February 20, 2024

California Air Resources Board

1001 I Street

Sacramento, CA 95814

RE: CARB Proposed 2024 LCFS Amendments

I'd like to voice my concerns with the Proposed 2024 LCFS Amendments and the associated rulemaking. These concerns revolve around an underestimation of the degree of tightening needed to drive higher credit prices, and a departure from the technologically neutral stance that formed the basis of the LCFS. I also have one question on the future of Electric Vehicle crediting which will be more pertinent in future years.

Proposed CI Targets

Overcompliance is clearly seen in recent data, with the credit bank set to increase to around 24mm MT by the end of 2023 and over 31mm MT by the end of 2024 (assuming no changes are made to 2024 targets). Data for the 3rd Quarter of 2023 demonstrated a 15.6% CI reduction, which exceeds the 2026 statutory reduction target. In just a few years, LCFS compliance has moved three years ahead of schedule.

In light of this data, the 2025 step change as proposed will not go far in rebalancing the market. The proposed 18.75% CI reduction target for 2025 would result in about equal credits and deficits assuming pretty conservative trends for biomass-based fuels, RNG, and electric vehicles. If this turns out to be true, the LCFS credit market will remain severely oversupplied due to the large credit bank until at least 2028, when the AAM can begin to respond. Until then, the credit bank will weigh on prices, decarbonization investments, and climate outcomes.

While these assumptions are far from a sure thing, history tells us that technology has adapted quickly to LCFS, and that overlapping local, state, and federal incentives for making this technology economical are quite powerful together. The biggest obstacle to accelerated technological progress seems to be underestimation of its potential. The rulemaking in 2018 seemed quite ambitious at the time but proved to be the opposite. The current rulemaking, on the other hand, feels conservative even at its onset.

The credit bank is in the process of reaching a full year's worth of deficits. The AAM is a fine instrument for automatically adapting to future developments, but CARB should act now to address current situation if it indeed seeks to support the market. A step change to 22.75% in 2025 would reduce the credit bank by approximately 28mm MT vs the current proposal. This is necessary if CARB seeks to reduce the LCFS credit bank by a meaningful amount before EV adoption begins shifting the market back into surplus before 2030, assuming the 30% target in 2030 remains in place. While I don't expect an

AAM trigger would be necessary if such a move would be made, I also cannot predict what unexpected advances or setbacks in decarbonized transportation might surface.

If it is the desire of CARB to keep prices around current levels (between $50 and $80) I think the current proposal would be adequate. While the market will remain oversupplied, I believe the prospect of the AAM triggering in later years will draw in investor interest when credits drop significantly below this range, with the possibility of higher prices in the 2030's. This rulemaking strategy also has its merits, as it would help avoid rising compliance and fuel costs which could pose a political risk to the LCFS and other state-level environmental programs such as Cap-and-Trade and ACCII, among others. And to the extent that LCFS is meant to find least-cost pathways to low carbon transportation, this path would truly emphasize the 'least-cost' aspect, with competition likely to drive the cost of low-carbon fuels lower.

I'd be happy to share my model assumptions with CARB if requested.

Concern Regarding Existing Modeling

Regarding the CATS model, I'd like to highlight what I view to be an improper implementation of the credit bank. While the bank has nominally been included, banked credits are only made available at the price ceiling where the supply of credits is effectively unlimited already. This effectively means the CATS model ignores the entire bank. In reality, banked credits will be available at much lower prices, especially when considering the lack of ambition around this proposed rulemaking. Correcting this assumption would show much lower credit prices going forward, even leaving the rest of the CATS model unchanged.

I also believe the CATS model is showing a misunderstanding of the state of the renewable diesel market. California is already consuming more RD than the CATS long-term projections of RD supply. I don't have specific recommendations for fixing the model, but suggest interpreting the results with extreme caution in light of this.

Technological Neutrality

I find the moves to limit crediting to particular decarbonization technologies as concerning for the integrity of the program going forward. To preserve an efficient market, the rules must be clearly established and enforced. The developments needed to decarbonize transportation (or any industry) require long periods of time to fund, deploy, and operate to be financially viable. Inconsistent rules add economic and regulatory risk to that process, and will make investment more expensive and more short-term focused. I do not believe this is the intention of the CARB, but it is a likely consequence of proposed changes to RNG, biomass-based fuels, and electric forklifts.

LCFS and the CA-GREET model have effective and scientifically rigorous means for evaluating technology, and in many ways already address the criticism of various technologies. Adapting these methodologies to new science and evidence is entirely appropriate, but disregarding them or creating parallel, inconsistent methodologies is not.

I urge ARB to eliminate its unscientific changes to its rules meant to favor some technologies over others, and instead strongly reaffirm its science-driven rules-based technological neutrality. To the extent that existing pathways do not properly reflect compliance with the LCFS CI targets, corrections for this should be made primarily through the established program mechanisms – updating CA-GREET and adjusting the annual CI reduction targets.

The Future of ZEV Crediting

Lastly, I have a question about Zero-Emission Vehicle crediting in the future with respect to ACCII. As the regulation goes into effect that requires a certain percentage of new car sales be Zero-Emission Vehicles, will LCFS crediting be adjusted to reflect the fact that each ZEV is not replacing an ICE vehicle? As soon as 2026, the status quo baseline alternative to purchasing and operating 100 new ZEVs will be purchasing and operating a fleet of 65 new ICE vehicles and 35 new ZEV vehicles. The overall fleet of vehicles will also shift more towards ZEV vehicles, making the concept that each ZEV displaces one ICE's worth of gasoline incorrect. How does LCFS plan to incorporate this into their crediting methodology, and is this consistent with other technologies?

Thank you for considering my comments. I greatly appreciate the hard work involved in managing this program, as well as the transparency which has allowed me to have and voice these reflections and opinions.

Sincerely,

Eric Mintzer