



February 19, 2024

Liane Randolph, Chair
Members of the Board
California Air Resources Board
via electronic submittal

Re: Comments on the Proposed Amendments to the Low Carbon Fuel Standard and Initial Statement of Reasons, released December 19, 2023

Dear Chair Randolph and Board Members,

We are pleased to comment on the continued refinement of the Low Carbon Fuel Standard Program (LCFS), on behalf of Climate Action California, with more than 12,000 supporters around the nation.

We support the further lowering of the carbon intensity standard (CI)—provided that the new standard can be paired with the gradual reduction of crop-based fuels, as discussed below. This approach will continue to reward innovative fuels as it supports California's ultimate goal to eliminate greenhouse gas emissions (GHG) emissions from the transportation sector.

We suggest four improvements to the program that were not included or adequately addressed in the proposal.

1. Crop-based fuels

The Initial Statement of Reasons (ISOR), like the existing LCFS regulation, recognizes that widespread land use change is a potential adverse effect of making fuel from crops. Yet the proposed solution largely ignores the central point: that *somewhere* in the world,

financial incentives for biofuels will stimulate conversion of forest/grassland carbon sinks into new crop land.

In section 95488.9 subd. (g), the proposal requires that a fuel producer using crop- and forest-based feedstocks certify that the feedstock was not grown on *specific* land forested at any time after 2008. That requirement completely ignores the central concept of land use change, which is that growing enough food to feed the human population is a zero-sum game. This means that growing corn for fuel in Iowa results in the destruction of forest in Brazil to grow more food. Indeed, this is exactly what is happening. The ten-fold expansion of ethanol use in the US in recent years is reflected in expanded corn production on tens of millions of acres just in this country. And that expanded demand for corn, along with other fuel crops, is mirrored by extensive deforestation and planting of crops in the tropics.¹ Under the proposal that would still be allowed. Only one type of land conversion – cutting down a forest to grow fuel crops on the exact same acres – would not be rewarded with LCFS credits.

The Global Trade Analysis Project (GTAP) model that the LCFS currently employs discounts that effect with the explicit assumption that when food crops are diverted to fuel, instead of planting additional acres, people will simply eat less.² This is an unproven assumption—that people will watch their family go hungry rather than planting crops or buying food. Given that large uncertainty, the safer assumption is that the world’s growing population will continue to demand food. That is exactly why LCFS recognizes the principles of land use change. The proposed certification process ignores the fact that crops are commodities, grown and sold in a global marketplace.

Most important for the LCFS update, research since the LCFS and GTAP model were adopted, increasingly indicates that emissions from land use change are significantly underestimated. As summarized in a recent brief from *Nature Climate Change*:

Under current land-use regulation, carbon dioxide emissions from biofuel production exceed those from fossil diesel combustion. Therefore, international agreements need to ensure the effective and globally comprehensive protection of natural land before modern bioenergy can effectively contribute to achieving carbon neutrality.³

¹ E.g., J. Albert, Human Impacts Outpace Natural Processes in the Amazon, [Science \(1/27/2023\) Vol. 379, Issue 6630](#).

² A second explicit, but dubious, assumption is that yields per acre will increase, but somehow emissions per acre will not change.

³ L. Merfort et al., Nature Climate Change, Volume 13 | July 2023 | 610–612, 610 <https://www.nature.com/articles/s41558-023-01711-7>

Furthermore, land use change models used in Europe show that many crop-based renewable fuels have a *higher carbon intensity than petroleum fuels*. Based on modeling conducted by the LCFS team as part of the 2015 rulemaking⁴ as well as in more recent academic research⁵, emissions associated with producing crop-based biofuels are highly uncertain and are likely, in fact, be greater than fossil fuels on a full life cycle basis.

Given the uncertainties with land use change calculations, CARB should wind down crediting for all crop-based fuels by 2030, or sooner. The precautionary principle should apply.

Unwinding of problematic aspects of the LCFS program especially important for fuels that all agree will never aid in the realization of California’s long-term vision of carbon neutral transportation. Crop-based liquid fuels support internal combustion (IC), and as such can fairly be viewed as prolonging the use of carbonaceous fuels and IC technology. Regardless of the precise CI, they will never support the deep reductions called for by both statute and the 2022 Scoping Plan Update.

2. Waste palm oil

The proposed amendments appropriately forbid fuel derived from palm oil feedstocks, recognizing that palm oil production is associated with significant adverse land use changes. CARB should be wary, however, of producers’ claims that certain palm oil is waste. This is an expansive, lucrative end run around the prohibition. CARB does not have the enforcement reach to effectively check claims relating to commodity trades in distant countries; claims that certain oil is a waste product are extremely difficult to verify. Given the great risk of adverse land use change, the regulation should clarify that “derived from palm oil or palm derivatives” includes waste palm oil. That allows for a simple chemical test – in California – for the presence of palm oil.

95482 subd. (f) should be amended to read:

Transportation fuel derived from palm oil or palm derivatives including waste palm oil is ineligible for LCFS credit generation. Any volumes of transportation fuel derived from palm oil or palm derivatives reported through the LCFS

⁴ <https://ww3.arb.ca.gov/regact/2015/lcfs2015/lcfsISappi.pdf>

⁵ Lark et al., Environmental outcomes of the US Renewable Fuel Standard, PNAS 2022 Vol. 119 No. 9, available online at <https://www.pnas.org/doi/10.1073/pnas.2101084119> . See also, <https://www.wri.org/insights/us-renewable-fuel-standards-emissions-impact>

program must be assigned the ULSD carbon intensity found in Table 7-1 of the LCFS regulation.

3. “Innovative” petroleum production

We were alarmed to read that the proposal enables specified petroleum development projects to earn credits for pumping oil from the ground until 2040.

The Initial Statement of Reasons (ISOR) says that the amendments’ goals, in concert with the 2022 Scoping Plan Update, include the following:

The objective is to send clear, long-term market signals to support investment in low-carbon fuel production and technologies that are needed to achieve deep emissions reductions in the transportation sector while supporting the broader portfolio of zero-emission vehicle regulations and climate statutes. Another goal is to align the crediting opportunities in the LCFS with the fuel and technology pathways identified in the 2022 Scoping Plan Update. ([ISOR](#), p.9)

Petroleum production, even using novel methods, will never lead to “deep emission reductions,” nor will it support “the broader portfolio of zero-emission vehicle regulations and climate statutes.” This ill-considered sop to the petroleum industry should be ended immediately.⁶ It is impossible to see how continuing to incrementally reward petroleum production investments through 2039 aligns with California’s overarching goals.

Section 95489, subd. (c) should therefore be amended to read:

Credits for Producing and Transporting Crudes using Innovative Methods. Until December 31, 2025, credits may be generated for crude oil that has been produced or transported using innovative methods and delivered to California refineries for processing. Beginning January 1, 2026, no further credits may be generated under this paragraph (c).

4. Avoided Emissions Crediting

Whenever an enterprise’s unregulated emissions are accepted as part of the environmental baseline, the LCFS counts capturing those emissions to produce fuel as “avoided emissions.” For example, fuels made with captured methane emissions yield extremely low CI scores, creating an especially lucrative stream of LCFS credits. As a result, a constituency is formed or strengthened against ever regulating the emissions in the first place.

⁶ If the intent was to somewhat appease the petroleum industry, after legal challenges to the LCFS by the industry’s trade association and a raft of lawsuits by its ethanol-producing allies, we now know conclusively that appeasement failed.

Consistent with that thinking, landfills outside of California that are too small to be covered by EPA methane capture requirements, but big enough to be included in California’s landfill methane regulation, are treated as if they were in California. Out-of-state landfill gas is scored like any other fuel, based on lifecycle emissions. To reward its capture in the first place as “avoided emissions” would make it harder for that other state to ever follow California’s lead in controlling landfill methane beyond the federal requirements.

The same logic applies to biogas from dairies. Livestock emissions—both enteric and manure related—could be regulated. By treating all captured methane as “avoided emissions” California is creating an ever-stronger constituency against regulating livestock, which are by far the largest anthropogenic methane source in the state. While captured biogas can be used as a fuel, and earn a CI score better than fossil fuels, it should not be credited with avoided emissions. Such calculations should be phased out by 2025.

Section 95488.9, subd. (f)(3)(A) should be amended to read as follows:

Crediting Periods. Avoided methane crediting for dairy and swine manure pathways as described in (f)(1) above, and for landfill diversion pathways as described in (f)(2) above, is limited to three consecutive 10 years crediting periods, counting from the quarter following Executive Officer approval of the application. The pathway holder must formally request each subsequent crediting period for the project through the LRT-CBTS. Beginning January 1, 2025, the Executive Officer shall not approve or renew any avoided methane crediting for dairy and swine pathways.

Conclusion

We appreciate this chance to comment on the Low Carbon Fuel Standard amendments. Thank you for all of the work you and the staff do to protect Californians from air pollution and the worst impacts of climate change.

Sincerely,



Will Brieger, Director
Climate Action California