February 19, 2024

LCFS staff
California Air Resources Board
1001 I Street
Sacramento, CA 95814

Dear CARB staff:

<u>Subject:</u> Feedback on newly proposed LCFS calculators

Dear CARB staff:

First of all, I would like to thank you for your work in the new LCFS calculators. The new versions of the calculators will help the industry streamline the pathway applications process for low carbon energy projects. In particular, we appreciate the new hydrogen calculator, building separate calculators for biodiesel and HEFA, and increasing the number of feedstocks that can be specified in the biodiesel calculator. I would also like to thank you for incorporating some of our previous comments into the new versions of the calculators.

Second, I would like to point out a few opportunities for improvement in the calculators that we reviewed:

- Consistency of by-product credit calculation in the HEFA calculator:
  o Light hydrocarbon used as H2 feedstock gets full displacement credit for natural gas displaced.
  o Light hydrocarbon used for alternate use gets energy allocation credit. Chevron continues to believe that the displacement method is the most appropriate approach to account for renewable propane and renewable fuel gas from hydrotreating lipids. That is because the renewable propane/fuel gas is routed to the refinery's fuel gas system where it *displaces fossil hydrocarbons and purchased natural gas* that is used as make-up to the refinery's fuel gas system. Further, the allocation includes ILUC which appears to be different than what CARB has done in the past (ILUC wasn't included when applying energy allocation).
  o Light hydrocarbon to renewable propane sales gets energy allocation credit, but not on the ILUC piece. Again, renewable propane to non-transportation sales would most likely be displacing fossil propane or fossil natural gas (e.g., for home heating) and therefore would be appropriate to credit with a displacement method.
- LHV versus HHV calculations in the HEFA calculator:

When calculating by-product credits in the "pathway summary" tab applying the first two methods above, it appears that the light hydrocarbons are expressed in a HHV-basis, and they are not converted to a LHV basis prior to applying the emission factors, which are expressed in an LHV-basis. We advise you to ensure that the heating values are consistently calculated on the same basis.

- It would be helpful to put together a document explaining the logic behind major changes in emissions factors such as the following:
    - The emissions factor for UCO increased from 95 to 123 gCO2e/MJ.
    - The natural gas emissions factor changed from 72,230 to 75,496 gCO2e/MMBTU.

- "Manure-to-Biogas (LOP Inputs)" Tab –
    - L1.(1-6).14 Retention Time and Drainage – Required Annual Lagoon/Digester Cleanout
        - After production, many facilities remove excess water but do not fully cleanout the lagoon/digester to keep the microbes active. The requirement to cleanout the system annually in September per the calculator is inconsistent with many baseline scenarios. We request that the lagoon/digester cleanout be optional, and if one occurs, it should be modeled in the month when the cleanout takes place.

Thank you very much in advance for addressing our concerns.

Best regards,

Laura Verduzco, D.Sc.

Chevron Corporation