March 15, 2023

VIA ELECTRONIC FILING

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

Re: Neste Comments on LCFS Rulemaking Workshop Held On February 22, 2023

Dear Dr. Laskowski:

Neste appreciates the opportunity to provide these comments to the California Air Resources Board (CARB) regarding the Low Carbon Fuel Standard (LCFS) Rulemaking Workshop on February 22, 2023. These comments are in addition to the comments submitted by Neste for the LCFS Rulemaking Workshops on July 7, 2022, August 18, 2022 and November 9, 2022, and we hope that CARB considers all of our recommendations as part of the upcoming LCFS rulemaking.

Proposed CI Reduction Target through 2030 and Updated CATS Model:

Neste applauds CARB's efforts to increase the LCFS carbon intensity (CI) reduction target to as high as 35% below 2010 levels by 2030. British Columbia recently announced a CI reduction of 30% below 2010 levels by 2030, and California has proven that it has more levers to reduce carbon emissions further and thus reach a CI reduction of 35% by 2030. The ability to reach 35% CI reduction is bolstered by the current depressed LCFS credit price, 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. California and the rest of the world are already experiencing the devastating effects of climate change, and California should not leave emissions reductions on the table. CARB should enact a CI reduction goal of 35% by 2030.

Neste supports an immediate step down in the CI to more quickly address the overperformance of the LCFS program and the depressed credit price. We would support a CI step change in the range of 3-5% for 2024 (15.5 to 17.5% CI reduction for 2024), but it will ultimately depend on the credit/deficit generators that are modified as part of this rulemaking. As for the Acceleration Mechanism, Neste supports such a mechanism only when the program is overperforming. Neste has already submitted detailed comments as part of the November 9, 2022 LCFS workshop about how this mechanism could work[1] . We support a mechanism that is less vulnerable to gaming, and we feel that focusing on excess credits (versus credit prices) would be better.

Neste has reviewed the CARB Scoping Plan and the presentation slides for the February 22 LCFS workshop, and we are concerned by the relatively low focus on liquid biofuels in helping California reach carbon neutrality by 2045. If liquid biofuels were further incentivized, California would see dramatic decreases in GHG, criteria and toxic pollutant emissions more quickly because liquid biofuels are available TODAY. Renewable diesel is now the single ***largest carbon reducer*** over the life of the LCFS program[2], and has resulted in **30%** of the GHG reductions achieved by the LCFS program. Combined with the newer heavy duty diesel engine technologies delivering near-zero NOx and PM emissions, studies have shown that increased use of renewable diesel and biodiesel can achieve three times the GHG reductions possible in the

[1] https://www.arb.ca.gov/lists/com-attach/69-lcfs-wkshp-nov22-ws-BmhXNFMhU3QLaAdY.pdf
[2] https://ww2.arb.ca.gov/sites/default/files/2023-01/quarterlysummary_013123.xlsx

next 10 years versus accelerated electrification[3]. Why hold off on significant reductions in CO2, PM and NOx emissions while waiting for other technologies to come online? California risks delaying reaching carbon neutrality (or not reaching it altogether) if it does not adequately incentivize the use of liquid biofuels.

As for the updated California Transportation Supply (CATS) model, we continue to encourage CARB to take a technology-neutral approach and refrain from using data points that favor one technology over another. We also encourage CARB to model the 35% CI reduction scenario given the urgency to address climate change, and to demonstrate that more aggressive CI reductions are possible.

Based on our experience with the SAF and renewable diesel market, we identified some fundamental issues with the CATS model. These errors indicate an urgent need for CARB to seek more input from industry stakeholders to more accurately represent the SAF and RD marketplace.

- SAF and RD Conversion Costs: The CATS model estimation process for the SAF conversion costs is based on an Argus survey, and is likely representative of only a small pool of SAF transactions. SAF is not a liquid market so the number of transactions included in the CATS dataset is limited. As CARB well in knows, production of SAF requires an extra step beyond the hydrogenation process, therefore it should cost more to refine SAF than renewable diesel. However, Tables 5 and 7 of the "California Transportation Supply (CATS) Model – Technical Documentation v0.2" suggest that SAF is cheaper to produce, which is incorrect. Even on a per-megajoule basis, we expect SAF to be more expensive than renewable diesel, but the CATS model data inputs suggest SAF at $0.019/MJ and renewable diesel at $0.022/MJ.

- RIN price assumptions: The CATS model assumes D5 RIN value at $1.49 per RIN and D4 at $1.45 per RIN. The way RINs are nested, D5 should never be worth more than a D4 as the D4 can comply with the D5 obligation as well as the D4. Biodiesel generates 1.5 RINs per gallon, while renewable diesel can generate 1.6 or 1.7 depending on the process. According to EPA data, most RD generates 1.7 RINs per gallon.

Updates to the CA GREET 3.0 Model

Neste is excited that CARB is updating the California GREET model (CA GREET 3.0) by using the Argonne National Laboratory GREET 2022. The current CA GREET uses the 2016 Argonne GREET model, and there is a lot of data in the California model that does not reflect recent improvements in technology and improved data collection. Neste is concerned that CARB will not have the resources to make all necessary updates to the model, especially if there is too much focus on things like the cap on crop-based feedstocks. Neste therefore requests that CARB commit to making all necessary updates to CA GREET 3.0 so that the new model correctly estimates all renewable fuel carbon emissions.

Crop-based Feedstock Cap on Diesel

To solve a perceived issue, the issue must be adequately defined and studied to determine if there even is an issue before developing a regulatory response to solve it. After reading all 38 comments submitted to CARB on the proposal of crop-based feedstock caps, and CARB's description of the issue, we agree with CARB that there is limited data to support the need for a cap. It should be acknowledged that the

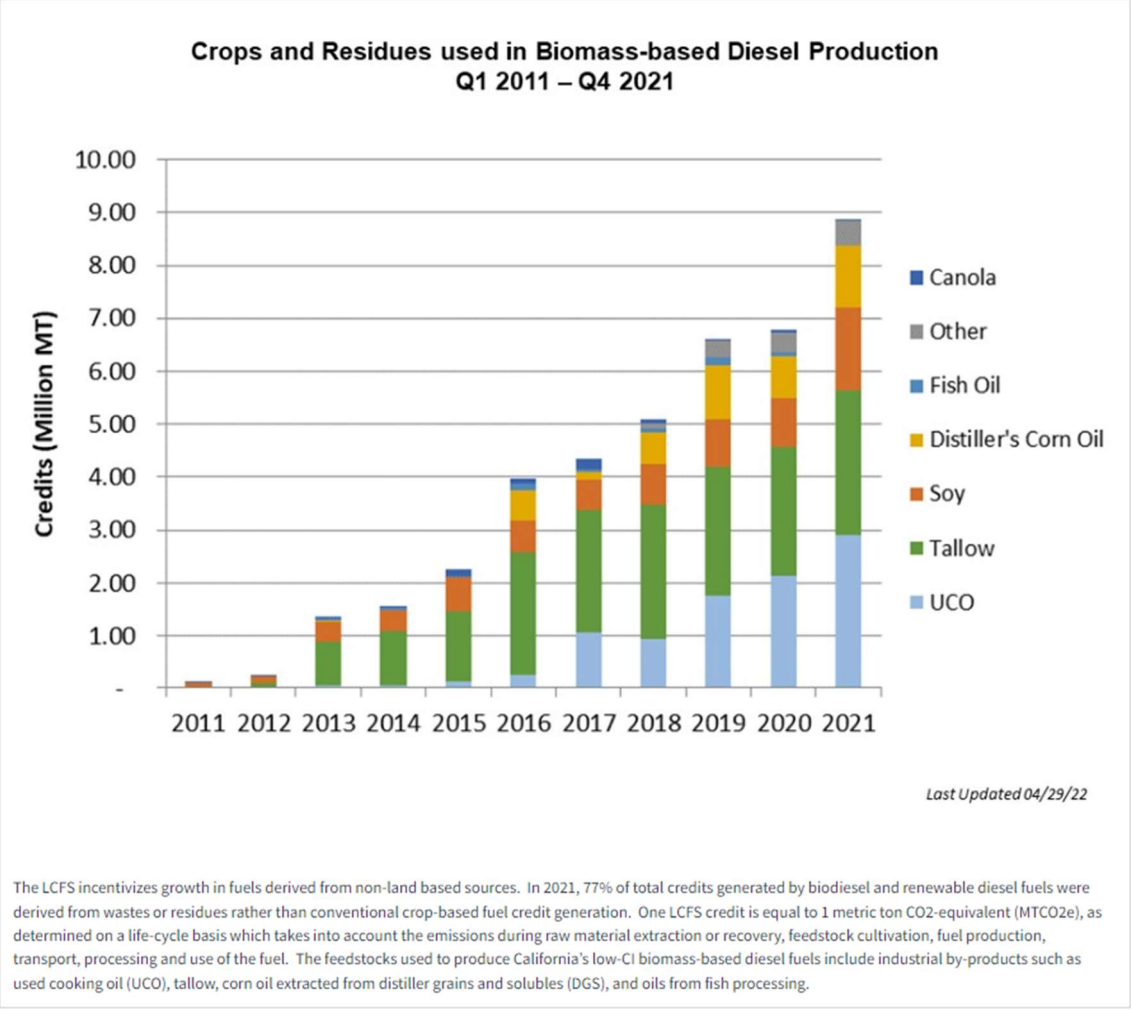
[3] https://dieselforum.org/news-posts/posts/10-years-of-opportunity-cutting-emissions-from-medium-and-heavy-duty-vehicles-in-the-northeast

overwhelming majority of those comments were ***against*** the implementation of crop-based feedstock caps and contained numerous citations supporting their argument compared to those in favor of the cap.

Neste is concerned about the information presented in slide 39 from the February 22, 2023 LCFS Workshop presentation, and we strongly recommend that CARB work with the soybean industry to better understand soybean oil production and associated acreage requirements. In a vacuum, and without any caveats to the reader who may not have attended the workshop, slide 39 shows what the biomass-based diesel industry would need in acreage to meet nameplate capacity at U.S. facilities. It ignores CARB's own published data (updated as recently as April 29, 2022) that **77%** of the feedstocks used in biomass-based diesel sold in California comes from waste and residues (also see Figure 1 below)[4]. Slide 39 also ignores some key points about the soy industry. The domestic crushing capacity today is approximately 2.2 billion bushels with another 2 billion bushels being exported annually. When a bushel is crushed, it produces 48 lbs of high protein meal and 11 lbs of oil. Thus, if demand ever got to the point that additional oil is generated for fuels than crushing capacity in the US, it would actually generate more food on almost a 5:1 ratio. Also, with almost 50% of the US soybeans being exported, even using the data on slide 39 that ignores that the majority of biomass-based diesel coming from waste and residue, it would very likely not generate the need for more acreage, but for more crushing capacity, which again, in turn, creates more food domestically.

Figure 1: California LCFS Data on Feedstocks Used to Produced Biomass-Based Diesel

Figure 6



[4] https://ww2.arb.ca.gov/resources/documents/lcfs-data-dashboard

Our concern is that the creation of a regulation, especially without a problem definition, will deter what could be one of the greatest environmentally positive changes to date in farming methodology. CARB has a great opportunity to acknowledge through incentives that not all farming is the same, and methodologies utilizing low to zero till, and Novel Vegetable Oils (NVOs) from cover cropping could change farming practices for the better to the point it reshapes an industry to make the planet a healthier place for our children.

LCFS Program Administrative Streamlining

Neste appreciates that CARB continues to work towards identifying ways to streamline the administration of the LCFS program. One of the biggest streamlining opportunities is CARB accepting Oregon-approved fuel pathways. Oregon now has a very mature Clean Fuels Program (CFP) program and has proven to have the experience and technical expertise to evaluate the most complex fuel pathways. Oregon's CFP also allows for acceptance of CARB-approved pathways, which has been effective in streamlining the CFP. To make the CARB LCFS program exportable and aligned with other similar programs, CARB should create a mechanism to accept fuel pathways approved by other similar programs.

Neste also supports truing up fuel pathway CI's to the final approved CI going back to the first quarter a fuel is used. This will help with addressing the long delays in getting an approved CARB LCFS pathway.

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.