

**COMMENTS OF
THE 25x'25 ALLIANCE**

On the U.S. Environmental Protection Agency's Proposed Rule:

**Renewable Fuel Standard Program:
Standards for 2018 and Biomass-Based Diesel Volumes for 2019**

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Introduction

The 25x'25 Alliance is a diverse, grassroots national alliance of nearly 1000 agriculture, forestry, conservation, business and environmental organizations working collaboratively to advance the goal of securing 25 percent of the nation's energy needs from renewable sources by the year 2025.

We are pleased to submit comments in response to the proposed 2018 cellulosic biofuel, advanced biofuel and total renewable fuel volumes and 2019 biomass-based diesel volume as directed by the Renewable Fuel Standard (RFS) program. The RFS has been an important tool for rural economic development and emissions reductions, and it has been a cornerstone policy in our nation's effort to reduce our dependence on foreign oil.

As in recent years, the Environmental Protection Agency's (EPA) proposed 2018 percentage standards for cellulosic biofuels, advanced biofuel and total renewable fuels fail to meet the congressionally established biofuel blending requirements. The EPA's proposal to reduce the advanced biofuel and total renewable fuel volumes from the levels finalized in 2017 continues to demonstrate a missed opportunity along the nation's move towards a more diversified energy future, as well as a failure to recognize the ability of achieving significant greenhouse gas (GHG) emission reductions.

Background

The U.S. pursuit of alternative, clean and domestically produced transportation fuels stemmed from a belief among policy makers that the traditional methods of powering our vehicles were unsustainable for the long-term and presented a risk to our national security. It was in this context that Congress amended the Clean Air Act to first establish the RFS with the enactment of the Energy Policy Act of 2005 (EPAAct of 2005, P.L. 109-58). This initial RFS (referred to as RFS1) mandated that a minimum of 4 billion gallons of biofuels be used in 2006, with volumes rising to 7.5 billion gallons by 2012. Two years later, the Energy Independence and Security Act of 2007 (EISA of 2007, P.L. 110-140) expanded the biofuel mandate volumes and extended the date through 2022. The expanded RFS (referred to as RFS2) required the annual use of 9 billion gallons of biofuels in 2008, rising to 36 billion gallons in 2022, with at least 16 billion gallons from cellulosic biofuels, and a cap of 15 billion gallons for starch-based ethanol. These biofuels are derived from a wide range of renewable feedstocks, including traditional crops, woody biomass, purpose-grown grasses, oil and greases, animal renderings, municipal wastes, and starch-based products.

Congress created the RFS to:

- Reduce the risk of investing in renewable biofuels by establishing a predictable market for biofuels for a projected period of time;
- Enhance U.S. energy security via the production of liquid transportation fuels from renewable, domestic feedstocks;
- Decrease reliance on imported fossil fuels;
- Provide an additional source of demand for U.S. agricultural commodities and drive agricultural and rural economic development;
- Increase rural incomes and rural employment opportunities;
- Ensure environmental benefits of renewable biofuels over fossil fuels; and
- Respond to climate change concerns, as agricultural-based biofuels emit lower volumes of direct greenhouse gases (GHGs) as compared to fossil fuels.

Current Proposal

Similar to previous years, the EPA’s use of its “cellulosic waiver authority”¹ in proposing Renewable Volume Obligations (RVOs) for 2018 once again represents a significant deviation from the volumes Congress set by statute (except for biomass-based diesel). EPA proposes to reduce the total renewable fuel volume from 26 billion gallons to 19.24 billion gallons. Within the total volume of renewable fuel, EPA has proposed to reduce the volume of advanced biofuels from 11 billion gallons to 4.24 billion gallons. As part of the advanced biofuels category, the EPA has also proposed to reduce the volume of cellulosic biofuels from 7 billion gallons to 238 million gallons. Furthermore, this represents a reduction of 73 million gallons of cellulosic biofuels that were mandated in the 2017 Final Rule. The volume of biomass-based diesel for 2018 was previously set at 2.1 billion gallons.² EPA has again proposed a volume of 2.1 billion gallons of biomass-based diesel for 2019 although EPA does “not see any significant marketplace impediments that are likely to prevent the supply of 2.9 billion gallons of biodiesel and renewable diesel in 2018.”³ The amount of conventional ethanol allowed in the proposed rule (15 billion gallons) is consistent with the 15 billion gallon “constant” volume for conventional, starch-based ethanol that has been stipulated in the statute since 2015.⁴ We commend EPA for avoiding the use of its “general waiver authority” and thus not applying its misinterpretation of the “inadequate domestic supply” waiver provision.

Overall, this proposal has the effect of reducing the total amount of cellulosic biofuels and biomass-based diesel that can be used to meet the standards.

RFS Volume Comparison (in billions of gallons)

	Statutory 2016 RVOs	Final 2016 RVOs	Statutory 2017 RVOs	Final 2017 RVOs	Statutory 2018 RVOs	Proposed 2018 RVOs	Proposed 2019 RVOs
Cellulosic biofuel	4.25	.230	5.5	.311	7.0	.238	n/a
Biomass- based diesel	No less than 1.0	1.9	No less than 1.0	2.0	No less than 1.0	2.1*	2.1
Advanced biofuel	7.25	3.61	9.0	4.28	11.0	4.24	n/a
Conventional ethanol	15.0	14.5	15.0	15.0	15.0	15.0	n/a
Total Renewable Fuel	22.25	18.11	24.0	19.28	26.0	19.24	n/a

* The 2018 biomass-based diesel volume requirement was established in the 2017 final rule (81 FR 89746, December 12, 2016).

The 25x’25 Alliance urges EPA to stand with the RFS2 as enacted under EISA of 2007 and amend its current proposal in a way that will encourage greater investments in cellulosic biofuels, result in more utilization of clean biofuels, and satisfy all of the reasons why Congress created and expanded

¹ Federal Register / Vol. 82, No. 139 / Friday, July 21, 2017 / Proposed Rule / Page 34209

² The 2018 biomass-based diesel volume requirement was established in the 2017 final rule (81 FR 89746, December 12, 2016).

³ Federal Register / Vol. 82, No. 139 / Friday, July 21, 2017 / Proposed Rule / Page 34234

⁴ Federal Register / Vol. 75, No. 58 / Friday, March 6, 2010 / Final Rule / Page 14746

this program. The 2018 RVO targets will cause numerous unintended impacts that run at cross-purposes with Congress's above-mentioned public policy goals.

Cellulosic Biofuel Volume for 2018

Cellulosic ethanol made from woody biomass, purpose-grown grasses, biobased wastes and byproducts must generate 60 percent less greenhouse gas emissions than gasoline. In some cases, cellulosic biofuels can be carbon negative as more GHGs are sequestered or offset than it takes to produce and consume the fuel. These fuels have greater economic and environmental value when policy supports innovation and promotes investment in this next generation of biofuels.

Unfortunately, the EPA has ignored the intent of the RFS – establishing a market for a prolonged period of time – and has focused solely on current, actual production volumes when setting the yearly RVO targets.

While cellulosic ethanol production has been slower to develop than many would have liked, there are numerous new projects and developments taking shape around the nation. In addition to the two Iowa facilities using corn stover as a cellulosic feedstock, several conventional ethanol production facilities are installing “bolt-on” technologies that will allow them to produce both starch-based and cellulosic ethanol from the same corn kernel. Numerous other pathways to cellulosic biofuels production are also being pursued. However, the EPA approval process is slow and cumbersome.

Increased adoption of new cellulosic technologies will take off if the EPA provides the necessary signals that innovation, investment and utilization will be rewarded. However, by not taking into account the evolving and growing state of the cellulosic biofuels industry, and by applying an overly-restrictive standard for cellulosic ethanol, the EPA is sending a signal that it does not appreciate nor acknowledge the significant potential of this sector.

25x'25 requests that the EPA significantly increase the volume of cellulosic biofuels required under the 2018 RFS Final Rule.

Biomass-based Diesel Volume for 2019

Biomass-based diesel can be derived from a wide range of feedstocks and produced using different technologies bringing biodiesel and renewable diesel to consumers. The biomass-based diesel industry has expanded markets for farmers and livestock producers, as well as created new jobs and economic growth, particularly in rural America. However, EPA's proposal to maintain current volume standards and not increase biomass-based diesel utilization requirements sends a negative signal to an industry that already has underutilized production capacity, but is capable of quickly bringing that existing capacity back online.

As previously mentioned in these comments, the EPA does “not see any significant marketplace impediments that are likely to prevent the supply of 2.9 billion gallons of biodiesel and renewable diesel in 2018.” Given likely improvements in production technology efficiency, increasing consumer acceptance, greater diversity in feedstock supplies, and expanding vehicle compatibility, the EPA should increase the biomass-based diesel standard for 2019.

Like the cellulosic biofuel standard, the EPA is sending the wrong signal regarding the further advancement of meaningful biomass-based diesel production. While we understand EPA's reasoning that any biomass-based diesel produced and blended above the mandated volumes for

biomass-based diesel can be used to satisfy the volume requirements for the advanced biofuels category and the total renewable fuel volume requirements, this action serves only to discourage additional production of non-biomass-based diesel products under those categories.

25x'25 urges the EPA to increase the biomass-based diesel volume standard for 2019.

Impact of Americans for Clean Energy, et al. v EPA Ruling

Per a decision reached on July 28, 2017, addressing the case brought against the EPA over the 2015 Renewable Fuel Standard Final Rule,⁵ the U.S. Court of Appeals for the District of Columbia Circuit found that the EPA erred in how it interpreted the “inadequate domestic supply” waiver provision. In past years, the EPA failed to implement congressionally mandated volume levels due to what the EPA perceived to be a lack of the necessary infrastructure to take that much renewable fuel to market. The Court disagreed with EPA’s view of demand-side constraints.

While the 2018 proposed rule does not use EPA’s past flawed interpretation of ‘insufficient domestic supply’ under the RFS program to reduce total renewable fuel volumes, the impacts of the court’s ruling – notably how the EPA will accommodate for the past shortfall in total renewable fuel volumes – will need to be considered prior to publication of the 2018 RFS Final Rule.

25x'25 requests that EPA develop a plan as part of the 2018 Final Rule that will restore the shortfalls in total renewable fuel volumes experienced in 2014-2016. 25x'25 is confident such a plan will help to spur investment in infrastructure needed to distribute higher-biofuel blends and will bring underutilized production capacity back online, while also lifting feedstock prices that will benefit rural America.

National Security

Not proposing volumes that meet the statutory levels as set by Congress could damage our nation’s energy security, as biofuels have helped to reduce our nation’s dependence on foreign sources of oil. In 2005, the U.S. imported 60% of our oil needs. In 2016, 47% of our daily crude demand was imported (7.88 million barrels per day out of 16.75 million barrels per day).⁶ In 2016, U.S. net imports (imports minus exports) of petroleum from foreign countries were equal to about 25% of U.S. petroleum consumption. This percentage is up slightly from 24% in 2015.⁷

The RFS has been a key instrument in creating fuel diversity and fuel choice in the U.S. These are key attributes of a healthy fuel market and will further increase our ability to move from a fuel market that has been controlled by a global cartel that does not have the best interests of the U.S. in mind. A strong and growing RFS will keep the monetary benefits of biofuels inside our domestic economy, creating jobs and building communities. This administration’s roadmap for an “America first” energy policy should embrace biofuels and the Renewable Fuel Standard program. The EPA can put biofuels on stronger footing by increasing the total renewable fuels volume requirements.

⁵ [USCA Case #16-1005](#); AMERICANS FOR CLEAN ENERGY, ET AL., PETITIONERS v. ENVIRONMENTAL PROTECTION AGENCY AND E. SCOTT PRUITT, ADMINISTRATOR, RESPONDENTS

⁶ U.S. petroleum flow, 2016: <https://www.eia.gov/totalenergy/data/monthly/pdf/flow/petroleum.pdf>

⁷ [How much oil consumed by the United States comes from foreign countries](#); USEIA; April 4, 2017

Jobs and the Economy

The RFS has driven the creation of 339,175 direct, indirect and induced jobs nationwide resulting in nearly \$22.5 billion in wages within the ethanol sector. In addition, the economic activities of the ethanol industry have generated nearly \$42.1 billion in incremental economic productivity and contributed nearly \$4.9 billion in federal tax revenue and \$3.6 billion in state and local government tax contributions.⁸ The 2.1 billion gallons of biodiesel and renewable diesel used by Americans in 2015 supported \$8.4 billion in economic impact, including 47,400 jobs and \$1.9 billion wages paid.⁹ In fact, every 100 million gallons of biodiesel produced supports roughly 3,200 jobs, and producers are ready to expand production and hire new workers with steady growth under the RFS.¹⁰ If biomass-based diesel volume requirements remain unchanged as proposed for 2019 at 2.1 billion gallons, the industry will not grow. Conversely, if EPA increases the volume mandate for biomass-based diesel and moves sourcing away from imports, the positive effects on the rural economy would be tremendous. Failing to significantly expand RVOs beyond the current proposed volumes will cause stagnation in the industry and a possible loss of jobs.

The proposed 2018 RVOs decrease the overall volume of renewable fuels compared to what was required in 2017. This action threatens the economic stability and resiliency of rural communities. The levels proposed by the EPA could have an impact on farms and rural economies by dragging down the price American farmers receive for some of their commodities to values below the cost of production. The latest USDA crop production, supply and demand reports indicate that a record soybean crop is on the horizon, and that the third largest corn crop of all time is anticipated to be harvested this year.¹¹ As supply grows, these crop production predictions have had a bearish impact on commodity prices. This situation could cause farmers to experience fewer marketing options and shrunken revenues if the proposed 2018 total renewable fuel and 2019 biomass-based diesel RVOs hold.

Biofuels Reduce Greenhouse Gas and Other Emissions

Since its adoption, the RFS has proven to be a highly effective policy for reducing GHG and toxic air emissions. While the administration continues to distance itself from policies and programs aimed at reducing GHG emissions, corporations,¹² states,¹³ and local communities¹⁴ are implementing initiatives that aim to increase their utilization of renewable energy, meet sustainability goals, and reduce GHG emissions. Biofuels can, and should, be a valued tool to achieve these targets. And the RFS should be fully utilized to support the achievement of these goals.

Earlier this year, the US Department of Agriculture (USDA) announced the release of a report studying the lifecycle GHG balance of corn ethanol. The report, [A Life-Cycle Analysis of the](#)

⁸ [CONTRIBUTION OF THE ETHANOL INDUSTRY TO THE ECONOMY OF THE UNITED STATES IN 2016](#); John Urbanchuk; January 30, 2017

⁹ [The Economic Impact of the Biodiesel Industry on the U.S. Economy](#); LMC International; June 2016

¹⁰ [The Economic Impact of Biodiesel](#); REG, Inc.; 2016

¹¹ [World Agriculture Supply and Demand Estimates](#); USDA Office of the Chief Economist; August 10, 2017

¹² <http://there100.org/companies>

¹³ [How Hawaii plans to get fossil fuels off the grid](#); Utility Dive; March 23, 2016

¹⁴ <http://www.sierraclub.org/ready-for-100/cities-ready-for-100>

[Greenhouse Gas Emissions of Corn-Based Ethanol](#),¹⁵ finds that GHG emissions associated with corn-based ethanol in the United States are about 43 percent lower than gasoline, when measured on an energy equivalent basis. Unlike other studies of GHG benefits, which relied on forecasts of future ethanol production systems and expected impacts on the farm sector, this study reviewed how the industry and farm sectors performed over the past decade to assess the current GHG profile of corn-based ethanol.

The results of the USDA report are comparable to Argonne National Lab’s Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation (GREET) emissions model that analyzes fuel pathways, including corn ethanol produced from grain and stover. GREET analysis shows that ethanol emits life cycle emissions that are a 50% reduction over gasoline.¹⁶

Significant progress in scientific research, as well as technological advancements and conversion efficiencies, have shaped the biofuels industry since the EISA of 2007 expanded the RFS. Thermal energy consumption, water consumption and total life cycle emissions of corn ethanol have been studied. Also, efforts to model emissions from land use change associated with an expansion of biofuels production have been continuously reassessed.

The results show farmers are producing corn more efficiently and using conservation practices that reduce GHG emissions, including reduced tillage, cover crops and improved nitrogen management. Corn yields are also improving—between 2005 and 2015, U.S. corn yields increased by more than 10 percent.

At the same time, advances in ethanol production technologies, such as the use of combined heat and power, using landfill gas for energy, and co-producing biodiesel helped reduce GHG emissions at ethanol refinery plants. By 2022, given current trends, the GHG profile of corn-based ethanol is expected to be almost 50 percent lower than gasoline, primarily due to improvements in corn yields, process fuel switching, and transportation efficiency. In other scenarios where improvements in ethanol refinery efficiencies and additional conservation farming practices are universally adopted, the GHG benefits of corn ethanol are even more pronounced over gasoline, about a 76 percent reduction.¹⁷

Going forward, efficiencies in feedstock production, improvements in biomass conversion processes and improved engine technologies will further enhance the carbon life cycle benefits for biofuels, while the search for harder to reach crude supplies will adversely impact the carbon life cycle for petroleum. In short, while biofuels are on a trajectory to become cleaner, petroleum gasoline is moving in the opposite direction and is becoming dirtier.

¹⁵ Flugge, M., J. Lewandrowski, J. Rosenfeld, C. Boland, T. Hendrickson, K. Jaglo, S. Kolansky, K. Moffroid, M. Riley-Gilbert, and D. Pape, 2017. [A Life-Cycle Analysis of the Greenhouse Gas Emissions of Corn-Based Ethanol](#). Report prepared by ICF under USDA Contract No. AG-3142-D-16-0243. January 30, 2017.

¹⁶ Steffen Mueller and Jennifer Dunn. “CCLUB Evolution”; GREET User Workshop, Argonne National Laboratory, October 15-16, 2015

¹⁷ Flugge, M., J. Lewandrowski, J. Rosenfeld, C. Boland, T. Hendrickson, K. Jaglo, S. Kolansky, K. Moffroid, M. Riley-Gilbert, and D. Pape, 2017. [A Life-Cycle Analysis of the Greenhouse Gas Emissions of Corn-Based Ethanol](#). Report prepared by ICF under USDA Contract No. AG-3142-D-16-0243. January 30, 2017.

Biofuels and Fuel Quality

Despite the dearth of reports that claim electric vehicles will quickly take over the transportation sector,¹⁸ a recent report released by DOE's Energy Information Administration (EIA) makes clear that a vast majority of the global transportation fleet will continue to run on energy-dense liquid transportation fuels well into the future.¹⁹

In response, automakers are developing a new generation of engines to run more efficiently, and generate more power from less fuel to reduce emissions and boost fuel economy. But for these engines to perform as designed, the fuels they use must be affordable and be high in octane. Mid-level ethanol blends (E25-E40) are a viable solution for providing the high-octane, low-carbon emitting fuels that automakers will need to meet future performance standards.

A U.S. Department of Energy initiative is accelerating the introduction of affordable, scalable, and sustainable biofuels and high-efficiency, low-emission vehicle engines. The Co-Optimization of Fuels & Engines Program (Co-Optima)²⁰ is already identifying fuel compounds that can maximize engine performance. Ethanol is the candidate fuel additive that checks virtually all 23 "feedstock viability" criteria boxes as either "favorable" or "neutral." Ethanol earned "favorable" marks for diverse attributes, ranging from feedstock quality – to cost – to lifecycle greenhouse gases – to political and geographic factors. The Co-Optima research builds on a large body of work that has already been done on ethanol. The current research supports the role of ethanol as an inherently high-octane fuel additive that contains many of the benefits researchers are looking for in advanced high-compression engines.

Furthermore, Oak Ridge National Laboratory (ORNL) published a study on mid-level ethanol blends determined that high-octane fuels, specifically ethanol blends of E25 to E40, could offer significant benefits to the U.S., including improved fuel efficiency in vehicles designed to use higher-octane fuels.²¹ According to the report improved efficiencies of 5 to 10 percent would offset the lower energy density of the mid-level ethanol blends. As a result, blends of E25-E40 can reach economic parity with E10 blends.

The significant addition of this research is the observation that ethanol is more commercially and economically viable than other alternatives. Increasing ethanol in fuels could be the lowest-cost way to increase octane and raise fuel economy. The RFS is the primary pathway for bringing high-octane, low-carbon fuels to market.

Conclusion

As outlined above, failing to put the RFS on an aggressive track that fulfills congressionally mandated renewable fuel use volumes, has unfavorable repercussions that will be felt by farmers, landowners, biofuel producers, rural communities, small businesses, and state and local governments. The lack of strong support for biofuels will also have adverse repercussions on our national security, environmental and public health, as well as clean-tech investors and fuel

¹⁸ [When Will Electric Cars Go Mainstream? It May Be Sooner Than You Think](#); NY Times; July 8, 2016

¹⁹ [Annual Energy Outlook 2017 with projections to 2050](#); US EIA; January 5, 2017

²⁰ [Co-Optimization of Fuels & Engines Program Fact Sheet](#); March 2016

²¹ Theiss, T., et al. (2015). [Summary of High-Octane, Mid-Level Ethanol Blends Study](#). ORNL/TM-2016/42

consumers. Only the oil sector will enjoy economic returns as they maintain or increase their share of the market.

The 25x'25 Alliance urges EPA to follow the course that Congress set in its commitment to the biofuels sector, which promotes market stability and spurs innovation. Efforts to amend the RFS and reduce obligated volumes, send chilling signals to the marketplace at just the time when the advanced and cellulosic biofuels industries are moving into commercial production to help meet this nation's energy independence and security needs.

The RFS has been an effective public policy tool, and it is generally meeting the goals that Congress envisioned when it first passed and then amended the program. However, we must continue down the path of increased domestic biofuels production, reduced reliance on foreign oil and promotion of an innovative spirit.

The 25x'25 Alliance respectfully urges EPA and the Administration to revise their proposal and increase volume targets for cellulosic, advanced and total biofuels in order to drive the investment and growth needed to maintain the expansion of cellulosic and advanced biofuel production. Failure to do so will discourage the prospects for billions of dollars of future investments in second- and third-generation production technologies; investments that will go to rural areas where jobs are crucial. The only action that can support customer choice, promote infrastructure and commercial readiness, and lead to substantial job creation in America is the expanded use of biofuels and the timely release of the Final Rule.