Testimony before the
United States House Committee
on Energy and Commerce

Subcommittee on the Environment

“The 21st Century Transportation Fuels Act – Discussion Draft”

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Chairman Shimkus, Ranking Member Tonko, and members of the House Committee on Energy and Commerce Subcommittee on the Environment:

Thank you for the opportunity to provide our perspective on the draft “21st Century Transportation Fuels Act”, particularly on the subjects of the repeal of the Renewable Fuel Standard (RFS) and a high-octane fuel standard being discussed today.

My name is Emily Skor, and I’m the CEO of Growth Energy, the leading ethanol industry association that represents 100 producer plants, 89 associated ethanol supply chain companies, and tens of thousands of ethanol supporters around the country. Together, we are working to bring consumers better choices at the fuel pump, grow America’s economy, and improve the environment for future generations.

Our industry remains committed to helping our country further diversify our energy portfolio and drive down costs of transportation fuels, and we appreciate the committee's attention to what our fuel mix should look like in the coming decades.

At Growth Energy, we recognize that a fuel mix with more ethanol will lower costs for consumers, revitalize our country’s economy, and improve our environment. To that end, we support the following key aspects of the draft legislation:

1. The recognition that octane plays a critical role in helping automakers meet current and future fuel economy and greenhouse gas standards;
2. A call to allow the year-round sale of higher level ethanol-blends by lifting the Reid Vapor Pressure (RVP) summer fueling barrier; and
3. Federal approval for fuel beyond E15, further supporting the research that shows that ethanol-blends above ten percent do not harm passenger vehicles.

However, as this committee considers what could help with our future energy mix, we hope you will look to the RFS for inspiration rather than work under the false assumption that it needs to be fixed. We wholeheartedly disagree with that perspective. In fact, despite years of mismanagement under both the Obama Administration and former U.S. Environmental Protection Agency (EPA) Administrator Scott Pruitt, the RFS has still been able to fulfill its original intent – to increase domestic energy supplies, improve farm incomes, and reduce carbon emissions. By any objective measurement, the RFS has been an overwhelming success and...
serves as the bedrock policy that has allowed our nation’s ethanol industry to flourish since 2005.

The absolute repeal of the RFS is unnecessary and will further destabilize the farm economy and the ethanol sector, both of which are already suffering from the EPA’s excessive use of small refinery exemptions, roadblocks erected by the oil industry to ethanol-blended fuel, and export barriers. We cannot support legislation that would ultimately turn back the clock on our nation’s commitment to renewable biofuels, completely undermining the benefits that consumers have come to expect from ethanol at the pump.

Furthermore, this draft is not bold enough when it comes to pursuing a plan to provide consumers with cleaner, more affordable fuels. It sets the minimum octane level at a 95 Research Octane Number (RON), which is roughly in line with a 91 Anti-Knock Index (AKI) fuel. AKI represents the current octane rating you see at the pump today. 91 AKI fuel is currently a low-level premium fuel that is found throughout the country and already contains up to ten percent ethanol. In fact, 98 percent of all gasoline sold in the U.S. today contains ten percent ethanol. Moving to a 95 RON baseline fuel would require almost no changes from refiners across the country. A recent study by the Energy Information Administration confirms this fact, specifically citing that the demand for additional octane investment for refiners would be minimal.

The draft also fails to fully recognize the “sweet spot” of where ethanol can help achieve the dual gains of increased fuel efficiency and reduced emissions: 30 percent ethanol-blended fuel. While the

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The draft does provide for an optional certification fuel using 30 percent ethanol, it does not provide for E30 to be a fully-approved legal fuel, nor does it provide for any sort of reasonable pathway for E30 to become a legal fuel for all vehicles. This gap is puzzling. After almost eight years of trying to work through hurdles to get E15, the most tested fuel in use, into the fuel supply, this draft should recognize the myriad of challenges to approving ethanol-blended fuels and look to eliminate them to enable a reasonable pathway for their entry into the marketplace.

Our key concern and basis for why we cannot support this initiative in its current form is that the draft eliminates the RFS for corn ethanol over a period of five years. Additionally, it does nothing to stop the misuse of the small refinery exemption authority in the intervening years, causing further loss of biofuel demand even before the permanent end to the RFS. Not including the exemptions anticipated for this year and in the 2019 RFS rule released last week, we have had up to 2.25 billion gallons of biofuels exempted3. EPA's unprecedented – and possibly illegal – use of this authority is not even acknowledged in this draft. Further, the sentiment of an EPA “boogeyman” taking control of the program in 2023 is vastly overstated by those who support ending the RFS. Since 2013, biodiesel volumes have been set without any statutory targets, and the program has still functioned correctly.

While one of the draft's primary goals is to make the U.S. fuel supply uniform, it does nothing to unify the availability of ethanol-blended fuels above ten percent, because it includes a half-hearted federal pre-emption provision aimed only at future action. By simply preventing future actions from limiting blending, this does nothing to break down any existing state-level hurdles, like caps on the percentage of oxygen in fuel or on ethanol concentration – neither of which exist at the federal level. Real hurdles exist right now in a small number of states, but the discussion draft does nothing to break down these market barriers. Further, it is unclear if the draft provision would prevent a state or locality from increasing the use of ethanol blended fuel, a scenario that the ethanol industry would not support.

Lastly, one of the biggest reasons for this conversation is that some believe there is vast uncertainty beyond 2022 under the RFS. Instead addressing this uncertainty, the draft legislation would repeal the RFS program in 2022 for corn ethanol. Moreover, this draft has no safeguards to protect against reduced blending by those who would seek to substitute oil-refined products for renewable biofuels. This draft also limits access to the marketplace and provides a narrow, very difficult pathway for stability and growth. Ending the RFS will actually provide more uncertainty beyond 2022 than there exists today.

IMPORTANCE OF HIGH-OCTANE FUELS

Octane is a measurement of resistance to fuel detonation or “knock”. There are three different ways to measure octane: RON (research octane number), MON (motor octane number), and AKI (Anti-Knock Index). What we see at the pump is the AKI or pump octave which is lower than the measurement in RON. AKI is actually RON plus MON divided by 2, or (R+M/2).

Both international and U.S. fuel economy standards for vehicles are increasingly becoming more and more stringent. Automobile manufacturers are being forced to move toward higher efficiency engines that require high-octane fuels to operate effectively, meet fuel economy standards, and lower greenhouse gas emissions. Ethanol continues to be the most valuable and competitive source of octane in the world, and because it is also lower in greenhouse gas emissions, it provides substantial benefits to automobile manufacturers.

Growth Energy has been an industry leader in advocacy in this area, first commenting to both EPA and the California Air Resources Board on the need for higher octane, mid-level ethanol-blends when the greenhouse gas standards for vehicles were first developed in 2012. At that time, we submitted a proposal for a 100 Research Octane Number (RON), E30 fuel for both vehicle certification and for consumer use.

The science supporting the benefits of a high-octane fuel, and specifically a mid-level ethanol-blend in the E20 to E30 range, in conjunction with a high compression ratio engine has been well-explored by several national laboratories including Oak Ridge National Laboratory, National Renewable Energy Laboratory, and Argonne National Laboratory, as well as automobile manufacturers and other scientific institutions. Ethanol has a very high octane number relative to other gasoline hydrocarbons, a lower carbon content than the gasoline components it generally replaces, and many other benefits that assist in combustion to increase engine efficiency and reduce both tailpipe greenhouse gas and criteria pollutant emissions.

The key studies that have been conducted over the past five years that highlight the efficiency improvements and environmental benefits associated with mid-level ethanol-blends include:


To briefly summarize, multiple studies have shown that a high RON, mid-level ethanol-blend (e.g. 96-RON E20 or 100-RON E30) when paired with various higher compression ratio engines yield tailpipe carbon emissions reductions of at least 44% compared to current gasoline. This makes ethanol an attractive option for manufacturers looking to meet the latest efficiency and emissions standards.
five percent, which, in most instances, were also coupled with efficiency gains. Some studies also showed significant volumetric miles per gallon savings associated with the higher efficiency engines and a high-octane fuel. One study that was submitted to EPA in response to their Draft Technical Assessment Report (TAR) by Air Improvement Resources, “Evaluation of Costs of EPA’s 2022-2025 GHG Standards with High Octane Fuels and Optimized High Efficiency Engines,” showed that the use of a 98 RON, E25 blend would reduce the cost of a model year 2025 vehicle by $400 and a popular crossover SUV by as much as $873.

Not only are the benefits of mid-level ethanol-blends well-understood by the scientific community, but the automobile industry has for years acknowledged the importance of affordable, high-octane fuels coupled with high-compression ratio engines as important to attaining regulatory compliance and improving vehicle performance in the most economical manner possible. A couple of examples can be found below:

• In 2013, Daimler (Mercedes-Benz) identified a worldwide strategy that incorporates E20 to E25 as the main grade gasoline fuel for the 2017-2020 period because “[i]ncreased octane with mid-blend ethanol fuels is [the] key to simultaneously achieve GHG compliance with high customer satisfaction.” “Advanced Power-train Technology Coupled with Octane & Ethanol – Benefits and Opportunities” at 19, William Woebkenberg, Mercedes-Benz Research and Development North America, 2013 SAE High Octane Fuels Symposium.


When you examine the data, there are clear benefits of moving to a high-octane, mid-level ethanol-blend, such as E30, including increased vehicle engine efficiency, lower tailpipe emissions, and increased use of renewable fuel. We believe that the use of mid-level ethanol-blends will continue to drive investment in more efficient vehicles, as well as more advanced biofuels, such as cellulosic ethanol.

THE RENEWABLE FUEL STANDARD: AN AMERICAN SUCCESS STORY

The RFS has been one of our country’s great success stories. It provides motorists with more affordable choices at the pump, keeps the air clean, and drives demand for our farmers, who harvest the feedstock for renewable biofuel.

Today, our industry produces over 16 billion gallons of renewable fuels and over 44 million tons of high protein animal feed to help feed and fuel our world. We are also exporting record numbers of ethanol to countries like Canada, Brazil, and India.

This stellar production in the U.S. means that every gallon of our earth-smart and engine-kind ethanol helps to decrease our dependence on foreign oil and improve our energy security. In fact, since 2005 – the year the RFS was enacted – ethanol has helped cut our oil imports by nearly 70 percent.

Ethanol is a more affordable option at the pump and is a major part of the reason gas is less expensive than it was just a few years ago. It reduces gas prices, with those who choose E15 saving up to ten cents per gallon.

Ethanol is now blended into 98 percent of our fuel supply, meaning it is already in ten percent of your fuel tank. And because ethanol has the highest octane of any available liquid alternatives - not to mention that it is also cleaner and cooler burn-


ing - ethanol allows for better performing engines that have greater fuel efficiency.

U.S. ethanol production supports nearly 360,000 jobs\(^9\) and plays a critical role in helping to sustain vibrant economies and small communities throughout rural America. For example, in Redfield, South Dakota, a town with a population of just over 2,000, the 60 million gallon ethanol plant, Redfield Energy\(^10\), LLC, employs a staff of 40.

It is no secret that it has been a difficult year for rural America. Inclement weather disrupted the harvest in many areas, and trade disputes placed international shipments on hold, driving prices down below the cost of producing a crop. Farm income is down 46 percent over the past five years\(^11\), and foreign nations are targeting our agricultural exports. Stronger markets at home could provide the breathing room we need to weather the storm. This draft would not provide that breathing room.

The ethanol industry is seeing ethanol prices at 13-year lows, resulting in very narrow profit margins and in some instances, a loss - driven in part by demand destruction caused by the misuse of small refinery exemptions under the RFS and trade barriers that have grown as a response to trade disputes. Sunsetting the RFS could put this precarious situation even more at risk at the same time we are already seeing plants idle production or shut down permanently.

Our farmers need certainty and market access for their products, and history shows that home-grown biofuels, like ethanol, can deliver. The addition of ethanol to the fuel mix has been the single most important aspect to the revitalization of U.S. agriculture. Adding more biofuels could provide a bigger market for farm commodities.

The RFS is also the single most effective policy tool we have to decarbonize our transportation fuels. It is protecting our planet and cleaning the air. Unlike fossil fuels, which increase our carbon dioxide (CO\(_2\)) emissions, ethanol reduces emissions. Research by the U.S. Department of Agriculture shows that corn ethanol reduces transportation CO\(_2\) emissions by 43 percent, and studies at the U.S. Department of Energy’s Argonne National Laboratory demonstrate that advanced varieties made with a more diverse bio-based feedstock can reduce emissions by 100 percent or more.\(^12\) These benefits continue to grow with ongoing innovations in biofuel production, innovations spurred by the positive market signals created through a strong RFS.

In fact, each year, ethanol production and use decreases greenhouse gas emissions by 110 million metric tons, which is the carbon equivalent of removing 20 million cars from the road.\(^13\)

In addition to being carbon reductive, ethanol displaces the need for toxic, cancer-causing chemicals that have been linked to asthma, smog, and groundwater contamination.

Ethanol also replaces harmful carcinogens and toxic additives like methyl tertiary-butyl ether (MTBE) and benzene that can be found in petroleum-based fuels, while providing a naturally high octane. Chemicals replaced by ethanol also include toxic aromatics, like xylene, and carbon monoxide, which forms ozone in sunlight and contributes to smog in urban communities. Because of ethanol, there are fewer toxic, dirty chemicals in our fuel, water, and our air.

In addition, farmers are making more efficient use of existing cropland, utilizing fewer resources to grow larger and larger crops. In fact, American farmers are growing record-breaking harvests on

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less land than was under cultivation in the 1930s\textsuperscript{14}. Between 1980 and 2011 alone, the amount of land required to produce one bushel of corn fell by 30 percent\textsuperscript{15}.

The numbers and the facts are clear: the RFS has been an overwhelmingly successful national policy. At Growth Energy, we will continue working with EPA to illustrate the job creation, energy security, environmental performance, and other benefits of biofuel growth with one goal in mind: to keep moving the RFS forward, not backward.

**EPA COULD REQUIRE A 95 OR HIGHER RON STANDARD WITHOUT LEGISLATION**

It is vital to think about fuels and vehicles as a system. Regardless of where future vehicle standards may go, a wealth of data supports moving to a high-octane, mid-level ethanol-blend. Benefits from a high-octane, mid-level ethanol-blend include reduced greenhouse gas emissions, lower cost to consumers, and further investment in rural America and our agricultural economy.

Our recommendations for future EPA engagement include:

1. EPA can and should immediately approve a high-octane, low-carbon, mid-level ethanol-blend such as the 100 RON, E30 fuel that we submitted to the agencies in 2012.

2. EPA can and should exercise its authority under the Clean Air Act to require a minimum octane standard. Higher octave fuels give automakers the additional flexibility they need to meet increasing fuel economy and greenhouse gas standards.

3. EPA can and should correct its fuel economy formula to encourage the use of mid-level ethanol-blends. We would urge that the R-Factor be updated and appropriately adjusted.

4. The National Highway Transportation Safety Administration and EPA should work together to re-establish credits for flex-fuel vehicles or at a minimum look at some of the newest data, particularly out of California on alternative fuel refueling and the significant growth of E85.

We would also be remiss in not outlining how the growth of E15 and the sale of dispensers approved up to E25 are poised to deliver these high-octane fuels once regulatory hurdles are removed.

**ENERGY INFORMATION ADMINISTRATION STUDY SHOW LIMITED UPSIDE TO 95 RON**

One of the greatest worries of ethanol producers is that replacing the RFS with a 95 RON standard fuel is that the new octane requirement will provide limited – if any – market space for increased ethanol blending. This is because 95 RON fuels already exist in the marketplace and the infrastructure already exists in the current refinery fleet to meet this need, limiting the octane market penetration opportunity for ethanol. Also, the transportation fuel marketplace is not like other markets; petroleum interests hold the keys to be able to access drivers, controlling refining, blending, distribution, and retail supply chains. Furthermore, they will often tie up many retail fueling operations, preventing them from offering fuels like E15 because they compete with petroleum-based fuels.

A recent study by the Energy Information Administration confirms this concern, stating that “U.S. refineries would be able to supply the increased octane requirements in 2027 with minor operational adjustments.”\textsuperscript{16} This report states that the need for additional sources of octane in a 95 RON world is limited. And despite a clear incentive in the RFS and previously the Volumetric Ethanol Excise Tax Credit, refiners have repeatedly shown limited interest in blending beyond what they want for minimal octane requirements. In fact, ethanol today sells for $1.20/gallon and refiners have shown little initiative to take advantage of this low-cost fuel. It is our belief that absent a need for higher

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\textsuperscript{14} U.S. Department of Agriculture: “National Agricultural Statistics Service”. \url{https://quickstats.nass.usda.gov/}


amounts of octane outside what the refinery fleet can produce, the benefits will be limited.

**YEAR-ROUND E15**

Since EPA approved the waiver for E15 for all vehicles model year 2001 and newer in 2011, our industry, along with our retail partners, have been working to install infrastructure to facilitate the introduction of not only E15 and E85, but mid-level ethanol-blends as well. Today, there are more than 1,600 stations in 30 states offering E15, and more than 4,000 sites offering E85.

Since the administration’s October 2018 announcement to begin rulemaking that will allow for year-round sales of E15 beginning next summer, we have already seen additional retail commitments to expand E15 offerings, with Casey’s committing up to 500 stores and Cumberland Farms adding another 120 locations\(^\text{17}\). Additionally, since 2016, Wayne Fueling Systems has only sold fuel dispensing equipment that is compatible up to E25, and we are hopeful that additional manufacturers will follow suit\(^\text{18}\).

With the president’s announcement and the development of more and more dispensing infrastructure, we believe the retail market is primed and ready to accommodate a high-octane, mid-level ethanol-blend in the 25-30% ethanol range.

**CLOSING**

I appreciate the opportunity to provide comments on this draft. I encourage the subcommittee to continue examining the benefits of high-octane fuels as a way to increase engine efficiency and vehicle mileage, and drive down emissions.

Unfortunately, we cannot support the draft before us as it ends the bedrock policy for biofuel blending, the RFS, without a clear pathway forward for growth and opportunity. We believe that any initiative must avoid reversing the progress the RFS has helped achieve in moving America forward through the increased use of domestically sourced and manufactured renewable ethanol in our transportation fuel mix. In addition, this draft misses clear opportunities to address issues that currently exist such as ending EPA’s abuse of small refinery exemptions. Finally, this initiative lacks a forward-leaning perspective on what can be achieved for automakers, consumers, air quality, and the U.S. economy by using high-octane, mid-level ethanol fuel blends. While we do support certain aspects of this draft, we believe it misses an opportunity to lay out a bold and visionary mission for the future of liquid fuels and to make a significant impact in restoring growth in America’s rural communities and decarbonizing our nation’s fuel supply.

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