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U.S. Department of Agriculture
Office of the Chief Economist
Submitted via portal: http://www.regulations.gov

Attention: Docket ID No. USDA–2021–0003

RE: Response to Notice of Request for Public Comment on the Executive Order on Tackling the Climate Crisis at Home and Abroad (86 Fed. Reg. 14403; March 16, 2021)

The Renewable Fuels Association (RFA) appreciates the opportunity to submit these comments in response to the Office of the Chief Economist, U.S. Department of Agriculture “Notice of Request for Public Comment on the Executive Order on Tackling the Climate Crisis at Home and Abroad.” [Docket No. USDA-2021-0003]

First organized in 1981, RFA serves as the prominent voice of advocacy for the renewable fuels industry. Its mission is to drive expanded demand for American-made renewable fuels and bioproducts worldwide. RFA’s 300-plus members produce billions of gallons of renewable fuel and millions of tons of valuable co-products each year and are working to help America become cleaner, safer, more energy secure, and more economically vibrant.

RFA appreciates the opportunity to provide input to USDA as it works to identify the most promising approaches to decarbonization and tackling climate change. The renewable fuels industry has been a leader in the effort to transition away from fossil fuels, and renewable fuels like ethanol have already prevented hundreds of millions of tons of greenhouse gas (GHG) emissions from entering the atmosphere. Moving forward, renewable fuels can and should play an even larger role in accelerating the evolution of our transportation sector. Renewable fuels like ethanol provide a solid foundation upon which to build a low-carbon future for our nation and world.

The following answers are provided in response to the specific questions for biofuels, wood and other bioproducts, and renewable energy questions posed in the notice.
1. **How should USDA utilize programs, funding and financing capacities, and other authorities to encourage greater use of biofuels for transportation, sustainable bioproducts (including wood products), and renewable energy?**

The United States’ economy cannot achieve net-zero emissions in the next three decades without addressing transportation fuels, as the combustion of fossil fuels for transportation is the single largest source of GHG emissions in the United States. In the past few years, the transportation sector surpassed electricity production as the largest contributor of greenhouse gas emissions in the United States.

Ethanol is a low-carbon, low-cost fuel that can serve as a gateway to a cleaner future both domestically and worldwide. As a result, the Administration should remain committed to faithful enforcement of the Renewable Fuel Standard (RFS), which is creating a market for cleaner-burning biofuels that reduce emissions in the transportation sector and displace imported petroleum. The RFS is an extraordinarily innovative carbon policy that has been in place since 2005.

Beginning in 2023, however, RFS volume obligations will no longer be specified by Congress, leaving discretion to the EPA to set future RFS volumes. That creates significant uncertainty for potential investors in innovative advanced and low-carbon biofuel technologies. The continued development of lower-emission biofuels will only happen with the market certainty provided by the RFS and new innovative policies that can serve as complements to the RFS. Investors need a stable environment, which was not the case under the leadership of the EPA during the previous Administration. We are urging EPA to expeditiously and transparently develop the RFS volume requirements for 2023 and beyond. With sufficient lead time and predictability, the RFS can continue to stimulate investment and innovation in biofuel technologies well beyond 2022.

The USDA was given an explicit role by Congress in setting RFS requirements that will apply starting in 2023. The Energy Independence and Security Act of 2007, which expanded the RFS, stated that the volumes “shall be determined by the [EPA] Administrator, in coordination with the Secretary of Energy and the Secretary of Agriculture, based on a review of the implementation of the program ... and an analysis of” six criteria. The Administrator is to issue a rule establishing the applicable volumes no later than 14 months before the first year for which they will apply, which would be November 1 of this year. Given the relatively short amount of time for both a proposed rule and a final rule to be issued, we would encourage the appropriate experts within the USDA to coordinate actively with EPA on the analysis of criteria related to agriculture. Relevant topics include, but are not limited to, the impacts of the RFS on the price and supply of agricultural commodities, rural economic development, land use, food prices and environmental conditions.

Furthermore, the existing RFS statute prohibits corn starch-derived ethanol from qualifying as an advanced biofuel, even if the fuel meets the required 50% GHG performance criteria established for advanced biofuels. This has the unintended consequence of discouraging investments in existing technologies to maximize carbon reductions from renewable fuels available to consumers today broadly and at low cost. As new energy and climate policy is considered that can complement the RFS, it would be prudent to assure there is certainty in the RFS volumes beyond 2022, as well as certainty that fuels

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will be judged and rewarded strictly on their GHG performance benefits and not impeded by arbitrary feedstock preclusions.

Even after accounting for every bit of energy and all of the emissions associated with every step of the ethanol production process, today’s corn starch ethanol is shown to reduce GHG emissions by nearly 50% compared to gasoline, according to a recent study by scientists from Environmental Health & Engineering, some of whom are affiliated with Harvard University, MIT, and Tufts University. The “central best estimate” of corn ethanol’s carbon intensity is 46% lower than the average carbon intensity of gasoline, according to the study’s authors, with some corn ethanol in the market today achieving a 61% reduction. The study credits recent efficiency improvements and the adoption of new technologies for the steady reduction in the lifecycle carbon intensity of corn ethanol. Biofuels have shown that they are already on the way to net zero emissions. Proper accounting of soil carbon accumulation in corn fields will shrink the carbon footprint of corn ethanol even further. And using biogas for thermal energy or adopting carbon capture and sequestration technologies could make corn ethanol carbon neutral—or even carbon negative.

State and national decarbonization programs prove that the Harvard, MIT, and Tufts University study findings are not just “theoretical.” Programs like California’s Low Carbon Fuel Standard (LCFS) demonstrate that ethanol’s carbon intensity is shrinking and will continue to decline with ongoing production improvements. In California, ethanol has reduced GHG emissions by more than 26 million metric tons since implementation of the state’s LCFS began in 2011—more than any other low-carbon fuel under the program. According to California regulators, ethanol used in the state last year has reduced GHG emissions by an average of 43% compared to gasoline. Some corn starch ethanol used in the state delivered GHG reductions in excess of 50%, while ethanol made from the cellulosic fiber in corn kernels registered a 73% reduction on average.

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3 Melissa J Scully et al 2021 Environ. Res. Lett. 16 043001
The success of USDA’s stated goals depends critically on the proper implementation of the RFS in a manner that is consistent with the statute and Congressional intent. Historically, EPA’s mismanagement of the RFS in the previous Administration, has undermined expansion of clean, home grown renewable fuels. Due to this factor, U.S. ethanol production fell in 2019 for the first time in more than 20 years. At 15.8 billion gallons, 2019’s output was down 300 million gallons from the record achieved in 2018—and even below 2017’s production volume.

USDA should be applauded for its previous efforts to invest in infrastructure capable of distributing higher biofuel blends, resulting in greater access to lower-carbon fuel blends and further reducing GHG emissions from transportation fuels. Starting with its 2015 Biofuel Infrastructure Partnership (BIP) and most recently the new Higher Blends Infrastructure Incentive Program (HBIIP), USDA has been an effective and collaborative partner in working with retailers, marketers, terminal operators, farmers, and ethanol producers in expanding the infrastructure needed to increase sales of higher blends of ethanol. Since the initial funding announcements, we are starting to see the effects of these infrastructure grants in the marketplace.

Sales of E15 (gasoline containing 15% ethanol) jumped 24% and set a new record in Iowa in 2020 according to data from the Iowa Department of Revenue⁴, while the Minnesota Department of Commerce⁵ reported that E15 sales were down just 4%, despite the pandemic-related drop in overall fuel consumption. According to the Energy Information Administration, total U.S. gasoline consumption

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fell 13% for the year.\textsuperscript{6} The outperformance of E15 is in no small part due to expansion in infrastructure, which was facilitated by the two USDA programs. Since 2015, the number of retail stations selling midlevel blends such as E15 has more than quadrupled in Minnesota and has tripled in Iowa. Additionally, more than 210 terminals are now offering pre-blended blends of E15.

USDA’s efforts to provide funding assistance to fuel retailers to upgrade their infrastructure has helped provide consumers with greater access to lower carbon biofuels. However, given the franchise structure of the retail gas industry, and the oil industry’s 100-year monopoly on the fuel market, the transition to higher volume biofuel blends continues to prove to be a very slow and difficult undertaking. Rapid proliferation of low-carbon liquid fuels will continue to require investments to our nation’s fuel infrastructure.

USDA should also redouble efforts to ensure its fleet of vehicles, which includes a large number of flex fuel vehicles (FFVs), is consistently fueled with low-carbon ethanol blends. Unfortunately, E85 use in the federally regulated fleet has dropped each of the last five years despite requirements to use the fuel when available. USDA currently operates 12,520 FFVs that can operate on E85, but rarely or never use the fuel today and instead receive fuel waivers. Greater use of E85 would not only allow USDA to meet their increasing requirements to use more alternative fuels and less petroleum each year but would also reduce the overall cost per mile of operation while also reducing GHG emissions and cutting the harmful tailpipe pollution that disproportionately impacts low-income communities. We encourage USDA to re-examine the availability of E85 for fleet use, as hundreds of new stations have been built in recent years, and hundreds more are coming soon as a result of USDA’s Higher Blends Infrastructure Incentive Program (HBIIP) and the Biofuels Infrastructure Partnership (BIP) program. In addition, mobile fleet fueling presents an excellent opportunity for USDA to recommit to increasing its use of the biofuels produced from American farm products. When it comes to using fuels with higher renewable content, USDA should be a leader amongst federal agency fleets and demonstrate its commitment to use more ethanol.

Administration policies to encourage greater use of lower-carbon liquid fuels will also require the government to work with financial institutions and investors to promote access to capital throughout the broad biobased manufacturing sector. To date, USDA has been a great champion in supporting and providing financial support to development of advanced biofuels through its Biorefinery, Renewable Chemical, and Biobased Product Manufacturing Assistance Program (BAP), also known as the Section 9003 Program. At a time of economic uncertainty in domestic markets and political uncertainty in foreign markets, USDA should continue to provide loan guarantees to new projects from funding already allocated to it by the Congress.

For USDA to take a proactive approach and facilitate the goals of fulfilling President Biden’s commitments regarding the RFS, the Department will need to continue to invest in all aspects of the biobased economy. That includes an investment in public engagement. It is crucial that the Department work with stakeholders to ensure the public and the broader Administration recognize that these solutions and tools are available today, and do not require a complete overhaul of our nation’s infrastructure. Reducing greenhouse gas emissions at this moment is more valuable than reducing them in the future.

https://www.eia.gov/petroleum/supply/monthly/
2. How can incorporating climate-smart agriculture and forestry into biofuel and bioproducts feedstock production systems support rural economies and green jobs?

While the COVID-19 pandemic and EPA led policies significantly reduced ethanol production in 2020, the industry remains a major driver fueling the rural economy. Ethanol biorefineries continue to offer skilled jobs and good wages in rural communities where attractive employment opportunities are often hard to find. And the industry continues to serve as an essential cog in the agriculture sector’s economic engine, generating tens of billions of dollars in economic activity. In 2020, more than 62,000 U.S. jobs were directly associated with the ethanol industry, which supported an additional 242,600 indirect and induced jobs across all sectors of the economy. Over 200,000 of those jobs, or 70% of the total, were in the agriculture sector. The industry created $18.6 billion in household income and contributed $34.7 billion to the national Gross Domestic Product (GDP). Moreover, the ethanol industry spent $21.4 billion on raw materials, inputs, and other goods and services. The demographic breakdown of the renewable fuels workforce is significant, employing a higher percentage of female, older and unionized workers than the petroleum industry. In addition, one out of five ethanol workers are veterans of the U.S. military with veterans currently comprising only 6% of the national workforce.

As USDA looks to policy measures that will utilize the power of agriculture to decarbonize our economy and support rural economies, we implore it to support new policies and programs that are technology and feedstock neutral and are based off performance and their capacity to deliver carbon reductions now. In this regard, if Congress begins development of a Clean Fuel Standard, also known in some jurisdictions as a Low Carbon Fuel Standard (LCFS), that builds on the successes of the RFS, it will be paramount that USDA work with lawmakers to ensure farmers and ethanol producers are part of the solution in future climate smart policies. RFA believes building upon the success of the RFS with a LCFS would be the most effective means of maximizing carbon reductions from transportation in the near- and mid-term and would minimize impacts to low- and middle-income families, create family sustaining jobs, and advance environmental justice. Ethanol is the lowest cost liquid fuel on the market, creates good jobs across many economic sectors, and provides a solution that is available immediately to significantly reduce GHG emissions and harmful tailpipe pollution today. When a National LCFS works in tandem with a voluntary carbon crediting and verification program it would allow agriculture to further participate quickly and effectively in fighting climate change. A National LCFS that builds off the volumes and infrastructure put in place by the RFS would create new opportunities and marketplaces for agricultural crops, crop residues, and other raw agriculture-based feedstocks.

The California Low Carbon Fuel Standard (or LCFS), part of California’s Global Warming Solutions Act of 2006, has already shown that carbon pricing can drive technology innovation and emissions reductions. The LCFS is a statewide policy designed to reduce the lifecycle carbon intensity (or CI) of transportation fuels—that is, the total greenhouse gas emissions from production to consumption, including raw materials, transportation, and processing. It achieves this goal by setting a regulatory target for fuel carbon intensity. Market forces then determine the most efficient way to meet or exceed the annual CI reduction targets. It is designed to help clean the air, protect the environment, and drive the development of clean, low-carbon fuels.

The LCFS program’s credit trading mechanism allows market forces to drive carbon reduction in the manner that is most economically efficient. Fuel producers and suppliers who exceed CI reduction requirements are rewarded, while other market participants may choose to meet the standards by purchasing surplus credits from others. Midwest ethanol plants have responded to the signal sent by the
LCFS credit market and invested billions of dollars in technologies that significantly reduce the CI of ethanol.

As shown in the chart on page 4 of these comments, creating an economic incentive for carbon reduction has resulted in a significant improvement in the lifecycle carbon performance of ethanol consumed in California under the LCFS. According to data from the California Air Resources Board, the average carbon intensity of ethanol has fallen nearly 30% since the program began in 2011. Meanwhile, the petroleum portion of gasoline in California has become 5% more carbon intensive over the same time period. In the most recent quarter for which data is available, the average CI of ethanol used in California was 43% lower than the CI of California gasoline.

The value of LCFS credits generated by ethanol since 2011 is estimated to be more than $1.5 billion which equates to roughly 12 cents per gallon of ethanol. Some of this value is captured by the ethanol producer, while some is shared with the supply chain and consumers to encourage increased use of ethanol blended fuels. For example, E85 consumption has increased dramatically in California, as carbon pricing has allowed E85 suppliers and retailers to share the value of carbon credits with consumers (in the form of deeply discounted fuel).

![California LCFS Credit and RFS RIN Credit Values](chart.png)

Clearly, the California LCFS has provided incentives to reduce the carbon intensity of ethanol and reinvest in technologies that increase efficiency. RFA has always prioritized the inclusion of approaches that would reward farmers and producers for reducing the carbon intensity of production practices and we look forward to continuing engagement and interaction with USDA and members of Congress as the next steps are taken legislatively and at the executive level.

Supporting America’s farmers who want to adopt new technologies and innovative practices will be critical to USDA achieving the goals set forth in the Executive Order. To that end, RFA recommends that the Secretary task the National Resources Conservation Service (NRCS) and other relevant experts at USDA with looking for ways to consistently and fairly measure and validate the carbon reduction and
sequestration that results from climate-smart agricultural practices. NRCS and others at USDA have the right mix experience and expertise to lead the development of measurement protocols, validation methods, and other standard practices that will be necessary to ensure farmers and downstream processors are able to participate in emerging carbon markets.

3. **How can USDA support adoption and production of other renewable energy technologies in rural America, such as renewable natural gas from livestock, biomass power, solar, and wind?**

As an initial matter, RFA was encouraged to see recent comments from EPA Administrator Michael Regan that he is excited about working with the agriculture community and wanted to gather regular input from stakeholders stating, “I want to hear from you directly when innovation has been stifled, because we need to work together to overcome these challenges.” It is important to note that many of the barriers that historically discouraged broader expansion of ultra-low carbon biofuel blends are regulatory in nature and under the jurisdiction of EPA.

When allowed to work, the RFS has enabled billions of dollars of investment in new technologies that have led to the rapid growth of the ethanol industry. Moving forward, USDA should partner with to EPA ensure that it has all the current data and tools needed to follow the rule of law as Congress intended. This includes improving its implementation of the Renewable Fuel Standard by issuing a robust and timely Renewable Volume Obligation (RVO), speeding up new RFS pathway approval decisions, and updating lifecycle analyses of the environmental impact of biofuels. Thus, we ask that USDA encourage and work with EPA to address these key regulatory barriers and impediments.

As briefly mentioned above, innovative biorefineries have been hindered by EPA’s delays in the approval of newer ultra-low carbon fuels. Improvements are needed in EPA’s pathway petition process because delays are keeping advanced and cellulosic biofuels from reaching the marketplace. The process should be streamlined to enable more timely and efficient decision making. In the past, EPA has blocked new cellulosic pathways by changing the approval mechanisms outside the required legal processes. This has slowed the development and commercialization of technology intended to meet the intent of the RFS. While the federal government stalls pathway approvals, California’s Low Carbon Fuel Standard has seen its fuels receive lower carbon intensity scores as producers deploy innovative technologies. For example, Alto Ingredients, formerly known as Pacific Ethanol, based in California installed a solar power array and is now operating at its full 5 MW generating capacity. Aemitis Inc. has recently provided an update of the many improvement projects underway at their facility that will reduce the carbon intensity of the fuel it produces, including the use of renewable natural gas (RNG), a membrane dehydration unit, a solar micro grid array with battery backup, and a mechanical vapor recompression (MVR) system. These improvements were made in order to meet increased demand for ethanol in California. As highlighted in the table below, ethanol made from cellulosic fiber in corn kernels that is sold in California is registering over a 70% reduction compared to gasoline on average.

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The above table seeks to juxtapose the California Air Resources Board (CARB) accommodating of pathways against EPA’s delaying of the approval process. Under the previous administration, EPA has blocked new groundbreaking pathways by changing the approval mechanisms outside of the required legal processes, slowing the development and commercialization of processes that meet the intent of the RFS. Furthermore, EPA has continuously implemented lower Renewable Volume Obligations (RVOs) for conventional, cellulosic and advanced biofuels, shrinking the market potential for these new technologies, while the small refinery exemption waivers have reduced blending requirements below statutory levels, which caused a decline in conventional, cellulosic and advanced biofuel Renewable Identification Number (RIN) credit values. This removes an incentive for purchasing these products and commercializing the technologies. Instead, producers who have developed low carbon sustainable fuels have had to turn to California and Oregon’s marketplaces to sell their fuels where they are approved for commerce. The uncertainty from EPA’s multiple regulatory changes provide a challenging economic landscape for investments into the United States. RFA respectfully asks that the Department push EPA to end its unwarranted stalling of pathways registrations.

As USDA considers technical assistance for agriculture producers, one important methodology to evaluate would be the way in which EPA measures greenhouse gas emissions from renewable fuels. To date, the EPA has demonstrated an inability to keep pace with state-of-the-art analysis techniques and new data in this sector. The Department of Energy should be delegated responsibility for this function and in the case of agriculture-based biofuels, while the Department of Agriculture should have a defined role in quantifying agriculture emissions reductions.

In October of 2019, the Argonne National Laboratory’s 2019 GREET (Greenhouse gases, Regulated Emissions, and Energy use in Transportation) model updated its carbon calculations for land-use change from the production of biofuels, as well as the use of an open-source database of soil organic carbon. The model is continuously updated (e.g., a new version was released in October 2020) and is used worldwide to analyze the effects of different types of fuel on the environment.

Other solutions may include citing specific models (i.e., GREET) or requiring consideration or reliance on existing state analyses (i.e., Oregon). This involves measurements of the feedstock, which includes production practices. There is a desperate need for EPA to update its methodologies for analyzing lifecycle GHG impacts of transportation fuels. EPA relies upon lifecycle accounting to quantify GHG emissions under the RFS; however, EPA’s model is over a decade old and fails to include the continuing

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advancements in agriculture and biofuel production. While not used by the U.S. EPA, the GREET model has been developed by the Department of Energy, one of the agencies tasked by Congress with coordinating with EPA on RFS implementation. We strongly encourage EPA to adopt the latest Argonne National Laboratory GREET model for all lifecycle analysis needs. To provide consistency, RFA recommends aligning (to the maximum extent possible) existing methodologies and models that capture better statistics.

Finally, we request that USDA encourage EPA to implement the RFS as intended by Congress by setting strong Renewable Volume Obligations for 2021 and 2022. The RFS was designed by Congress to be a market forcing policy that would create demand for renewable fuels through the mandates for increasing consumption of renewable fuels. Numerous court decisions have reaffirmed this clear legal guidance by requiring EPA to adhere to the primary market-forcing intent of Congress which in some cases it has failed to do. Proper yearly administration of the RFS will provide certainty for biofuel producers. With USDA and EPA’s assistance, capitalizing on the low carbon benefits of ethanol provides a win-win for farmers and the environment. Looking ahead, agriculture can do even more to contribute to carbon reduction.

4. Conclusion

In closing, RFA thanks USDA for the opportunity to share our perspective. We stand ready to assist USDA through the development and execution of the Biden-Harris Administration’s important goals and we thank you for the opportunity to comment.

Sincerely,

[Signature]

Geoff Cooper
President & CEO