

May 10, 2024

Submitted electronically via <https://ww2.arb.ca.gov/applications/public-comments>

Chair Liane Randolph and Board Members
California Air Resources Board
1001 I Street
Sacramento, CA 95814

RE: Tesla Comments on CARB's Low Carbon Fuel Standard Public Workshop (April. 10, 2024)

Dear Chair Randolph and Members of the Board:

Pursuant to the California Air Resources Board's (CARB's) Proposed Low Carbon Fuel Standards (LCFS) Amendments (Dec. 19, 2023) and Low Carbon Fuel Standard Public Workshop (April 10, 2024), Tesla respectfully submits the following comments. Tesla incorporates by reference its written comments in response to previous 2022 Scoping Plan and LCFS workshops and presentations.^{1 2 3 4} Tesla continues to support CARB and the state of California in defending the state's authority to implement the LCFS.

I. Background - Tesla's Mission

Tesla's mission is to accelerate the world's transition to sustainable energy. Moreover, Tesla believes the world will not be able to solve the climate change crisis without directly reducing air pollutant emissions - including carbon dioxide and other greenhouse gases - from the transportation and power sectors.⁵ To accomplish its mission, Tesla designs, develops, manufactures, and sells high-performance fully electric vehicles and energy generation and storage systems, installs, and maintains such systems, and sells solar electricity.⁶ Consistent with this effort, in May, 2023, Tesla was ranked as the world leader in the transition to vehicle electrification.⁷

II. Tesla Supports Strong Program Stringency (30% minimum by 2030) and a Greater Step Change Than Is Proposed⁸

¹ <https://ww2.arb.ca.gov/form/public-comments/submissions/3796>

² <https://www.arb.ca.gov/lists/com-attach/4195-scopingplan2022-BmVcO1IMAYMGYwBv.pdf>

³ [https://www.arb.ca.gov/lispub/comm2/iframe_bccomdisp.php?listname=lcfs-wkshp-feb23-
ws&comment_num=111&virt_num=98](https://www.arb.ca.gov/lispub/comm2/iframe_bccomdisp.php?listname=lcfs-wkshp-feb23-ws&comment_num=111&virt_num=98)

⁴ <https://www.arb.ca.gov/lists/com-attach/7042-lcfs2024-AjBdb1VkVjclP1Rk.pdf>

⁵ See, Tesla, Master Plan Part 3 (Apr. 5, 2023) available at https://www.tesla.com/ns_videos/Tesla-Master-Plan-Part-3.pdf
https://www.tesla.com/ns_videos/Tesla-Master-Plan-Part-3.pdf

⁶ See, Tesla, Impact Report 2022 (Apr. 24, 2023) available at [https://www.tesla.com/ns_videos/2022-tesla-impact-
report-highlights.pdf](https://www.tesla.com/ns_videos/2022-tesla-impact-report-highlights.pdf)

⁷ See, ICCT, The Global Automaker Rating 2022: Who Is Leading the Transition to Electric Vehicles? (May 31, 2023) available at <https://theicct.org/publication/the-global-automaker-rating-2022-may23/>

Tesla applauds CARB's long-term vision of setting a 90% reduction target by 2045. This cements California as the clear leader in the transportation decarbonization policy space, with the farthest-forward decarbonization target of any transportation decarbonization program globally. It also sets California on a path to reach Net Zero by 2045, as envisioned by Executive Order B-55-18. Currently, there are two principal factors in overcompliance that threaten the continuing stringency of the LCFS – the accelerating use of both renewable diesel and renewable natural gas. As discussed below, CARB's decision not to limit these fuels results in the necessity of CARB implementing a more significant step change.

The compliance curve, step change, and auto acceleration mechanisms must all work in unison, and Tesla encourages CARB to increase the stringency of the 2030 target beyond 30% if the below recommended changes to the step-change and auto acceleration mechanism are not implemented. In the latest data release, the LCFS program achieves a 17.27% CI reduction from 2010 levels versus the 11.25% compliance curve, an overcompliance of 6%. This is the largest overcompliance in the program's history and this overcompliance is accelerating.

A leading cause of this overcompliance is the significant growth in renewable diesel consumption. In the latest workshop CARB signaled that it will not cap crop-based biofuels. Absent such a cap, the liquid diesel pool will grow and, with lower step downs, will harm the program's effective stringency. The latest data release showed the liquid diesel pool at a 66% renewable content at the end of 2023. A simple linear extrapolation of the past two years puts the diesel pool at 100% renewable in 2026. EIA data on PADD 5 renewable diesel consumption shows 2024 renewable diesel consumption accelerating even faster than the 2023 rate, indicating the liquid diesel pool could reach 100% in 2025.⁹ The EIA's analysis of existing and expected renewable diesel plant capacity shows that there is nearly double the amount of capacity needed for the California liquid diesel pool to reach 100%.¹⁰ Tankage and shipping constraints could slow the final few percentage points but the trajectory is clear: renewable diesel is on pace to completely displace fossil diesel in California. Once the liquid diesel pool reaches 100%, the surplus production will likely go into Sustainable Aviation Fuel, buoyed by the Inflation Reduction Act's Section 45Z credits starting in 2025. This will exacerbate the projected oversupply of LCFS credits. Thus, in the absence of a crop-based biofuel cap, CARB should implement a more significant step change to address this credit oversupply issue. Accordingly, Tesla encourages CARB to adopt a 12% or higher step change – a position echoed by Neste, the world's largest producer of renewable diesel, in their February 20th comments.¹¹

Renewable Natural Gas (RNG) consumption continues to grow significantly as well, especially for negative CI dairy RNG, further creating a need for a more robust step change. In the latest workshop CARB signaled that it will not accelerate the phase out of Avoided Methane Crediting and will instead continue granting negative CI dairy pathways until 2030. Like renewable diesel, the latest data release showed Dairy RNG becoming the largest feedstock for CNG in 2023 with growth on pace to completely take over the pool; a simple 2-year linear extrapolations show dairy RNG becoming 100% of the feedstock pool for CNG by 2028. The absence of an accelerated phase out of Avoided Methane Crediting further highlights the need for CARB to implement a more significant step change.

⁹ https://www.eia.gov/dnav/pet/pet_sum_snd_a_EPOORDO_mbbi_m_cur.htm

¹⁰ <https://www.eia.gov/todayinenergy/detail.php?id=55399>

¹¹ <https://www.arb.ca.gov/lists/com-attach/6974-lcfs2024-B2IUN1YkACcLaARb.pdf>

A critical issue impacting CARB's insufficient step change proposals is that CARB's models provided in the latest workshop¹² systematically under-estimate credit generation in the near-term. The six modeled scenarios all show renewable diesel consumption falling, in some cases to nearly half the current rate of consumption, between 2024 and 2030; in the absence of a crop-based biofuel cap, there is no reason to believe that renewable diesel consumption would decline in this timeframe. Similarly, the six modeled scenarios also show RNG volume declining between 2024 and 2030; again, in the absence of an accelerated phase out of Avoided Methane Crediting there is no reason to believe that RNG consumption would decline in this timeframe.

Additionally, the six modeled scenarios show light-duty electric vehicle charging not reaching the *current* rate of EV charging until 2026, again showing a systemic under-estimate of near-term credit production. Taken together, these systemic underestimates of near-term credit generation create a similar underestimation of the stepdown necessary to stabilize the LCFS program. Based upon clear trends in the marketplace and the gaps in the recent modeling, the proposed step change options of 5%, 7%, and 9% are clearly inadequate.

The market reaction to CARB's recent proposal is also indicative of its inadequacy. Credit prices have fallen to their lowest level since the program began trading in 2015, indicating that the market has socialized CARB's proposed step change options and does not believe that a 5%, 7%, or 9% step-change is stringent enough to materially affect credit oversupply.

In sum, the current LCFS market is not functioning in a sustainable manner. There is simply a glut of credits on the market that has driven down pricing, making the LCFS less supportive of electrification efforts in California. Unfortunately, CARB's proposal does not do enough to address this existential threat to the program. The clear near-term solution is implementation of a step change of at least 12%, as quickly as possible.

III. Restart the Clean Fuel Reward (CFR) Program

CARB should also restart the CFR program quickly. The revenue intended for the CFR program is currently pooling up at the electric utilities instead of incentivizing and accelerating consumer adoption of electric vehicles (EV). EV sales are entering difficult terrain as the market transitions from early adopters to mainstream buyers and the current high interest rate environment means these cash incentives matter now more than ever.

In restarting the CFR program, CARB should ensure that the incentive is a meaningful enough amount to move consumer behavior. Under the current proposal, CARB would switch most of the CFR revenue to a medium- and heavy-duty vehicle incentive while also leaving the door open for a smaller, light-duty incentive. Tesla's modeling indicates that splitting the base credit revenue between a light-duty CFR and a medium/heavy duty CFR would result in on-the-hood incentives that would be too small to effectuate significant behavior change in either category. To effectively transition the vehicle market, the CFR program should dedicate the applicable base credit revenue to only one vehicle sector - either light-duty or medium/heavy duty.

¹² <https://ww2.arb.ca.gov/resources/documents/supplemental-2023-lcfs-isor-documentation>

CARB should also recognize that automakers are best positioned to successfully manage a restarted CFR program. Manufacturers enjoy comparatively strong relationships with consumers and act as primary distributors of information regarding the consumer and environmental benefits of EVs. Automakers know more about their delivery and sales plans than anyone and can leverage that knowledge to better forecast CFR program expenses. Automakers also have direct access to the best data on home charging rates and can leverage that data to better forecast CFR program revenues.

As a path forward, Tesla has worked with other OEMs to develop a program structure that is workable and would eliminate many of the issues burdening the prior CFR program. In short, this plan consists of:

- A) Committing all CFR revenue towards light duty incentives;
- B) Put all EVs on the road before Jan. 1, 2025, into a “community pool.” A 3rd party administrator would receive the base credits from those vehicles and sell the credits;
- C) The significant CFR revenue currently unused by the utilities would go to the community pool;
- D) OEMs would receive base credits from their fleets sold after Jan. 1, 2025; *and*
- E) If any OEM has a CFR outlay shortfall greater than their base credit revenue, the OEM will receive a “make whole” payment from the community pool administrator (ensuring automakers are not punished for rapidly expanding their EV sales).

IV. Trigger the Automatic Acceleration Mechanism (AAM) Off of 2025 Data

CARB should set up the AAM to trigger off 2025 data, allowing for the first year of AAM implementation in 2026, rather than 2027 as proposed in the draft regulations.

V. Update the Light Duty BEV Energy Efficiency Ratio (EER)

CARB should update the Energy Efficiency Ratio (EER) for Light Duty Battery Electric Vehicles (LD BEV). The current 3.4 EER was adopted by CARB in 2011 and has not been updated in the 13 years since. California now lags other jurisdictions which have more accurate EERs, such as The Netherlands (4.0 EER)¹³, The European Union (4.0 EER)¹⁴, and Canada (4.1 EER).¹⁵ As described in our previous comment, a more thorough analysis would likely result in an EER over 4.0.¹⁶

VI. Remove the Unnecessary Third-Party Verification for Non-Residential EV Charging

Proposed section 95501 of the amendments includes a proposal to expand third-party verification for EV charging transactions. While Tesla appreciates the intent of CARB staff’s proposal, it is unnecessary to create a separate third-party verification program regime for non-residential electricity transactions related to EV charging. Commercial EV charging infrastructure transactions fall under the purview of the

¹³ <https://www.rijksoverheid.nl/documenten/kamerstukken/2022/12/22/beantwoording-kamervragen-over-wijziging-van-de-stimuleringsfactoren-in-de-regeling-energie-vervoer>

¹⁴ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32023L2413&qid=1699364355105>

See also, https://www.europarl.europa.eu/doceo/document/ITRE-AM-729929_EN.pdf

¹⁵ Page 86 of the Specifications for Fuel LCA Model CI Calculations, <https://datadonnees.az.ec.gc.ca/data/regulatee/climateoutreach/carbon-intensity-calculations-for-the-clean-fuelregulations/en/Resources/?lang=en>

¹⁶ <https://www.arb.ca.gov/lists/com-attach/7042-lcfs2024-AjBdb1VkJcLP1Rk.pdf>

CA Department of Agriculture, Division of Measurement Standards (DMS), under its state weights and measures program. CA DMS is responsible for verifying the accuracy of commercial EV charging infrastructure in California. This includes both a field verification process carried out by the CA counties as well as type evaluation program. It is unnecessary for LCFS to add additional verification requirements given the accuracy of commercial EV charging transaction is already regulated and verified in CA. We therefore recommend that no additional third-party verification is necessary for EV charging transactions.

VII. Expeditious Amendment to the LCFS Supports the Energy Transition in California

The LCFS program in California is a crucial component of the transition of California's transportation system from fossil fuels to zero emission vehicles. Lower LCFS prices will cause many EV charging companies to re-evaluate whether to expand deployment of DC Fast Chargers in California or instead to focus on other markets.

The ultimate end-goal of the energy transition is to move from fossil fuels to Zero Emission Vehicles (ZEVs). Biofuels are a transition fuel to get California to a fully ZEV economy. Biofuels like renewable diesel and renewable natural gas are buoyed by the federal RFS, which does not extend to ZEV technologies like EV charging and hydrogen. In the absence of higher LCFS prices, we will see a longer period of transition where California is dependent on biofuels (with associated air pollution and land use change effects) while pushing out the ultimate transition to ZEVs. Accordingly, CARB should act expeditiously to ensure the program curve is based on updated data; and that the amendments ensure appropriate emissions reductions, program, stability, and active marketplace - that provides revenue to companies to invest in the acceleration of the energy transition in California.

Respectfully submitted,



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