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The American Fuel & Petrochemical Manufacturers ("AFPM") appreciates the opportunity to provide its views on the implementation of the Renewable Fuel Standard ("RFS") program. AFPM represents 98 percent of U.S. refining capacity and all of our refining members are obligated parties under the RFS.

This hearing comes at a critical time for the RFS and for AFPM's members. Last year, pursuant to a consent decree with AFPM and the American Petroleum Institute, the Environmental Protection Agency ("EPA") finalized its annual percentage standards for 2014-2016. For the first time, EPA recognized the E10 blend wall and utilized its waiver authorities to adjust the renewable percentage standards accordingly. In May 2016, EPA proposed the 2017 RFS and again proposed to use its waiver authorities to reduce the cellulosic biofuel, advanced biofuel, and total renewable fuel volumes. Although AFPM supports EPA's use of its waiver authorities, EPA is nevertheless once again proposing unrealistic targets untethered from market realities. This proposal and its potential impacts on consumers are yet more evidence that Congress must repeal or, at the very least, significantly reform the RFS.

AFPM members are not anti-biofuel. To the contrary, many of AFPM's members own or invest in biofuel facilities and have used ethanol well before the RFS mandates took effect. Ethanol has

positive blending properties and would still be widely used even if Congress repeals the mandates. AFPM members are, however, anti-mandates, oppose limiting consumer choice, and oppose propping up some interests at the expense of others. AFPM believes that consumers and the free-market should decide which fuels are used in the marketplace—not the federal government. The following testimony discusses issues with the RFS generally and then highlights our concerns with EPA's 2017 proposed rule, which are indicative of the core problems with the program.

I. U.S. Energy Markets are Very Different than in 2005 and 2007, Affecting both the Justifications for the RFS and the Feasibility of the RFS

The RFS was implemented through two statutes. The first was the Energy Policy Act of 2005 ("EPACT"), which required U.S. consumers to use 7.5 billion gallons of biofuels by 2012.[1] Two years later, Congress enacted the Energy Independence and Security Act of 2007 ("EISA"), which significantly expanded the RFS ("RFS2") by effectively requiring the consumption of 36 billion gallons of biofuels by 2022.[2] The stated purposes of the RFS program were twofold: (1) to move the United States to greater energy independence; and (2) to reduce greenhouse gas emissions from the transportation sector. More than a decade after enactment, U.S. domestic energy production is near an all-time high, with little or no assistance from the RFS, and the notion that the RFS is better for the environment is at best debatable, and questioned by many. In other words, the original premises for the RFS no longer hold true.

RFS2 includes four "nested" mandates. Of the 36 billion gallons, 21 billion were intended to be advanced biofuels, which in turn was to be comprised of at least 16 billion gallons of cellulosic biofuel

[1] Energy Policy Act of 2005, Pub. L. No. 109-58 (2005).
[2] 42 U.S.C. §7545(o).

and 1 billion gallons of biomass-based diesel. The remaining 15 billion gallons can be filled by any qualifying biofuel, but is colloquially known as the "conventional biofuel mandate" or "corn ethanol mandate." Each year, EPA must translate the aggregated volumes into percentage standards that obligated parties use to determine their individual compliance obligation, or renewable volume obligations ("RVOs").

EPA created the Renewable Identification Number (RIN) system as the mechanism for obligated parties to demonstrate compliance with their RVOs. In the RFS1 rulemaking, EPA identified several advantages to having a RIN-based system, including verification of renewable fuel production, real-time RIN trading to provide compliance certainty, ensuring the ability of renewable fuel to be produced, distributed, and blended "*where economic* to do so" (emphasis added), and reduction in double-counting of renewable fuel claimed for compliance.[3] EPA described the RIN-based trading program as "an essential component of the RFS program, ensuring that every obligated party can comply with the standard while providing the flexibility for each obligated party to use renewable fuel in the most economical ways possible."[4] The RIN-based system was recognition that some refiners would have access to terminal blending facilities and others would not. RINs allow for trading that would ensure the RFS volume standards could be met without requiring wholesale changes to the fuel distribution infrastructure. In promulgating the RFS2 implementation rules, EPA reiterated its reasoning for utilizing the RIN-based system, emphasizing yet again that the RFS was <u>not intended to change the existing system of fuel distribution and blending</u>, despite claims to the contrary. EPA discussed its adoption of a RIN-based system as:

[3] Regulation of Fuels and Fuel Additives: Renewable Fuel Standard Program 72 Fed. Reg. 23900, 23908 (May 1, 2007) [hereinafter "RFS1 Final Rule"].
[4] *Id.*

> [f]or compliance and credit purposes as the one which met our goals of being straightforward, maximizing flexibility, ensuring that volumes are verifiable, and *maintaining the existing system of fuel distribution and blending*. RINs represent the basic framework for ensuring that the statutorily required volumes of renewable fuel are used as transportation fuel in the U.S. *Since the RIN-based system generally has been successful in meeting the statutory goals*, we are maintaining much of its structure under RFS2" (emphasis added).[5]

Throughout its implementation of the RFS, EPA has continually reaffirmed its interpretation of the statute that the intent of Congress was to minimize costs, ensure flexibility, and maintain the existing system of fuel distribution and blending. EPA noted that its approach in RFS1 was predicated on the belief "that there would be an excess of RINs at low cost" and that the "ability of RINs to be traded freely between any parties once separated from renewable fuel would provide ample opportunity for parties who were in need of RINs to acquire them from parties who had excess."[6] RINs were merely intended to serves as a compliance mechanism; there is no evidence in the legislative and regulatory history of the RFS that RINs were intended to function as a tool to spur investment or to compel refining companies to subsidize gasoline marketers and retailers for mid-level ethanol blends or E85 sales.

Despite the enormous incentive the RFS provides, commercially available advanced and cellulosic biofuels have failed to materialize in significant volumes. During a Senate Environment and Public Works Committee hearing in February 2016, the Energy Information Administration ("EIA") testified that the RFS volume targets will not be met by 2022, and the shortfall is projected at 18 billion credits, virtually entirely within the advanced biofuels category.[7] Last year, corn ethanol accounted for

[5] Regulation of Fuels and Fuel Additives: Changes to Renewable Fuel Standard Program 75 Fed. Reg. 14670, 14684 (March 26, 2010) [hereinafter "RFS2 Final Rule"].
[6] Regulation of Fuels and Fuel Additives: Changes to Renewable Fuel Standard Program74 Fed. Reg. 24904, 24963 (proposed May 26, 2009) [hereinafter "RFS2 Proposed Rule"].
[7] *Oversight of the Renewable Fuel Standard: Hearing before S. Comm. on Environment and Public Works*, 114th Cong. (2016) (Testimony of Howard Gruenspect, Deputy Administrator, Energy Information Administration) [hereinafter "EIA Testimony"].

80 percent of biofuel production. The balance was filled primarily by biomass-based diesel and renewable diesel. In fact, only 2.2 million gallons of liquid cellulosic biofuels were produced in the U.S. last year. This fact is important, because it demonstrates that corn ethanol and biodiesel are currently the only real options to comply with growing mandates, and each have significant market barriers that EPA is either ignoring or downplaying.

In addition to the reliance on corn ethanol and biodiesel brought on by the failure of drop-in biofuels to materialize, the gasoline market has also changed. More specifically, the U.S. is using less gasoline than Congress envisioned when it enacted the RFS program and mandated biofuel volumes, and EIA projects that domestic gasoline demand will drop further in the coming years. When Congress debated and enacted RFS2, the EIA projected gasoline demand would continue to rise each year. However, a number of factors have reversed that trend, including increased new vehicle efficiency standards and changes in Americans' driving habits. In 2007, EIA projected that the U.S. would consume 159 billion gallons of gasoline in 2016. It now forecasts demand of 142 billion gallons—a 10 percent decrease.[8] EIA has reduced its demand projection for 2022 by 23 percent compared to its 2007 forecast (from 172 billion gallons to 132 billion gallons)(see figure 1). For obligated parties, this means there is an increasingly smaller gasoline pool into which to blend increasing volumes of mandated biofuels. As discussed below, this conflict has led to the onset of the E10 blend wall.[9]

[8] EIA Short Term Energy Outlook (June 2016).
[9] The E10 blend wall is reached when all gasoline contains 10 percent ethanol.

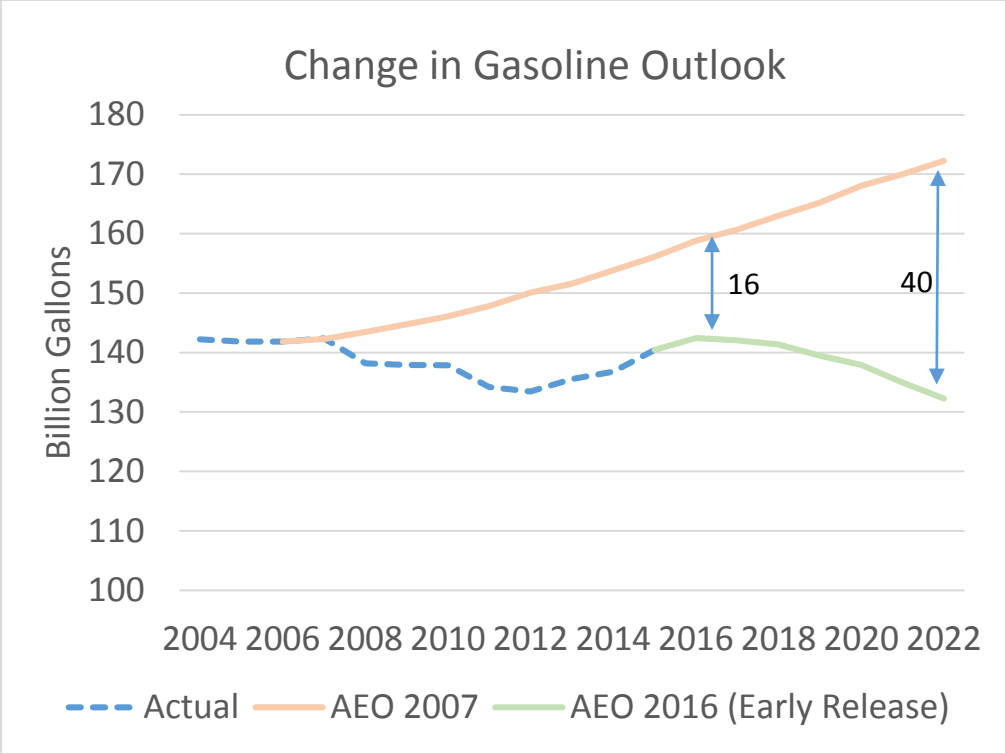


Figure 1

The U.S. has undergone a seismic shift in domestic energy production since 2007 undermining one of the main objectives of the RFS program. Indeed, the U.S. produced 9.4 million barrels per day of crude oil in 2015, the highest domestic production since 1972. As a result of increased domestic crude oil production, gross U.S. crude oil imports have dropped by 30 percent since 2007. Additionally, in contrast to popular belief, of U.S. crude oil imports, only 30 percent come from OPEC countries—the rest comes from non-OPEC nations, mostly Canada and Mexico. In fact, Canada alone accounted for nearly 40 percent of U.S. crude oil imports in 2015. The fact is that the conversation of energy security has gone from one of energy scarcity in 2007 to one of abundance in 2016. According to EIA, the RFS played only a small part in this shift.[10] The vast majority is the result of innovation in domestic crude oil production techniques.

[10] EIA Testimony at 5-6 ("biofuels volumes in response to the RFS program have played only a small part in reducing projected net import dependence given the expectation of continued use of ethanol as an octane and volume source independent of RFS program requirements.").

The other stated goal of the RFS program, the reduction of GHGs and other environmental benefits, also is not being realized. In 2011, the National Academies of Science ("NAS") reviewed the RFS, and concluded that "RFS2 may be an ineffective policy for reducing global GHG emissions because the effect of biofuels on GHG emissions depends on how the biofuels are produced and what land-use or land-cover changes occur in the process."[11] In addition to the marginal GHG impacts, EPA also examined other environmental impacts, including on criteria pollutants and both water quality and quantity. EPA found that the RFS is projected to increase emissions and "lead to increases in population-weighted average ambient PM and ozone concentrations."[12] NAS put a finer point on its findings, stating "[t]hose projected air-quality effects from ethanol fuel would be more damaging to human health than those from gasoline use."[13] In addition to air quality impacts, biofuels can have a significant impact on water use. NAS found that "consumptive water use over the life cycle of corn-grain ethanol is higher than petroleum-based fuels even if the biofuels are produced from non-irrigated crops."[14] Although NAS warned that there is significant variability in results depending on regional characteristics, production methods, and other factors, it is important that Congress recognize that there is significant and ongoing scientific debate about whether the RFS worsens the environment.[15]

[11] National Research Council Comm. on Economic and Environmental Impacts of Increasing Biofuels Production, *Renewable Fuel Standard: Potential Economic and Environmental Effects of U.S. Biofuels Policy* (National Academies 2011)[hereinafter "NAS Report"].
[12] *Id.* at 206, citing RFS2 Final Rule Regulatory Impact Analysis.
[13] *Id.* at 246.
[14] *Id.*
[15] *See, e.g.*, House Comm. on Science, Space, and Technology Subcommittee on Environment and Subcommittee on Committee on Oversight, *Renewable Fuel Standard: A Ten Year Review of Costs and Benefits*, 114 Cong. (Nov. 3, 2015) (testimony of John M. DiCiccio, Research Professor, University of Michigan Energy Institute) ("The program has resulted in higher cumulative CO2 emissions than otherwise would have occurred and has also damaged the environment in many other ways. In summary, careful scientific analysis indicates that the lifecycle studies used to justify the RFS were flawed.").

In addition to the RFS' failure to meet its most basic goals, the program does not pass basic cost benefit analysis, even using EPA's own data. In 2014, the Government Accountability Office ("GAO") found that the net costs of the RFS, under EPA's own Regulatory Impact Analysis ("RIA"), would range from $64.5-77.5 billion dollars after accounting for the infrastructure overhaul needed to distribute the statutory volumes of renewable fuels.[16] GAO also found that EPA did not quantify some adverse water quality effects, used murky discount rates, and ultimately did not even use the RIA in implementing the program. The foregoing discussion highlights the disconnect between Congress's original intent in enacting the RFs and the current realities after a decade of experience with the implementation. In addition to these core problems, EPA's 2017 proposed rule exemplifies the problems with the annual implementation of the program.

II. EPA Correctly Recognizes the E10 Blend Wall, but Continues to Ignore Market Realities

As previously discussed, U.S. gasoline demand has remained flat and is projected to decline in the coming years. For obligated parties, this means there is a smaller volume of gasoline into which to blend increasing volumes of renewable fuels. This situation has led to the onset of the blend wall, which is the maximum amount of ethanol that the gasoline market can absorb given market, technical, and infrastructure barriers.[17] AFPM is pleased that EPA has and continues to recognize the existence of the blend wall and that it is appropriate and necessary for it to its statutory waiver authorities to adjust the annual ethanol mandates. However, the agency did not reduce the requirement enough to adequately address the inability of the fuel supply to handle greater biofuel volumes. The failure of the agency to waiver the volume sufficiently will create compliance and consumer challenges.

[16]Government Accountability Office, *Environmental Regulation: EPA Should Improve Adherence to Guidance for Selected Elements of Regulatory Impact Analysis*, GAO-14-519 (July 2014).
[17] The E10 blend wall is reached when all gasoline contains 10 percent ethanol.

The predominant gasoline-ethanol blend in commerce is 10 percent ethanol mixed into 90 percent gasoline ("E10"). Nearly all gasoline engines and infrastructure are designed and warrantied to handle no more than E10. As previously discussed, when Congress enacted EISA, EIA projected that the U.S. would consume 159 billion gallons of gasoline in 2016. Simple math shows that Congress believed the full 15 billion gallon conventional biofuel mandate would be capable of being consumed as E10, since 159 billion gallons would allow for 15.9 billion gallons of ethanol consumption. Unfortunately, given declining gasoline consumption, full adoption of E10 nationwide would only allow for 14.2 billion gallons of ethanol consumption this year. This highlights the need for EPA to exercise its waiver authority.

On May 31st, 2016 EPA proposed the renewable percentage standards for 2017. As a recognition that there are practical constraints on the amount of ethanol that can be used, EPA proposed to utilize its waiver authority "but only to the extent necessary to derive the applicable volume of total renewable fuel that reflects the maximum supply that can reasonably be expected to be produced and consumed by a market that is responsive to the RFS standards."[18] The table below summarizes the proposed volumes (billion):

	2016	2017		2018	
	Final Rule	**EISA**	**NPRM**	**EISA**	**NPRM**
Total	18.11	24	18.8	26	N/A
Advanced	3.61	9	4	11	N/A
BBD	1.9	$\geq$ 1.0	2*	$\geq$ 1.0	2.1
Cellulosic	0.230	5.5	0.312	7	N/A

Volumes shown as ethanol-equivalent RINs, except BBD, which is shown as physical gallons (multiply by 1.5 to convert to RINs)
*Finalized in the 2014-16 rulemaking.

[18] Renewable Fuel Standard Program: Standards for 2017 and Biomass-Based Diesel Volume for 2018; Proposed Rule, 81 Fed. Reg. 34778, 34781-82 (proposed May 31, 2016).

In proposing the 2017 renewable percentage standards, EPA assumes that the market will consume 14.4 billion gallons of ethanol in 2017, an increase of 270 million gallons beyond the volume assumed by EPA for 2016 in the 2014-16 RFS final rule. EPA also assumed a consumption increase of 170 million gallons from 2015 to 2016. Additionally, EPA estimates that 400 million gallons of biomass-based diesel and renewable diesel would be used to meet the total renewable requirement over and above the aggressive ethanol, biomass-based diesel, and advanced biofuel requirements. Despite EPA's argument that its proposed volumes are reasonably achievable, it nevertheless relies on compliance pathways that have never been demonstrated in the real world.

A. EPA Drastically Over-Estimates the Amount of Ethanol-Free Gasoline (EO) that can be Removed from the Market

EPA's proposed rule would reduce the market for ethanol-free gasoline (E0) to only 200 million gallons in both 2016 and 2017, despite the fact that EIA recently reported that E0 demand in 2015 reached 5.3 billion gallons.[19] This difference in E0 demand is significant when faced with the blend wall. If E0 demand holds steady around 5 billion gallons, that means EPA is overestimating the amount of ethanol that can be consumed by at least 500 million gallons. It would require 700 million gallons of E85 to be used in 2017 to offset 5 billion gallons of E0 demand. As described in more detail below, the market for E85 in 2015 only reached 87 million gallons. Ethanol-free gasoline is currently offered at approximately 10,000 stations nationwide,[20] compared to fewer than 3,500 E85 stations.[21]

Congress should not underestimate the impact this proposal has on consumers. Despite the fact that most engines are capable of utilizing E10, many consumers nevertheless prefer E0 for any

[19] Energy Information Administration, Almost all U.S. gasoline is blended with 10% ethanol, Today in Energy (May 4, 2016) http://www.eia.gov/todayinenergy/detail.cfm?id=26092.
[20] PURE-GAS.ORG, Pure-gas.org (2016).
[21] DOE Alternative Fuels Data Center shows about 3100 station, while E85prices.com indicates almost 3500.

number of factors. This is particularly true of boaters, but retailers report consumer demand for lawn equipment, motorcycles, and "anything with a small engine."[22]

B. EPA Drastically Over-Estimates the Amount of E85 that Consumers will Use

In addition to underestimating the amount of E0 demand, EPA's 2017 proposal overestimates E85 demand. EPA continues to use estimates for historical E85 demand that are not reflected in EIA data. For instance, EPA performs a stochastic analysis of E85 data from five states and from proprietary data from only 200 stations. As a result, EPA estimates that 166 million gallons of E85 were sold in the U.S. in 2015, while EIA's data indicate only 87 million gallons. It is widely accepted that Minnesota is among the most developed E85 markets in the U.S. Yet in 2015, the Minnesota Department of Commerce showed a 13 percent decline in E85 sales compared to 2014, despite (1) E85 being priced, on average, at a 21 percent discount or more to E10 in 8 of the 12 months, and (2) station counts increasing throughout the year.[23] Even if EPA is correct that 166 million gallons of E85 were sold in 2015, the agency's proposed 2017 compliance scenarios nevertheless show E85 varying from potentially 200-600 million gallons. The volumes would have to be even higher if EPA's estimates for E0 demand or biodiesel production prove wrong, which we believe is the case.

There are many reasons that E85 usage and demand are low. First, there are only between 3100 and 3500 retail stations offering E85, representing about 2 percent of U.S. retail stations. Further, only 7 percent of vehicles are Flex-Fuel Vehicles that can handle E85.[24] Finally, there is low consumer acceptance of E85. This can be attributed to a number of factors, including that gasoline contains 50

[22] *see* Ryck Lydecker, Could Ethanol-Free Gas Evaporate?, BoatUS Magazine (Dec. 2015)("But given the choice, boaters will fuel up with the ethanol-free gasoline in the places where they can find E0, even at an extra 30 cents a gallon, as at the Chinook Country Store. 'That's all we run, non-ethanol gas," says Kathy Whiteman, store manager. "People want it for their boats, of course, but also for their weed eaters, four-wheelers, motorcycles. Anything with a small engine.'").
[23] EIA Testimony, *supra* note 7 at 5.
[24] Minn. Dept. of Commerce, *2015 Minnesota E85 + Mid-Blends Station Report* (2015).

percent more energy per gallon than ethanol—meaning that the higher the ethanol content in fuel, the worse gas mileage one gets. As a result, consumers can pay more money to drive the same distance, and have to fill up more often.

Because of low consumer acceptance and the high capital costs associated with installing E85 infrastructure, most retailers are reluctant to install E85 pumps. For instance, according to the Petroleum Marketers Association of America, "99 percent of existing [underground tanks] currently in the ground are not legally certified as compatible with ethanol blends higher than 10 percent."[25] This means that a retailer selling ethanol blends higher than 10 percent may be violating federal and state regulations, and likely the retailer's insurance policy. Installing the underground storage tank and associated dispensing equipment can cost as much as $200,000 per station. As a result, station owners, who make an average of less than $50,000 per year, are hesitant to expend significant resources on installing infrastructure for a fuel in which consumers have no demonstrated interest.

Most retail gas stations are independently owned and operated. Indeed, according to GAO, major integrated oil companies own less than 1 percent of retail stations. In addition, approximately 48 percent of retail fueling outlets are operated by independent businesses who do not sell gasoline under a brand owned or controlled by a refining company. Approximately 52 percent are owned by independent businesses who sell fuel under the brand of one of the major oil companies or refineries. These retailers sign a supply and marketing agreement with the supplier to sell fuel under the name of the supplier. According to the National Association of Convenience Stores ("NACS"), 59 percent of convenience stores selling fuel are single store operators, "so having a branded contract with a major

[25] PMAA letter to Chr. Upton and Ranking Member Pallone (May 1, 2015).

refiner/supplier instantly provides a retailer with a familiar brand for their top product: motor fuels."[26] NACS reports that the benefits of being branded include not only the marketing benefits associated with a known brand, but also guaranteed fuel supply when supplies are tight and less exposure to the volatility in the wholesale gasoline market.

A retailer selling fuel under a franchise contract is obligated to sell a certain amount, maintain image requirements of the brand, and have purchase requirements from their supplier. But as a general matter, franchisees are free to sell higher ethanol blends. Nothing in the typical franchise agreement or anywhere else prohibits them from doing so. They merely need to make the necessary investment in equipment and infrastructure to sell the higher ethanol blends, and they are free to make these decisions based on their own competitive decisions and the demands of the marketplace.

Several laws protect the ability of franchisees to sell renewable fuels, including the Gasohol Consumption Act and the Petroleum Marketing Practices Act ("PMPA"). The PMPA in particular protects both franchisees and franchisors by ensuring that franchisors have two grades of gasoline being sold while barring a franchise agreement from preventing franchisees from carrying higher ethanol blends as a third grade of fuel. Thus, marketers are free to make the investments needed to store and sell higher ethanol blends.

Finally, nothing in the law or in the market prevents ethanol companies from buying retail stations or franchising their brands to sell E85. They likely choose not to enter the retail market because they recognize consumers have no interest in buying what they are selling.

[26] 2016 NACS Retail Fuels Report at 4 (2016), http://www.nacsonline.com/YourBusiness/FuelsCenter/Documents/2016/2016-Retail-Fuels-Report.pdf.

C. EPA Drastically Over-Estimates the Amount of E15 that Consumers will Use

The sole remaining pathway to push more ethanol into the market to meet EPA's 2017 proposal is through E15. EPA has approved the use of E15 in model year 2001 and newer cars and light duty trucks, but not in older vehicles or in any smaller engines (e.g. lawnmowers, motorcycles, and boats). In approving E15, EPA determined that the fuel did not defeat the emissions control system of the cars it tested. However, EPA did not design or run tests to determine the impact of E15 on the full engine. When the fuel and auto industries ran their own testing, it was determined that E15 had the potential to harm other engine components.[27] As a result, auto makers have refused to warranty potential damage cause by E15 in all models prior to 2012 and have only recently started designing engines to handle E15. The auto fleet takes more than a decade to turn over, so many cars on the road today are not designed or warrantied to handle E15. The ethanol industry repeatedly makes the claim that E15 "is the most tested fuel on the planet" and claims that it is safe for a 15-year-old car because NASCAR uses E15. This argument has no merit. First, NASCAR has designed the multi-million dollar cars to use E15/98 octane and the engines are rebuilt after every race. The ethanol industry's logic is no different than saying rocket fuel can be used in a 2002 Camry. Moreover, regardless of what the ethanol industry claims, it does not change the fact that using E15 can terminate a car's warranty.

In addition to vehicle compatibility, there is also significant infrastructure barriers that are very similar to those presented by E85. Retailers are required to have compatible underground storage tanks ("USTs") and dispensing equipment. EPA regulates approximately 600,000 actives USTs at about 215,000 sites in the U.S.[28] The Occupational Safety and Health Administration requires that all equipment used to dispense gasoline be certified for safety by a nationally recognized testing

[27] *See, e.g.*, Coordinating Research Council , *Intermediate-Level Ethanol Blends Engine Durability Study* (April 2012).
[28] Government Accountability Office, *Challenges to the Transportation, Sale, and Use of Intermediate Ethanol Blends*, GAO-11-513 at 9 (July 8, 2011).

laboratory, such as Underwriters Laboratory. Additionally, in 2015, EPA promulgated new regulations that affirmatively require station owners to notify the state implementing agency of plans to sell greater than E10 and that in doing so, they must "demonstrate compatibility of UST system." Many station owners do not have complete records of USTs, which may be as old as 40 years old. As a result, stations are reluctant to take on the liability associated with selling incompatible fuel like E15. Of course, retailers and refiners alike are concerned about consumer misfuelling. EPA has done an inadequate job of making consumers aware of what E15 is and its approved uses, instead relying solely on a 4x4 inch label affixed to gas pumps.

There has been a low level of consumer education associated with E15. An estimated 95 percent of boats are filled at retail gas stations, but a 2016 Harris Poll commissioned by the Outdoor Power Equipment Institute found a startling 60 percent of consumers believe any gas sold at retail stations is suitable for all engines and products. Further, only 36 percent know E15 is harmful to some engines—with just five percent aware that its use in those engines is also illegal.

In addition, a recent Harris Poll found that fewer than half (47 percent) of respondents admit they check the fuel pump for warning labels. This is consistent with earlier findings from the Association for Consumer Research, showing that warning labels are "not effective in influencing consumers' perceptions of hazards and risks." Though the government is aware that the RFS is changing the makeup of the fuel supply, it has undertaken no serious education campaign—beyond requiring small warning labels on fuel pumps—to inform boaters and other consumers about the problems they may face from improper or accidental fueling.

As a result of the infrastructure compatibility and liability concerns associated with E15, very few retail stations offer the fuel. In fact, only 312 stations offer E15 despite EPA's assumption in the 2014-16 RFS rule that 700 stations would offer E15 in 2016. EPA goes on to increase its assumption for 2017 to 1700 stations, based not on market response, but on a federal government grant program in conjunction with state funding to have 1500 stations be able to offer higher ethanol blend fuels.[29] It is not clear how many will actually offer E15, E85, or both. Stretching this assumption even further, EPA assumes that under the most favorable conditions, these stations would add 600-800 million gallons of ethanol to the ethanol supply in 2017. Given the infrastructure and liability concerns associated with E15, EPA's assumptions about E15 demand in 2017 are not credible.

D. EPA Drastically Over-Estimates the Amount of Biodiesel that the Market will Handle

Biomass-based diesel is approved to meet the total renewable mandate. Last year, EPA finalized a 2016 biomass-based diesel requirement of 1.9 billion gallons and a 2017 requirement of 2 billion gallons. The record production for combined biomass-based diesel and renewable diesel was 1.9 billion gallons in 2015 and the U.S. is on pace to produce the same volume in 2016. However, EPA also assumes an additional 0.4 billion gallons of biodiesel to meet the proposed 2017 conventional biofuel requirement, and 0.3 billion gallons to meet the advanced biofuel requirement, for a total of 2.7 billion gallons of biodiesel. EIA is showing U.S. biodiesel capacity in place (excluding renewable diesel) of just under 2.1 billion gallons as of March 2016.[30] Although nameplate capacity of the biodiesel industry and imports combined suggest ample capacity, the simple fact is that the U.S. has never produced that much biodiesel in any year, raising the likelihood that greater imports would be required. EPA justifies this by taking an average annual increase in production since 2011, the year after RFS2 was implemented,

[29] U.S. DEPT. OF AGRICULTURE BIOFUEL INFRASTRUCTURE PARTNERSHIP, http://www.usda.gov/wps/portal/usda/usdahome?contentid=2015/05/0157.xml.
[30] Energy Information Administration, Monthly Biodiesel Production Report, March 2016, http://www.eia.gov/biofuels/biodiesel/production/

dismissing the fact that the largest increases came before 2013, with subsequent increases showing significantly less growth.[31]

There are many factors restraining biodiesel production. In its 2017 proposed rule, EPA identifies local feedstock availability, production and import capacity, and infrastructure constraints (e.g. it requires specialized storage to prevent the fuel from gelling in cold temperatures).[32] An important factor to consider, however, is the sheer cost to consumers and taxpayers of forced biodiesel consumption. According to EIA, biodiesel is "significantly more costly than petroleum-based diesel under recent market conditions."[33] To put a finer point on it, EIA reported that "between August 2015 and January 2016, the difference between Gulf Coast spot market prices of biodiesel and petroleum-based diesel averaged $1.25 per gallon."[34] EIA further estimated that "[b]ased on Chicago Mercantile Exchange soybean oil prices, the difference between biodiesel production cost and Gulf Coast diesel averaged $1.15 per gallon between August 2015 and January 2016. For the month of January 2016 alone, when oil prices fell markedly, the difference between biodiesel production cost and Gulf Coast diesel averaged $1.55 per gallon."[35]

Using these data, EIA estimated that using 1.9 billion gallons of biodiesel rather than the petroleum diesel will cost between $2.2 - 2.4 billion in 2016 alone, and will be higher if biodiesel is used to meet the advanced or total biofuel targets.[36] This cost "is borne by both gasoline and diesel consumers. . ., by the Treasury, and by taxpayers more generally."[37] EPA's own analysis bears this fact

[31] 2017 Proposed Rule, *supra* note 18 at 34795
[32] *Id.* at 34791
[33] EIA Testimony, *supra* note 7 at 6
[34] *Id.*
[35] *Id.* at 7.
[36] *Id.*
[37] *Id.*

out. In the 2017 proposed rule, EPA estimates that the incremental cost of using soybean biodiesel to meet the advanced biofuels standards will be $453-683 million over 2015.[38]

Finally, biodiesel RIN fraud is also a problem and creates obstacles to compliance. Between 2011 and 2015, 154 million fraudulent RINs were identified. Not only did EPA punish refiners with fines for being unwitting victims of fraud, but also required refiners to purchase replacement RINs to account for the fraudulent credits. If additional fraud is identified in the coming months and years and EPA continues its past practice of requiring replacement, there will simply not be enough RINs to simultaneously meet the volume requirements and the replacement requirements.

E. EPA Proposes an Infeasible Cellulosic Requirement

The final category of renewable fuels is the cellulosic biofuel category. As previously discussed, there are very few gallons of cellulosic biofuels commercially available, much less available to meet EPA's aggressive increased standards. EPA proposes a 312 million gallon requirement for the 2017 standards. However, RIN generation through the first quarter of 2016 would only indicate approximately 141 million available credits, meaning EPA is assuming capacity will double between this year and next. There is no demonstrated ability of the cellulosic industry to meet that level of growth. In addition, more than 90 percent of the cellulosic requirement is being met through biogas generation, not through liquid transportation fuels. The biogas generation is available for RFS compliance purposes if it can be shown that the biogas was used in transportation, or burned for power generation that is subsequently used to power electric cars. In neither instance does a petroleum refiner distribute the fuel.

F. EPA Correctly Proposes to Maintain a Robust RIN Bank

[38] 2017 Proposed Rule, *supra* note 18 at 34802.

Although EPA proposed overly aggressive targets for the 2017 RFS, we support the agency's recognition of the vital importance of maintaining the RIN bank and not relying on it to propose 2017 standards. AFPM agrees with EPA's reasoning as articulated in the 2017 proposed rule:

> The availability of carryover RINs is important both to individual compliance flexibility and operability of the program as whole. We believe that carryover RINs are extremely important in providing obligated parties compliance flexibility in the face of substantial uncertainties in the transportation fuel marketplace, and in providing a liquid and well-functioning RIN market upon which success of the entire program depends. As described in the 2007 rulemaking establishing the RFS regulatory program, and further reiterated in the 2014–2016 final rule, carryover RINs are intended to provide flexibility in the face of a variety of circumstances that could limit the availability of RINs, including weather-related damage to renewable fuel feedstocks and other circumstances affecting the supply of renewable fuel that is needed to meet the standards.[39]

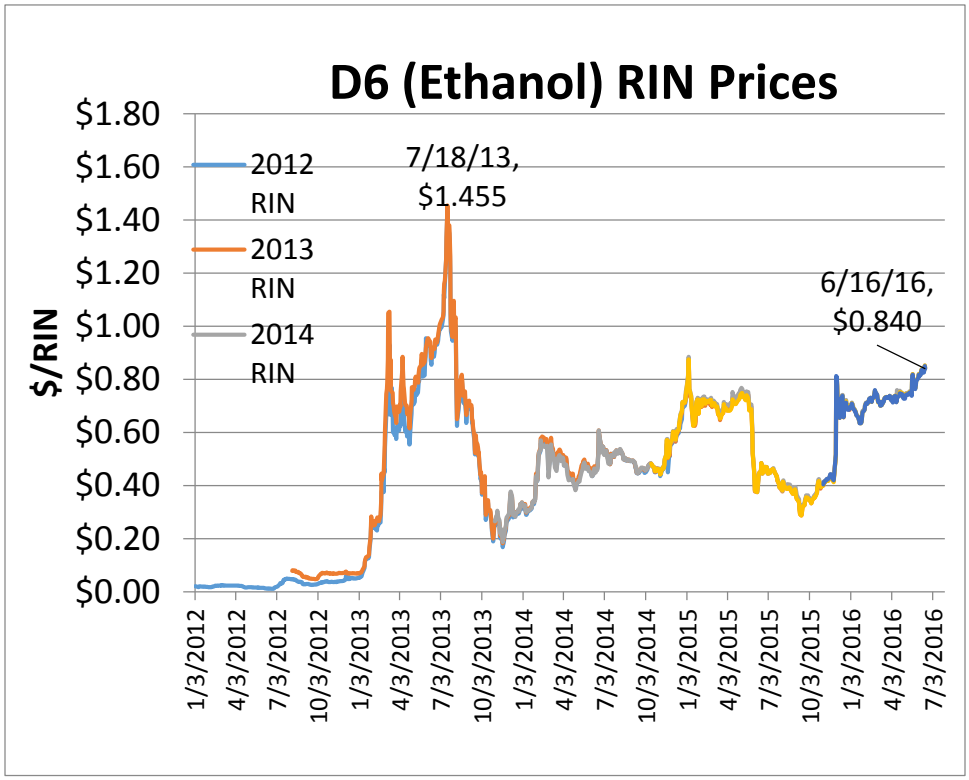
AFPM supports EPA's proposal to maintain the RIN bank, but takes notice that the overly aggressive volumes would necessitate obligated parties to draw down the RIN bank, thereby reducing liquidity in the RIN market and making future years' standards increasingly fraught with peril. The blend wall, lack of drop-in compliant fuels, and aggressive mandates virtually eliminate the potential to build RINs in the future.

G. Summary Comparison and RIN Market Reaction

Taken together, EPA's proposed 2017 standard is very aggressive and very likely unachievable, as indicated by 2016 production to date. For example, RIN generation for the first quarter of 2016 would imply 3.039 billion advanced RINs (cellulosic+biodiesel+other), compared to a 2016 requirement of 3.61 billion. This suggests that the biofuels industry will not produce enough volume to meet the 2016 standards, much less a further 400 million gallon increase for 2017.

[39] 2017 Proposed Rule, *supra* note 18 at 34789, 34793.

Likewise, total renewable RIN production for 2016 is only on track to hit 17.625 billion RINs, well short of the 18.11 billion RIN obligation for 2016. The 2017 standard would increase that obligation to 18.8 billion, leaving obligated parties with few, if any, compliance options. As evident from the following graph showing D6 (ethanol) RIN prices, RIN prices have increased since EPA proposed the 2017 standards. As the chart shows, RIN prices increased dramatically in 2013, the year the market anticipated the blend wall would be breached. The volatility since 2013 is largely attributable to various EPA announcements, whether proposed rules, withdrawn rules, or promulgation of final rules.



III. Other Systemic Issues with the RFS Indicate the Need for Repeal or Significant Reform

A. EPA is Chronically Late in Promulgating Annual Volumes

EPA faces an enormously difficult task in implementing the RFS, and as a result has historically had difficulty finalizing timely annual rulemakings. EPA appears to be on track for a timely promulgation of the 2017 volumes. However, EPA's timely action in 2016 and (presumably 2017) was preceded by six

years of late rules. In the case of the 2014 standards, obligated parties did not have notice of their obligation until two years after the standards were required by statute. The following chart summarizes the timing of the 2010-2015 rulemakings.

RFS Compliance Year	Federal Register publication of final rule	Number of days late compared with statutory schedule
2010 RFS	March 26, 2010	116 days late
2011 RFS	December 9, 2011	9 days late
2012 RFS	January 9, 2012	40 days late
2013 RFS	August 15, 2013	258 days late
2014 RFS	November 30, 2015	730 days late
2015 RFS	November 30, 2015	365 days late

AFPM is pleased that EPA finalized the 2016 volumes on time and appreciates EPA's use of its waiver authorities reflecting the agency's recognition of the blend wall. However, it is a concern that some parties are challenging EPA's authority to utilize its waiver authorities. Should those parties succeed in their litigation, there will be tremendous pressure on fuel markets and consumers, leaving Congress with no option other than to repeal or reform the RFS.

B. Congress Should Consider Consequences of Post-2022 Implementation and End the RFS

In addition to the short-term issues posed by the blend wall and the administrative challenges with the RFS, AFPM urges the Committee to end the RFS before 2022. Because the statute does not specify volumes after 2022, many mistakenly believe that the mandates end. However, not only do the mandates continue in perpetuity, the statute provides wide discretion to EPA to determine what the volumes should be. In particular, EPA may set the standards at a level it deems appropriate (under restrictions noted in the next paragraph) provided it considers the following six factors: (1) environmental impacts; (2) energy security; (3) annual production rate of renewable fuels; (4) impact on infrastructure, including the sufficiency of infrastructure to deliver and use renewable fuel; (5) cost to consumers; and (6) other factors such as job creation, price and supply of agricultural commodities, rural

development and food prices.[40] EPA must apply these factors in coordination with the Secretaries of Energy and Agriculture.[41] These are also the same factors that EPA currently now applies in setting biomass-based diesel standards each year.

The statute requires EPA to set the advanced biofuel volume standard at least the same percentage of the applicable volume in 2022.[42] It also requires that the cellulosic biofuel standards assume EPA will not need to issue waivers as it has in each year since the RFS was enacted.[43] Furthermore, the biomass-based diesel volume cannot be less than 1.0 billion gallons.[44]

AFPM supports full repeal of the RFS at the earliest possible time. However, an alternative solution would be for Congress to sunset the program after 2022. The biofuels industry would have had 17 years to get up and running and compete on a level playing field. Sunsetting the program in 2022 would also address any arguments about stranding assets.

IV. Recommendations to Congress

The time has come for Congress to repeal the RFS program. Not only is RFS implementation unwieldy and unworkable, but the ultimate goals of the program are not being met. This multi-billion dollar subsidy program is a drain on the economy, impedes true innovation, prevents consumers from making meaningful choices about their fuel purchases, may be causing more environmental harm than benefit. Again, full repeal is AFPM's preferred remedy.

[40] *Id.*
[41] *Id.*
[42] 42 U.S.C. § 7545(o)(2)(B)(iii).
[43] 42 U.S.C. § 7545(o)(2)(B)(iv).
[44] 42 U.S.C. § 7545(o)(2)(B)(v).

However, AFPM also supports other measures that prevent the short-term problems from growing worse while Congress considers repealing this law. For example, AFPM would support legislation that meets the following:

1. **Cap Ethanol Content in Gasoline as a Function of the RFS at 9.7 Percent or Less.** AFPM supports a 9.7 percent cap on mandated ethanol content. The cap has a number of virtues. First, it would allow consumers continued access to at least some ethanol free gasoline and prevent mandated use of higher ethanol blends. Second, it would preserve some liquidity in the RIN market. In AFPM's analysis of the RIN market, it became apparent that the increases in RIN prices occurred after the average ethanol content exceeded 9.7 in 2013. Third, it would account for measurement disparities at the terminal rack and historical differences between EIA projections and actual demand.

   It is important to recognize what a 9.7 percent ethanol cap would <u>not</u> do. First, by allowing more than 13.8 billion gallons of mandated ethanol demand in 2017, it would essentially freeze in place current usage. It would not prohibit higher consumption in a free market or disallow the nearly billion gallons of corn ethanol exports that are on track to occur this year. In other words, it will not disadvantage ethanol producers or rural America. It would also not affect drop-in biofuels, biodiesel, or indeed any non-ethanol biofuel. In other words, it is a targeted approach to the discrete problem of the blend wall.

2. **Put a Consequence in Place if EPA Misses its Statutory Deadlines**

   Congress should also enact a consequence in the event EPA begins to miss its statutory deadlines. In particular, if EPA misses its November 30th deadline to timely promulgate a standard, the standard should automatically be set at the previous year's standard. This would

provide certainty for obligated parties, renewable fuels producers, and other stakeholders, as well as provide an incentive for EPA to get rules done on time.

3. **Sunset the RFS as Quickly as Possible**

   Finally, Congress should sunset the RFS as quickly as possible. It has been nearly a decade since Congress debated this mandate, and we now know much more about the costs and benefits of the current structure. Rather than delegating important decisions about the fuel supply to a future Administration, Congress should reclaim its authority and sunset the program before it is taken over by unelected bureaucrats.

AFPM notes that the first two of these concepts are embodied in legislation led by two members of this Committee, Congressmen Flores and Welch, and cosponsored by many of Members on both sides of the dais. This bipartisan legislation, H.R. 5180, deserves support from every Member of Congress.

AFPM appreciates the opportunity to testify today and the Committee's continued leadership in addressing this important issue.