August 8, 2022

Ms. Cheryl Laskowski
Branch Chief, Transportation
California Air Resources Board
P.O. Box 2815
Sacramento, California 95812

RE: Comments on Public Workshop to Discuss Potential Changes to the Low Carbon Fuel Standard held on July 7, 2022

Submitted via: https://www.arb.ca.gov/lispub/comm/iframe_bcsubform.php?listname=lcfs-wkshp-jul22-ws&comm_period=1&_ga=2.241299265.2121183608.1659617541-1105992502.1659617541

Dear Ms. Laskowski:

On behalf of the American Coalition for Ethanol (ACE), I appreciate the opportunity to provide comments on the public workshop to discuss potential changes to the California Low Carbon Fuel Standard (LCFS) held on July 7, 2022.

ACE is a grassroots advocacy organization, powered by rural Americans from all walks of life who have built an innovative industry that delivers homegrown biofuel and food for a growing world. Our nearly 300 members include U.S. ethanol biorefineries, investors in biofuel facilities, farmers, and companies that supply goods and services to the U.S. ethanol industry.

Over the past five years, ACE has been at the forefront of discussions on how the ethanol industry and U.S. farmers can further contribute to greenhouse gas (GHG) reduction goals. Specifically, ACE's Board of Directors committed to support polices at the state and/or federal level which recognize ethanol is part of the climate and health solution while crediting farmers and ethanol producers for activities which help reduce lifecycle GHG emissions by at least 70% compared to gasoline by 2030 and reach net-zero lifecycle GHG emissions by 2050. ACE is working to make this commitment a reality through policy development and real-world validation of lifecycle GHG benefits of climate smart agriculture practices at scale.

Proper implementation of California's LCFS will more quickly incentivize U.S. ethanol companies and farmers to invest in production processes and deployment of climate smart agriculture practices to reach these net-zero carbon intensity goals in a meaningful timeframe to address the current climate challenges.

To that point, we wish to comment on two inter-related topics raised by CARB during the July 7 workshop including establishment of post-2030 carbon intensity targets and treatment of crop-based biofuels.

Untapped Decarbonization Opportunities from Adoption of Climate Smart Agriculture Practices

Scientific evidence increasingly shows that adoption of climate smart agriculture practices is one of the quickest and most cost-effective areas for GHG emission mitigation. In 2018, the Intergovernmental Panel on Climate Change found that 89% of the world's GHG emission mitigation

potential comes from agricultural soil carbon sequestration and exceeds 5 gigatons of CO_2e per year in potential mitigation reductions.[1]

In January 2020, Lawrence Livermore National Laboratory reviewed California's objective to reach carbon neutrality by 2045.[2] In its report, Lawrence Livermore found that California would need to remove 125 million tons of carbon from the atmosphere each year to meet the 2045 goal. The first strategy identified by Lawrence Livermore to meet California's objective was to capture and store as much carbon as possible through better management of natural and working lands. The report identifies several climate smart agriculture practices that could provide meaningful reductions including changes in tillage practices (no-till and reduced till), cover crops, and compost application.

In July 2020, Argonne National Laboratory issued a report highlighting the GHG benefits of deploying the climate smart agriculture practices of no-till, cover crops, and nutrient management. The report noted that these reductions could be worth $279 per acre if they could be credited under California's LCFS program.[3]

In a January 2021 report, a Rhodium Group report found that even under most aggressive sales projections, EVs alone will not accomplish the goal of net-zero emissions by 2050. Rhodium explained that increased reliance on clean liquid fuels will be needed to close the emissions gap.[4]

LCFS Markets Best Means to Incentivize Adoption of Climate Smart Practices on Existing Farms

Adoption of climate smart agriculture practices provide significant GHG and soil health benefits but come at an economic cost to farmers. Because of these costs, adoption of climate smart agricultural practices remains low across the corn belt. Argonne National Laboratory has found that additional incentives over and above those currently provided are needed to increase practice adoption.[5]

In recent years, multiple market-based efforts have attempted to scale these USDA climate smart practices but have failed to significantly expand adoption. For example, business-led carbon markets where businesses voluntarily pledge carbon reductions have proliferated. Private companies working to generate credits for these markets have in some cases devised proprietary measurement, monitoring, reporting, and verification (MMRV) systems and offer farmers nominal incentives for climate smart practices. These nominal incentives do not cover a farmer's cost to implement climate smart practices and therefore are not succeeding in securing robust farmer participation.

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[1] Smith, P., D. Martino, Z. Cai, D. Gwary, H. Janzen, P. Kumar, B. McCarl, S. Ogle, F. O'Mara, C. Rice, B. Scholes, O. Sirotenko, 2007: Agriculture. In Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [B. Metz, O.R. Davidson, P.R. Bosch, R. Dave, L.A. Meyer (eds)], Cambridge Universit y Press, Cambridge, United Kingdom and New York, NY, USA, available at https://www.ipcc.ch/site/assets/uploads/2018/02/ar4-wg3-chapter8-1.pdf

[2] Sarah E. Baker, Joshuah K. Stolaroff, George Peridas, Simon H. Pang, Hannah M. Goldstein, Felicia R. Lucci, Wenqin Li, Eric W. Slessarev, Jennifer Pett-Ridge, Frederick J. Ryerson, Jeff L. Wagoner, Whitney Kirkendall, Roger D. Aines, Daniel L. Sanchez, Bodie Cabiyo, Joffre Baker, Sean McCoy, Sam Uden, Ron Runnebaum, Jennifer Wilcox, Peter C. Psarras, Hélène Pilorgé, Noah McQueen, Daniel Maynard, Colin McCormick, Getting to Neutral: Options for Negative Carbon Emissions in California, January, 2020, Lawrence Livermore National Laboratory, LLNL-TR-796100, available at https://wwwgs.llnl.gov/content/assets/docs/energy/Getting_to_Neutral.pdf

[3] https://iopscience.iop.org/article/10.1088/1748-9326/ab794e

[4] Closing the Transportation Emissions Gap with Clean Biofuels. January 15, 2021. https://rhg.com/research/closing-the-transportation-emissions-gap-with-clean-fuels/

[5] https://iopscience.iop.org/article/10.1088/1748-9326/ab794e/pdf

By contrast with voluntary carbon markets, mandatory carbon markets such as state LCFS programs offer much more equitable credit for GHG reductions. Unlike voluntary markets, LCFS markets pay significantly more for GHG reductions — nearly 10 times voluntary market payments. Mandatory markets would provide sufficient incentive to compensate farmers for the economic costs of implementing climate smart practices.

ACE Program to Validate Climate Benefits of Climate Smart Agriculture Practices for LCFS Markets

Since 2018, ACE has been actively engaged in efforts to better quantify the carbon intensity reductions of U.S. corn production as it relates to biofuel lifecycle analysis for state and federal low carbon fuel programs.

In 2018, we published a report titled "The Case for Properly Valuing the Low Carbon Benefits of Corn Ethanol"[6] to highlight how U.S. farmers and ethanol producers are improving efficiencies, investing in technologies, and adopting practices to dramatically reduce lifecycle GHG emissions from corn ethanol. This report explained how increasing the use of corn ethanol beyond levels called for in the Renewable Fuel Standard (RFS) would help reduce GHGs. Our paper also called on EPA to adopt the latest U.S. Department of Energy Greenhouse gases, Regulated Emissions, and Energy use in Technologies (GREET)[7] model for making determinations about ethanol's lifecycle GHG emissions, because EPA's own analysis overstates reality.

A study published last year by Harvard University, Tufts University and Environmental Health & Engineering Inc. cites ACE's 2018 White Paper and reinforces the fact that the GHG reduction benefits of corn ethanol have been significantly undervalued because some regulatory bodies refuse to apply or use the latest lifecycle science. The Harvard/Tufts study found that average corn ethanol reduces GHGs by 46 percent compared to gasoline and given improvements occurring in corn farming and within ethanol facilities, corn ethanol's carbon footprint will continue to decline over time.[8]

We joined more than 30 organizations to publish the Clean Fuels Policy for the Midwest white paper in 2020, a blueprint for Midwest policymakers in 2020 which offered unique considerations needed to design a successful Clean Fuels Policy for the Midwest. Created by Midwesterners for the Midwest, the report recommends a technology-neutral, portfolio approach that encourages a fair and competitive marketplace and benefits producers, consumers, agriculture, utilities, jobs, and public health. This report was the result of nearly two years of analysis and stakeholder discussion by the Midwestern Clean Fuels Initiative. Facilitated by the ACE and the Great Plains Institute (GPI), the Initiative brings together fuels producers and marketers, nonprofit and research organizations, scientists and engineers, and agriculture and industry stakeholders. The Initiative's consensus white paper illustrates broad support for a policy by diverse interests across the region.

Following the release of this blueprint, we have worked alongside a broad coalition of interests, led by GPI, to support the introduction and enactment of new low carbon fuel standard legislation across the Midwest.

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[6] The Case for Properly Valuing the Low Carbon Benefits of Corn Ethanol. (2018) https://ethanol.org/ethanol-essentials/low-carbon-benefits-of-corn-ethanol

[7] https://greet.es.anl.gov

[8] https://ethanol.org/news/news/2021/01/26/new-study-showing-corn-ethanol-reduces-carbon-emissions-by-nearly-50-percent-cites-ace-low-carbon-white-paper/

In late 2021, the United States Department of Agriculture (USDA) provided ACE with $7.5 million to work in the grainshed of one of our ethanol company members to: (1) incentivize farmer adoption climate smart agriculture practices at scale, (2) partner with leading land-grant university scientists and Sandia National Laboratory to collect data to measure, verify, and model resulting soil health and GHG benefits, and (3) use this data to help project farmers enter LCFS markets. Within the project area, it is estimated that shifting from conventional tillage to no-till would reduce 91,000 metric tons of GHG emissions per year or the equivalent of removing 20,000 cars from the road. If LCFS markets credited these GHG benefits, farmers in the grainshed would reap 39-49 cents per bushel, a sizable economic incentive for farmers to expand these climate-smart practices. This potential economic return has resulted in significant farmer interest in the program with expressed interest nearly tripling available funding for the program.

Importantly, the data collected through this project will increase the confidence in current models used to quantify soil carbon sequestration and nitrous oxide emissions, and the impacts of crop yield, tillage intensity, and nutrient management on biofuel GHG emissions.

ACE is currently working to expand upon this project to assist farmers in a 10 state, 13 grainshed region supplying ethanol company partners to adopt climate smart practices to reduce GHGs and to secure and verify the resulting GHG data needed to provide farmers LCFS market access based on these practices. The project's team of leading scientific experts including from several land-grant universities is developing a non-proprietary MMRV system that will provide all farmers in the project region with the ability to accurately calculate the GHG value of climate smart practices. Further, we will be collaborating with established climate scientific teams to incorporate verified, project-generated GHG benefit data into existing datasets used by DOE's Argonne National Laboratory in the GREET model as well as other models. The 162-county project area was explicitly selected to capture the soil, precipitation and temperature variability needed to refine the GHG data assumptions underlying these climate models to allow them to be used in LCFS programs.

According to our county level analysis using USDA's GHG predictive COMET-Planner tool,[9] the climate smart practices deployed in this project will reduce CO_2 emissions 364,098 metric tons per year. Further, securing LCFS market access based on these practices in the project area would result in roughly $530 million in new revenues annually, with farmers earning an average of approximately $263 acre per year. These revenues are sufficient to overcome existing barriers to farmer adoption of climate smart practices.

<u>Potential Changes to California LCFS Could Positively or Negatively Impact these GHG Reductions</u>

California's LCFS program is poised to play a leading role in incentivizing farmers to adopt climate smart agriculture practices on existing acres and to generate significant GHG reduction benefits. That said, how CARB handles two issues discussed in the July 7, 2022 workshop have significant implications for whether this potential is realized.

First, artificially capping crop-based biofuels under the LCFS program would stunt efforts to leverage the LCFS to expand climate smart practice adoption and would leave near-term, cost-effective carbon reductions untapped. This runs counter to the scientific findings discussed above that climate smart practices are the best option to meet carbon reductions goals between now and 2045. We welcome the opportunity to collaborate with CARB as we deploy our USDA-funded climate smart project described in these comments to ensure that it fosters the type of data, measurement,

[9] http://comet-planner.com

monitoring and verification protocols necessary for inclusion on climate-smart practices within the LCFS program.

Second, we would encourage CARB to set aggressive interim carbon intensity goals between 2030 and 2045. As noted, climate smart agriculture practices are poised to provide real, near term GHG reductions if fairly priced in the marketplace. That said, a lack of economic return in voluntary carbon markets today is currently preventing farmer adoption at meaningful scale. Carbon prices within the $150 to 200 per ton range – as has been the case over the past several years in California – would provide sufficient market incentive and economic return for farmer adoption of climate smart practices. Carbon intensity targets should be set in a manner that preserves this carbon pricing level to ensure sufficient economic incentives to undertake practice adoption.

Conclusion

Thank you for your time and consideration of these comments. We look forward to collaborating with you on these important issues.

Sincerely,

Brian Jennings, CEO
American Coalition for Ethanol