December 21, 2022

VIA ELECTRONIC FILING

Cheryl Laskowski
Chief, Transportation Fuels Branch
California Air Resources Board
1001 I Street
Sacramento, Ca 95814

Re: Neste Comments on LCFS Rulemaking Workshop Held On November 9, 2022

Dear Ms. Laskowski:

Neste appreciates the opportunity to provide these comments to the California Air Resources Board (CARB) regarding the LCFS Rulemaking Workshop on November 9, 2022. These comments are in addition to the comments submitted by Neste for the LCFS Rulemaking Workshops on July 7, 2022 and August 18, 2022, and we hope that CARB considers all of our recommendations as part of the upcoming LCFS rulemaking.

Proposed Targets through 2030 and the CATS Model:

Neste applauds CARBs efforts to increase the LCFS carbon intensity (CI) reduction target to as high as 35% below 2010 levels by 2030. The proposed standards will not only make significant strides in helping California reach its ambitious carbon reduction goals, but it also sends a strong signal of support for renewable fuels and low carbon fuel programs. The ability to comply with the proposed standards is bolstered by the projected significant growth in renewable fuels production (most notably renewable diesel) over the next few years, the additional LCFS credit generation opportunities being proposed by CARB (intrastate SAF), and the current oversupply of LCFS credits.

Neste has reviewed the California Transportation Supply (CATS) Model information provided by CARB. Firstly, Neste supports CARB's initiative to increase the GHG reduction target to as high as 35% as outlined in Alternative C, and believes such initiatives are vital to the ongoing success of the program and achieving CA's goal of carbon neutrality.

In support of that goal, the CATS model is a solid framework for calculating the lowest-cost structure for reducing GHG emissions in the transportation fuel energy sector. We would request some clarification on how the CATS model is to be used by CARB. The model is mathematically impressive, and produces comprehensive results, but the results and the model are only as good as the data they are fed. The results show what the model calculates to be the fuel mix that would meet CA's fuel demand with the lowest cost, however policy is more than just cost considerations and models, by nature, simplify complex systems and in doing so lose fidelity.

Below are some points of concern that we identified while looking at and running the CATS model using CARB's example data input.

- It would benefit us greatly to better understand the variables that go into the Conversion Cost calculation formula, specifically the "alpha" variable described as encompassing fixed cost and "other subsidies not priced independently"
- The biodiesel blend limit is set at 17% by energy content (16% by volume). While CA law does allow for this possibility, the production costs of Renewable Diesel and Biodiesel have been consistent relative to one another and Biodiesel has only ever seen a 7.7% blend rate, annually. Since both fuels can be produced from the same feedstock pool, barring a significant change in the technology

used to refine one, the other or both, the model's assertion that biodiesel volumes will grow beyond the historical annual maximum bears reconsideration.

The original mandate of the LCFS was to produce a fuel-agnostic incentive program. Mathematical models themselves are unbiased, and CARB should strive to create a model that is technology neutral by using representative data for all fuels. CARB's provision of the CATS model for public scrutiny is a great exercise in transparency and Neste appreciates the opportunity to provide comments that will hopefully assist in refining and optimizing this basis for CARBs policymaking decisions moving forward.

As for the CATS model inputs provided by CARB, Neste determined that CARB underestimated the available waste and residue volume. Per the World Economic Forum "Clean Skies for Tomorrow" report prepared by McKinsey and Co[1], waste and residue volume worldwide is estimated to be 40 MT/yr (see Figure 11 on page 27). This is about 10 times larger than what CARB is assuming in the CATS model, which means CARB is severely underestimating the potential biofuel production from waste and residues. Neste requests that CARB update this volume to better align with the estimates of the World Economic Forum.

Crop-based Feedstock Cap on Diesel

As part of Alternatives A and B, CARB has included a cap on crop-based feedstocks but has not provided the technical basis for needing such a cap. CARB also noted that such a cap would limit CI reductions possible under the LCFS program, and that is one of the main reasons Alternatives A and B have lower CI reductions goals than Alternative C which contains no cap. Therefore, it appears that CARB must decide between a cap on crop-based feedstocks, or higher GHG reduction goals under the LCFS. As part of the July 7th LCFS Workshop, CARB received compelling data showing that the Indirect Land Use Change (ILUC) factors are doing their job in preventing deforestation and other land use issues. The ILUC factors also reduce credits from diesel produced from these feedstocks, something CARB is hoping to achieve with a cap. In addition, the science is very clear that climate change is happening and any delays in reducing GHG reductions will have irreversible consequences on the planet. Neste therefore strongly opposes a cap based on the following data provided to CARB as part of the July 7th workshop[2], and strongly recommends that vegetable oils derived from newer crops and farming technologies not be included in a cap. There is no data showing that crop-based feedstocks are affecting food prices, availability and overall land use.

Highlight of Comments submitted to CARB as part of July 7th, 2022 LCFS Workshop:

- Crops used to produce liquid biofuels are not for human consumption and are derived from feed crop production, waste and residues, or inedible cover crops
- Technology advancements have resulted in significant increases in production yields per acre and thus crop production is increasing while land use remains stable
    - A cap will actually eliminate investments in newer farming practices that could lead to even lower CI fuels
- Liquid biofuels have achieved about 75% of the GHG reductions since the inception of the LCFS program
- Liquid biofuels burn much cleaner and lead to immediate air quality benefits, especially to communities of color that are disproportionately affected by the air pollution of the transportation sector

[1] https://www3.weforum.org/docs/WEF_Clean_Skies_Tomorrow_SAF_Analytics_2020.pdf , pg 27
[2] https://www.arb.ca.gov/lispub/comm2/iframe_bccommlog2.php?listname=lcfs-wkshp-jul22-ws&_ga=2.196721449.449189954.1670276158-1388421127.1643142970

Automatic CI Adjustments ("Ratcheting")

Neste is supportive of CARB having the authority to increase CI reduction targets outside of the rulemaking process as long as it is reflective of changes that benefit the environment and stabilize the market. Market volatility and uncertainty depresses investment in future energy production, both conventional and renewables. To create certainty for fossil producers and importers CARB has placed a ceiling on credit prices, but does not have a mechanism to generate a floor. Renewable producers have no assurances that their investments in clean energy will generate credits worthy of a project. The ability for CARB to adjust CI reduction goals ("ratcheting") could be that mechanism, and if so, Neste would be very supportive of such a proposal. The proposal should consider the following attributes to CI goals outside of rulemaking process:

- Targets can increase, but not go down without rulemaking procedures.
- The necessity of target adjustments should be based on a formulai decision-making process that is ***automatic*** and ***not*** requiring CARB intervention. This methodology will also have the benefit of the market being able to track what the change will be and thus further stabilize the market expectations.

A potential formula should be based on:

1. Credit Price - Outside of an artificial ceiling, credit prices are indicators of the health of the intent of the program. Prices going towards zero may seem as though there is enough supply of clean energy to offset fossil energy in transportation, but could also signal an opportunity to exceed goals sooner. At a certain price point before reaching equilibrium, future projects could get stalled or producers could be incentivized to take their product elsewhere, stalling the overall initiatives of the LCFS. By adjusting CI goals periodically, CARB could prevent this from happening.
2. Excess Credits - For similar reasons to credit price, a leading indicator to adjust CI goals would be a review of the difference between deficits generated and credits generated during a compliance period to help make a decision on goals. This would require consideration beyond the number of credits remaining in the market to ensure the decision is not inadvertently manipulated by large transactions with the intent to hold excess credits for future production or imports. Neste recommends annual credit reviews be the basis for further CI goal reductions, and not quarterly data for example.
3. Energy Security - CARB has an opportunity to assist the nation by diversifying the energy portfolio through CI goal adjustments making renewables more attractive in times of global conflict. At the same time crude was increasing due to global conflicts in 2022, LCFS credit prices were falling. An opportunity exists that CARB should take advantage of to increase the pool of options by incentivizing the numerous renewable feedstocks to assist in the production of energy needs during such time. Adjusting CI targets outside of rulemaking could do this.

Crediting of Medium- and Heavy-Duty (MHD) ZEV Refueling Infrastructure

Neste is concerned that the crediting of Medium- and Heavy-Duty (MHD) ZEV Refueling Infrastructure will put downward pressure on the credit prices, which in turn will undermine the intended goals of this and other LCFS driven infrastructure funding mechanisms. As part of the CARB Advanced Clean Fleets Regulation and the In-Use Locomotives Regulation, CARB assumes that LCFS credits at $200/tonne will provide sufficient funding for those wishing to install zero emission (ZE) trucks or locomotive infrastructure. However, CARB has not provided the data showing that refueling infrastructure credits or similar funding mechanisms will not instead drive LCFS credit prices down, preventing them from achieving their intended goals.

ILUC Factors for New Crops and Technologies:

Instead of pursuing a cap on crop-based feedstocks that could hamper investment on newer crops and farming technologies, CARB should instead incentivize these new technologies by creating ILUC factors that recognize the CI reductions they achieve. Climate change is already happening, and CARB should start working on creating these updated ILUC factors that account for things such as regenerative cultivation methods and cover crops to drive the development of the low CI fuels of tomorrow.

Neste looks forward to continued participation in the LCFS rulemaking, and being a leader in the fight against climate change.

Please feel free to contact me if you want additional information or have questions regarding our submission.

We appreciate your consideration.

Oscar Garcia

West Coast Regulatory Affairs Manager
Neste US, Inc.