Deere & Company
One John Deere Place Moline, IL 61265

Dr. Cheryl Laskowski
Branch Chief, Low Carbon Fuel Standard
California Air Resources Board
1001 I Street, Sacramento, CA 95815

Re: 2024 Proposed Amendments to the Low Carbon Fuel Standard Regulation

Dear Dr. Laskowski,

Deere & Company ("John Deere") appreciates the opportunity to submit these comments in response to the proposed Low Carbon Fuel Standard (LCFS) amendments, published in January 2024, to the California Air Resources Board (CARB).

John Deere's customers play a critical role in producing crop-based feedstocks for California's liquid biofuels and can directly contribute to measurable reductions in carbon intensity (CI) of the state's overall energy mix. The U.S. renewable fuels sector provides thousands of jobs to rural communities, enhances U.S. energy security, provides cleaner-burning transportation fuels to U.S. consumers, and generates additional value for farmers. It is John Deere's hope that, backed by strong clean fuels policies like California's LCFS program, farmers can continue to add positively to our nation's economy and play a key role in reducing emissions within the transportation sector.

Respectfully, John Deere opposes the "***Sustainability Requirements for Crop-Based and Forestry-Based Feedstocks***" in CARB's latest proposal. These deforestation-focused requirements would create broad, inequitable administrative burdens for the agricultural sector without significant benefits towards the stated goal of minimizing CI associated with biofuel feedstock production. For example, most of the crop-based feedstocks for fuel ethanol used in California are produced by U.S. corn farmers[1], where corn production efficiency improvements have drastically out-paced growth in corn acreage. Specifically, average bushel per-acre yield has seen a 400% increase since the mid-1900s while total harvested acres of corn have increased by less than 25%, according to USDA data[2].

The California LCFS could more effectively meet its sustainability goals by recognizing voluntary farm emissions reductions that contribute to the reduced CI of fuels, allowing biofuel producers to use field-level CI data in their fuel pathways, and enabling farmers to receive a fair share of the economic value generated.

Deere recommends that CARB add voluntary incentives for farmers to leverage sustainable practices and utilize field-level data that demonstrate a reduction in CI instead of the proposed mandatory certification

[1] California State Energy Profile, U.S. Energy Information Administration (2023). www.eia.gov/state/analysis.php?sid=CA
[2] USDA, Economic Research Service, National Agricultural Statistics Service (2023). www.ers.usda.gov

laid out in the "***Sustainability Requirements.***" Deere believes the certification requirement for crop- and forestry-based feedstocks is an inefficient and inequitable approach to reducing overall CI of crop-based biofuels and fails to acknowledge and leverage the major technological innovations that characterize today's agriculture operations:

A. **Efficiency and equity for farmers:** Any sustainability requirements of biofuel feedstock growers should be voluntary and incentive-based, rather than mandatory. Productive engagement and buy-in from farmers that produce crop-based biofuels feedstocks are essential to the success of clean fuels programs and standards. This will only come with meaningful and fair incentive structures that allow farmers to receive compensation from lowering their operation's CI, given that they are already pressed for time and resources throughout the growing season without additional documentation burdens.

   Mandatory certifications created by disparate and disconnected sustainability and clean fuels programs ultimately place a burden on farmers without any apparent benefits. Instead, CARB should incentivize traceability and field-level certification of growing practices, rather than mandating sustainability certifications. Several other active and proposed low carbon fuel programs around the world have adopted a strategy that allows farmers to certify their operations by utilizing the same technology and data that already support their decision-making in the field. Importantly, creating demand for field-level data will also increase the adoption of precision technology and sustainable farm management practices, resulting in many benefits including reduced greenhouse gas (GHG) emissions. There are significant opportunities for digital agricultural technologies to improve nitrogen use efficiency and water quality, while restoring soil health and contribute to the overall[3].

B. **Appropriate use of technology:** Precision technologies and data have made demonstrable contributions to GHG emissions measurement and reduction of U.S. agriculture,[4] with significantly greater emissions reductions still possible[5]. John Deere brings a unique perspective on the use of technology and data, as the leader in precision agriculture equipment and technologies. In 2020, John Deere introduced its Smart Industrial Operating Model to accelerate the delivery of scaled analytics and provide high-quality, usable data, while protecting the proprietary interests of producer customers. Today, John Deere's farm data management system, Operations Center™, has enabled agricultural producers to digitize their operations on more than 388 million acres globally (e.g. digital record of planting rate, fuel use efficiency, fertilizer application, and yield variability within a field).

   As more acres are digitally engaged, Deere is focused on empowering farmers with data-driven insights on key sustainability metrics, including nitrogen use efficiency and field-level GHG emissions. The necessary data for voluntary sustainability programs can be verified using the John

[3] Khanna, et al. (2022). doi.org/10.1111/agec.12733; MacPherson, et al. (2022). doi.org/10.1007/s13593-022-00792-6 Balasundram, et al. (2023). doi.org/10.3390/su15065325
[4] Balafoutis, et al. (2017). doi.org/10.3390/su9081339; Kazimierczuk, et al. (2023). doi.org/10.1021/acsengineeringau.3c00031
[5] Northrup, et al. (2021). doi.org/10.1073/pnas.2022666118

Deere Operations Center today[6]. For example, farmers can opt-in to sharing tillage intensity and cover crop data from their operations with a third party directly via APIs. CARB's approach should ensure that current farm data systems like Operations Center are considered acceptable sources of data to increase accuracy, reduce verification costs, and allow farmers to more easily provide necessary data to meet sustainability goals, if they choose.

We appreciate the opportunity to be an active participant as CARB continues implementation of the LCFS and considers program changes. John Deere supports maintaining a pathway-neutral low carbon fuel program without limits or caps on crop-based feedstocks in California. We also reiterate our offer to work collaboratively with CARB on ways to ensure farmers are included as part of the solution to meet the State of California's climate goals.

For questions or for further information regarding John Deere's comments, please contact John Rauber, Director & Counsel, Federal Affairs at rauberjohnw@johndeere.com.

Thank you for your consideration on this important issue.

[6] John Deere and Cargill Partner To Expand Regenerative Ag Practices. (2023)