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Nov 5, 2020

Rajinder Sahota
Division Chief, Industrial Strategies Division
California Air Resources Board
1001 I Street
Sacramento, California 95814

Re: Low Carbon Fuel Standard Public Workshop

Dear Ms. Sahota,

Thanks very much for the opportunity to comment on the workshop. Our comments focus primarily on farm-level lifecycle accounting and we are also separately submitting joint comments on biomethane. While we do not endorse the FBN/Poet proposal, or any other specific approach, we encourage CARB to begin a careful process to assess the best approach to including farm-level accounting within the biofuels lifecycle. More details on this are below.

We have a few more specific comments on topics raised in the workshop below.

General Comments on Rulemaking Schedule and Potential Amendments discussed by staff

The general schedule for the next LCFS rulemaking seems reasonable. While we defer to CARB staff judgement on the logistics, it does seem that splitting the rulemaking into phases could make sense, to allow nearer term implementation of some more straightforward changes in program administration while allowing adequate time to address larger changes that will require more extensive stakeholder feedback. Moreover, some of the broader changes discussed below would create significant new sources of credit generation that could destabilize the LCFS credit market. Introducing significant new credit generation opportunities would ideally be done together with updating the targets beyond 2030.

The topics discussed for the next rulemaking, including fuel pathway clarifications, updates to simplified calculators, credit true-ups, EERs, registration and reporting, third party verification, ZEV infrastructure crediting and project based crediting, generally seem appropriate, reasonable and well thought out. We look forward to responding to more detailed proposals in the future. We also look forward to a more extensive discussion of CCS in the context of California's long-term carbon neutrality goals, but do not have specific feedback to offer at this time.

We appreciate all the good work that has been done by Adam Brandt and his group and by CARB to advance the OPGEE model. In addition to the importance of OPGEE to the LCFS, it has also had broad influence beyond California's borders, clarifying the importance of holding the oil and gas industry

accountable for the avoidable pollution at its own operations even as we work to shift away from petroleum based fuels as quickly as possible.

Farm Business Network/Poet presentation

Thank you for giving Farmer Business Network (FBN) the opportunity to present at the workshop. We appreciate the goals, careful thinking and investment of time and resources from FBN, Poet, and Argonne National Labs. We agree with them that the topic is worth CARB's careful consideration. However, we do not endorse the FBN proposal or any other specific approach to farm level lifecycle accounting at this time. Several key scientific and economic questions should be carefully studied and several possible policy approaches considered in a public stakeholder process before CARB commits to a specific approach.

We strongly encourage CARB to begin a careful, science-based process to include farm-level activity in the lifecycle of biofuels. CARB's own analysis shows that on-farm emissions are responsible for a significant share of the total lifecycle emissions of ethanol and other biofuels. The evidence suggests that there is a significant, underdeveloped technical potential to reduce on-farm emissions and increase soil carbon, which should result in lower carbon biofuels. Finally, there is considerable interest in the stakeholder community to support agricultural emissions reductions and to enhance soil carbon storage.

However, our confidence that there is technical potential and stakeholder enthusiasm does not mean that implementation of on-farm emissions accounting is straightforward or that recognizing farm emissions in biofuel pathways will necessarily realize the technical potential for emissions reductions. There are technical, economic, logistical and program design questions that should be explored, and we are under no illusion about the complexity of these questions and the challenge of developing a good regulation. Specifically, it is important to explore whether to initially take up only parts of the on-farm emissions that are amenable to direct measurement (principally from nitrogen use efficiency), or whether to also include soil carbon changes (with associated questions around permanence) and practices that may reduce nitrogen pollution. Questions about the appropriate baselines and additionality also deserve an extensive discussion, as do questions about whether it is possible to leverage systems that document environmental attributes of crop production across multiple markets for agricultural products rather than creating a totally separate approach just for biofuels. CARB should also be attentive to the implications of program design for the market power of particular actors in the fuel supply chain. A well-designed program should ensure that meaningful incentives reach biofuel feedstock producers that act to reduce emissions, while minimizing counterproductive outcomes.

It is precisely because of the complexity of these issues that we urge CARB to take up this question. CARB's leadership on the LCFS over the last decade make it the natural leader to develop this important addition to the low carbon fuel policy. CARB should conduct an open and fact-based review of policy design alternatives, understand the underlying science, and solicit expert and stakeholder feedback before finalizing amendments to the regulation. A sounds LCFS amendment can strengthen the California LCFS, serve as a model for other states and jurisdictions, and shed light on questions relevant to other uses of crops, including food and feed production.

We encourage CARB to prioritize getting the policy right over rushing to fit it into a tight rulemaking timeline. We also encourage CARB to look for opportunities to collaborate with other public and private actors to workshop the scientific, technical, economic and policy design issues. While California

currently has the largest US market for low carbon transportation fuel, much of the biofuel consumed in California is produced in other states and countries. A successful integration of farm level emissions into the fuel lifecycle should provide workable incentives for farmers to adopt lower carbon practices, and it will be important to hear directly from the farmers that grow the crops. We encourage CARB to consider collaborative approach to the analysis and stakeholder engagement with major land grant universities with relevant expertise.

Other Stakeholder Presentations

Aside from the Farmer Business Network/Poet presentation discussed above, we are not convinced that the other stakeholder suggestions merit further consideration at this time.

Oxy Low Carbon Ventures: While we appreciate the importance of direct air capture (DAC) to California's long term goals, and look forward to a robust analysis and discussion of this topic in consideration of the program's extension beyond 2030, we are not convinced it would be appropriate to advance credits to Oxy before their facility begins operation. The treatment of DAC within the LCFS is already quite generous, and the risks to the program from advancing credits to a technology that has no track record are significant.

Marathon/Virent: The proposal for LCFS credits to be issued to cover the full capital cost of first-of-a-kind facilities employing novel technology was poorly conceived and we strongly oppose it. While we appreciate the challenges of financing novel technology, the proposal's structure is poorly aligned with the specific goals and design of the LCFS. Moreover, technological novelty alone is no guarantee of importance, value to the State or viability. If CARB does decide after careful review and stakeholder feedback that a specific technological pathway is exceptionally important to the realization of California's long-term climate goals, it would be appropriate to make targeted policy adjustments. However, we strongly oppose the present proposal as too generous and painted with too broad a brush.

Innovative Crude Pathway Expansions: The proposals from Norsepower and Water Jet were interesting, but we are not convinced they merit consideration as innovative crude pathways. The use of wind power to augment petroleum in ocean going vessels is attractive, and is broadly aligned with the goals of the LCFS, but limiting the credit generation opportunity for this technology to crude oil imports seems poorly aligned with the guidance within the recent executive order to transition rapidly away from petroleum based fuels. Support for this technology seems most appropriate in the context of regulations or incentives to reduce the carbon intensity of shipping in general, rather than focusing on shipping crude oil in particular. The Water Jet technology was new to us, but it seems premature to support it until more is known about any risks or benefits of the technology.

Sincerely,

Jeremy Martin, Ph.D.
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Clean Vehicles Program