

Testimony before the U.S. House Committee on Agriculture
Subcommittee on Commodity Exchanges, Energy, and Credit
“A Look at the Renewable Economy in Rural America”

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Chairman Delgado, Ranking Member Fischbach, and Members of the Subcommittee:

Thank you for the opportunity to testify today on the role biofuels like ethanol play in the renewable economy in rural America. My name is Emily Skor, and I am the CEO of Growth Energy, the world’s largest ethanol trade association.

Growth Energy represents over half of all U.S. ethanol production, including 92 producer plants, 91 innovative businesses that support biofuels production, and tens of thousands of ethanol supporters around the country.

Ethanol production has long been an economic driver for our rural economies. The United States is home to 210 biorefineries across 27 states that have the capacity to produce more than 17 billion gallons of low-carbon, renewable fuel.

Ethanol is also the second-largest customer to 300,000 U.S. corn growers with roughly one-third of the field corn crop used to produce fuel ethanol each year.¹ In a particularly unusual year of depressed demand in 2020, the ethanol industry purchased 4.78 billion bushels of corn to produce nearly 14 billion gallons of biofuels and more than 36.4 million tons of dried distillers grains.² Also in 2020, 26.6% of field corn went into fuel ethanol.³ This year, our industry will purchase nearly 30 billion dollars of corn to produce ethanol and co-products such as high-protein animal feed and corn oil.

Renewable fuels like ethanol remain the single most affordable and abundant source of low-carbon motor fuel on the planet – and are critical to meeting carbon reduction goals today.

Recent research shows there is no path to net-zero emissions by 2050 without biofuels. Even accounting for the projected growth of electric vehicles, the Energy Information Administration indicates that the vast majority of cars on the road through 2050 will run on liquid fuels. Biofuels like ethanol are affordable, available, and can be used in our current auto fleet. Put simply, America cannot decarbonize the transportation sector without homegrown biofuels.

¹ National Corn Growers Association. <https://www.ncga.com/key-issues/current-priorities/ethanol>

² “Grain Crushings and Co-Products Production- 2020 Summary,” U.S. Department of Agriculture. March 2021. <https://downloads.usda.library.cornell.edu/usda-esmis/files/v979v304g/jh344m06h/1j92h279h/cagcan21.pdf>

³ “Corn Usage by Segment 2020,” National Corn Growers Association. April 2021. <https://www.worldofcorn.com/#corn-usage-by-segment>

My comments today will focus on how America’s ethanol industry is leading the way in producing renewable energy in our rural areas, driving new economic activity and environmental benefits. Specifically, I will explore the following areas:

- Why low-carbon liquid biofuels like ethanol are essential to meet our climate goals;
- How programs at the U.S. Department of Agriculture and provisions in the Build Back Better Act can help us further decarbonize transportation;
- How a strong and growing RFS will continue to cut carbon emissions from transportation; and
- How higher-level ethanol blends like E15 can drive down emissions and lower consumer fuel costs.

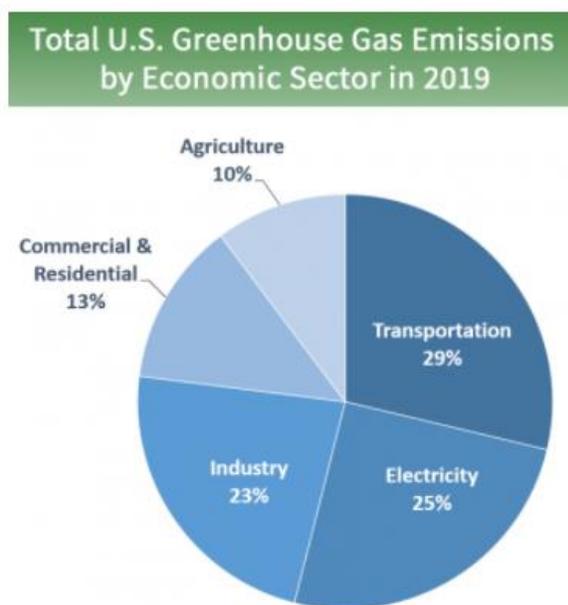
Biofuels: An Essential Solution to Meet Climate Goals

This past year has seen an increased focus on achieving long-term carbon reduction goals. The Biden Administration has pledged to reduce greenhouse gas (GHG) emissions by 50-52% by 2030 and make the United States carbon neutral by 2050. There is no one-size-fits-all path toward decarbonization. Meeting this challenge will require a broad array of solutions and renewable biofuels like ethanol are readily available today to accelerate our transition to a healthier, net-zero emission, 100% renewable energy future.

In 2019, the transportation sector accounted for 29% of all greenhouse gas emissions in the United States, the highest of any major economic sector.⁴ Lowering carbon emissions in transportation is paramount to meet the Biden Administration goals. Biofuels can immediately lower GHG emissions and help decarbonize the transportation sector.

Plant-based ethanol is low-carbon and can be used in our current auto fleet. It is also affordable, keeping fuel prices lower for all drivers in all communities. Drivers today can choose fuel blended with ten-percent ethanol (E10), fifteen-percent ethanol (E15), or up to eighty-five percent ethanol (E85).

Figure 1: U.S. GHG Emissions by Sector



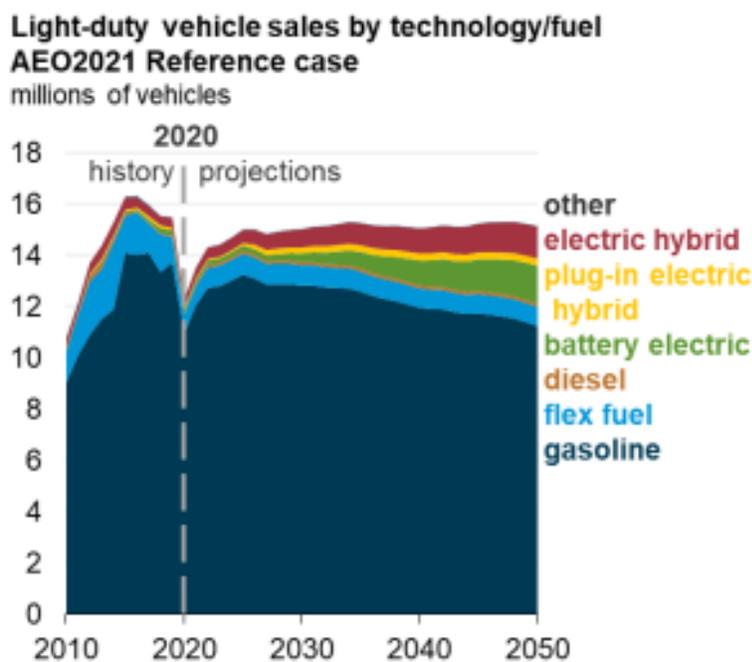
Source: EPA

⁴ “Sources of Greenhouse Gas Emissions,” U.S. Environmental Protection Agency. <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions>

A recent January 2021 study by Environmental Health and Engineering, Inc. found that ethanol reduces GHGs by 46% compared to traditional gasoline.⁵ The use of biofuels from 2008 to 2020 has already resulted in cumulative reductions of almost 1 billion metric tons of carbon dioxide-equivalent GHG emissions⁶. Additionally, a study by Growth Energy showed that nationwide transition from E10 to E15 would lower GHG emissions by 17.62 million tons annually, the equivalent of removing 3.85 million vehicles from the road⁷.

Recent data from the U.S. Energy Information Administration (EIA) indicates that while we will see dramatic growth in the number of electric vehicles, vehicles that run on liquid fuels will

Figure 2: Light-duty Vehicle Sales by Fuel Type



Source: U.S. Energy Information Administration

dominate the light duty transportation landscape for decades. EIA’s Annual Energy Outlook from 2021 stated that gasoline and flex fuel vehicles will account for 79% of vehicles sales in 2050, down from 95% today, as referenced in Figure 2.⁸ Moreover, EIA projects in its 2021 International Energy Outlook that, worldwide, the number of conventional light-duty vehicles – those which operate on liquid fuels – will not peak until 2038.⁹

To meet these challenges, we cannot rely on a single solution to propel our transportation sector to net-zero carbon emissions by 2050. We will need every tool in our toolbox. We will see increased efforts towards electrification and vehicle efficiency, but we will also

need more biofuels like ethanol, which have the potential to do even more to reduce the carbon intensity of transportation with the right combination of policy and marketplace certainty. An analysis by the Rhodium Group released in January 2021 found that biofuels are a mainstay for any climate strategy looking to attain net-zero emissions by 2050.¹⁰

⁵ “Carbon Intensity of corn ethanol in the United States: State of the science,” *Environmental Health & Engineering, Inc.* Melissa Scully, Gregory Norris, Tania Alarcon Falconi, and David MacIntosh (March 2021). <https://iopscience.iop.org/article/10.1088/1748-9326/abde08>

⁶ “GHG Emissions Reductions due to the RFS2 – A 2020 Update.” Life Cycle Associates, Unnasch, Stefan and Debasish, Parida. February 2021. https://ethanolrfa.org/file/748/LCA - RFS2-GHG-Update_2020.pdf.

⁷ “GHG Benefits of 15% Ethanol (E15) Use in the United States,” Air Improvement Resources, Inc. <http://www.airimprovement.com/reports/national-e15-analysis-final.pdf>

⁸ “Annual Energy Outlook 2021,” Energy Information Administration. https://www.eia.gov/outlooks/aeo/pdf/AEO_Narrative_2021.pdf

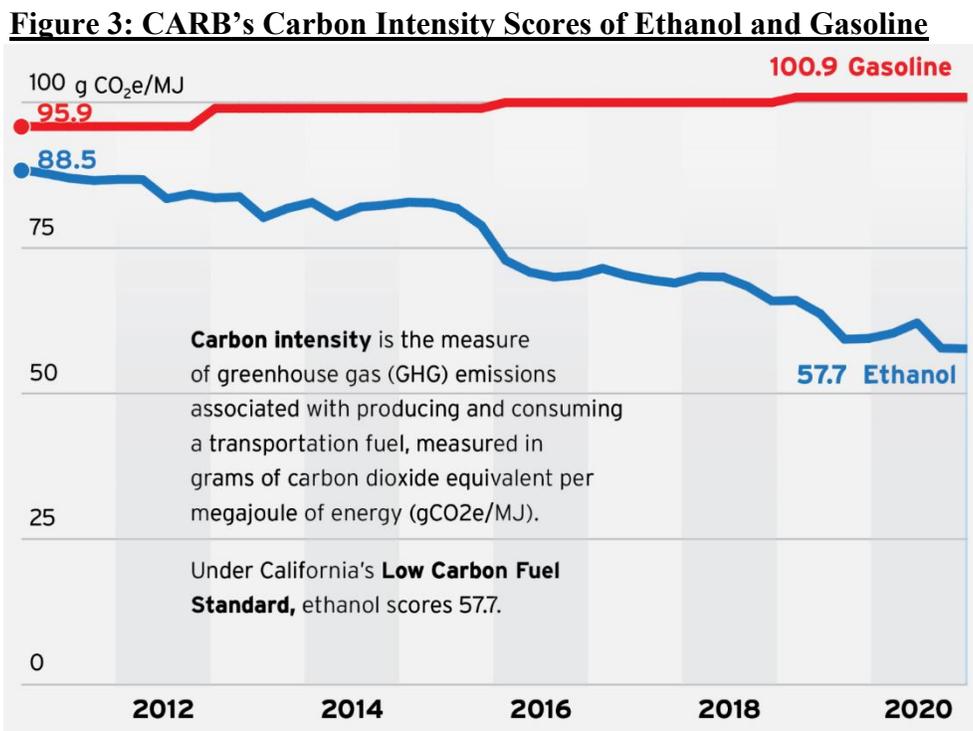
⁹ “EIA projects global conventional vehicle fleet will peak in 2038,” Energy Information Administration. <https://www.eia.gov/todayinenergy/detail.php?id=50096&src=email>

¹⁰ “Closing the Transportation Emissions Gap with Clean Fuels,” Rhodium Group. <https://rhg.com/research/closing-the-transportation-emissions-gap-with-clean-fuels/>

One of the most compelling demonstrations of the essential role biofuels play in meeting climate goals is California’s Low Carbon Fuel Standard (LCFS). The goal of the LCFS is to, “encourage the use of cleaner low-carbon transportation fuels in California, encourage the production of those fuels, and therefore, reduce GHG emissions and decrease petroleum dependence in the transportation sector¹¹.”

According to data by the California Air Resources Board (CARB), biofuels are responsible for nearly 80% of all carbon reductions credited under the LCFS, with the recorded carbon intensity (CI) of ethanol declining 33% since 2011¹².

CARB tracks the CI of a variety of fuel options and has updated the CI scores annually since the state’s LCFS was adopted in January 2011. Figure 3 shows the steady decline in the CI score for ethanol and the uptick in CI score for gasoline over the same period.



Source: California Air Resources Board

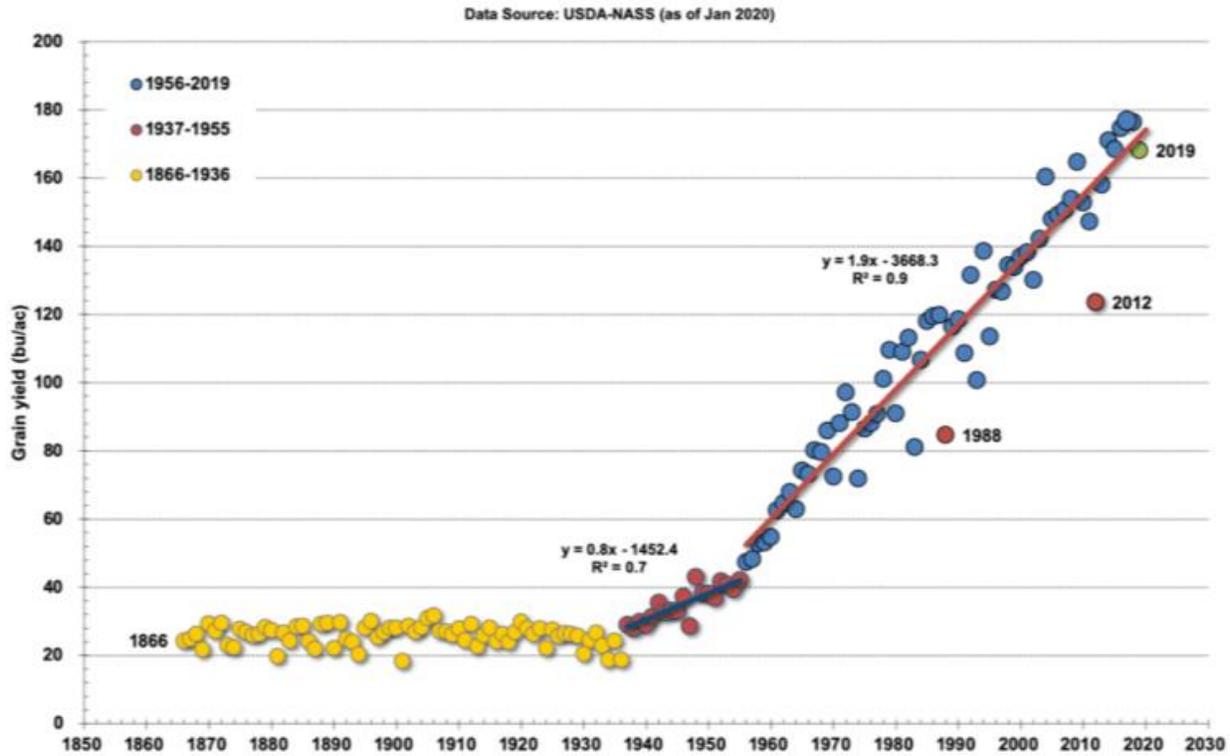
Improvements in ethanol’s CI scores can be attributed to the biofuel industry’s increased manufacturing efficiency through less energy intensive energy usage, more effective biotechnology, lower water usage and increased efficiencies in the amount of land used for biofuel feedstock production. America’s corn growers are producing stronger yields with less

¹¹ California Air Resources Board. Accessed 6/15/2021, <https://ww2.arb.ca.gov/our-work/programs/low-carbon-fuel-standard/about>

¹² “Data Dashboard: Low Carbon Fuel Standard,” California Air Resources Board. May 2020, <https://ww3.arb.ca.gov/fuels/lcfs/dashboard/dashboard.htm>.

acreage, and biorefineries can manufacture more gallons of ethanol per bushel of corn. Total cropland acreage has fallen from 470.8 million acres in 1978 to 391.9 million acres in 2012¹³. Moreover, yields of corn have increased dramatically over the last 50 years, increasing from 72.4 bushels per acre in 1970 to 172 bushels per acre in 2020. Over the last 10 years, corn yield has increased by 20%¹⁴, while land planted for corn has remained steady. Figure 4 demonstrates the improvements in corn yields over the last 150 years.

Figure 4: Corn Crop Yields 1866-2019



Source: USDA-NASS and [Historical Corn Grain Yields in the U.S. \(Purdue University\)](#)

USDA: A Department Well Positioned to Help Decarbonize Transportation

USDA’s 2015 Biofuel Infrastructure Partnership (BIP) and the 2020 Higher Blends Infrastructure Incentive Program (HBIIP) are prime examples how the Department can support the productivity of our farmers and boost rural economies while decreasing GHG emissions. With the \$1 billion of funding included in the Build Back Better (BBB) Act to expand the availability of biofuels, we stand ready to work with the Department to put this funding to work to further decarbonize the cars on the road today.

¹³ “Cropland, 1945-2012, by State: The sum of cropland used for crops, cropland idled, and cropland used for pasture,” U.S. Department of Agriculture’s Economic Research Service. August 2017, <https://www.ers.usda.gov/data-products/major-land-uses/>

¹⁴ “Crop Production Historical Track Records,” National Agricultural Statistics Service. April 2021, https://www.nass.usda.gov/Publications/Todays_Reports/reports/croptr21.pdf

Currently, more than 95% of cars on the road are compatible with E15¹⁵, and consumers have driven more than 25 billion miles on the fuel. There is a significant market available today for higher blends of biofuels like E15 if consumers can access these products. The biofuels industry is ready to provide the fuel necessary to meet those demands; however, long-term infrastructure incentives for our retailers, like the competitive grant structure under BIP and HBIIP, must be available.

Demand for these grants exceeded funds available, demonstrating that retailers and the working families they serve want a lower cost fuel and more choices at the pump. This gives retailers a competitive advantage in the market while providing our transportation sector a higher quality fuel that decreases GHG emissions.

Build Back Better with Biofuels

The BBB Act currently before Congress includes important infrastructure funding to encourage the adoption and availability of higher-level biofuel blends through the Biofuel Infrastructure and Agriculture Product Market Expansion provision included in the bill. This important funding is a key component of a suite of authorities included in the BBB that provide concrete incentives to lower the carbon intensity of transportation fuel.

The Biofuel Infrastructure and Agriculture Product Market Expansion program provides \$960 million in funding through September 30, 2031, to install, retrofit, or otherwise upgrade fuel dispensers or pumps and related equipment, storage tank system components, and other infrastructure required at a location to dispense ethanol blends above 10% and biodiesel blends above 5%. Funds may also be used to build and retrofit distribution systems for ethanol blends, traditional and pipeline biodiesel terminal operations (including rail lines), and home heating oil distribution centers or equivalent entities to blend biodiesel and to carry ethanol and biodiesel. This provision authorizes a maximum federal share of a project would be 75%, up from 50% under the most recent USDA program from 2020. And importantly, the provision allows USDA to provide sizeable grant packages to market participants that sell high volumes of fuel, allowing the program to secure more carbon reductions at a lower cost.

Biofuel Infrastructure and Agriculture Product Market Expansion Program Recommendations

Having worked very closely alongside retailers for both BIP and HBIIP to secure grant funding, and having administered the industry's more than \$90 million private matching grant program, Prime the Pump, we have three different recommended approaches we encourage the House Agriculture Committee and USDA to consider for the next round of infrastructure incentives for higher blends should the BBB be passed into law:

- 1. Use an equipment-focused approach and allow all fuel dispensing and underground storage equipment upgrades to be eligible under a future grant program.**

¹⁵ Air Improvement Resources, Inc. "Analysis of Ethanol Compatible Fleet for Calendar Year 2021," November 9, 2020. <https://growthenergy.org/wp-content/uploads/2020/11/Analysis-of-Ethanol-Compatible-Fleet-for-Calendar-Year-2021-Final.pdf>

Historically, BIP and HBIIP have focused on dispenser replacement and underground storage tanks. However, there are more than 100 pieces of equipment needed to legally dispense fuels, so the cost per site can vary widely based on retailer needs. Based on historical sales data provided by retailers, assuming a \$960 million grant program, this program would generate about 8 billion gallons of E15 sales. The program should also require that E15 is sold on a shared hose with other grades of fuel to make consumer access as easy as possible.

2. Provide a sales incentive for retailers offering E15.

Industry research by the National Association of Convenience Stores¹⁶ found that consumers will drive five miles out of their way to save \$0.05 per gallon. By providing a \$0.05 per gallon of E15 incentive, a \$960 million grant program has the potential to yield nearly 18 billion gallons of E15 sales. Offering retailers a performance incentive, along with small bonus payments for installation targets, has been the optimal method for Prime the Pump.

3. Increase funding for large volume retailers and streamline the paperwork required by a retailer.

We are pleased to see that the language included in the BBB Act that allows for additional funds for large-volume retailers. Some larger retail chains will want to upgrade hundreds of stores to provide universal access to E15 and higher blends across their entire market chain, increasing the availability of low-carbon liquid fuels. For small retailers, reducing the amount of paperwork will help them access infrastructure grants. Lastly, we recommend that any future grant programs allow companies which aggregate fuel for several small retailers be eligible to participate in the program as well.

In the end, flexibility is the most important element of the next infrastructure program. Focusing the grants solely on dispensers and tanks, disincentivizing large volume retail locations, or issuing too many burdensome administrative hurdles limits overall access to the program. We encourage the subcommittee and USDA to leverage learnings from previous public and private grant programs. Growth Energy will lend our expertise to help in any way we can to ensure a future program is another success.

Build Back Better Provides Voluntary Incentives to Lower Carbon Farming

America's biorefineries have deployed a number of low-carbon practices to reduce the carbon intensity of our fuel, including wind energy, solar energy, carbon capture, combined heat and power, and more. In fact, almost all capital expenditures at ethanol biorefineries today are aimed at reducing their carbon footprint to take advantage of low-carbon fuel markets like those in the western United States and abroad.

Even with significant innovation at our member's plants, farming practices still account for roughly 50-65% of the lifecycle carbon emissions of these fuels. Farmers have already responded to the call for improved sustainability, using fewer inputs and increasing efficiencies in their

¹⁶ National Association of Convenience Stores. "2015 Retail Fuels Report," Page 12. <https://www.convenience.org/>

farming practices. These improved practices have already helped reduce the CI of farming, and therefore the overall carbon intensity of biofuels.

The BBB Act provides further voluntary incentives like cover crops, nutrient management, buffers, and incentives for locally led conservation efforts that will help reduce the CI of agriculture even further, helping biofuel producers provide an even lower carbon liquid fuel at a time when demand for low-carbon fuels is rising. As biofuel producers benefit from low-carbon farming practices, farmers also benefit in the form of premium prices for their commodities.

States like California, Oregon, and Washington are all placing an emphasis on incorporating more carbon-friendly fuel into their transportation supply through Low Carbon Fuel Standard and Clean Fuel Standard (CFS) programs in the states. The LCFS places a premium on fuel sources which have lower CI scores to act as an incentive to fuel producers. Biofuels continue to provide the foundation towards reaching goals set in both California's LCFS and Oregon's CFS, but the American farm economy could further benefit with improved modeling.

For example, the LCFS does not currently account for low-carbon farming practices when rating the CI for various biofuels. Using less fertilizer through precision agriculture technologies lowers nitrogen use and would improve ethanol's CI score. Further improvements also include adopting farming techniques like no-till and planting cover crops keep nutrients in soil. The CI score can also be lowered significantly through the use of updated modeling that accurately reflects the carbon sequestered with the planting of corn, a natural carbon sink. Accounting for the CI benefits brought by these techniques and more would provide a greater premium for ethanol producers and the farmers they support.

How the Build Back Better Act Will Encourage More Low-Carbon Biofuels

Besides the important funding for infrastructure and voluntary farming incentives, the BBB Act contains several important incentives that will help ethanol producers further reduce the CI of their fuels and explore new markets outside of light-duty vehicles. We appreciate and support the inclusion of the following items:

1. **The extension and increase of the 45Q tax incentive for the capture, utilization, and storage of carbon dioxide.**

Roughly half of our member plants either capture carbon for food and beverage use, expect to transport carbon dioxide by a carbon pipeline for permanent geologic storage, or expect to store carbon nearby for geologic storage. With 99.9% pure, clean fermentation carbon from an ethanol plant being relatively easy to capture, our facilities provide a good opportunity to deploy carbon capture technology and appreciably lower emissions. For the average U.S. ethanol plant, carbon capture can cut the CI in half.

2. **The establishment of the Clean Fuel Production Credit (CFPC, or 45CC), which provides an incentive to produce low-carbon biofuels.**

This credit provides a producer-based tax incentive to encourage the adoption and deployment of low-carbon fuel technologies. The size of the incentive is based on the

percentage of carbon reduction relative to a fixed baseline, re-orienting our biofuels tax policy toward carbon reductions instead of producing specific types of fuel.

3. **A credit for the blending and production of sustainable aviation fuel (SAF).**
4. **The BBB Act establishes a standalone credit for SAF from 2022-26 and folds the SAF credit into the CFPC for 2027-31.**

If properly implemented, these SAF incentives could provide a new marketplace for ethanol.

We would also like to provide the Committee with a list of suggested changes that would make the three provisions above work better and further reduce carbon in the transportation sector:

1. **A facility cannot claim CFPC (including SAF) and 45Q at the same time in last 5 years, while they can claim the initial standalone SAF credit and 45Q for first 5 years.**

Because SAF will need an additional incentive to ensure parity with petroleum-based jet fuel, we believe that allowing an ethanol producer to claim both credits will have the maximum carbon reduction benefit and will continue to drive innovation in our industry.

2. **The CFPC does not start until 2027, leaving ethanol producers without a decarbonization incentive between 2022 and 2027.**

We recommend allowing low-carbon fuel facilities the option to elect to start the CFPC in 2022 to further accelerate emissions reductions.

3. **The positive 45Q changes only impact projects that commence construction after January 1, 2022.**

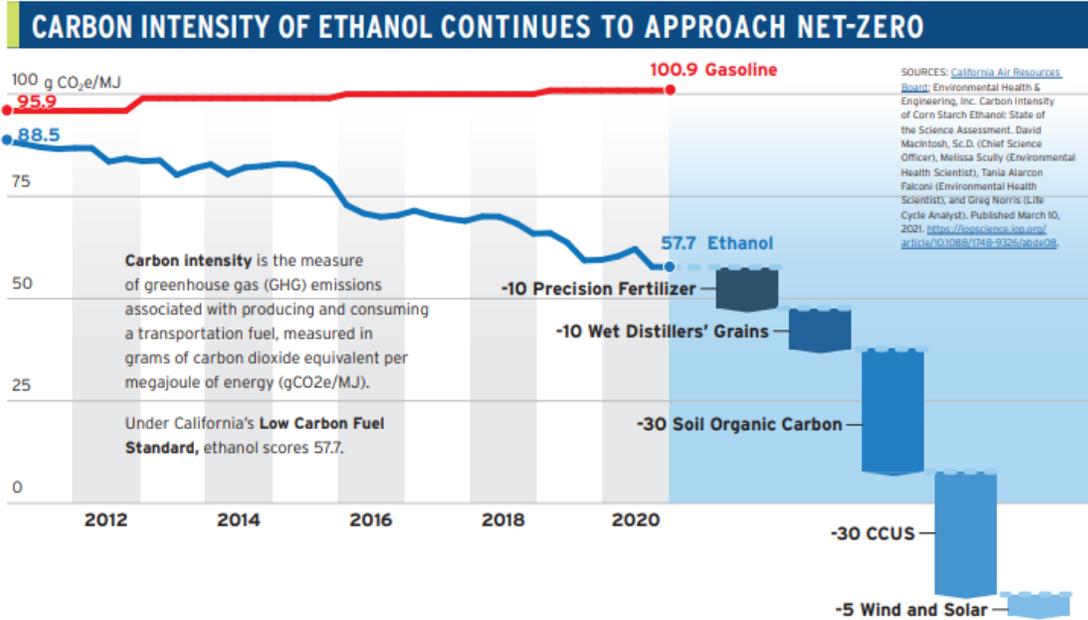
We would encourage these changes to apply to all projects, allowing forward-thinking facilities that have already begun efforts to innovate to capture this benefit.

4. **Despite improvements, the SAF modeling language is still confusing and is now bifurcated after 2027 between non-aviation fuels, which use the Greenhouse Gases, Regulated Emissions, and Energy Use in Technologies (GREET) Model by the Argonne National Laboratory, and SAF, which has limited specification for a life cycle analysis model.**

We recommend adopting the GREET model for all biofuels – including SAF – from the date of enactment moving forward. The Department of Energy’s Argonne National Laboratory is a world leader in lifecycle analysis of biofuels, and it only makes sense to adopt their latest analysis, which is updated annually. It is important that new tax incentives are guided by technology-neutral life-cycle assessments by scientists who understand the U.S. biofuel sector. U.S. tax credits must reflect U.S.-based modeling.

Our industry is committed to growing more clean energy jobs and the incentives in this legislation would provide that opportunity. We would encourage Congressional leaders to provide more detailed information on how our common goal of growth in clean-energy jobs can be met with the prevailing wage and apprenticeship requirements in the legislation.

Figure 5: Achieving Net-Zero Ethanol



Source: California Air Resources Board and Environmental Health and Engineering

Biorefineries are researching and implementing technological improvements to further reduce the carbon intensity of ethanol. Using the California Air Resources Board data on the carbon intensity of ethanol as shown in Figure 5 above, biorefineries can reach net-zero ethanol and even achieve negative carbon emissions using today's technology. Some examples include installing more renewable sources of energy including wind and solar and installing carbon capture and sequestration equipment.

Sustainable farming practices can also have an impact on reducing a biorefinery's carbon intensity score. Precision fertilizer and accurately accounting for the carbon sequestered with the planting of corn are other examples of methods to further reduce the carbon intensity.

A Strong and Growing RFS Will Continue to Cut Carbon Emissions from Transportation

The Renewable Fuel Standard (RFS) is one of the nation's most successful renewable energy policies in reducing GHGs and providing a steady market for U.S. grain. This policy is the bedrock for the modern biofuels industry, providing a stable policy platform for ethanol producers to grow, expanding our nation's supply of renewable, low-carbon liquid fuels. Given the importance of this policy, we are greatly concerned about media reports that the Biden Administration is considering cutting the RFS, a position we believe directly contradicts President Biden's strong commitment to biofuels as a way to help rural economies and lower carbon emissions and only leaves us further reliant on fossil fuels.

Biofuels have long been an economic driver for our rural economies. In addition to the key jobs statistics cited at the outset of this testimony, it is important to note that biorefineries employ a skilled workforce in small, rural communities and are often the epicenter of the local economy. Accordingly, we have a strong interest in the future success of American agriculture.

Rural communities are eager to lead this charge, and the benefits to our economy are significant, especially as the cost of oil surges. Ethanol saves the average household \$142 per year – an average of 22 cents per gallon – and even more with higher blends of ethanol. With this homegrown energy comes homegrown jobs, from farmers to the union professionals. As Daniel Duncan, Executive Secretary-Treasurer of the Maritime Trades Department (MTD), AFL-CIO, said just last week, “[u]nion members are not just on the production side of the American biofuel industry, but also build, operate, and maintain the infrastructure that keeps homegrown fuels like ethanol and biodiesel flowing. This sector is an important source of strength for union jobs, especially when it comes to growth in agricultural regions of the nation¹⁷.”

Figure 6: Contribution of Ethanol Production to Individual State Economies, 2019

	Production (Mil Gal)	Production Share	GDP ((Mil \$))	Employment Jobs	Income (Mil \$)
IA	4,126	26.0%	\$9,096	82,294	\$4,910
NE	2,176	13.7%	\$4,797	43,401	\$2,589
IL	1,833	11.5%	\$4,041	36,560	\$2,181
MN	1,315	8.3%	\$2,900	26,232	\$1,565
IN	1,083	6.8%	\$2,388	21,601	\$1,289
SD	1,002	6.3%	\$2,209	19,985	\$1,192
WI	648	4.1%	\$1,429	12,924	\$771
ND	487	3.1%	\$1,074	9,713	\$579
KS	518	3.3%	\$1,142	10,332	\$616
OH	408	2.6%	\$900	8,138	\$485
TX	335	2.1%	\$739	6,682	\$399
MI	283	1.8%	\$624	5,644	\$337
TN	230	1.4%	\$507	4,587	\$274
MO	165	1.0%	\$364	3,291	\$196
NY	165	1.0%	\$364	3,291	\$196
CA	158	1.0%	\$348	3,151	\$188
CO	125	0.8%	\$276	2,493	\$149
GA	120	0.8%	\$265	2,393	\$143
PA	110	0.7%	\$243	2,194	\$131

*Excludes construction, exports and R&D

Source: ABF Economics

In a February 2020 study, ABF Economics broke down the economic impact ethanol production brought to each state in 2019 which is shown in Figure 6.¹⁸ The RFS is the policy that supports

¹⁷ Seafarers International Union. “Biofuel Industry Boosts Union Jobs.” November 10, 2021.

<https://www.seafarers.org/biofuel-industry-boosts-union-jobs/>

¹⁸ “Contribution of the Ethanol Industry to the Economy of the United States in 2019,” Urbanchuk, John M., Managing Partner. February 4, 2020. <https://files.constantcontact.com/a8800d13601/9e769376-3aef-4699-b31f-3c6415b8fa63.pdf>

all this good work in building out clean-energy jobs in our rural areas and supporting the U.S. farm economy. We ask that the members of this subcommittee work with the Environmental Protection Agency (EPA) in ensuring the agency releases growth-oriented Renewable Volume Obligations (RVOs), the annual requirement for renewable fuel blending. In a first test of upholding his campaign promises, it has been reported that President Biden's EPA will reach back two years and retroactively lower RVOs for 2020 and also propose flat RVOs for 2021 with no market-forcing considerations.

We are especially concerned about EPA reopening the 2020 RVOs retroactively and acceding to requests by oil states and refineries to lower 2020 RVOs for reasons unrelated to RFS compliance. The Biden Administration simply cannot meet its climate goals while retroactively rolling back low-carbon biofuel blending requirements even further to help oil refiners, in particular, when the hardship they claim resulting from the COVID crisis has been widely shared across a number of economic sectors. In addition, this would be an unprecedented move that not only exceeds EPA's legal authority under the RFS, but also would fail to recognize the RFS' built-in mechanism, via the annual RVO percentage standard, that already accounts for any changes in fuel demand that differ from original projections. When COVID decreased fuel demand in 2020, the RFS percentage standard decreased the requirement for conventional biofuels by at least 1.6 billion gallons, a more than 10% decrease. There is no need for further decreases.

We are also awaiting the RVOs for 2022, which will establish a foundation for RVOs over the next few years as EPA begins the Set rulemaking process to establish renewable fuel volumes for 2023 and beyond. It is critically important that EPA propose 15 billion gallons of implied conventional biofuels for 2022 so that the ethanol industry has a solid foothold in producing adequate supply in for years to come.

We urge you to continue to coordinate with EPA on proposing strong RVOs for 2021 and 2022 and release those values as soon as possible. We strongly oppose further delay and uncertainty with the RVOs – similar to what we saw in 2014 and 2015 – and in particular, the loss of a binding, strong requirement for 2022. Continued delay creates uncertainty in the marketplace and has profound implications on the RFS set and the future of the program. The 2022 RVO, for example, will set the ratio of total vs. advanced renewable fuel volumes for 2023 RVOs and beyond. If EPA sets the 2022 RVO below 15 billion gallons of conventional biofuels – or does not set it at all – this could negatively impact renewable fuel blending for years to come.

Small Refinery Exemptions

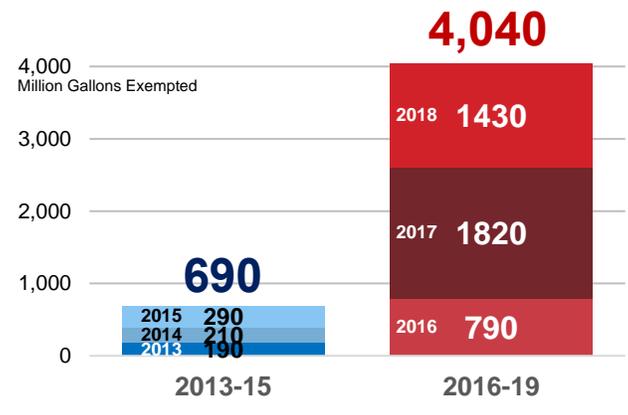
Despite the demonstrable economic, environmental, and energy security success of the RFS, the Trump Administration repeatedly granted oil refiners an unprecedented number of small refinery exemptions (SREs), allowing them to avoid their obligations to blend biofuels into our national fuel supply. Many on this Subcommittee advocated on behalf of biofuel producers in your districts to the Trump Administration against this radical escalation of exemptions, and we thank you for those efforts.

The SRE authority was included under the Clean Air Act to provide small refineries (those with a daily input capacity of less than 75,000 barrels of crude oil) with a temporary avenue to avoid

blending obligations, provided the refinery demonstrate that compliance results in severe economic hardship. But in the previous Administration, the number of SREs increased six-fold with no transparency into the process or explanation as to which refineries received an exemption and why.

As shown in Figure 7, EPA granted 88 SREs over four years, which cost the industry 4.3 billion gallons of lost biofuel demand. Many of the SREs went to some of the largest, most profitable oil companies in the world.

Figure 7: SREs by Administration



Source: EPA's SRE Dashboard

In January 2020, the 10th Circuit Court of Appeals issued a unanimous decision that invalidated SREs granted by EPA to three refineries for the 2016 and 2017 compliance years on three grounds. First, the court held that EPA could grant SRE “extensions” only to those refineries who had received SREs in all prior years. Second, the court held that it was improper for EPA to find disproportionate economic hardship on bases other than alleged hardship caused solely by compliance with the RFS. Third, the court held that EPA failed to explain why it deviated from its previous position that refineries recoup their costs of compliance through downstream pricing. The refineries petitioned the U.S. Supreme Court for review of the decision solely on the first, “extension” holding of the 10th Circuit, and the case was argued before the Court on April 27, 2021. On June 25, 2021, the Supreme Court overturned the “extension” portion of the 10th Circuit opinion.

Under the Biden Administration, EPA has stated that it agrees with the remainder of the 10th Circuit Court’s opinion, in particular, that SREs must be based solely on hardship caused by compliance with the RFS.

We strongly urge the Biden Administration to uphold the integrity of the RFS program by encouraging more renewable, low-carbon fuel blending, narrowing the use of SREs in line with the decision in the 10th Circuit Court of Appeals, and set conventional blending requirements of at least 15 billion gallons.

RIN Prices

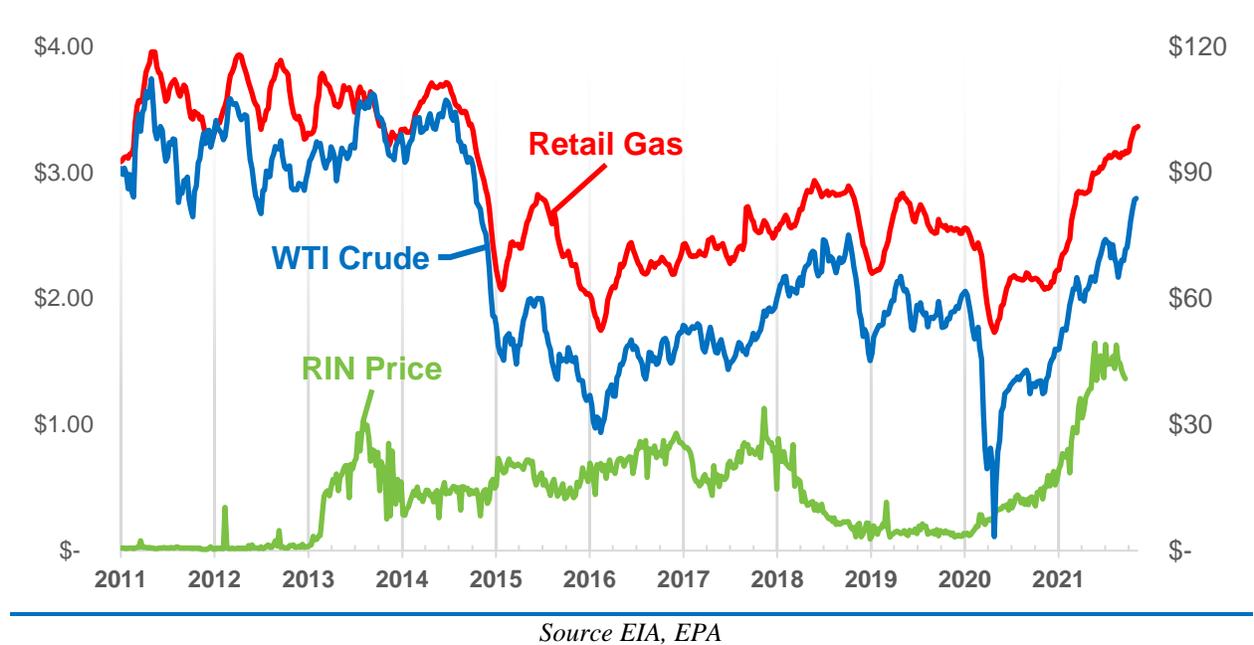
Renewable Identification Numbers (RINs) were included in the RFS to add flexibility to the compliance mechanism of the RFS. Obligated parties have the option to either blend biofuels and generate RINs or purchase RINs to meet their obligations under the RFS.

We are aware that some refiners that have chosen to purchase RINS in lieu of blending renewable fuels are seeking a waiver for their blending obligations, citing economic hardship as a result of high RIN prices. Some refineries claim this causes higher gasoline prices. To be clear, there is no relationship between RIN prices and refinery profits, as EPA has repeatedly stated:

“We do not believe that the price paid for RINs is a valid indicator of the economic impact of the RFS program on these entities [refiners], since a narrow focus on RIN price ignores the ability for these parties to recover the cost of RINs from the sale of their petroleum products.”¹⁹

First, as EPA wrote in November 2018, refiners recoup the cost of RIN purchases when they sell petroleum products on the market. Any RIN cost is incorporated into the sell price, so refineries account for this during their transactions.

Figure 8: Price of Retail Gas, WTI Crude, and D6 RINs



Second, refineries have had almost 14 years to comply with the RFS, a law which was constructed to encourage an increasing scale of biofuel blending. Supply and demand ultimately dictate price, so blending more biofuel creates more RINs, which in turn push RIN prices down. The easiest way to lower RIN prices is to blend more biofuels.

¹⁹ “Renewable Fuel Standard Program- Standards for 2019 and Biomass-Based Diesel Volume for 2020: Response to Comments.” Environmental Protection Agency, November 2018. <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockkey=P100VU6V.pdf>

With respect to gas prices, as shown in Figure 8, gas prices are directly correlated with the price of crude oil, not RINs. According to the EIA, crude oil is the most impactful contributor, accounting for 56% of the price of gasoline²⁰. The RIN market is independent from gas prices and instead reflects the blending decisions by obligated parties.

The RFS works best when it is implemented in accordance with congressional intent. We encourage members of this Subcommittee and the administrative bodies it oversees to maintain the integrity of the RFS.

Breaking Down Barriers to Biofuels: Marketplace Hurdles for Higher Blends

As stated earlier, a nationwide transition from E10 to E15 would lower GHGs by 17.62 million tons annually, the equivalent of removing 3.85 million vehicles from the road. Further, an ABF Economics study from June 2021²¹ shows that moving to a nationwide E15 standard would offer even further economic benefits:

- Add \$17.8 billion to the U.S. Gross Domestic Product
 - \$27.9 billion would come from boosted corn production
- Create an additional 182,700 jobs
 - 76,000 of these would be in agriculture
- Generate \$10.5 billion in new household income
- Save consumers \$12.2 billion fuel costs annually
 - E15 is typically \$0.05 to \$0.10 cheaper than E10 due to the higher ethanol content

Agriculture jobs that would be supported by a nationwide E15 standard include farm advisors, producers, distributors of crop protection and fertilizer products, farm equipment, and other service providers. These jobs are typically located in rural parts of the United States and would greatly benefit from more biofuel production due to E15 expansion efforts.

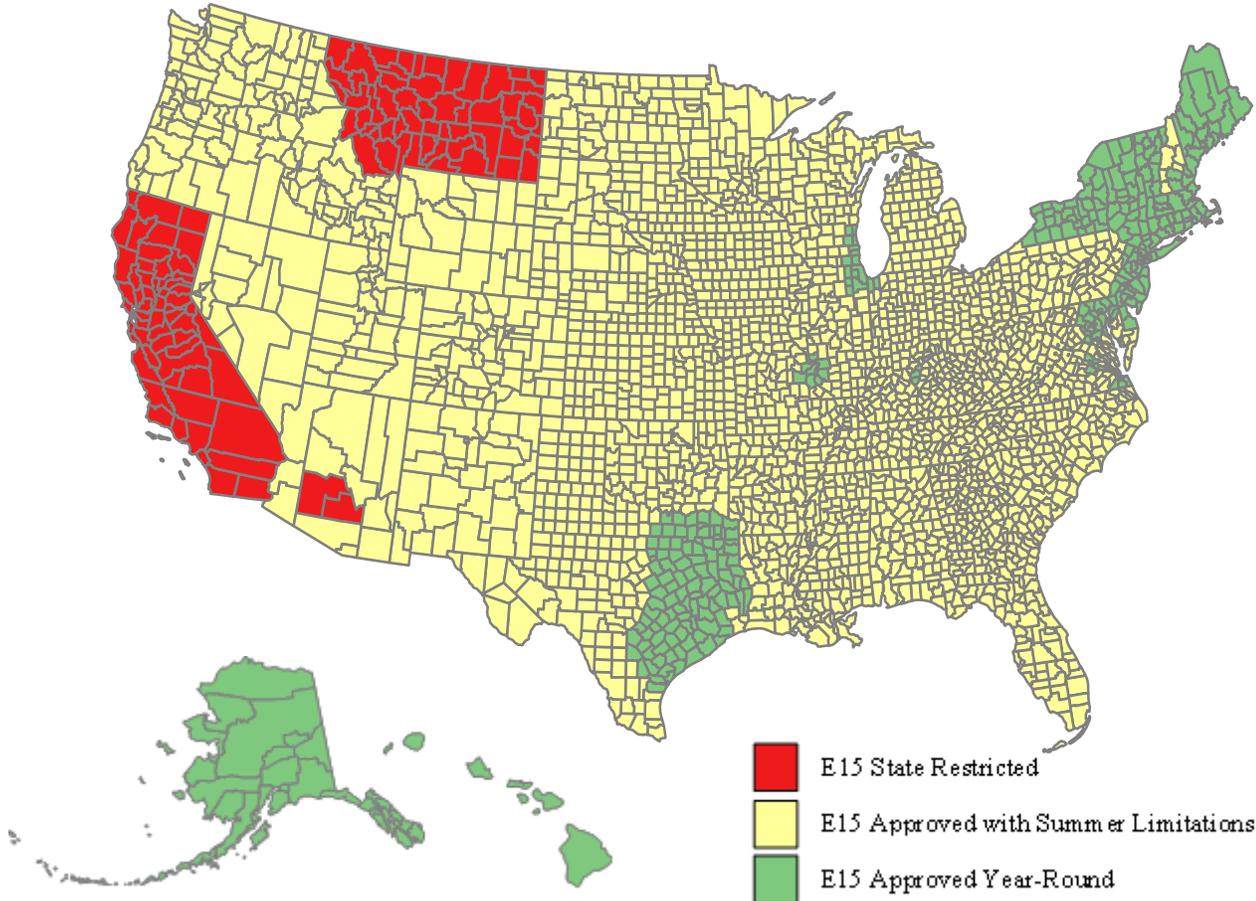
However, the pathway to these higher-level ethanol blended fuels has regulatory hurdles and outdated policy assumptions. To fully realize these potential gains in economic growth and emissions reductions, we recommend Congress pass legislation, the Year-Round Fuel Choice Act (H.R. 4410), or EPA take relevant regulatory action to restore summer sales for E15 and complete a pending rulemaking that would clear unnecessary hurdles related to the pump labeling of E15 and clarify some potential refueling infrastructure hurdles.

²⁰ U.S. Energy Information Administration. “Gasoline explained – Factors affecting gasoline prices,” <https://www.eia.gov/energyexplained/gasoline/factors-affecting-gasoline-prices.php>

²¹ ABF Economics. “Economic Impact of Nationwide E15 Use,” Urbanchuk, John M. June 10, 2021. <https://growthenergy.org/wp-content/uploads/2021/06/Nationwide-E15-Use-Economic-Impact-Final.pdf>

Summer E15 Sales Restriction

The Clean Air Act includes seasonal fuel vapor pressure provisions intended to reduce evaporative emissions in the summer months (June 1 to September 15). In the 1990 amendments to the Clean Air Act, Congress limited allowable fuel vapor pressure during the summer months



to 9-pounds per square inch (psi) Reid Vapor Pressure (RVP) in certain areas of the country. Congress also specified, however, that fuel blends containing 10% ethanol would receive a 1.0 psi RVP waiver from the seasonal RVP limit to encourage use of ethanol-blended fuels, which provide significant reductions in tailpipe emissions. This RVP waiver made the sale of E10 and lower ethanol blended fuels possible year-round throughout the country. However, the waiver predates the introduction of higher blends of ethanol like E15, which have a lower RVP than E10.

In May 2019, EPA clarified that E15 could be sold in the summer months, resolving ambiguity in the 1990 statute that arose because there was no 15% ethanol fuel at the time. Following this EPA rulemaking, the oil industry challenged this rulemaking in court. In a July 2021 D.C. Circuit Court of Appeals ruling, the court reversed EPA's interpretation, denying the majority of American drivers access to a cleaner, more affordable biofuel blend during the summer months starting on June 1, 2022. This move threatens the expansion of clean, homegrown renewable energy.

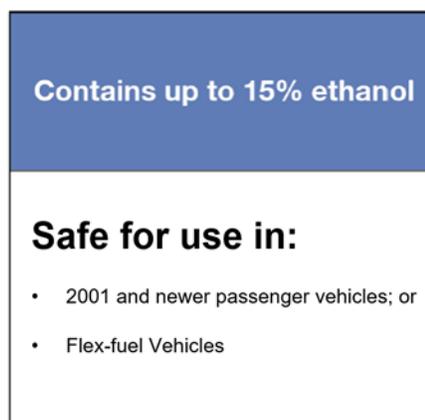
The DC Circuit ruling affects nearly 85% of retailers currently selling E15 across 30 states and creates needless uncertainty across the marketplace. We urge the members of this subcommittee to move swiftly to ensure uninterrupted access to lower-cost E15 for the summer of 2022 and beyond, particularly as consumers seek relief from rising gasoline prices. If not addressed, the court’s decision would require E15 retailers to change out fuels twice a year (on June 1 and September 15), a costly and burdensome process that actually increases GHG emissions, counter to Congress’ intent of providing cleaner fuel choices at the pump.

This decision impacts all non-reformulated gasoline markets throughout 33 states – conventional markets outside of urban areas that are not required to participate in our nation’s reformulated gasoline program. In these areas, summer sales of E15 in retail sites could fall by 85%, and the new restrictions on E15 sales would also cut overall ethanol consumption and increase greenhouse gas emissions nationwide as more petroleum products would be used. This decision has no impact on long-standing rules that permit sales of E15 in RFG and other markets, which are found in 17 states. However, the largest concentration of RFG markets is in California and the Northeast, where the availability of E15 is already limited.

Labeling and Equipment Compatibility



Current EPA Label



Growth Energy Proposed Label

In order to remove unnecessary barriers that prevent consumers from utilizing E15, Growth Energy supports EPA finalizing their proposed rule to address E15 Fuel Dispenser Labeling and Compatibility with Underground Storage Tanks that would erase market hurdles for E15 adoption. We support modifying the E15 label requirement to increase clarity and ensure it clearly advises consumers of appropriate uses of the fuel, while not unnecessarily dissuading the vast majority of consumers whose vehicles can refuel with E15.²² Either modification of EPA’s E15 label or removal of the E15 label requirement entirely would expressly preempt and conflict-preempt any state or local government E15 label requirement.

²² Growth Energy Comment on EPA’s NPRM “E15 Fuel Dispenser Labeling and Compatibility with Underground Storage Tanks” (Docket ID No. EPA-HQ-OAR-2020-0448): <https://www.regulations.gov/comment/EPA-HQ-OAR-2020-0448-0051>

In addition, Growth Energy strongly supports EPA’s proposal to modify the underground storage tank (UST) compatibility requirements applicable to E15 and other fuel blends. There is ample evidence that a wide variety of fuel storage equipment, including USTs and related piping, may store E15 if it is suitable for use with E10. Removing unnecessary impediments to retailers’ use of such existing equipment is imperative to providing E15 equal footing in the fuels marketplace.

Fixing these outdated and confusing barriers are critical to ensuring we can capture the emissions reduction, farm income, and fuel price relief benefits that come with E15 expansion. As our nation faces the challenges of climate change, it is imperative that EPA act quickly to support greater access to cleaner renewable fuel blends for all Americans. E15 and higher ethanol blended fuels will deliver immediate benefits for our environment and are a critical piece of our nation’s efforts to reduce carbon emissions. Clearing hurdles to the sale of E15 and growing markets of biofuels would also provide an economic lifeline for rural communities as they continue to rebuild in the wake of COVID.

The Future of Biofuels: Decarbonizing Land, Air, and Sea Transportation

As carbon reduction becomes more important to the transportation sector, ethanol is poised to play a greater role in decarbonizing all forms of transportation – whether on land, in the air, or in the seas – and we are energized by the potential opportunity to expand our role in reducing our nation’s carbon emissions. In addition to our current light-duty vehicle market, we see new and emerging low carbon fuel markets in hard-to-electrify sectors such as aviation, marine, and heavy-duty vehicle markets. Earlier in this testimony, I discussed the potential incentive structure for sustainable aviation fuel. U.S. based airlines used more than 18 billion gallons of jet fuel in 2019.²³ Accessing the aviation market through ethanol to SAF, along with new technologies that allow ethanol to be used in marine and heavy-duty applications provide America’s ethanol industry the opportunity to be utilized in more than just light duty cars and trucks.

With the appropriate investment in critical research and development and the right policy environment, our industry can continue to decarbonize our transportation sector – from passenger vehicles to our aircraft fleet. However, in order to achieve the Biden Administration’s goal of 3 billion gallons of SAF production by 2030 and net-zero emission in aviation by 2050, we need game-changing solutions and for that we must have a healthy and thriving corn ethanol industry and rural economy. That starts with a strong RFS, a nationwide E15 standard, and accurate carbon modeling.

Ethanol Production Co-Products

Ethanol biorefineries produce several valuable co-products, which are integral to related supply chains. The industry produced an estimated 43.6 million short tons of distiller’s grains and nearly 3.9 billion pounds of distiller’s corn oil (DCO) in 2019 with an aggregate market value for these

²³ “Airline Fuel Cost and Consumption (U.S. Carriers - Scheduled),” Bureau of Transportation Statistics. <https://www.transtats.bts.gov/fuel.asp>.

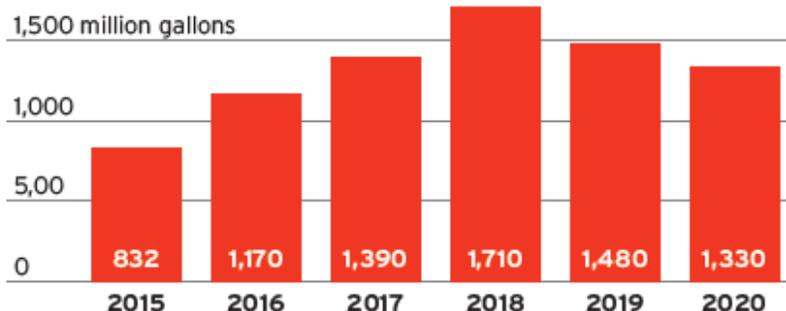
products at \$7.5 billion²⁴. Distiller’s grains are a high-protein feed purchased by local livestock farmers and provide a steady stream of animal feed for their farms. Roughly half of all DCO is used in animal feed, while the other half is used by the biomass-based diesel industry in their production process.

Additionally, about 50 biorefineries have the ability to capture a pure stream of carbon dioxide, which has a wide variety of uses including water treatment at municipal water facilities, food and beverage preservation. During the peak of the COVID pandemic, the ethanol industry also stepped up during a national hand-sanitizer shortage, converting ethanol production to produce high-quality, pharmaceutical-grade hand sanitizer for local hospitals and consumers. Captured carbon dioxide is also being used as dry ice for the safe transportation of COVID vaccinations.

Ensuring Access to International Markets for U.S. Ethanol

As nations around the globe are looking to achieve their carbon reduction goals, international markets are turning to biofuels as a solution. However, tariffs, technical trade barriers, and follow-through on trade agreements pose challenges to U.S. exporters looking to fulfill growing biofuel demand abroad.

Total U.S. Ethanol Exports by Year



Source: USDA

The USDA designates an official trade representative who leads efforts on promoting U.S. agricultural products, including biofuels, abroad. USDA Secretary Vilsack has not yet selected a nominee to fill that position, but we encourage him to do so as soon as possible.

In 2020, U.S. ethanol exports totaled 1.33 billion gallons, which fell 9.8% compared to 2019²⁵. The decline is almost entirely due to COVID’s downward impact on gasoline demand, as shown in the graph below. Through Q3 2021, the U.S. exported 872.1 million gallons of ethanol. Unfortunately, this is on pace to fall below last year’s export numbers by nearly 170 million gallons.

²⁴ “Contribution of the Ethanol Industry to the Economy of the United States in 2019,” Urbanchuk, John M., Managing Partner. February 4, 2020. <https://files.constantcontact.com/a8800d13601/9e769376-3aef-4699-b31f-3c6415b8fa63.pdf>

²⁵ U.S. Department of Agriculture, Foreign Agricultural Service. “Biofuels,” <https://www.fas.usda.gov/commodities/biofuels>.

Growth Energy has been working closely in markets such as Brazil, Canada, India, Mexico and China to encourage the adoption of biofuels as a displacement to petroleum products. Expanding ethanol use around the world will boost domestic production and help countries meet their carbon reduction and clean air commitments at the same time.

Industry Assistance for COVID Losses

On June 15, 2021, USDA announced that it will provide \$700 million in aid to support biofuel producers recover from the wake of the COVID pandemic. The funds will be distributed through USDA's Pandemic Assistance for Producers initiative to provide additional relief to the farmers that depend on a vibrant biofuels industry, however, no funds have been released to date.

Although the details on how these funds will be distributed remain opaque, Growth Energy has provided USDA the following suggestions, which we urge you to support:

1. Assistance should only be available to biorefineries that were in normal operation between Jan. 1 and March 1, 2020.

As the emergency relief funding is intended to address only revenues lost as a direct result of COVID, ethanol biorefineries that were not operating normally prior to the pandemic should not qualify to receive assistance.

2. Assistance levels should be the same on a per gallon basis for each biorefinery who seeks assistance.

Because each biorefinery in operation during COVID suffered the same economic injury due to the pandemic, each biorefinery should receive the same per gallon level of assistance. We recommend providing assistance of 10 cents a gallon based on each qualifying biorefinery's production in 2019, the last full year before COVID demand destruction.

3. Payments made to biorefineries should be made public.

We support making available to the public information on which entities are receiving assistance and in what amount.

We are grateful for this support from USDA which reflects President Biden's repeated promises to support rural and clean energy jobs. However, we urge the USDA to release this funding as soon as possible. Many biofuel producers have yet to recover from the devastating drop in fuel demand due to COVID and are lacking certainty due to the delay in releasing the COVID aid.

Higher Octane Fuels Help to Drive Lower Vehicle Greenhouse Gas Standards and Better Fuel Economy

It is imperative to consider the benefits of using high-octane, low carbon fuels to make engines more efficient. Beyond E15, Growth Energy has been a leader on the need for higher octane, mid-level ethanol blends, first submitting a proposal for a 100 RON, E30 fuel nearly a decade ago. By moving towards higher octane, lower carbon mid-level blends, automakers can optimize engines to further improve efficiency and further reduce both greenhouse gas and tailpipe emissions.

The science supporting the benefits of a high-octane, low carbon midlevel blend in conjunction with a high compression ratio engine is not new, and has been well-explored by the national labs, automobile manufacturers, and other scientific institutions.²⁶ Ethanol has a very high octane number, a lower carbon content than the gasoline components it replaces, and myriad other benefits that assist in combustion to increase engine efficiency and reduce both greenhouse gas and tailpipe criteria pollutant emissions.

We urge the Committee to work with USDA, EPA, and the Department of Transportation to move quickly to require a minimum octane standard as well as to approve a high-octane, mid-level ethanol blend such as that first proposed by Growth Energy for vehicle certification as well as for consumer use. Additionally, we strongly support the Next Generation Fuels Act (H.R. 5089) introduced by Congresswoman Bustos. This important legislation would increase the use of high-octane, low-carbon biofuels while limiting the use of harmful petroleum additives. We would urge Congress to consider and enact this key legislation.

Conclusion

The biofuel industry stands ready to work with Congress and the Biden Administration to meet our national commitments to attaining aggressive climate goals by mid-century while supporting rural development, working families, and renewable energy. With forward-leaning policies that support innovation and access to markets, our industry will continue to reduce our carbon footprint, create more clean energy jobs, spur economic activity in rural and farming communities, and provide drivers across the country with affordable, clean fuel choices today.

Congress can help accelerate our transition to a clean energy future and a prosperous rural America with some of the provisions in the Build Back Better Act that help reduce the carbon footprint of transportation. Infrastructure investments will expand consumer access to higher fuel blends of homegrown biofuels like E15. Ensuring the RFS is administered as intended by Congress will guarantee that we blend more low-carbon renewable fuel in our transportation sector each year. And reducing trade barriers to U.S. ethanol allows greater access to foreign markets, boosts our domestic production, and assists other countries in meeting their carbon reduction commitments.

In short, we have ample opportunity to achieve our renewable energy goals while supporting an industry that has supported rural America for decades. I appreciate the opportunity to participate in this important hearing on renewable energy's role for agriculture and rural economies.

Thank you and I look forward to answering your questions.

²⁶ See e.g., Oak Ridge National Laboratory, *Summary of High-Octane, Mid-Level Ethanol Blends Study* (July 2016), available at <https://info.ornl.gov/sites/publications/Files/Pub61169.pdf>.