April 5, 2013

The Honorable Fred Upton
Chairman
Committee on Energy and Commerce
U.S. House of Representatives

The Honorable Henry Waxman
Ranking Member
Committee on Energy and Commerce
U.S. House of Representatives

Dear Chairman Upton and Ranking Member Waxman:

The Renewable Fuels Association (RFA) is the national trade association representing the U.S. ethanol industry. The RFA appreciates the opportunity to respond to the questions posed in the white paper, “Examining ‘Blend Wall’ Challenges,” as part of the Committee’s review of the Renewable Fuel Standard (RFS).

In short, the RFA believes the “blend wall” is a creation of the oil companies’ failure to respond appropriately to the very clear market signal given upon passage of the Energy Independence and Security Act of 2007 (EISA), a bill they vehemently opposed and are seeking to re-litigate today. By refusing to make (or allow their franchisees to make) the investments necessary to provide market access to increasing volumes of renewable fuels, they hope to create a self-fulfilling prophecy that the RFS targets cannot be met. One, Congress should not reward such blatant disregard for the law. Two, there is nothing wrong with the RFS that cannot be fixed with what is right with the RFS, and that includes the blend wall. As the “cost of compliance” increases, the incentive to make or allow the necessary investments to scale the blend wall will triumph. That is particularly true because the “cost” of providing marketplace access to larger volumes of renewable fuels is actually quite low. E15 is a legal fuel being sold successfully today by a small but increasing number of gasoline marketers willing to challenge their franchisors and suppliers in the interest of providing a lower cost, higher octane fuel to their consumers. And E85 pumps are increasing as well today as the economics of ethanol become more attractive with every predictable rise in consumer gasoline prices.

It is important to note at the outset that overcoming the “blend wall” issue is most critical to the success of cellulosic and advanced biofuels just now beginning their journey toward commercialization. Those next generation fuels need the assurance of market demand beyond the E10 blend market to attract investors. Leaving the market artificially constrained further limits market opportunities for next generation biofuels, missing an opportunity to meaningfully increase America’s use of renewable fuels and reduce our dependence on imported oil.

Below please find RFA’s responses to questions set forth by the Committee on blend wall challenges.
1. To what extent was the blend wall anticipated in the debate over the Energy Policy Act of 2005 and the Energy Independence and Security Act of 2007?

In creating a market for 36 billion gallons of renewable fuels, Members of Congress most certainly knew in 2007 that such a large volume of fuel could not be absorbed by the gasoline market expected in 2022 without changes to the vehicle fleet and fuel distribution infrastructure. While nobody anticipated that gasoline demand would fall as it has, largely in response to the skyrocketing oil and gasoline prices in 2008 that precipitated a world-wide recession, there was absolutely an expectation that renewable fuels would have to move beyond just being a blend component in gasoline. Indeed, that was the intent.

By early 2009, it was clear that the arrival of the so-called E10 blend wall may occur sooner than was expected in 2007. In fact, in the analysis that accompanied EPA’s proposed rule for the RFS2, the Agency wrote, “…under the proposed RFS2 program, we are projected to hit the E10 ‘blend wall’ of about 14-15 billion gallons by 2013.” EPA’s final rule for the RFS2 underscored this point again, stating, “…the nation is expected to hit the blend wall in 2013 under our high-ethanol control case [and] in 2014 under our primary mid-ethanol control case…. Regardless, to meet today’s RFS2 requirements using increased volumes of ethanol we are going to need to see growth in FFV and E85 infrastructure and increases in FFV E85 refueling rates.” To suggest that the blend wall was not anticipated to occur in the 2013/14 timeframe is simply not truthful.

The RFS was intended to drive innovation in technology by fostering investment in cellulosic ethanol and other advanced biofuels. It has done that. While slower than hoped, commercialization of these new technologies is occurring today. The RFS was also intended to drive innovation in the marketplace, with E85 and other blends providing consumers choice at the pump. In fact, the auto companies responded to that policy objective by expanding their production of flexible fueled vehicles (FFVs) that can use up to 85 percent ethanol. Fifty-percent of the automobiles produced by domestic auto manufacturers are FFVs today, and there are now greater than 15 million FFVs on the road. If those vehicles had consistent access to E85 infrastructure, they could consume some 6-7 billion gallons of ethanol on an annual basis. The problem, of course, is that refiners and their downstream partners have fought the introduction of E85 at every turn, refusing to invest in E85 infrastructure, discouraging their franchisees from making such investments or offering non-branded products to consumers.

The bottom line is that Congress knew EISA would require the marketplace to adapt to the increasing demand for renewable fuels, far beyond ethanol’s use as a blend component. The renewable fuels industry responded by increasing production and making investments in new technologies. The auto industry responded by dramatically increasing their production of FFVs. But the oil industry has thus far steadfastly refused to provide the market access necessary to meet the EISA volumes, coming to Congress now for relief from a problem they have created!

2. What are the benefits and risks of expanded use of E-15 to automakers, other gasoline powered equipment makers, refiners, fuel retailers, and others involved in the manufacture and sale of gasoline and gasoline-using equipment?

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Ethanol helps cars run better. It is a natural, biodegradable high octane additive. It helps reduce engine knock and pinging while also removing gum and other deposits from fuel systems. It helps prevent gasoline lines from freezing in the cold of winter. And because of its high oxygen content, it reduces carbon monoxide, exhaust hydrocarbons and toxics in gasoline. Finally, because it is renewable, ethanol is the only liquid transportation fuel that reduces greenhouse gas emissions, as much as 30-50 percent compared to gasoline.

For refiners, because of ethanol’s high octane value, refineries don’t have to run reformers as severely, producing fewer toxics and extending the barrel of oil. Thus, the cost of gasoline is reduced for consumers. Studies have concluded that both because ethanol is cheaper than gasoline and because it extends gasoline supplies, the price of gasoline is as much as $1.09 lower per gallon than it would be without ethanol, saving the average American family more than $1,200 on their gas bill for the year (Attachment 1). E15 would only expand those benefits to refiners and consumers alike.

3. **What are the risks of the introduction and sale of E15 to the owners of pre-2001 motor vehicles, boats, motorcycles, and other gasoline-powered equipment not approved to use it? Are there risks to owners of post-2001 vehicles? How do these risks compare to the benefits of the RFS?**

There has been so much manufactured hysteria surrounding the introduction of E15, we appreciate this question. Fact: E15 has been the most studied fuel EPA has ever evaluated as part of a 211(b) waiver process. Fact: the Department of Energy conducted E15 tests involving 87 vehicles of all types and models with NO emissions, materials compatibility, durability or driveability problems being identified. Fact: Brazil has used blends of up to E25 for more than a quarter century without any of the engine issues suggested by the API-funded 3-car test. Fact: a report by the world-renowned automotive engineering firm, Ricardo Inc., concluded that if E15 is approved for 2001 and newer vehicles, there would be no emissions, materials compatibility or regulatory reason not to approve it for older vehicles. Nonetheless, out of an abundance of caution, and because testing for the full useful life of the vehicle could not be completed on cars having already exceeded their full useful life, the EPA decided to limit approval to those vehicles for which they had actual testing data.

EPA’s Misfueling Mitigation Rule requires gasoline marketers offering E15 to label the pumps conspicuously. Beyond that, EPA requires a public education campaign, special treatment on product transfer documentation, and an industry-funded, independent national survey to assure compliance. The Renewable Fuels Association has published and distributed a detailed “E15 Retailers Handbook” for gasoline marketers walking them through all of the steps necessary to properly label pumps and protect against misfueling (Attachment 2). As a consequence, we do not believe that misfueling will occur. Nonetheless, based on the testing that has been done, the decades of experience in Brazil, where E25 is the only fuel available for small and marine engines, and the absence of engine issues through the first 9 months and estimated 30 million miles driven on E15 use in this country, we do not believe there will be any risk to those engines from the extremely rare and inadvertent blending of E15. Importantly, there is not a scintilla of data to suggest that the one-time misfueling of E15 would pose a risk for a non-approved engine.

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3 As of April 1, 2013, 21 retail gasoline stations are offering E15. The average length of time that these stations have been selling E15 is four months. These retailers report that E15 has, on average, constituted 20% of total
4. What is the likely impact, if any, of the blend wall on retail gasoline prices?

As gasoline prices across the country continue to climb, threatening household budgets and economic recovery alike, ethanol continues to provide consumer savings at the pump. Today, ethanol is priced approximately $0.60-0.70 per gallon below the wholesale costs of gasoline. Beyond its gasoline displacement benefit, as ethanol now represents 10 percent of the nation’s motor gasoline supply, it has greatly reduced the need for oil imports and provided a macroeconomic benefit to gasoline prices. Depending on the study you choose, the increased use of ethanol in 2011 saved consumers between $0.89 and $1.09. Those savings would only be enhanced by the use of ethanol in higher blends.4

Recently, oil companies have suggested that increased prices for conventional ethanol RINs (Renewable Identification Numbers) are leading to higher gasoline prices at the pump. Some have even deceptively claimed RINs are adding as much as $0.10 per gallon to the retail price of gasoline. This assertion is completely absurd and was recently completely dismissed by a comprehensive analysis by Informa Economics (Attachment 3). The Informa report concludes that ethanol continues to sell at a discount to gasoline and continues to offer savings at the pump, even when the impact of higher RIN prices is considered.

The Informa analysis found RINs are likely contributing no more than $0.004 (four-tenths of one cent) to the retail price of a gallon of gasoline. Meanwhile, ethanol’s wholesale discount to gasoline in 2013 has reduced the pump price for blended gasoline by an average of $0.044 per gallon. Thus, when the net impact of both RIN costs and ethanol’s discount to gasoline are considered, ethanol-blended gasoline is saving consumers an average of $0.04 per gallon based on straight blending economics. This savings doesn’t take into account either the indirect benefit that ethanol has on gasoline prices by effectively lowering demand for crude oil and clear gasoline or the enhanced octane value of ethanol over gasoline.

High gasoline prices in early 2013 can be explained by several factors unrelated to the RFS, RINs, or ethanol use. According to Informa, “[t]here is a distinct seasonal pattern to gasoline prices and crack spreads,” adding that “[t]he increase in gasoline prices and crack spreads during the first quarter of 2013 has been generally consistent with increases experienced in 2011 and 2012, despite the fact that conventional ethanol RIN prices averaged $0.03 during the first quarter of 2011 and $0.02 during the first quarter of 2012.” A Department of Energy analysis notes that higher gasoline prices have stemmed from planned and unplanned refinery maintenance; the low starting level for gasoline crack spreads going into 2013; preparation for seasonal fuel specification changes; and developments in global product demand – NOT ethanol, the RFS or RIN prices.

Further, examining the timing of the increase in RIN prices relative to the timing of the recent increase in retail gasoline prices shows that the two events are completely unrelated. Figure 1 below shows

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that retail gasoline prices and RIN prices were generally stable and flat through much of January. Gasoline prices shot up at the end of January, as crude oil prices surged and gasoline crack spreads widened. Gasoline prices continued to steadily escalate over the first three weeks of February, while RIN prices were flat. Then, near the end of February, retail gasoline prices peaked and began to ease. Indeed, gasoline prices were steadily falling when RIN prices temporarily spiked in mid-March. Gasoline prices continued to fall after the RIN spike, and RIN prices have also moderated. Clearly, there was no correlation between the February surge in gas prices and the mid-March spike in RIN prices.

Figure 1. 2013 Weekly Retail Gasoline Prices and Daily RIN Prices

5. What is the timing of the implementation challenges related to the blend wall? Will some entities face difficulties earlier than others?

The only “entity” facing difficulties from the blend wall today is the U.S. ethanol industry that has had to shut down approximately 12-15 percent of its production capacity because it has been denied access to the marketplace. That can be remedied, however, as long as the RFS stays in place and is allowed to work as intended, creating the economic incentive for gasoline marketers to install the infrastructure necessary to blend E85, E15 or other higher blends. Today’s market for RINs will provide that incentive. In response to higher RIN prices, we have already seen increased E85 use, and renewed
interest in E15. That is the genius of the RFS, the credit system not only provides flexibility, but it also provides the incentive to drive innovation in the marketplace.

The market-driving benefit of the RFS credit program was recently affirmed by BP Biofuels CEO Phil New, who stated:

“[t]he conventional RIN markets are responding to the blend wall – exactly as could have been anticipated. The RIN markets are now starting to incentivize all members of the value chain to seek ways to resolve the blend wall. What had become a static, entrenched relationship is now starting to look much more fluid, as the incentives provided by the RIN markets provide a real prompt to innovation – not just on the supply side, but for the better demand side players as well.”

Similar comments have come from oil industry economist Phil Verleger, who said:

- “In short, no RIN problem exists. Instead, the trouble has been created by the stubborn resistance of some refining companies…to the RFS program.”
- “…refiners have resorted to “export blackmail” rather than try other solutions. One of these would be sales of E85 (85:15 ethanol/gasoline), which would alleviate the problem.”
- “…the obvious solution to the RIN price problem involves no EPA intervention and no regulatory action at this point. It simply calls for boosting E85 sales.
- “Refiners and marketers could meet their RFS requirements by boosting E85 sales.”

The message is clear. Let the RFS work and solutions to the blend wall will be found!

6. Could the blend wall be delayed or prevented with increased use of E-85 in flexible fuel vehicles? What are the impediments to increased E-85 use? Are there policies that can overcome these impediments?

Viable options exist for breaking through the E10 “Blend Wall” and meeting RFS requirements with physical ethanol volumes instead of paper RIN credits. E15 and E85 blends are legally approved and offer a workable pathway for meeting increased RFS volumetric requirements. Only slight increases in E15 consumption would be needed in 2013 to satisfy this year’s RFS obligations with physical gallons rather than banked RINs. If E15 accounted for just 1 percent of total gasoline sales in 2013, the RFS requirement for renewable fuel could be met strictly with physical gallons of ethanol.

The Regulatory Impact Analysis that accompanied the RFS2 final rule includes a detailed assessment of the costs to modernize fuel distribution infrastructure to accommodate higher-level ethanol blends under the RFS. Notably, the analysis is based on input from petroleum terminal operators, the rail industry, the marine transport sector, the trucking industry, retail gas station owners, manufacturers of fuel storage and dispensing equipment, and other industry sources.

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7 Assumes gasoline demand of 133.8 billion gallons, 13.38 billion gallons of ethanol use at E10, and 200 million gallons of ethanol use at E85. Thus, 220 million gallons of ethanol would need to be consumed as E15 to meet the 13.8 billion gallon RFS requirement for “renewable fuel.” This means 1.47 billion gallons of E15 would need to be consumed, which equates to 1.09% of projected gasoline demand. Does not account for impact of sugarcane ethanol imports that may be used to meet advanced biofuel standard.
One scenario in the analysis examined the cost of upgrading the fuel distribution system from handling a baseline of 13.2 billion gallons of ethanol annually to accommodating 33.2 billion gallons of ethanol — a 20-billion-gallon increase. The results of this scenario indicated a total capital investment of $9.9 billion would be necessary to modernize the terminal, fuel transportation and retail infrastructure. According to the analysis, **that works out to just 6 cents of capital investment per gallon of additional ethanol use over the baseline.** When amortized over total gasoline sales, the infrastructure costs would be **fractions of a cent per gallon.** These costs include construction of new rail cars, new tank barges, new tank trucks, new and retrofitted storage tanks and blending equipment at petroleum terminals, unit train receiving infrastructure, manifest rail receipt facilities, and marine terminal infrastructure. Additionally, the estimate includes the costs to outfit retail stations for higher-level blends, including installation of new dispensers, hanging hardware, refueling island hardware, automatic tank gauging equipment, canopy installation, underground storage tanks, and other retail infrastructure.

All of this means the higher-ethanol blend infrastructure necessary to bridge the gap between the infamous E10 "blend wall" (approximately 13.3 billion gallons) and the 2013 RFS requirement of 13.8 billion gallons would cost about $30 million — or $0.00023 per gallon of expected 2013 gasoline sales.

While we believe the RFS itself does provide the policy support to encourage investment in technologies to drive the market to greater renewable fuel use, the RFA does continue to support bipartisan legislation requiring automakers to produce fewer gasoline-only vehicles. The Open Fuel Standard promoted by Representatives John Shimkus (R-IL) and Elliot Engel (D-NY) would assure more FFVs, electric cars and natural gas vehicles to dramatically reduce our dependence on imported oil.

**7. Is E-15 misfueling unavoidable? Are there lessons from the labeling and dispensing of diesel, E-85 and other fuels that prevent their misfueling that can also be applied to E-15? What specific actions are companies taking to address potential misfueling concerns under MMPs?**

The EPA approved E15 blends to for use in cars, pickups and SUVs built in 2001 and later, or about two-thirds of the vehicles on the road today. E15 is a safe fuel, as evidenced by the fact auto manufacturers are now providing warranty coverage for it. Today, more than 40 model year 2012 and 2013 vehicles include E15 in the fuel recommendations section of the owner’s manual.

EPA’s rulemaking approving E15 for only certain engines did raise issues regarding the potential for misfueling. As noted earlier, the RFA has been sensitive to those concerns and worked diligently with EPA and stakeholders to assure that E15 is only used by consumers with 2001 and newer vehicles. The RFA has developed the only Misfueling Mitigation Plan approved by EPA. That plan must be adopted by gasoline marketers before they can legally offer E15 for sale. The RFA has published and distributed an E15 Retailer Handbook taking marketers through all of the steps necessary to properly handle E15 – from which underground storage tanks are approved for E15 to proper labeling language and placement to registration and reporting to EPA. The RFA has also helped organize a public outreach campaign to inform consumers about the use of E15. We want E15 to be used, but we want it to be used safely and within the bounds of EPA’s approval.

Toward that end, the RFA has responded to concerns raised by various stakeholders, including motorcyclists and small engines, and sought and received approval from the EPA for additional flexibility for retailers offering E15, ensuring that gasoline with up to 10 percent ethanol is available at each station when also offering the higher octane fuel E15. The new configuration will eliminate the
need for a four-gallon minimum fueling transaction when E15 is sold from the same hose as E10, E0 or both. Advocates for motorcyclists and small engines had expressed concern that EPA’s four-gallon minimum requirement would make it difficult for those low volume customers to find fuel appropriate for their vehicles. Those concerns have now been eliminated. The configuration approved by EPA will recommend that retailers either sell E15 from a dedicated hose, or have at least one fueling position that does not have E15 available. This fueling position will be clearly identified, and other fueling positions will direct those seeking that option to the right place. EPA may ultimately approve more configuration options in the future. The U.S. ethanol industry clearly heard stakeholders’ concerns and we moved quickly to address them.

8. Can blend wall implementation challenges be avoided without changes to the RFS? Is the existing EPA waiver process sufficient to address any concerns? If the RFS must be changed to avoid the blend wall, what should these changes entail? Should any changes include liability relief or additional consumer protections for addressing misfueling concerns?

The RFA fundamentally and vehemently does not believe changes need to be made to the RFS to address the blend wall. The original legislation, which included a dynamic credit trading mechanism, will drive the innovation needed to scale the blend wall as long as Congress leaves it in place.

Similarly, we believe the existing waiver provisions are sufficient to address any legitimate concern that the RFS requirements cannot be met. The various waiver provisions afford EPA the ability to administratively adjust RFS requirements on an annual basis in light of prevailing fuel market and economic conditions (for a summary of RFS flexibility provisions, see Attachment 4). EPA has exercised this waiver authority each and every year since the RFS2 became effective with respect to cellulosic biofuel requirements. In fact, EPA has waived more than 97 percent of the cellulosic biofuel requirements since 2010.

EPA is also empowered by the statute to waive any part of the RFS if the Administrator determines the program is causing “severe harm” to the economy or environment, or if there is “inadequate domestic supply.” States and parties subject to RFS requirements may also petition the Administrator to consider waiving the RFS, in whole or in part, based on these criteria. EPA has twice received such requests from states to partially waive the RFS requirements; both times EPA denied the waiver requests, due in significant part to the extraordinarily large stocks of surplus RIN credits and the significant compliance flexibility afforded to obligated parties.

Finally, as noted earlier, we believe EPA’s Misfueling Mitigation Rule and the RFA’s own efforts to inform consumers and gasoline marketers alike of the proper use of E15 are adequate protections against misfueling.

9. Have the 2017 and Later Model Years Light Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy standards for cars and light trucks changed the implementation outlook of the RFS?

Yes. The new CAFE/GHG standards may actually lead to another option to meet RFS obligations through the use of higher octane fuels. A recent paper published by Ford Motor Company (Attachment 5) concludes that one means of meeting the new CAFE/GHG standards is through the use of direct injection and higher compression ratio engines. Such engines would require a higher octane motor fuel, and the most cost effective octane booster available today is ethanol. According to the Ford paper:
• “The physical properties of ethanol provide important benefits when added to gasoline. Ethanol has both a higher octane rating and a higher heat of vaporization than typical gasoline.”
• “Ethanol improves octane ratings when added to gasoline. The RON and AKI of pure ethanol are approximately 109 and 99, respectively, much higher than regular or premium-grade US gasoline.”
• “Higher minimum octane ratings for regular-grade fuel would enable higher compression ratios in future vehicles and is an opportunity to provide greater engine efficiency and meet increasingly stringent fuel economy regulations and expectations.”
• “…it appears that substantial societal benefits could be obtained by capitalizing on the high octane rating of ethanol through the introduction of higher octane number ethanol–gasoline blends to the US marketplace.”

EPA referred to this effect in its recent TIER3 proposed rulemaking, asserting that a high-octane ethanol/gasoline blend “…could help manufacturers that wish to raise compression ratios to improve vehicle efficiency, as a step toward complying with the 2017 and later light-duty greenhouse gas and CAFE standards (2017 LD GHG).”

However, some automakers and supporters of FFVs have expressed concern that the recent CAFE/GHG rule may discourage ongoing production of FFVs beyond 2016. The final rule included generous credits and incentives for the production of some alternative fuel vehicles, like vehicles that operate on electricity and natural gas, but it substantially encumbered the ability of automakers to continue generating compliance credits for FFVs.

10. What other methods, including the use of drop-in fuels, are available to industry to ease the challenge posed by the blend wall?

While RFA sees promise in “renewable hydrocarbon” fuels and other biofuel molecules like butanol, these technologies generally have not been cost competitive with existing commercial biofuels. Accordingly, there is very little commercial capacity to produce these fuels, aside from modest volumes of renewable diesel. We believe these technologies will become more economical in the future, but large volumes of these biofuels will not be available in the near term as the industry confronts the so-called blend wall. Therefore, growth in E15 and E85 usage will be the most economical and most plausible means of penetrating the blend wall in the near term.

Further, it should be pointed out that no biofuel — regardless of its chemical properties — can simply be “dropped in” the existing petroleum fuel distribution infrastructure. Introduction of any new fuel into commerce requires creation of specifications and standards, substantial testing (e.g., health effects, materials compatibility), and legal registration, before it can be offered for sale to the public. Many of the “renewable hydrocarbon” fuels under development have yet to go through this process.

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11. What are the impacts on renewable fuel producers if the RFS is changed to avoid the blend wall?

As noted earlier, the RFA does not believe legislative changes to the RFS program are necessary to address the “blend wall.” The flexibility and market driving mechanisms included in the RFS will ultimately provide appropriate responses. It is already happening as E85 infrastructure expands and marketer interest in offering E15 to consumers is enhanced through compelling economics. To the contrary, amending the RFS right now, at this critical juncture for the development of the fledgling cellulosic and advanced biofuel sector, would send a loud and decidedly negative signal to the investment community that the federal government’s commitment to this program is fickle and create uncertainty that could prove to be a death knell to the continued evolution of the biofuels industry.

Most importantly, Congress needs to consider the consequences of “changing the rules in the middle of the game.” Investments have been made on the basis of a law passed by Congress and regulations promulgated by EPA. As noted, it would send a particularly negative and chilling signal to the investment community if the RFS is interrupted midstream. Without a doubt, it would be a devastating setback to the movement toward cellulosic ethanol and other advanced biofuels, and the nation’s investment in a more secure and diverse energy future.

In addition, adjustments to the RFS could result in the stranding of some existing first generation biofuel assets that have reliably supplied renewable fuels to the American public since the RFS was adopted.

If there is any additional information you would like RFA to provide, please do not hesitate to ask.

Sincerely,

Bob Dinneen
President & CEO