly support the proposed modifications and urge the Board to approve these provisions at the November hearing.**

Should market conditions trigger these provisions, Rivian would look forward to engagement with the Executive Officer and the staff—as well as more formal agency guidance—to inform implementation. Among other things, we would encourage a focus on stability and predictability in the base credit allocation. We support leaving that allocation to the Executive Officer's discretion, but to best aid industry in making investment with credit revenue, CARB should provide automakers with as much notice as possible of base credit allocations and make adjustments on a reasonable and consistent timeline—not more than annually, in our view—and on a predictable basis.

CARB could take other steps now to prepare for a smooth implementation of these provisions. To be consistent with existing practice and to avoid the need for reregistration of vehicles by market participants, **we recommend that the regulation specify that an OEM *or their designee* may register with the Executive Officer** to generate the allowed share of base credits.

Fast Charging Infrastructure ("FCI") Pathway Rules are Much Improved

Rivian welcomes the changes made to the provisions governing the FCI pathway. We find that establishing a *light- and medium-duty* ("LMD") FCI pathway is reasonable and appropriate given the similarities in charging behavior and need across those classes, while other changes in the modified text helpfully streamline and simplify the eligibility criteria for LMD FCI sites. Specifically, we welcome the following changes:

- Increasing the per-site power limit from 1 MW to 2.5 MW;
- Removing the geographic limits;

- Matching the credit life for the FCI and hydrogen refueling infrastructure ("HRI") programs at 10 years (fair regulatory treatment of electricity and hydrogen remains an important principle, more on which below); and,
- Allowing stations installed after 2022 to apply.

Perhaps most importantly, the staff restored the cap to 2.5 percent of prior quarter deficits—a significant improvement over the prior proposal that will avoid undercutting the FCI pathway's effectiveness.

Combined, these modifications meaningfully improve prospects for participation by EV charging providers, which is key for accelerating the expansion of charging networks into every corner of the state. We look forward to leveraging the FCI pathway to expand the footprint of RAN into high-need regions across California and therefore **urge the Board to finalize the proposed LMD FCI provisions.**

To strengthen the FCI pathway yet further and to ensure fair treatment across both the FCI and HRI pathways, **we also recommend that the final language be amended to allow FCI credit generators to claim capacity-based credits at zero CI if the site's charging activity is matched with renewable energy.** Under the regulation, the CI used for HRI crediting is equal to the companywide average CI for dispensed hydrogen in the quarter "or 0 g/MJ, whichever is greater."[3] But the CI used for FCI crediting is "the California average grid" CI with no option to generate credits at zero CI like that available to HRI claimants.[4] If charging network providers are sourcing renewable energy to power their sites, the regulation should permit them to earn capacity-based credits at zero CI, just as in the HRI pathway. This will only enhance the impact of the LCFS on clean grid buildout. We respectfully encourage the staff and Board to consider this modification.

[3] 17 C.C.R. §95486.2(a)(5).
[4] 17 C.C.R. §95486.2(b)(5).

Rivian Encourages Continued Deliberation on Other Topics

Third-Party Verification Requirements for Certain Electricity Credit Pathways Remain a Concern

The Initial Statement of Reasons (“ISOR”) proposed to introduce third-party verification requirements for an expanded list of electricity credit pathways. The latest package of modified text does not appear to have changed these requirements. Therefore, as currently proposed, electricity credit generators would require third-party verification of credit claims associated with non-residential charging and metered residential charging, despite the significant compliance burden this poses without commensurate benefits in return.

We urge CARB to reconsider the proposals and establish pragmatic requirements that account for real-world implementation concerns.

- **Third-party verification of non-residential charging by desktop review should suffice.** Existing regulations govern EV charger accuracy and practical considerations call into question the feasibility of comprehensive site visitation to fuel supply equipment. If site visitation remains a priority for CARB, we recommend at least reducing the site visit burden using a reasonable sampling approach and/or authorizing third-party verifiers to exercise discretion in determining when a site visit to a specific location is warranted. The latter approach would align with a recent proposal by Oregon DEQ for its Clean Fuel Program.[5]
- **Metered residential charging should be entirely exempt from site visit requirements.** Site visits to many thousands of residential locations would be highly impractical, raise privacy concerns, and incur significant costs that would significantly erode the economics of the incremental credit pathway. The implications of potentially disincentivizing automaker generation of incremental credits include relatively more carbon-intense EV charging, diminished market pressure to accelerate the development of renewable electricity generation, and the potential loss of the best available data on residential EV charging, which CARB now uses to establish base

[5] Oregon Department of Environmental Quality, *Oregon Clean Fuels Program 2024 Rulemaking: Rulemaking Advisory Committee Meeting #2* (Meeting Slides), August 14, 2024, slide 17, available at www.oregon.gov/deq/rulemaking/pages/cfp2024.aspx.

credit volumes. CARB can achieve this with a small modification to the final regulatory language in §95500(c)(1)(E)(1) to state (new text in italics),

> "EV Charging except as specified under 95491(d)(3)(A) *and 95491(d)(3)(B)*."

This would exempt both metered and non-metered residential charging from third-party verification.

Updates to the Light-Duty ("LD") EER and Geofencing Radius Still Merit Consideration

Rivian has previously raised the need to implement technical adjustments to the LD EV EER and geofencing radius used to identify eligible telematics-recorded charging activity. Unfortunately, the latest package of modified text does not include any discussion of potential changes to these aspects of the LCFS.

We acknowledge that updating the EER would represent a relatively substantial change at this stage in the rulemaking process. Nonetheless, we want to take this opportunity to reiterate a summary of our findings in this regard and encourage continued deliberation on this important aspect of the regulation. If the staff consider proposing further modifications to the regulatory text before the hearing, we recommend an update to the EER be included.

At the same time, we believe it is not yet too late to update the geofencing radius, which CARB specifies through guidance. While relatively minor in administrative complexity, a change to agency guidance in this respect would be significant in its real-world impact on credit generators.

- **Revise the LD EER.** The current value of 3.4 stems from a determination originally made by CARB in the 2011 rulemaking—and is thus now more than a decade old.[6] Continuing to use an outdated EER systematically undervalues the real-world displacement of fossil fuels achieved by EVs, and the true role EVs play in decarbonizing the transportation fuel pool in support of the LCFS' objectives. Examples of more appropriate EER values exist. For instance:

[6] California Air Resources Board, *Appendix A: Proposed Regulation Order*, October 26, 2011, available at www.arb.ca.gov/sites/default/files/barcu/regact/2011/lcfs2011/lcfsappa.pdf.

- A National Renewable Energy Laboratory analysis of the U.S. passenger vehicle fleet found an EER of 4.4.[7]
- Canada's clean fuels regulation specifies an EER of 4.1 for LD vehicles.[8]
- Rivian compared the R1S to comparable three-row internal combustion engine ("ICE") SUVs and estimated an EER of 4.05.[9]

We encourage CARB to take this opportunity to calculate a revised EER.

- **Update the Geofencing Radius.** To avoid double-counting, CARB currently requires that vehicle charging sessions recorded using telematics that occur within 220m of a non-residential charging station be excluded from reporting for residential incremental credits.[10] As the density of public charging networks continues to increase, a 220m geofencing radius risks excluding a growing share of incremental charging claims. Moreover, contemporary GPS accuracy, usually accurate to within 2 meters, means that such a generous radius is no longer necessary nor justifiable.[11] Rivian recommends that CARB amend the geofencing radius as part of this rulemaking. At a minimum, we suggest aligning with the 110m radius established by Washington's Clean Fuel Standard guidance but encourage CARB to consider an even smaller figure.[12]

---

[7] Mark Singer, Caley Johnson, Edward Rose, Erin Nobler, and Luna Hoopes, National Renewable Energy Laboratory, *Electric Vehicle Efficiency Ratios for Light-Duty Vehicles Registered in the United States*, March 2023.

[8] Environment and Climate Change Canada, *Clean Fuel Regulations: Specifications for Fuel LCA Model CI Calculations, Version 2.0*, January 2023, p. 85, available at www.data-donnees.az.ec.gc.ca/data/regulatee/climateoutreach/carbon-intensity-calculations-for-the-clean-fuel-regulations/en/Resources/?lang=en.

[9] Rivian analysis of fuel economy data for a range of ICE vehicles relative to Rivian's R1S. ICE vehicles examined include the Jeep Grand Wagoneer, Chevrolet Suburban, and Ford Expedition. In all cases, Rivian selected the most fuel-efficient variants of the ICE vehicles and excluded plug-in hybrid vehicles from the analysis.

[10] California Air Resources Board, *Low Carbon Fuel Standard (LCFS) Guidance 19-03: Reporting for Incremental Credits for Residential EV Charging*, June 2019.

[11] National Oceanic and Atmospheric Administration, *Official U.S. Government Information about the Global Positioning System (GPS) and Related Topics*, March 3, 2002, available at https://www.gps.gov/systems/gps/performance/accuracy/.

[12] Washington Department of Ecology, *Clean Fuel Standard Participation Guidance: Claiming Incremental Credits for Metered Residential EV Charging*, December 2023, available at www.apps.ecology.wa.gov/publications/documents/2314029.pdf.

RIVIAN

Conclusion

Rivian greatly appreciates the hard work of staff in developing the modified text for the proposed LCFS amendments. We welcome and applaud key changes in the latest round of proposals and respectfully urge the Board to finalize them at its November hearing. Rivian is particularly supportive of the proposed base credit generation opportunity for automakers. This is an important evolution of the LCFS' residential charging provisions that we believe is not just consistent with the policy's foundational principles but also potentially a significant catalyst for accelerated growth in California's EV market. **The LCFS has been very successful. The proposed rulemaking will ensure that success continues.**

At the same time, we encourage the staff and Board members to continue reflecting on the burdens credit generators will incur under the proposed requirements for third-party verification of certain electricity credit claims. We do not believe third-party verification as proposed is appropriate or necessary in these contexts and that CARB's objectives can be met through other means, including desktop verification procedures and reasonable sampling. We also believe there is still an opportunity to update the geofencing radius used for certain electricity credit claims and, if further regulatory amendments are proposed, to revisit the outdated LD EV EER.

Please do not hesitate to reach out with any questions about our comments. We look forward to strongly supporting the proposed amendments at the November hearing.

Sincerely,

Tom Van Heeke
Senior Policy Advisor, Environmental
Rivian Automotive, LLC
tvanheeke@rivian.com | 641-888-0035