



August 13, 2013

The Hon. Gina McCarthy  
Administrator  
United States Environmental Protection Agency  
1200 Pennsylvania Avenue, NW  
Washington, D.C. 20460

**Re: Petition for Partial RFS Mandate Waiver**

Dear Administrator McCarthy:

The American Petroleum Institute (“API”) and the American Fuel & Petrochemical Manufacturers (“AFPM”) (collectively the “Petitioners”) respectfully submit this petition to the U.S. Environmental Protection Agency (“EPA” or “the Agency”) for a partial waiver of the 2014 applicable volumes of the Renewable Fuel Standard (“RFS”) pursuant to section 211(o)(7)(A) of the Clean Air Act.<sup>1</sup> Petitioners represent numerous refiners and importers of transportation fuel and, in that capacity, are “person[s] subject to the requirements” of section 211(o)(2) and entitled to petition for a waiver. Petitioners are trade associations that appear on behalf of their members before Congress, administrative agencies, and the courts on a wide range of issues, including the U.S. supply of transportation fuels.<sup>2</sup> Unless this petition for waiver is granted, the RFS will result in inadequate domestic supplies of gasoline and diesel fuel and severe economic harm to consumers and the economy. EPA must take action to avoid the disastrous consequences of the RFS blendwall.

### **Introduction**

#### **a. The Blendwall Will Limit Domestic Supplies of Gasoline and Diesel Fuel Causing Severe Economic Harm.**

Fundamentally, this Petition seeks to avoid the critical threats that the RFS presents to consumers and the entire U.S. economy. This year, the United States hit the “blendwall”—the point at which the RFS attempts to force the use of more renewable fuels than can be consumed in the United States, due to

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<sup>1</sup> See 42 U.S.C. § 7545(o)(7)(A).

<sup>2</sup> The RFS directly implicates the interests of the Petitioners and their members, threatening—as discussed herein—“certainly impending” injuries that are “fairly traceable” to agency action. *Clapper v. Amnesty Int’l USA*, 133 S. Ct. 1138, 1143 (2013).

fundamental constraints imposed by fueling infrastructure and problems of gasoline engine incompatibility. Unless EPA exercises its authority to waive the mandates, the ultimate and unavoidable outcome of the RFS-imposed “blendwall” will be significant increases in the cost of fuel and substantial fuel supply shortages in the United States—resulting in undeniably severe economic harm to consumers and the economy.

Because of the blendwall, the RFS limits the supply of gasoline and diesel fuel for U.S. consumption. Compliance with the RFS is demonstrated through Renewable Identification Numbers (“RINs”). In effect, RINs operate like permits to sell specific quantities of gasoline and diesel for U.S. consumption. The number of RINs available for compliance depends on the consumption of renewable fuels in U.S. transportation fuels. Therefore, as the RFS mandates exceed the ability of the underlying fuel supply and vehicle and infrastructure compatibility to accommodate additional amounts of renewable fuels, there will be a shortage of RINs for compliance. This will in turn limit supplies of gasoline and diesel for U.S. consumption, resulting in severe economic harm to consumers and the overall economy.

**b. E15, E85, and Biodiesel Cannot Supply Enough of the Needed RINs.**

As explained in more detail below, there are no options beyond EPA’s waiving of the requirements that can avert the potentially disastrous implications of the blendwall. There is no option that can realistically supply the necessary RINs to enable the continued adequate supply of gasoline and diesel fuel for U.S. consumption. Both E85 and E15 are only compatible with approximately 5 percent of the existing vehicle fleet, and the vast majority of retail infrastructure is not compatible with ethanol above 10 percent volume. In addition, over 95 percent of all retail gasoline stations are independently owned and operated—*i.e.*, they are not owned and operated by the RFS obligated parties. Moreover, biodiesel cannot fill the gap because of limitations on biodiesel supply resulting from feedstock constraints. Quite simply, there is no option other than an EPA waiver to avoid the adverse impacts that the RFS will have on domestic supplies of gasoline and diesel fuel.

**c. The Shortage of RINs Will Cause an Inadequate Domestic Supply of Gasoline and Diesel Fuel.**

Because the number of RINs available for compliance depends on the consumption of renewable fuels in U.S. transportation fuels, constrained consumption will result in a shortage of RINs. Indeed, the volumes of renewable fuels currently required by the RFS in 2013 are unachievable—the “blendwall”—and can be satisfied only through the use of previously banked RINs. The problem becomes more acute in 2014. Although the RFS requires industry to blend 14.4 billion gallons of corn-based ethanol, and hundreds of millions of gallons of imported sugarcane-based ethanol in 2014, the effective, practical limit imposed by the existing domestic distribution infrastructure and vehicle fleet will cap the amount of ethanol that can actually be blended into our gasoline supply at roughly 13 billion gallons.<sup>3</sup> “Therefore, after exhausting all other available options for compliance, individual obligated parties, each acting independently,” will have no practical option but “to reduce their RIN obligation by decreasing the volume of transportation fuel supplied to the domestic market—either by reducing production,” reducing imports, or increasing exports.<sup>4</sup> Obligated parties can legally supply only as much gasoline and diesel as they have permits (*i.e.*, RINs) to supply.

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<sup>3</sup> U.S. ENERGY INFORMATION ADMINISTRATION, *SHORT TERM ENERGY OUTLOOK* Table 4a (July 2013).

<sup>4</sup> NERA ECONOMIC CONSULTING, *ECONOMIC IMPACTS RESULTING FROM IMPLEMENTATION OF THE RFS2 PROGRAM 2 (2012)* (hereinafter NERA STUDY) (Attachment 1).

**d. An Inadequate Domestic Supply of Gasoline and Diesel Fuel Will Severely Harm Consumers and the Economy.**

As domestic fuel supplies decrease, large increases in transportation fuel costs would impose significant costs on society.<sup>5</sup> As the RFS mandate is ratcheted up every year, the annual increase in the mandates will further exacerbate the decreased fuel availability and increased fuel costs to society.<sup>6</sup> These increased fuel costs will have a broad impact across the economy and will increase over time as this process repeats itself yearly.<sup>7</sup> “As domestic supply continues to decline, the blending percentage obligation becomes increasingly untenable.”<sup>8</sup>

The severe economic impact is seen most acutely first in the diesel fuel market. “The tightening of the diesel supply (up to 15% decline in 2015)” likely will cause “large fuel cost increases to ripple through the economy, adversely affecting employment, income, consumption, and GDP.”<sup>9</sup> This disruption in fuel supply will result in severe economic harm to consumers and to the overall economy of the United States.<sup>10</sup> “By 2015, the adverse macroeconomic impacts” are estimated to “include a \$770 billion decline in GDP and a corresponding reduction in consumption per household of \$2,700.”<sup>11</sup> EPA can avert this outcome by exercising its authority to grant the partial waiver requested in this Petition.

**e. EPA’s Issuance of a Waiver Will Provide Relief Because It Will Remove the Limitation on Gasoline and Diesel Supplies Resulting From the RIN Shortage.**

EPA has previously considered two other requests for waivers of the RFS standards. In both cases, the Agency denied the waivers primarily because issuance of the waiver would not likely have impacted the amount of ethanol blended during the waiver period and therefore would not have had any real world impact. Now that the blendwall has been reached, that underlying reason no longer applies. Here, a waiver would have a very clear and necessary practical impact—it would lift the limitations on gasoline and diesel supplies that arise due to the blendwall.

**f. Specific Relief Requested**

To avoid the inevitable severe economic harm described herein, Petitioners respectfully request that EPA partially waive the RFS 2014 applicable volumes. Due to the nested nature of the four renewable fuel categories, this waiver request comprises the following elements:

- Biomass-Based Diesel: Biodiesel production is expected to meet the 1 billion gallon statutory minimum volumetric requirement, and EPA need not waive this obligation at this time provided other renewable requirements are waived in accordance with this Petition.<sup>12</sup>

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<sup>5</sup> *Id.*

<sup>6</sup> *Id.*

<sup>7</sup> *Id.*

<sup>8</sup> *Id.* at 3.

<sup>9</sup> *Id.*

<sup>10</sup> *Id.*

<sup>11</sup> *Id.*

<sup>12</sup> For purposes of this waiver request, Petitioners assume that EPA’s mandate for 1.28 billion gallons of biomass-based diesel will be fulfilled. This amount of biomass-based diesel would create 1.92 billion RINs. Petitioners filed for reconsideration of the 2013 biomass-based diesel mandate, in addition to filing for review with the U.S. Court

- Cellulosic Biofuels: Because actual production of cellulosic biofuels remains minimal (less than 75,000 gallons have been produced in 2013 as of this petition), the 2014 cellulosic biofuel mandate of 1.75 billion gallons is impossible to meet and therefore EPA should use its authority to reduce the cellulosic mandates to reflect actual production.
- Advanced Biofuels: EPA is on record before Congress as identifying a 2013 advanced biofuels domestic supply shortfall of 666 million gallons. This shortfall will increase in 2014 as the advanced biofuel statutory mandate increases. Because the *domestic* supplies of advanced biofuels (*e.g.*, biomass-based diesel) and cellulosic biofuels are inadequate, a waiver of at least 1.83 billion gallons from 3.75 billion gallons to 1.92 billion gallons is necessary in 2014. This number represents the actual supply of biomass-based diesel and cellulosic biofuels expected to be produced in 2014. As EPA reduces the cellulosic mandate, EPA must reduce the advanced category by the commensurate amount.
- Total Renewables: Waiving the cellulosic and advanced nested biofuel mandates, along with a corresponding downward adjustment to the total renewable fuel mandate, would be insufficient to overcome the severe economic harm caused by the E10 blendwall and thus EPA must reduce further the 2014 total renewable requirement. Based on the EIA 2014 gasoline consumption estimate of 132.8 billion gallons, the maximum amount of ethanol that can be blended into the gasoline supply at levels that are safe, effective, and practical given the existing vehicle fleet and distribution systems, is 13.28 billion gallons (*i.e.*, 10 percent ethanol levels, or E10). To avoid severe economic harm resulting from a breach of the E10 blendwall, the total renewable fuel volume must be reduced by 3.35 billion gallons – from 18.15 billion gallons to 14.8 billion gallons. This number represents the total amount of ethanol, drop-in cellulosic gasoline, cellulosic diesel, and biomass-based diesel that can be safely blended into U.S. transportation fuels in 2014. Given the variability of approximately 3 percent in EIA’s projections, total ethanol usage (*i.e.*, the sum of corn, advanced, and cellulosic) should not exceed 9.7% of EIA’s projected gasoline demand.<sup>13</sup>

Congress explicitly authorized EPA to waive the RFS mandates, under Section 211(o)(7) of the Clean Air Act, in whole or in part, where there would be *either* (1) an inadequate domestic supply *or* (2) severe adverse consequences to the U.S. economy. As this Petition demonstrates below, the inadequate supply and severe economic consequences projected to occur in 2014 independently establish *both* grounds for a waiver. In 2014, there will be an inadequate supply of RINs—as already definitively recognized by EPA—to satisfy the various mandates of the RFS, forcing the overall reduction of supplies of gasoline and diesel for U.S. consumption. This will result in an inadequate domestic supply of

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of Appeals for the D.C. Circuit. Petitioners maintain their arguments that the Agency failed (a) to apply properly the statutory criteria set forth at section 211(o)(2)(B)(ii) when promulgating the 2013 biomass-based diesel mandate and (b) to take into account the fraudulent RINs that affected the biomass-based diesel industry.

<sup>13</sup> The E10 blendwall reflects the technological limitations of existing gasoline engines and fuel dispensing equipment. To avoid the harmful economic effects described herein, however, the maximum amount of ethanol mandated should be no more than 9.7 percent (*i.e.*, 12.88 billion gallons). This level reflects the normal variability in gasoline consumption forecasted by EIA, as well as the need to accommodate some continuing sales of E0, account for geographic areas where it is not practical to blend ethanol, and provide a small cushion to ensure RIN liquidity.

gasoline and diesel fuel. The impact of this fuel shortage will create severe harm across the economy, establishing the second ground for granting a waiver.

As set forth more fully below, the RFS will result in inadequate domestic supplies and severe economic harm. Moreover, and also more fully set forth below, no option other than EPA's granting of a partial waiver can avoid the potentially disastrous implications of the blendwall. Granting a waiver will alleviate the adverse impacts of the RFS on gasoline and diesel supplies and the severe adverse economic impacts of the blendwall.

#### **I. Enforcement of Existing Renewable Volume Obligations Will Result in Inadequate Domestic Supplies of Gasoline and Diesel in 2014.**

Section 211(o)(7)(A)(ii) authorizes the Administrator to issue a waiver of the RFS upon a determination "that there is an inadequate domestic supply."<sup>14</sup> The blendwall will result in an inadequate domestic supply of gasoline and diesel fuel. The domestic supply of fuels will be dramatically curtailed under the current RFS because of various factors outside the control of the obligated parties. Put simply, domestic demand for fuels has dropped in a way that no one anticipated when Congress passed the Energy Independence and Security Act ("EISA") in 2007. This drop in demand is reflected globally and has been predicted to peak at a level of less than 92 million barrels per day in the next few years.<sup>15</sup> Furthermore, the consumption of higher blends of ethanol (*i.e.*, E15 and E85) depends on a multitude of factors beyond the control of obligated parties: (1) only 5 percent of vehicles on the road are compatible with such fuels; (2) the majority of retail infrastructure is not compatible with ethanol blends above 10 percent volume; and (3) obligated parties do not own the vast majority of retail stations and, therefore, cannot make the necessary infrastructure upgrades. As the GAO noted in 2011, federal safety standards do not allow ethanol blends over E10 to be dispensed with existing equipment at most retail fueling locations.<sup>16</sup> Because of that drop in demand, and vehicle and infrastructure compatibility issues, there will be insufficient RINs to maintain adequate domestic supplies of gasoline and diesel fuel.

"Inadequate domestic supply" can take the form of (1) an insufficient supply of RINs, (2) an insufficient supply of transportation fuel such as gasoline and diesel, or (3) an insufficient supply of certain renewable fuels required by the RFS. All three supply impacts are "certainly impending"—indeed, they are actually present.

#### **A. The Inability To Consume the Statutory Amounts of Renewable Fuels Leads to an Inadequate Domestic Supply of RINs, and Therefore an Inadequate Domestic Supply of Gasoline and Diesel Fuel.**

EPA has already determined that insufficient RINs can be the basis for a finding of an inadequate domestic supply. Former Administrator Jackson plainly stated that "[f]or most biofuels EPA believes that a demonstration by a petitioner that there were insufficient RINs available from the previous year (subject to the 20% carryover limitation) and the current year's production to allow for compliance with

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<sup>14</sup> 42 U.S.C. § 7545(o)(7)(A)(ii).

<sup>15</sup> See *Yesterday's Fuel*, THE ECONOMIST, Aug. 3, 2013, at 12.(citing studies by Citi).

<sup>16</sup> U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-11-513, BIOFUELS - CHALLENGES TO THE TRANSPORTATION, SALE, AND USE OF INTERMEDIATE ETHANOL BLENDS 23 (2011).

the standard could be a basis for finding that there was an ‘inadequate domestic supply.’”<sup>17</sup> This situation is precisely what we face today.

Obligated parties must report (retire) RINs to demonstrate compliance with their respective Renewable Volume Obligations (“RVOs”) in any given year. As long as RVOs are realistic, obligated parties can meet them by using the requisite quantity of renewable fuel—detaching and reporting RINs as the fuel is used. Surplus RINs generated by the fuel can be banked for later use by the obligated party, or put on the RINs trading market where they can be purchased by other obligated parties who require additional RINs to meet their own RVOs.

The number of RINs available for compliance with the RFS depends on the consumption (not production) of renewable fuels in the U.S. transportation system.<sup>18</sup> As the mandates in the law exceed the ability of the transportation system to consume the mandated levels of renewable fuel, the number of RINs available for compliance falls short of the mandated levels. Basic law of supply and demand, not surprisingly, anticipates this scarcity of RINs will be reflected in the market price of RINs. Indeed, the recent volatility in RIN prices suggests that the blendwall has arrived.

The system becomes more complex when the renewable fuel requirements exceed what is realistic (*e.g.*, requiring 1.75B gallons of cellulosic biofuel in 2014 when virtually none physically exists) or what can be accommodated by banked RINs and the RINs trading market. For example, although EPA’s final RFS for 2013 requires ethanol use that will exceed the E10 blendwall, EPA has stated that it believes a sufficient number of banked or traded RINs from 2012 are available for obligated parties to ensure compliance with the RFS for 2013. In other words, rather than exceed the E10 blendwall in 2013, manufacturers can continue to produce gasoline with a 10 percent ethanol blend and fulfill their higher RVO mandates by drawing down on banked or market-traded RINs.

But this complexity devolves into near impossibility as RVOs continue to increase in 2014 and beyond. With overall demand for gasoline falling, the number of RINs being generated and made available in the RINs trading market is insufficient to fulfill the mandates under the RFS.

The 2013 Annual Energy Outlook (“AEO 2013”) projects a continuing decline in motor gasoline consumption, due to a combination of a sluggish economy in the short term, more stringent CAFE standards, increased use of diesel, and an increasing number of natural gas-powered vehicles.<sup>19</sup> Motor vehicle gasoline consumption is projected to decline by approximately 1.6 million barrels per day from 2011 to 2040 in AEO 2013’s Reference Case.<sup>20</sup> EIA projects gasoline consumption in 2014 to reach only 132.8 billion gallons.<sup>21</sup> Assuming that E10 represents the primary means of RFS compliance for 2014, the maximum amount of ethanol that refiners could practically blend is 13.28 billion gallons. The RFS conventional biofuel (*i.e.*, corn-based ethanol) implied statutory requirement is 14.4 billion gallons,

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<sup>17</sup> Letter from Lisa P. Jackson, U.S. EPA, to Robert Greco III, API Group Director of Downstream and Industry Operations, and Letter from Lisa P. Jackson, U.S. EPA, to Charles Drevna, AFPM President, denying petitions for reconsideration of portions of the December 9, 2010 RFS Rule and requests to waive the 2011 RFS cellulosic biofuel standard, at 17 (May 22, 2012).

<sup>18</sup> See 40 CFR § 80.1401. Under the RFS, U.S. transportation fuels generally exclude jet fuel, heating oil, and fuel consumed in the State of Alaska.

<sup>19</sup> U.S. ENERGY INFORMATION ADMINISTRATION, DOE/EIA -0383 (2013), ANNUAL ENERGY OUTLOOK 2013 2.

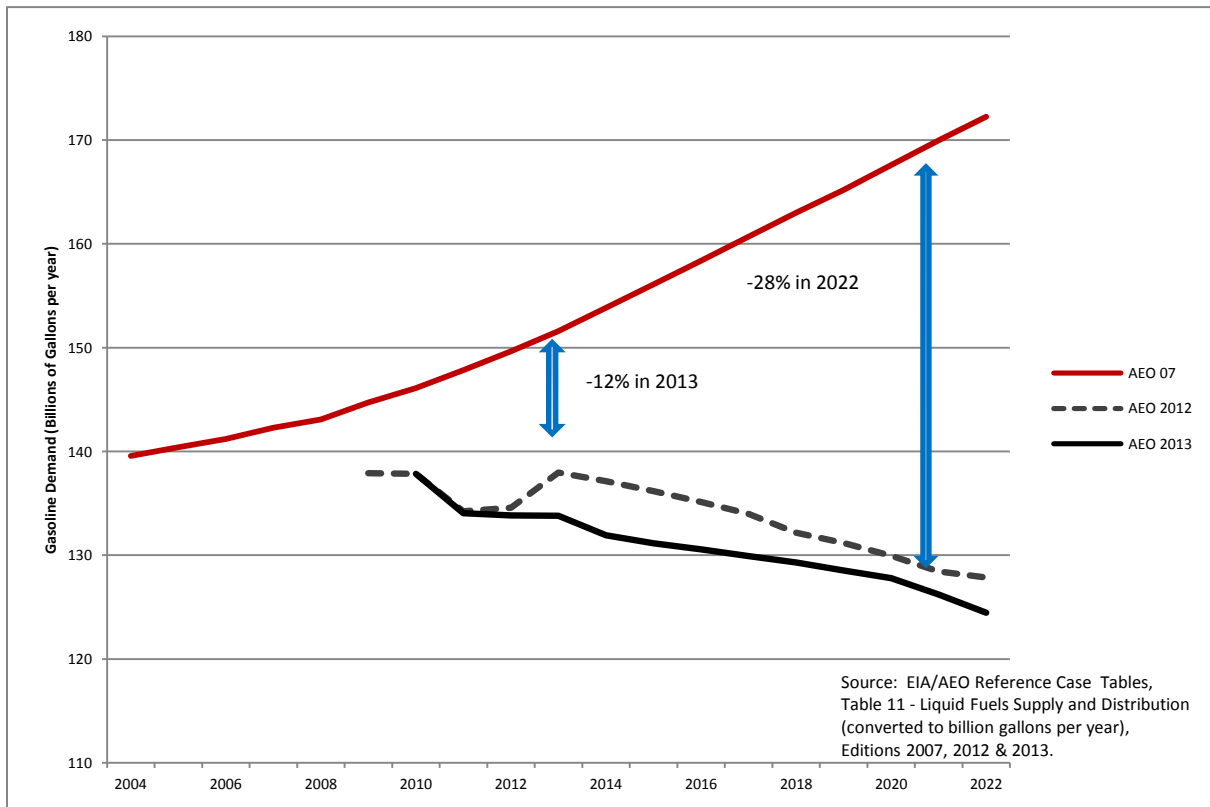
<sup>20</sup> *Id.* at 80.

<sup>21</sup> U.S. ENERGY INFORMATION ADMINISTRATION, *SHORT-TERM ENERGY OUTLOOK* Table 4a (July 2013).

which in and of itself is beyond the 10 percent ethanol saturation point.<sup>22</sup> Add a small amount of cellulosic ethanol and hundreds of millions of gallons of sugarcane ethanol needed to meet the advanced biofuel requirement, and obligated parties are faced with too much ethanol to fit into the gasoline supply.

Tellingly, the AEO 2013 reveals fundamental inaccuracies in earlier projections of energy demand on which the RFS was initially based and subsequently amended. Estimates available at the time EISA was enacted in 2007 projected gasoline demands for 2013 and 2022 that are 12 percent and 28 percent higher than what is projected today.<sup>23</sup> AEO 2013's updated data highlight the incorrect assumptions underlying the renewable volumes mandated for 2013, 2014, and 2015. AEO 2013 now projects that this downward trend will continue for years, with projected gasoline demand falling by approximately 625,000 barrels per day from 2011 to 2022:

### Drastic Unanticipated Drop in Gasoline Demand



Because of this demand drop illustrated above, refiners cannot physically meet the 2014 RFS total renewable fuel volume of 18.15 billion gallons.<sup>24</sup> While some have argued that refiners can simply blend either E15 or E85 in order to avoid the blendwall (at least for a year or two), neither offers a viable

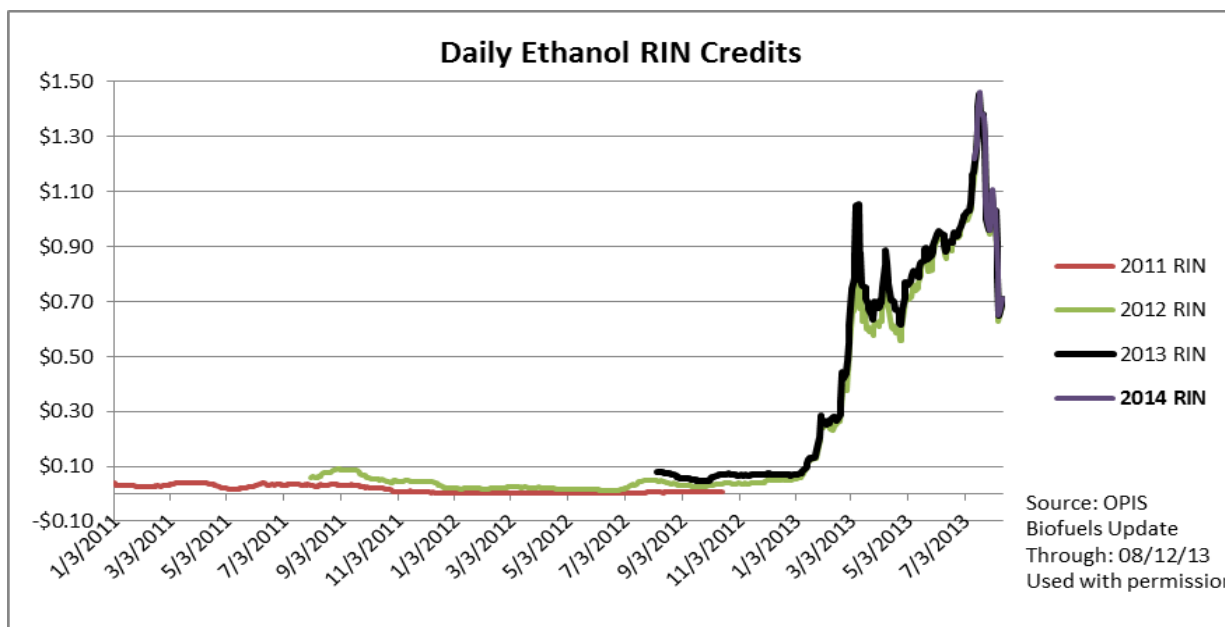
<sup>22</sup> The implied corn-based ethanol mandate is calculated by subtracting the advanced biofuel mandate from the total RFS mandate. In 2014, the implied corn-based ethanol mandate is 14.4 billion gallons (18.15 – 3.75).

<sup>23</sup> See U.S. ENERGY INFORMATION ADMINISTRATION, ANNUAL ENERGY OUTLOOK 2013 84 Figure 102.

<sup>24</sup> Even if one assumes that there will be 2 billion biomass-based diesel RINs, the 2014 total RFS volume of 18.15 billion gallons would require more than 16 billion gallons of ethanol, which cannot be practically folded into the nation's existing gasoline pool.

solution as discussed further below. The availability of surplus RINs in 2014 will be extremely limited. In fact, EPA already has expressed concerns that the RIN supply in 2014 will not be sufficient to avoid the blendwall, and NERA also projects that surplus RINs may be depleted in 2014. As the number of available RINs for compliance is depleted, one would expect their price to rise with their growing scarcity. This will in turn likely result in increased exports, reduced imports, and reduced production for domestic consumption, as supplying transportation fuels for U.S. consumption becomes less economic and increasingly infeasible.<sup>25</sup> Then, as the RIN supply becomes even tighter as the mandates continue to escalate in disproportion to vehicle use and infrastructure, refiners and importers will be left with no practical option but to reduce their RFS obligation by reducing supplies of gasoline and diesel for U.S. consumption.<sup>26</sup>

This year, conventional biofuel RIN prices have increased by as much as 2,700 percent.<sup>27</sup>



The chart referenced above from the Oil Price Information Service (“OPIS”) illustrates this dramatic rise in conventional biofuel D6 RIN prices.<sup>28</sup> Recent drastic increases in the price of RINs serve as objective market-derived evidence that there is an inadequate domestic RIN supply relative to demand (*i.e.*, when expected supply is lower than expected demand, RIN prices increase).<sup>29</sup>

In light of the projected demand decline, there will simply not be enough RINS and not be enough fuel sold to meet the RFS mandates in the Clean Air Act.<sup>30</sup> The conditions described above more than meet

<sup>25</sup> NERA STUDY, *supra* note 4, at 36-37.

<sup>26</sup> *Id.*

<sup>27</sup> See Robert Wagner, *Ethanol RIN Prices Up 2740% Year To Date*, SEEKING ALPHA (July 19, 2013), <http://seekingalpha.com/article/1558892-ethanol-rin-prices-up-2740-year-to-date?source=bloomberg>.

<sup>28</sup> Oil Price Information Service, “Biofuels Update” (Aug. 12, 2013).

<sup>29</sup> USDA ECONOMIC RESEARCH SERVICE, FDS-13d-SA, *HIGH RIN PRICES SIGNAL CONSTRAINTS TO U.S. ETHANOL EXPANSION 1* (Apr. 12, 2013) (stating that “as for any product, prices for RINs reflect underlying supply and demand factors.”).

<sup>30</sup> See University of Illinois, *Exploding Ethanol RINs Prices: What’s the Story?* <http://farmdocdaily.illinois.edu/2013/03/exploding-ethanol-rins-prices.html> (Mar. 8, 2013) (stating that “The



the statutory test for an “inadequate domestic supply.” Indeed, RINs need only be “insufficient” in number and availability to authorize the exertion of the EPA’s waiver authority under section 211(o)(7) of the Clean Air Act. Moreover, EPA’s authority for the current RIN system is based on section 211(o)(5), which provides for the generation of an appropriate number of credits for (1) persons that refine, blend, or import gasoline, (2) biomass-based diesel, and (3) small refiners.<sup>31</sup> This section authorizes EPA to issue regulations providing for the generation, use, and transfer of credits for the purpose of complying with RFS volume requirements. RINs are, therefore, inextricably linked to the production, use, and supply of renewable fuel, in addition to the need to have a fungible supply of RINs allowing for compliance in all geographical areas of the United States.<sup>32</sup> Where this supply is challenged or threatened—as here—the exercise of EPA’s waiver authority is necessary to avoid severe economic harm resulting from obligated parties’ continued compliance with the RFS.

#### **B. The Scarcity of RINs Leads to an Inadequate Domestic Supply of Diesel and Gasoline.**

As discussed above, obligated parties can only supply as much gasoline and diesel fuel as they have RINs to meet the obligations that supplying such fuel incurs. Each gallon of gasoline and each gallon of diesel fuel supplied for U.S. consumption incurs an obligation under each of the four RFS mandate categories—biomass based diesel, cellulosic, advanced, and general renewable. The number of RINs available for compliance depends on the consumption of the renewable fuels in the U.S. transportation system. As the mandated levels of renewable fuel exceed the ability of the vehicles and infrastructure to consume the renewable fuel, a shortage of RINs relative to the mandated levels occurs, which in turn limits the amount of gasoline and diesel fuel that can be legally supplied for U.S. consumption.

The blendwall problem likely will be seen most acutely in the diesel market.<sup>33</sup> This is because ethanol comprises the vast majority of current U.S. biofuels and ethanol cannot be blended into diesel. An obligated party’s total RVO is derived from its production of both gasoline and diesel fuel. For each gallon of diesel fuel produced or imported, however, a RIN deficit is incurred. For example, to meet the 2012 RFS, each gallon of gasoline and each gallon of diesel fuel produced or imported incurred a 9.23 percent RIN obligation.<sup>34</sup> Diesel fuel can only be blended with biomass-based diesel to meet the RFS, but the RFS biomass-based diesel requirement was only 0.91 percent or roughly 10 percent of the 9.23 percent overall requirement, leaving a deficit of 8.32 percent.<sup>35</sup>

This diesel deficit requires diesel manufacturers to purchase excess ethanol RINs. When the renewable mandate was less than the blendwall, excess ethanol RINs were available from gasoline blending of ethanol, but as the mandate approaches and exceeds the blendwall, the RINs surplus shrinks. With surplus RINs disappearing and RINs prices increasing rapidly, that compliance option is becoming costly and increasingly infeasible, which results in a significant incentive to reduce diesel fuel supplied to the

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prospect of not being able to meet ethanol blending mandates with physical blending and prospects for a rapid decline in the stock or RIN credits in the very near future has substantially increased the value of D6 RINs.”)

<sup>31</sup> 42 U.S.C. § 7545(o)(5).

<sup>32</sup> See 42 U.S.C. § 7545(o)(2)(A)(ii).

<sup>33</sup> NERA STUDY, *supra* note 4, at 3.

<sup>34</sup> 77 Fed. Reg. 1320, 1341 Table III.B.3-3 (Jan. 9, 2012).

<sup>35</sup> A similar situation is required for 2013. The 2013 total renewable obligation is 9.74 percent, whereas the biomass-based diesel requirement is only 1.13 percent, leaving diesel refiners and importers with a deficit of 8.61 percent. See EPA, 2060-AR43, *REGULATION OF FUELS AND FUEL ADDITIVES: 2013 RENEWABLE FUEL STANDARDS*, pre-publication copy at 88 (Aug. 6, 2013)(hereinafter 2013 RFS Final Rule) (to be codified at 40 CFR § 80.1405(a)(4)).

U.S. market below the level that the market currently demands.<sup>36</sup> This diesel deficit is another example of inadequate domestic supply that would support EPA's granting of this Petition request. In this case, there is an inadequate supply of biomass-based diesel needed to generate a sufficient quantity of RINs to support the sale of diesel fuel in quantities demanded by consumers. To address this problem, EPA must waive the total RFS requirement, as described herein.

## **II. Unless Waived, the RFS Will Cause Severe Economic Harm.**

As discussed above, RINs effectively function as a permit to supply gasoline and diesel in the United States. If a refiner cannot secure enough RINs to meet its RVOs, then the refiner is limited in the amount of gasoline and diesel it may supply for U.S. consumption. Consequently, the inadequate supply of RINs leads to an inadequate domestic supply of gasoline and diesel fuel for U.S. consumption and presages severe economic consequences stemming from the RFS.

### **A. The Blendwall Will Force Obligated Parties To Supply Less Fuel for U.S. Consumption, Setting Off a Chain of Events That Causes a Massive Decline in GDP.**

The fuels market already is experiencing the economic effects of the impending blendwall. Starting early this year, prices for ethanol D6 RINs skyrocketed, rising from an average of below 4 cents per RIN in years prior to 2013 to over a \$1.40 per RIN in July 2013. A significant price spike occurred in conjunction with EPA's announcement of the proposed renewable fuel volumes for 2013. The current ethanol RIN price is now many multiples of the average ethanol RIN price experienced in the five years since the volume requirements for renewable fuels contained in section 211(o)(2)(B) were increased to their current level.

While the near term economic effects of higher RIN prices are troublesome enough, the arrival of the blendwall in 2013 and depletion of banked RINs in 2014 likely will force obligated parties to take drastic measures to comply with the law. NERA Economic Consulting has projected the economic impacts that the blendwall will impose on consumers and the U.S. economy through 2015.<sup>37</sup> NERA's model projects a \$1,300 decline in average household consumption and an aggregate GDP loss of \$270 billion in 2014.<sup>38</sup> If these effects are not somehow avoided by changes to the current implementation of the RFS, NERA concluded that the aggregate economic impacts by 2015 will be a loss of a staggering \$770 billion in GDP.<sup>39</sup>

The decrease in GDP, projected by NERA, results from a combination of (1) structural problems within the RFS itself and (2) technical constraints that prevent the development and deployment of higher ethanol blends that could forestall the blendwall.<sup>40</sup> With regard to the structural problems, the RFS requires each obligated party to meet an annual RVO, which is calculated as a percent of their total annual volume of gasoline and diesel produced or imported for sale in the United States by that obligated party during the year.<sup>41</sup> Thus, the final RVO in a given year for an obligated party will fluctuate based on its own fuel production and imports. As the RFS-mandated volumes increase in the face of

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<sup>36</sup> NERA STUDY, *supra* note 4, at 31.

<sup>37</sup> *Id.* at 38-39.

<sup>38</sup> *Id.* at 38-39 and Table 14.

<sup>39</sup> *Id.* at 8, 38-39.

<sup>40</sup> *Id.* at 4.

<sup>41</sup> 40 C.F.R. § 80.1407.

declining gasoline demand and infrastructure and vehicle incompatibility constraints—and the blendwall is hit—obligated parties will need more RINs than they can get from E10. That is to say, the volumes of RINs associated with corn-based and sugarcane-based ethanol that the obligated parties need to comply with the RFS will exceed RINs they purchase from downstream entities that blend 10-percent ethanol in gasoline. Thus, obligated parties will need to draw down previously banked RINs; there will be no “excess” RINs generated for compliance. Existing and available RINs now are likely being held or used for compliance, rather than being sold in the marketplace, and obligated parties needing to buy RINs to comply in 2014 will face a lack of feasible options to sustain their level of gasoline or diesel production and imports.<sup>42</sup> Because RINs effectively operate as a permit to sell specific quantities of gasoline and diesel, when obligated parties cannot acquire RINs, they must reduce the amount of gasoline and/or diesel they sell in the United States to remain in compliance with RFS.

With regard to the technical constraints, the U.S. fuel market lacks the physical infrastructure, compatible vehicles, and consumer demand to support enough sales volumes of ethanol-blended fuels other than E10 to meet the growing mandate. While it is legally permissible to blend ethanol in gasoline to produce E85 or E15 blends, simply because EPA has removed one legal impediment to the production of these blends does not mean that local regulations allow the use of these fuels, or that the market and consumers can or will accommodate their use.

Without an adequate supply of RINs, obligated parties will turn to the other compliance options available to them: (1) a decrease in fuel production; (2) a decrease in transportation fuel imports; and/or (3) an increase in gasoline/diesel exports.<sup>43</sup> These alternatives reduce the number of RINs an obligated party needs to demonstrate compliance with the RFS. A decrease in transportation fuel supplied to the domestic economy over and above the current and projected decrease in demand for transportation fuels will likely result in higher fuel costs and will have effects throughout the U.S. economy as manufacturers, distributors, and suppliers adjust to higher fuel costs.<sup>44</sup> The market’s response to obligated parties’ attempt to meet their RVOs and comply with the RFS ultimately will force individual households to decrease consumption at the pump and elsewhere.<sup>45</sup>

As detailed in the NERA Study, the overall effect of hitting the blendwall without viable compliance alternatives beyond reducing supply will be a contraction of multiple sectors of the U.S. economy that will ultimately result in a massive decrease in GDP, totaling \$770 billion in 2015. This severe adverse economic impact would be extraordinarily harmful to tens of millions of Americans and far exceeds any level necessary to constitute “severe economic harm” under CAA section 211(o)(7).

Importantly, in the context of considering the harms that will result in 2014 and 2015, nothing in the Clean Air Act requires that the severe economic harm occur in the same year that EPA issues the waiver.<sup>46</sup> EPA itself recognized that it has discretion when determining what time period to examine with respect to a severe economic harm analysis in its denial of North Carolina’s and Arkansas’s waiver petitions.<sup>47</sup> While EPA previously declined to examine impacts beyond the current calendar year due to

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<sup>42</sup> NERA STUDY, *supra* note 4, at 30.

<sup>43</sup> *Id.* at 27.

<sup>44</sup> *Id.* at 7.

<sup>45</sup> *Id.*

<sup>46</sup> See 42 U.S.C. § 7545(o)(7)(A).

<sup>47</sup> See 77 Fed. Reg. 70,752, 70,757 (Nov. 27, 2012).

an inability to properly assess the relevant variables, such a limitation is data-driven, not a function of the requirements of section 211(o)(7).<sup>48</sup>

The NERA Study fully accounts for fluctuations in fuel prices and availability, and it provides sufficient certainty to conclude severe economic harm will result from reaching the blendwall in the years following 2013.<sup>49</sup> Existing infrastructure cannot support the higher-ethanol blend fuels required to avoid the blendwall. Thus, the NERA Study forms a more than sufficient basis for EPA to waive the requirements of section 211(o)(2) in 2014 and subsequent years.

#### **B. The Harms Detailed in the NERA Study Are Unprecedented.**

The E10 blendwall has arrived, making 2014 unlike any other year that EPA previously examined. As explained in the NERA Study, infrastructure, technological, and market limitations will restrict the ability of obligated parties to market ethanol blends higher than E10 for use in conventional vehicles.<sup>50</sup> As a result, the only practical compliance strategy for obligated parties will be to reduce the amount of fuel produced for the U.S. market, causing sharp declines in fuel availability and associated increases in fuel prices.<sup>51</sup> In 2014, the ultimate result will be a decrease in average household consumption of \$1,300 and a net GDP loss of \$270 billion. The severe economic harm becomes worse in 2015 with a decrease in average household consumption of \$2,700 and a net GDP loss of \$770 billion.<sup>52</sup> EPA's issuance of a waiver here will help ameliorate these effects of the blendwall because it would remove the existing, rather than theoretical, limitation of the supply of gasoline and diesel—thus, this situation differs from earlier waiver situations, where the waiver's impact was not as clear.

The harms calculated in the NERA Study as the result of the blendwall are immediate and unprecedented. In denying the RFS waiver request of several States and other parties in 2012, EPA relied upon Iowa State University's model to evaluate the impact of a potential waiver on corn prices, food prices, feed prices, and fuel prices.<sup>53</sup> EPA's denial of the 2012 waiver request expressed the result of the Iowa State model in terms of avoided costs and concluded that the waiver would have decreased annual household expenditures on fuel just \$1.98-\$17.40.<sup>54</sup> In EPA's denial of Texas's 2008 waiver petition, EPA relied on the same Iowa State model and concluded implementation of the RFS would increase annual household expenditures only \$3.43-\$34.29.<sup>55</sup> Unlike those years, the country has run out of practical options because vehicle and refueling infrastructure compatibility is at the blendwall. In

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<sup>48</sup> *Id.*

<sup>49</sup> *See id.* at 70,758 (noting that a waiver petition based on the blendwall itself could provide a proper analysis of all the relevant factors required to grant a petition based on severe economic harm occurring in a year different than the year of the petition's filing).

<sup>50</sup> The issues associated with E15 and E85 compliance options are discussed in detail in Sections III.B and III.C, *infra*.

<sup>51</sup> NERA STUDY, *supra* note 4, at 2.

<sup>52</sup> *Id.* at 8 Table 3.

<sup>53</sup> 77 Fed. Reg. at 70,761. Petitioners do not suggest that the projected levels of harm in the 2008 and 2012 waiver requests, in addition to other information submitted for EPA's consideration, were insufficient to justify the Administrator's exertion of RFS waiver authority, only that the economic harms detailed in the NERA Study present adverse economic impacts of another magnitude altogether than the effects EPA projected in the 2008 and 2012 waiver decisions.

<sup>54</sup> *Id.* at 70,765.

<sup>55</sup> 73 Fed. Reg. 47,168, 47,179 (Aug. 13, 2008).

contrast to these rather small, previously projected effects, the NERA Study finds that the blendwall will significantly increase costs for both fuel and finished goods in 2014.<sup>56</sup>

In stark contrast with prior waiver petitions to the EPA, the economic harms that will occur here (absent waiver) not only are “certainly impending,” they are immediate, unprecedented, widespread, and severe. Indeed, as detailed by NERA, the adverse economic impacts will be felt by virtually every American household and by most of the U.S. economy. Petitioners respectfully submit that the ultimate cost—a massive decrease in GDP totaling \$770 billion in 2015—far exceeds any level necessary to constitute “severe economic harm” under CAA 211(o)(7).

### III. Severe Harms Flowing From the RFS Can Be Avoided Only Through A Waiver.

Having established that the blendwall will result in an inadequate supply of RINs and thereby lead to severe economic harm, we now turn our attention to potential alternative mechanisms to delay or avoid the arrival of the blendwall, and explain why they are in fact unavailing and do not defeat this Petition. The only solution to the blendwall problem that will avoid inadequate domestic supplies and severe economic harm is the issuance of a waiver. Unlike previous waiver request situations, in this case, issuance of a waiver will provide relief from the binding nature of the RFS and avoid the harms of the blendwall because it will remove the limitation on the supply of gasoline and diesel fuel that currently exists.

A study titled “Renewable Fuel Standards and the Ethanol Blendwall” was recently conducted by MathPro and is attached in its entirety in Attachment 2 of this waiver petition.<sup>57</sup> MathPro developed a spreadsheet-based model (“Software Tool”) to assess specified compliance approaches for various schedules of annual renewable fuel volumes that EPA might establish.<sup>58</sup> The spreadsheet used EIA’s 2013 Annual Energy Outlook of transportation energy demand (AEO 2013).<sup>59</sup> MathPro then assessed hypothetical scenarios involving assumed schedules of annual renewable fuel volumes and various compliance approaches using this tool.<sup>60</sup>

Scenario 1 represents the most aggressive case, and assumes that EPA leaves the total renewable fuel and advanced biofuel standards unchanged from the EISA volume schedule.<sup>61</sup>

- Scenario 1A: EISA volume standards, unrestricted expansion of FAME, no expansion of E85, AEO cellulosic biofuel volumes.
- Scenario 1B: EISA volume standards, expansion of E85, no expansion of FAME, AEO cellulosic biofuel volumes.
- Scenario 1C: EISA volume standards, expansion of E85, expansion of FAME to 5 percent, AEO cellulosic biofuel volumes.

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<sup>56</sup> NERA STUDY, *supra* note 4, at 8.

<sup>57</sup> MATHPRO, RENEWABLE FUEL STANDARDS AND THE ETHANOL BLENDWALL (Aug. 13, 2013) (hereinafter MATHPRO STUDY) (Attachment 2).

<sup>58</sup> *Id.* at 2.

<sup>59</sup> *Id.*

<sup>60</sup> *Id.*

<sup>61</sup> *Id.* at 10.

Scenario 2 assumes that EPA modifies the annual total renewable fuel and advanced biofuel volume standards to account for cellulosic biofuel being available in volumes significantly lower than contemplated in EISA.<sup>62</sup> Annual cellulosic biofuel volume standards (and the split between ethanol and diesel) are set at the volumes forecast in the AEO 2013 Reference Case.<sup>63</sup>

- Scenario 2A: Adjusted EISA volume standards, unrestricted expansion of FAME, no expansion of E85, AEO cellulosic biofuel volumes.
- Scenario 2B: Adjusted EISA volume standards, expansion of E85, no expansion of FAME, AEO cellulosic biofuel volumes.
- Scenario 2C: Adjusted EISA volume standards, expansion of E85, expansion of FAME to 5 percent, AEO cellulosic biofuel volumes.

Scenario 3 assumes a RFS schedule that maximizes ethanol use without exceeding the E10 blendwall.<sup>64</sup>

- Scenario 3A: Maximum ethanol without exceeding the E10 blendwall, no FAME expansion, no cellulosic biofuel volumes.
- Scenario 3B: Maximum ethanol without exceeding the E10 blendwall, no FAME expansion, and AEO cellulosic biofuel volumes.

The key conclusions from the MathPro study are summarized below:<sup>65</sup>

- Use of carryover RINs alone can delay some of the consequences of the ethanol blendwall to 2014, but not beyond.
- Subsequently, steep and likely unattainable increases in either E85 use or biomass-based diesel (“FAME”) use would be required to meet the RFS volume standards.
- Expanded use of FAME, to generate excess D4 RINs, could delay reaching the ethanol blendwall after carryover RINs are exhausted. But the likelihood and extent of the delay depends on the annual volume standards established by EPA and the extent to which FAME production and use can be increased.
- With FAME use limited to 5 percent of the distillate pool, ethanol blendwall would be reached in 2015.
- When the ethanol blendwall is reached (with limited FAME expansion), the volume of E85 necessary to generate sufficient RINs for compliance with the renewable fuel volume standards would require rapid, large expansion in the availability of E85 and in the number of FFVs using E85. In most of the cases studied, the necessary expansions would be beyond what might be considered feasible.
- Annual volume standards can be set that maximize ethanol use subject to the practical constraints imposed by the E10 blendwall. Such volume standards would facilitate compliance with RFS requirements.

The Exhibits below from the MathPro study summarize the scenario results.<sup>66</sup> In the case of FAME, note that the required volumes far exceed the nameplate capacity of 2.2 billion gallons per EIA. In the case of

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<sup>62</sup> *Id.* at 13.

<sup>63</sup> *Id.*

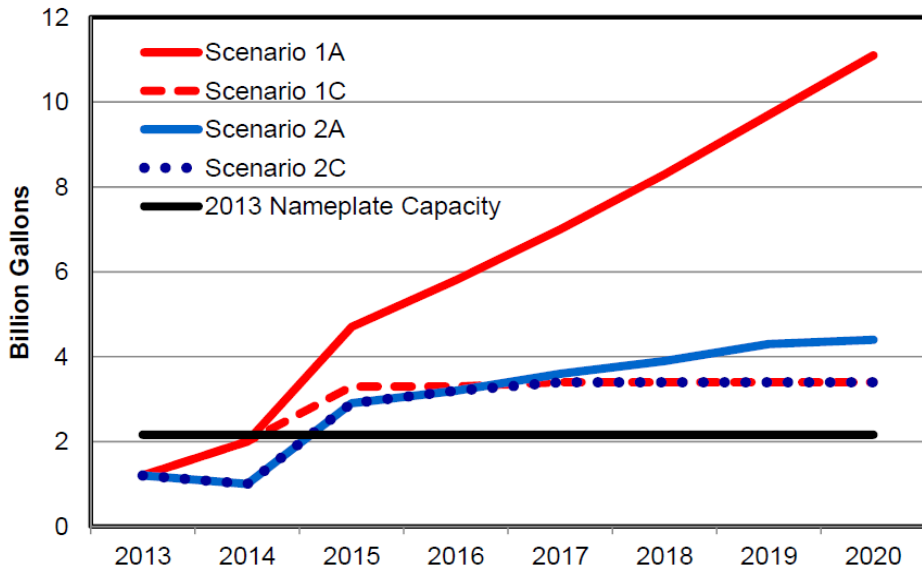
<sup>64</sup> *Id.* at 14.

<sup>65</sup> *Id.* at 16.

<sup>66</sup> *Id.* at Exhibits 4 and 5.

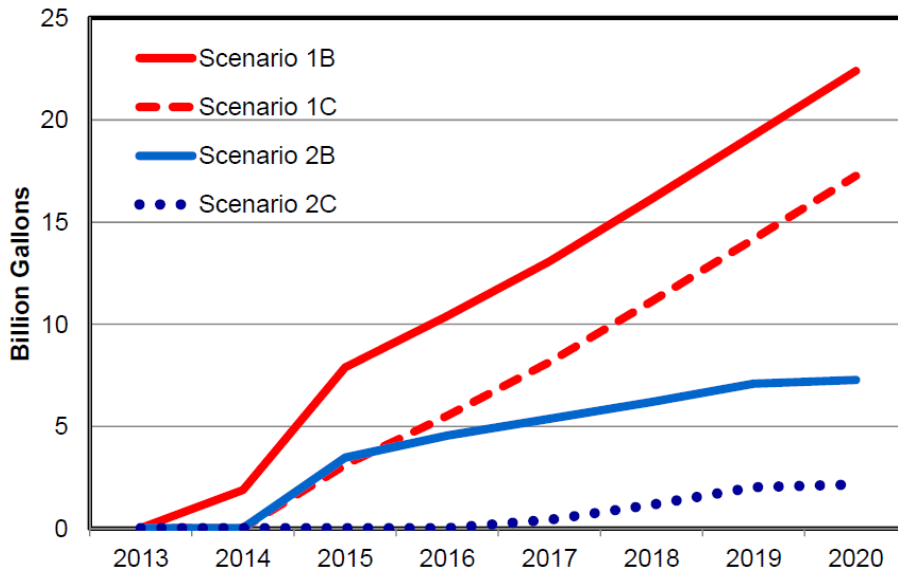
E85, note that the required volumes far exceed the current use of 0.1 billion gallons per EIA (too small of a number to appear on the graph).

**Exhibit 4: FAME Volume, by Scenario**



Note: 2013 nameplate capacity from EIA website.

**Exhibit 5: E85 Volume, by Scenario**



Note: E85 use in 2012 was on the order of 0.1 B gallons (AEO 2013).

**A. Carryover RINs Will Not Prevent the Market Imbalance Caused by the Blendwall.**

EPA itself noted the imminence of the RFS blendwall in the preamble to its proposed RFS volumes for 2013. In its proposed rule, EPA stated its belief that the economic effects from the blendwall would

likely be averted in 2013 because there are sufficient carryover RINs that can be used for compliance.<sup>67</sup> EPA expressed doubts, however, that such a surplus will be available to forestall the blendwall in 2014.<sup>68</sup> Moreover, concerns related to RIN market volatility should call into question EPA's belief that sufficient quantity of RINs exist for the entire regulated community to avoid the blendwall. According to many experts, the scarcity of valid RINs has led to a rapid rise in the price of RINs due to increasing demand in the face of inability to increase surplus RINs.<sup>69</sup> Based on these concerns, EPA must reassess its projections that sufficient carryover RINs will be available to supplement the 2013 market to ensure compliance with the RFS mandates, and EPA also must further evaluate the projected shortfall of RINs in 2014.

The blendwall effects may be avoided in 2013 only if obligated parties have sufficient carryover RINs to meet their requirements under the RFS—a questionable conclusion given the current volatility of the RIN trading market.<sup>70</sup> Several economists have stated that the RIN carryover will be reduced significantly by the end of 2013 and will be insufficient to meet the 2014 RFS mandates.<sup>71</sup> Charles River Associates completed a study in 2011 that concluded that the market would encounter the E10 blendwall by 2013.<sup>72</sup> The study concluded that efforts to increase E85 or E15 and to decrease the presence of E0 (neat gasoline) in the domestic market could not be implemented economically or quickly enough to forestall the blendwall.<sup>73</sup> Additionally, EPA's original estimates of when the market would reach the blendwall were based on fuel consumption estimates found in the AEO 2009,<sup>74</sup> while the Charles River Study's fuel consumption estimates come from the AEO 2011.<sup>75</sup> The difference in the projection of when the blendwall will be reached can be explained in part by an examination of the *Annual Energy Outlook* reports, which show declining estimates of transportation fuel consumption in successive years.<sup>76</sup> Lower fuel consumption requires that a higher percentage of ethanol be blended into gasoline in order to meet the renewable volume targets and accelerates the arrival of the

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<sup>67</sup> 78 Fed. Reg. 9282, 9301 (Feb. 7, 2013).

<sup>68</sup> *Id.* See also USDA ECONOMIC RESEARCH SERVICE, FDS-13d-SA, *HIGH RIN PRICES SIGNAL CONSTRAINTS TO U.S. ETHANOL EXPANSION* 1, 3 (Apr. 12, 2013) (stating that “This shortfall in meeting the conventional ethanol RFS will soon transmit to a shortfall in the availability of conventional RINs relative to the demand for RINs for RFS compliance, likely to occur in 2014 once carryover RINs are no longer sufficient to fill the gap.”).

<sup>69</sup> Since January 7, 2013, RIN prices rose from 7.1 cents per credit to over \$1.00 per credit, representing an increase of over 2700 percent in the price of RINs. See Robert Wagner, *Ethanol RIN Prices Up 2740% Year To Date*, Seeking Alpha (July 19, 2013), <http://seekingalpha.com/article/1558892-ethanol-rin-prices-up-2740-year-to-date?source=bloomberg>.

<sup>70</sup> Most refiners do not blend ethanol and are dependent upon purchasing RINs for compliance. Some refiners do not have a supply of “banked RINs” and now may be unable to acquire sufficient RINs at reasonable prices. See *e.g.*, Frank Pici, Monroe Energy Letter to EPA, Docket ID No. EPA-HQ-OAR-2012-0546-0110 (Apr. 7, 2013).

<sup>71</sup> See, *e.g.*, University of Illinois, *Exploding Ethanol RINs Prices: What's the Story?* Table 1 <http://farmdocdaily.illinois.edu/2013/03/exploding-ethanol-rins-prices.html> (Mar. 8, 2013).

<sup>72</sup> See HARRY FOSTER, ROBERT BARON, AND PAUL BERNSTEIN, *IMPACT OF THE BLENDWALL CONSTRAINT IN COMPLYING WITH THE RENEWABLE FUEL STANDARD*, CHARLES RIVER ASSOCIATES 5 (Nov. 2, 2011) [hereinafter CHARLES RIVER STUDY].

<sup>73</sup> *Id.*

<sup>74</sup> EPA, *RENEWABLE FUEL STANDARD PROGRAM (RFS2) REGULATORY IMPACT ANALYSIS 238* (2010) [hereinafter RFS2 RIA]; see U.S. ENERGY INFORMATION ADMINISTRATION, DOE/EIA-0383(2009), *ANNUAL ENERGY OUTLOOK 2009* (“AEO 2009”).

<sup>75</sup> CHARLES RIVER STUDY, *supra* note 63, at 15.

<sup>76</sup> See, *e.g.* U.S. ENERGY INFORMATION ADMINISTRATION, *ANNUAL ENERGY OUTLOOK 2012 EARLY RELEASE OVERVIEW 5* (Jan. 23, 2012); compare with U.S. ENERGY INFORMATION ADMINISTRATION, *ANNUAL ENERGY OUTLOOK 2013 EARLY RELEASE OVERVIEW 1, 6* (Dec. 5, 2012).



blendwall.<sup>77</sup> Regardless of these differences, both studies support the undeniable fact that the blendwall will be reached in 2013.

Unlike the earlier work, the MathPro study takes into account the RIN carryover and uses the most up-to-date energy demand from AEO 2013.

## **B. E15 Is Not a Viable Solution to the Blendwall.**

EPA has approved the sale of E15 for sale for use in model year 2001 and later vehicles. That approval was based exclusively on a Department of Energy study indicating that E15 would not adversely affect emissions control systems in a select group of on-road vehicles.<sup>78</sup> Petitioners question, but do not attempt to challenge, the E15 waiver decision in this Petition. The DOE study looked at other electronic and mechanical systems (*e.g.*, engines, fuel systems) essential for vehicle functionality, but this was a cursory, last-minute, approach that was inappropriate for extrapolation.<sup>79</sup>

The fact that only two vehicle manufacturers have approved of E15, and have only done so for vehicles produced in the most recent two model years, demonstrates just how radically the widespread use of E15 would impact the existing fleet. EPA's approval was based on their limited analysis of emissions control systems. E15 creates numerous concerns for consumers, refiners, ethanol producers, fuel retailers, and auto manufacturers. E15 is not a viable mechanism for the transportation sector to absorb more ethanol-blended fuels (and thereby also generate additional RINs), nor does it do anything to prevent—or even delay—the blendwall. Instead, E15 merely provides one limited, problematic avenue for additional RFS compliance that is insufficient to surmount the issues that the blendwall creates.

### **1. E15 Is Incompatible With the Existing Vehicle Fleet.**

For automobiles built before 2011, automobile manufacturers are unanimous. They have stated that the use of E15 may damage vehicle engines and will void warranties.<sup>80</sup> In the face of these public pronouncements, the sale of E15 creates concerns over not only consumer dissatisfaction and brand reputational harm, but also potential liabilities for obligated parties, fuel distributors, ethanol producers, and engine manufacturers.<sup>81</sup> The Coordinating Research Council (“CRC”) conducted extensive studies

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<sup>77</sup> See CHARLES RIVER STUDY, *supra* note 63, at 15-16.

<sup>78</sup> See 75 Fed. Reg. 68,094 (Nov. 4, 2010) (providing E15 waiver for vehicles model year 2007 and after for light duty motor vehicles); 76 Fed. Reg. 4662 (Jan. 26, 2011) (providing E15 for vehicles model year 2001-2006 for light duty motor vehicles).

<sup>79</sup> EPA should have used tests specifically designed by automotive engineers to evaluate those effects—the approach that the Coordinating Research Council took.

<sup>80</sup> See Letter from Representative James Sensenbrenner to Lisa Jackson, Administrator, Env'tl. Protection Agency (July 5, 2011), available at [http://sensenbrenner.house.gov/uploadedfiles/e15\\_auto\\_responses.pdf](http://sensenbrenner.house.gov/uploadedfiles/e15_auto_responses.pdf) (summarizing comments from automakers on the use of E15 and expressing concern for the effects of E15 on vehicles); see also Gary Strauss, *AAA Warns E15 Gasoline Could Cause Car Damage*, USA TODAY, Nov. 30, 2012, available at <http://www.usatoday.com/story/news/nation/2012/11/30/aaa-e15-gas-harm-cars/1735793/> (noting statements by BMW, Chrysler, Nissan, Toyota, and Volkswagen that their warranties will not cover fuel-related claims caused by E15, and statements from Ford, Honda, Kia, Mercedes-Benz, and Volvo that E15 use will void warranties).

<sup>81</sup> See *Overview of the Renewable Fuel Standard: Stakeholder Perspectives: Hearing Before the Subcomm. on Energy and Power of the H. Comm. on Energy and Commerce, 133<sup>th</sup> Cong. 5* (2013) (statement Shane Karr, Vice President for Federal Government Affairs, Alliance of Automobile Manufacturers) [hereinafter Alliance Testimony].

examining the potential effects of E20 and E15 use on motor vehicle engines and fuel system components across a sample set of commonly-used post-2001 model year light duty vehicles.<sup>82</sup> The studies found that some vehicles—ones that EPA approved for use with E15 after reviewing effects on emissions—experienced fuel pump system failures or other mechanical damage from operating on intermediate-level ethanol blends.<sup>83</sup> Moreover, the fuel pump systems that failed or exhibited other effects during testing on E15 are used in a substantial number of the 29 million 2001-2007 model year vehicles represented in the studies.<sup>84</sup> The engine durability study showed that two popular gasoline engines used in light-duty automotive applications of 2001-2009 model year vehicles failed with mechanical damage when operated on E15 and E20.<sup>85</sup> The damage that E15 will inflict on a significant number of vehicles translates to a significant potential liability for multiple entities throughout the fuel supply chain.

Furthermore, consumer organizations including AAA fear that the public's unfamiliarity with E15 will lead to misuse and vehicle damage.<sup>86</sup> In a recent survey, AAA found that "[a]n overwhelming 95 percent of consumers surveyed have not heard of E15, a newly approved gasoline blend that contains up to 15 percent ethanol."<sup>87</sup> Based on this finding and the fact that less than 5 percent of the vehicles on the road are approved by their manufacturers to use E15, AAA urged EPA to halt the sale of E15.<sup>88</sup> Even Public Citizen has come out in opposition to E15. In a recent *amicus* brief filed in the U.S. Supreme Court, Public Citizen identified the harm to consumers that will result from E15: (1) incompatibility with vehicles, and the likely damage to many vehicles for which E15 has been approved; (2) the potential for misfueling; (3) reductions in gas mileage; and (4) greater fueling and food costs.<sup>89</sup>

The fuel segregation and labeling requirements attendant to the marketing of E15 depend on market and consumer acceptance. In fact, EPA itself recognized the potential dangers resulting from the improper use of E15 when it approved the E15 waivers.<sup>90</sup> EPA determined that the use of product transfer documents to track the distribution of E15 and "attention" labels on fueling stations were necessary to minimize the risk of vehicle damage caused by misfueling.<sup>91</sup> Thus, E15 is far from a "drop

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<sup>82</sup> See COORDINATING RESEARCH COUNCIL, INTERMEDIATE-LEVEL ETHANOL BLENDS ENGINE DURABILITY STUDY (Apr. 2012), available at <http://www.crao.org/reports/recentstudies2012/CM-136-09-1B%20Engine%20Durability/CRC%20CM-136-09-1B%20Final%20Report.pdf>; see also COORDINATING RESEARCH COUNCIL, DURABILITY OF FUEL PUMPS AND FUEL LEVEL SENDERS IN NEAT AND AGGRESSIVE E15 (Jan. 2013), available at [http://www.crao.org/reports/recentstudies2013/CRC%20664%20\[AVFL-15a\]/AVFL%2015a%20\[CRC%20664\]%20Final%20Report%20only.pdf](http://www.crao.org/reports/recentstudies2013/CRC%20664%20[AVFL-15a]/AVFL%2015a%20[CRC%20664]%20Final%20Report%20only.pdf).

<sup>83</sup> COORDINATING RESEARCH COUNCIL, DURABILITY OF FUEL PUMPS AND FUEL LEVEL SENDERS IN NEAT AND AGGRESSIVE E15 1-3 (Jan. 2013), available at [http://www.crao.org/reports/recentstudies2013/CRC%20664%20\[AVFL-15a\]/AVFL%2015a%20\[CRC%20664\]%20Final%20Report%20only.pdf](http://www.crao.org/reports/recentstudies2013/CRC%20664%20[AVFL-15a]/AVFL%2015a%20[CRC%20664]%20Final%20Report%20only.pdf).

<sup>84</sup> *Id.* at 3.

<sup>85</sup> COORDINATING RESEARCH COUNCIL, INTERMEDIATE-LEVEL ETHANOL BLENDS ENGINE DURABILITY STUDY, *supra* note 73, at 15.

<sup>86</sup> Press Release, AAA, New E15 Gasoline May Damage Vehicles and Cause Consumer Confusion (Nov. 30, 2012), available at <http://newsroom.aaa.com/2012/11/new-e15-gasoline-may-damage-vehicles-and-cause-consumer-confusion/>; see also Brief of Amicus Curiae Public Citizen, Inc., in Support of Petitioners, Alliance of Automobile Manufacturers v. U.S. Evtl. Protection Agency, 133 S. Ct. 2880 (2013) (No. 12-1167).

<sup>87</sup> Press Release, AAA, *supra* note 77.

<sup>88</sup> *Id.*

<sup>89</sup> See Brief of Amicus Curiae Public Citizen, *supra* note 77.

<sup>90</sup> See 75 Fed. Reg. at 68,049-50 (noting the difficulties of ensuring the proper labeling of E15 pumps due to the fact that most retail stations are independently operated).

<sup>91</sup> *Id.*

in” solution to the blendwall. The fuel’s very use is conditioned by restrictions in state law, by acceptable light duty vehicle types, by labeling of the fuel, and through a continuing inability to use the fuel in any non-road vehicle engine or vehicle, including such ubiquitous consumer items as lawnmowers and hedge trimmers. EPA cannot reasonably rely on a potentially unsafe fuel source as a compliance option, especially when the manufacturers of those vehicles have warned their customers not to use E15.

## **2. E15 Impairs Vehicle Fuel Economy.**

Relatedly, E15 also results in lower fuel economy due to the higher concentration of ethanol in the fuel. A Department of Energy study found that the use of E15 over E10 results in a 1.6 percent loss in fuel economy.<sup>92</sup> Particularly in the current economic climate, consumers are unlikely to choose a product that fails to deliver long-term savings at the pump.

## **3. E15 Is Incompatible With the Existing Refueling Infrastructure, the Vast Majority of Which Is Not Owned by Obligated Parties.**

The E15 infrastructure is not under the control of the parties obligated to comply with RFS, given that *more than 95 percent of gasoline stations are independently owned*. While refiners and importers are obligated to comply with the mandates, they own less than 5 percent of the gasoline stations in the United States, and thus cannot completely control what fuel will be offered or not offered to consumers at the retail level. With limited exceptions, obligated parties cannot themselves decide to install infrastructure or carry a new type of fuel. Individual retail outlets will largely decide when to offer E15—or not. They will decide (1) whether to assume the risk of damaging their customers’ gasoline engines and (2) whether and how to upgrade their facilities to replace tanks, dispensers, and related equipment to carry E15.<sup>93</sup> And their decisions are made more difficult by the fact that no one knows if consumers will actually purchase the product. For those obligated parties that operate retail facilities, the cost of retrofitting those facilities to store and dispense E15 is prohibitive. Retail fuel sales have been a low margin, highly competitive business that generally cannot afford the costs associated with hardening their fuel storage and dispensing systems to handle E15.

A study conducted by the National Renewable Energy Laboratory in 2010 evaluating retail fuel dispensing equipment types already approved for E10 found that the use of higher ethanol-blended fuels in both new and older equipment resulted in a reduced levels of safety and performance.<sup>94</sup> To ensure that the dispensing equipment is safe, federal regulations require only approved or “listed” devices may be used for dispensing motor fuel at fueling stations, which requires station operators who wish to offer ethanol blends higher than E10 to retrofit or to install new, specially designed pumps that are listed as compatible with higher blends of ethanol by a nationally recognized testing laboratory

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<sup>92</sup> ALTERNATIVE FUELS DATA CENTER, U.S. DEP’T OF ENERGY, *E15 Approved for Use in 2001 and Newer Vehicles* (Feb. 11, 2011), [http://www.afdc.energy.gov/technology\\_bulletin\\_1210.html](http://www.afdc.energy.gov/technology_bulletin_1210.html) (last visited Mar. 12, 2013).

<sup>93</sup> See *Overview of the Renewable Fuel Standard: Stakeholder Perspectives, Hearing Before the Subcomm. on Energy and Power of the H. Comm. on Energy and Commerce*, 113<sup>th</sup> Cong. (July 23, 2013) (statement of Joseph Petrowski on behalf of the Society of Independent Gasoline Marketers of America and the National Association of Convenience Stores, available at <http://docs.house.gov/meetings/IF/IF03/20130723/101184/HHRG-113-IF03-Wstate-PetrowskiJ-20130723.pdf> [hereinafter SIGMA/NACS Testimony]).

<sup>94</sup> See Kenneth Boyce & Thomas Chapman, NATIONAL RENEWABLE ENERGY LABORATORY, *Dispensing Equipment Testing With Mid-Level Ethanol/Gasoline Test Fluid 16* (2010), available at <http://www.nrel.gov/docs/fy11osti/49187.pdf>.

(NRTL).<sup>95</sup> Prior to 2010, Underwriters Laboratories (the primary NRTL) had not listed a single dispenser as compatible with any ethanol concentration greater than 10 percent.<sup>96</sup> EPA states “[b]ecause it is common for tank owners to use their tanks for 30 years or more, most UST systems currently in use are likely to contain components not designed to store ethanol blends greater than 10 percent.”<sup>97</sup> Selling E15 safely will require expensive investments in retail fueling equipment—which are beyond the control of obligated parties that own less than 5 percent of gasoline stations—and which may not be made unless sufficient demand for higher blend fuels exists to justify such expenditures.

The Society of Independent Gasoline Marketers of America (“SIGMA”) and the National Association of Convenience Stores (“NACS”) recently testified to Congress that potential liabilities associated with selling E15 prevent E15 from being a viable solution to the blendwall:

Without regard to these unanticipated market realities, the required RFS volume targets continue to increase year after year. As a practical matter, these targets can only be met if more ethanol is blended into gasoline. The market is not able to do this at the present time, largely because (as discussed below) retailers fear that selling gasoline blends greater than 10 percent ethanol (so-called “E10”) will increase their liability exposure.

\* \* \* \*

As you are likely aware, EPA recently authorized the use of E15 in certain vehicles. However, this has so far done very little to expand the use of renewable fuels, due largely to a lack of consumer demand, as well as retailers’ liability and compatibility concerns and state and local restrictions on selling E15. Indeed, EPA’s decision to approve the sale of E15 serves to highlight the *limitations* that directly affect retailers and impede the implementation of the RFS.<sup>98</sup>

The costs associated with E15 dispenser and storage systems compatibility can be formidable.<sup>99</sup> Purchasing new E-15 compatible dispensers costs approximately \$20,000 per dispenser, while retrofitting a dispenser, if even possible, can be done for \$2,000-\$4,000 per dispenser. Even if a retail establishment were willing to expend the capital to ensure E15 compatible dispensers, many stations will find it impossible to determine the compatibility of their underground storage systems and “[w]hen a retailer proceeds to crack open concrete to address underground equipment issues, costs can quickly exceed \$100,000 per location.”<sup>100</sup>

A recent survey by NACS found similar limitations for mid-level ethanol blends: “recent consumer input indicates that the market is not ready to accommodate sufficient volumes of these alternative fuel blends to satisfy the requirements of the RFS. Inadequate infrastructure and limited consumer demand

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<sup>95</sup> 29 C.F.R. 1910.106(g).

<sup>96</sup> SIGMA/NACS Testimony, *supra* note 84 at 5.

<sup>97</sup> EPA, Notice of Final Guidance, Compatibility of Underground Storage Tank Systems with Biofuel Blends, 76 Fed. Reg. 39,095, 39,096 (July 5, 2011),

<sup>98</sup> SIGMA/NACS Testimony, *supra* note 84, at 4-5. *See also* NACS “Challenges Remain Before E15 Usage is Widespread, [http://www.nacsonline.com/YourBusiness/FuelsReports/GasPrices\\_2013/Pages/Challenges-Remain-Before-E15-Usage-Is-Widespread.aspx](http://www.nacsonline.com/YourBusiness/FuelsReports/GasPrices_2013/Pages/Challenges-Remain-Before-E15-Usage-Is-Widespread.aspx) (last visited August 8, 2013).

<sup>99</sup> SIGMA/NACS Testimony, *supra* note 84, at 5-6,

<sup>100</sup> *Id.* at 6.

puts the future of the RFS in peril unless adjustments are made.”<sup>101</sup> Moreover, “[r]etailers recognize this limitation in demand, with more than three-quarters (79%) of the NACS members surveyed citing lack of demand as the reason that they don’t sell the fuel.”<sup>102</sup> The NACS Survey also confirms the retail station operators’ concerns over the potential legal risks of selling E15:

Demand isn’t the only issue limiting availability. Retailers also expressed concerns about the costs associated with upgrading or replacing equipment to legally store and sell these new fuels: 46% said that the costs to upgrade to sell E15 were a concern, and 44% said that the costs to upgrade for E85 were a concern. Failure to use certified equipment can expose retailers to potential liability. Retailers also expressed concerns over potential liability from misfueling: 46% and 44% cited liability concerns over E15 and E85, respectively.<sup>103</sup>

For these reasons, NACS believes that “the statutory increases in renewable fuel volumes sold each year must be revised to reflect the declining size of the overall gasoline market.”<sup>104</sup>

State regulatory approvals stand as an additional obstacle to the introduction of E15. DOE has noted that 90 state laws and regulations in more than 30 states limit the sale of E15, and it is not known when they will be revised or amended.<sup>105</sup> A Congressional Research Service report includes an overview of the various concerns:

A key non-vehicle issue is whether existing infrastructure can support ethanol blends above E10. Like automobiles, while some existing gasoline tanks and pumps were designed and/or certified to handle up to E10, none to date have been designed or certified to handle higher ethanol blends. Even if the fuel is approved by EPA for use in motor vehicles, presumably fuel suppliers and/or retailers would be unwilling to sell the fuel unless they are confident that it will not damage their existing systems or lead to liability issues in the future. Otherwise, it seems doubtful that fuel suppliers and retailers would voluntarily upgrade their systems to handle the new fuel. Further, loan covenants and insurance policies would need to be modified to reflect the use of the higher ethanol blend.<sup>106</sup>

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<sup>101</sup> See NACS Survey: Evolve the Renewable Fuels Standard, Natl. Assoc. of Convenience Stores (June 11, 2013), <http://www.nacsonline.com/News/Daily/Pages/ND0611131.aspx#.UeNKrZXLZUQ>. “Only 26% of fuel consumers said that they are familiar with E15, and this lack of awareness significantly diminishes potential demand. After E15 was described to surveyed consumers, only 59% of them said that they would consider purchasing E15 if it were the same price per gallon as gasoline.” *Id.*

<sup>102</sup> *Id.*

<sup>103</sup> *Id.*

<sup>104</sup> *Id.*

<sup>105</sup> See U.S. DEP’T OF ENERGY, E15, Alternative Fuels Data Center, [http://www.afdc.energy.gov/fuels/ethanol\\_e15.html](http://www.afdc.energy.gov/fuels/ethanol_e15.html) (stating that “[t]here are more than 90 state laws and regulations currently limiting sales of E15 in more than 30 states. Some state restrictions in conflict include a 10 percent ethanol blend cap, state biofuels mandates, technical fuel specification standards, and waivers. It is unknown when the update of laws and regulations to allow E15 sales will be completed”).

<sup>106</sup> BRENT D. YACOBUCCI, CONG. RESEARCH SERV., R40445, INTERMEDIATE-LEVEL BLENDS OF ETHANOL IN GASOLINE, AND THE ETHANOL “BLEND WALL” 11-12 (2010) (footnote omitted).

Blendstock for E15 blending differs from blendstock for E10 blending, and would present its own infrastructure/storage issues at refineries/terminals. For instance, while E10-BOB benefits from a summertime 1 psi RVP waiver, E15-BOB does not. This would require that E10-BOB be segregated from E15-BOB during the volatility control season from the refinery all the way through the distribution system to retail. Further, producers of E15-BOB must have an EPA-approved E15 misfueling mitigation plan (“MMP”) in place before its blendstock can be sold for blending E15. E10-BOB does not require an MMP to be in place. These differing suitability requirements will make it necessary that the two blendstocks be kept segregated downstream of the refinery year-round. Such segregation requirements make offering an additional blendstock specifically for E15 unworkable and impractical.

In its 2009 Federal Register notice, EPA acknowledged that the driving motivation behind the original petition for the E15 waivers was the need to find a fuel source that could delay the blendwall.<sup>107</sup> The original hope was that the use of E15 would provide time for the maturation of alternative sources that would ensure long-term, sustained compliance with the RFS. But that clearly has not happened. A waiver of the RFS in 2014 provides a reasonable, rational way to proceed in the face of the confluence of many different circumstances preventing E15 use for the foreseeable future.

The risks and potential liabilities presented by E15 in terms of vehicle and infrastructure incompatibility cannot be overstated and must not be ignored by EPA. This petition is not about the wisdom of RFS or ethanol particularly. It is about the simple facts and realities presented by the E10 blendwall. It is difficult to understand how or why the federal government would knowingly and intentionally enforce a rule that seeks to require the manufacture and sale of a fuel product (E15) that:

- will damage engines and other systems in millions of vehicles that have been “approved” by EPA for E15, but which are unapproved by the vehicle manufacturers and for which use may void the vehicle warranty;
- is illegal and unavailable for tens of millions of other automobiles, trucks, off-road vehicles, boats and small-equipment products, and which will decrease the availability of the gasoline required by owners of these products;
- results in fewer miles-per-gallon for most vehicles, thus reducing vehicle efficiency at a time when the federal government is promulgating aggressive vehicle efficiency standards;
- is incompatible with, and thus cannot legally be stored in or dispensed from, the vast majority of the existing gasoline retail distribution system, thus forcing thousands of small business owners to either incur enormous costs to upgrade their systems or run the economic and environmental risks posed by carrying an incompatible product; and
- requires obligated party manufacturers and importers, fuel suppliers, distributors and retailers, engine and vehicle manufacturers, and many others, to face potential liabilities and litigation all for complying with the federal mandate.<sup>108</sup>

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<sup>107</sup> 74 Fed. Reg. 18,228, 18,229 (Apr. 21, 2009).

<sup>108</sup> Unlike the different fuel nozzle sizes required for unleaded and leaded gasoline (which themselves did not completely stop improper usage of leaded fuel), however, there are no physical safeguards to prevent consumer misuse of E15.

Accordingly, it is unreasonable to expect fuel suppliers to introduce E15 and assume these risks.

### **C. E85 Is Not a Viable Solution to the Blendwall.**

Many of the factors that have prevented E15 from expanding in the domestic fuel market and slowing the arrival of the blendwall also prohibit E85 from serving as a solution to the blendwall problem. Moreover, there are simply not enough flex-fuel vehicles (“FFVs”) to use enough ethanol to delay the blendwall. Under any reasonable assumptions relating to the growth of the market for FFVs, there will still not be enough FFVs to avoid the blendwall in the foreseeable future.

In the United States, there is a very limited market for E85—an ethanol/gasoline blend that in practice ranges from 51 percent to 83 percent denatured ethanol—which can be sold for use in FFVs. Even with very optimistic projections of the growth in E85 sales, the NERA Study concludes that E85 is an ineffective solution to prevent the blendwall from continuing into 2014.<sup>109</sup> E85 fails to provide a viable solution because of the significant market limitations and infrastructure constraints identified below.

The MathPro study shows that E85 is not a viable solution to the blendwall (see E85 graph on page 15).

In the scenario assuming no reduction in total renewable and advanced biofuel volumes in proportion to cellulosic biofuel reduction, the data in the MathPro study show that E85 fuel demand would need to grow from 0.02 billion gallons in 2013 to ~1.9 billion gallons in 2014 (over 9000 percent increase), to ~7.9 billion gallons in 2015, and to 22.4 billion gallons in 2020.<sup>110</sup> Such growth would be unprecedented for any industry. Furthermore, “[t]he ability of the prospective FFV fleet’s [sic] to absorb E85 volumes would be exceeded by 2017 (even under the optimistic assumptions that FFV owners using E85 would use it exclusively). . . . This result implies that FFV sales would have to expand considerably beyond those projected in *AEO 2013*.”<sup>111</sup>

In the scenario assuming a reduction in total renewable and advanced biofuel volumes in proportion to cellulosic biofuel reduction, the data in the MathPro study shows that E85 fuel demand would need to grow from 0.02 billion gallons in 2013 to ~3.5 billion gallons in 2015 (over 17,000 percent increase), to ~7.3 billion gallons in 2020. Similar to the previous case, such growth would be unprecedented. Also use of E85 fuel in FFVs would need to increase to over 50 percent of the time, when, according to EIA, consumers in the marketplace use E85 less than 5 percent of the time.<sup>112</sup>

#### **1. The E85 Refueling Infrastructure Is Inadequate.**

The over 2,300 E85 fueling stations currently in existence in the United States<sup>113</sup> represent only approximately 2 percent of domestic fueling stations. High investment costs prevent the rapid construction of new stations or the conversion of existing stations. New fueling tanks for E85 cost up to \$200,000, a substantial investment for a product that lacks demonstrated demand in the

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<sup>109</sup> NERA STUDY, *supra* note 4, at 32.

<sup>110</sup> MATHPRO STUDY, *supra* note 57, at 11.

<sup>111</sup> *Id.* at 12.

<sup>112</sup> *Id.* at 13.

<sup>113</sup> U.S. DEP’T OF ENERGY, *ETHANOL FUELING STATION LOCATIONS*, [http://www.afdc.energy.gov/fuels/ethanol\\_locations.html](http://www.afdc.energy.gov/fuels/ethanol_locations.html) (last visited 8/11/2013).

marketplace.<sup>114</sup> Moreover, most fueling stations contain two tanks one for regular gasoline and the other for premium gasoline, with mid-grade being produced by blending the two.<sup>115</sup> Retrofitting or converting an existing tank would result in a retailer losing an existing proven revenue stream in exchange for a product with speculative demand.<sup>116</sup> Given these impediments, it is not surprising that only 200 to 500 E85 dispensers are installed each year, representing a miniscule portion of the fueling station market.<sup>117</sup> This number pales in comparison to the over 156,000 gas stations<sup>118</sup> in the United States.<sup>119</sup> The costs associated with E85 infrastructure are important because, even though many gas stations sell “branded” fuel, obligated parties do not own the vast majority of retail gas stations across the country. In fact, more than 95 percent of all gas stations are owned by smaller businesses (non-obligated parties).<sup>120</sup> EPA cannot expect independently-owned businesses that operate on thin margins to risk installing expensive E85 dispensing equipment in the absence of strong consumer demand. Even if the number of stations continues to grow at a rate of 500 per year, E85 stations would still likely represent a mere 3 percent of the fueling station market by the end of 2013.<sup>121</sup> Because they are not obligated parties under the RFS, these small business owners also lack the regulatory incentive to make the costly investments in E85 infrastructure. We also note that distribution of E85 is concentrated in the Midwest and FFV access to E85 is even more limited than these numbers imply.

As the NERA Study points out, even an overly optimistic growth scenario still fails to produce enough E85 fueling stations to create a viable alternative to E10.<sup>122</sup> Although the number of FFVs in the market may continue to grow, sufficient infrastructure does not exist to encourage consumers to use E85 in these vehicles. Even if there were a significant expansion in E85 sales in the next two years—as assumed in the NERA Study—the study clearly demonstrates that E85 consumption would still be insufficient to avoid the adverse consequences of the blendwall in 2014.<sup>123</sup> Quite optimistically in comparison to the AEO 2011 forecast, NERA modeled the sale of over 1.6 billion additional gallons of

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<sup>114</sup> COMM. ON ECON. AND ENVTL. IMPACTS OF INCREASING BIOFUELS PROD., RENEWABLE FUEL STANDARD: POTENTIAL ECONOMIC AND ENVIRONMENTAL EFFECTS OF U.S. BIOFUEL POLICY 385 (The National Academies Press, 2011). EPA has previously made the following cost estimates: (1) the total cost of installing a two-nozzle E85 dispenser is \$23,000; (2) the cost of automatic tank-level gauging equipment is \$6,500; (3) the cost of installing a canopy addition to provide cover for an extra dispenser is \$15,000; and (4) the cost of installing a new 15,000-gallon underground E85 storage tank is \$102,000. Based on these figures, EPA estimated that an E85 installation with one dispenser would cost \$131,000, an E85 installation with two dispensers would cost \$154,000, an E85 installation with three dispensers would cost \$177,000, and upgrading an existing E85 facility from one E85 dispenser to three E85 dispensers would cost \$130,000. RFS2 RIA, *supra* note 65, at 781-82.

<sup>115</sup> NACS ONLINE, Challenges Remain Before E15 Usage Is Widespread, [http://www.nacsonline.com/YourBusiness/FuelsReports/GasPrices\\_2013/Pages/Challenges-Remain-Before-E15-Usage-Is-Widespread.aspx](http://www.nacsonline.com/YourBusiness/FuelsReports/GasPrices_2013/Pages/Challenges-Remain-Before-E15-Usage-Is-Widespread.aspx).

<sup>116</sup> *Id.*

<sup>117</sup> CHARLES RIVER STUDY, *supra* note 63, at 12-13.

<sup>118</sup> *Third consecutive year station count drops*, NPN MAG., Oct. 2012, at 17 (counting 156,065 stations in 2012).

<sup>119</sup> U.S. DEP'T OF ENERGY, ETHANOL FUELING STATION LOCATIONS, [http://www.afdc.energy.gov/fuels/ethanol\\_locations.html](http://www.afdc.energy.gov/fuels/ethanol_locations.html) (last visited 8/11/2013).; *see also* John Mayes & Tom Hogan, *Market, Production Conditions will Prevent Meeting RFS*, OIL & GAS J. (Oct. 12, 2012), available at <http://www.ogj.com/articles/print/vol-110/issue-10/processing/market-production-conditions-will-prevent.html>.<http://factfinder2>.

<sup>120</sup> Robert Bradley, *It's Time to Repeal the Renewable Fuel Standard*, FORBES, Apr. 17, 2013, <http://www.forbes.com/sites/robertbradley/2013/04/17/its-time-to-repeal-the-renewable-fuel-standard/>.

<sup>121</sup> CHARLES RIVER STUDY, *supra* note 63, at 13.

<sup>122</sup> NERA STUDY, *supra* note 4, at 22.

<sup>123</sup> *Id.* at 26-38.



E85 in 2014.<sup>124</sup> The model's only constraint on the sale of E85 is the ability to build E85 fueling stations.<sup>125</sup> To determine station growth, the NERA Study examined the number of E85 stations built from 2005 to 2011—an average of 340 new stations a year—and then assumed a construction growth rate increase of 25percent per year.<sup>126</sup> Further contributing to the aggressiveness of NERA's modeling assumptions regarding E85 growth, the demand projections used in NERA's model assume that the volume of E85 sales per station will increase 2.5 times between 2012 and 2015—an assumption that predicts much stronger demand than the market constraints detailed above would indicate.<sup>127</sup> Yet even with these optimistic modeling assumptions about E85 station growth and consumption, NERA's analysis still projects a significant RIN shortfall in 2014.<sup>128</sup>

## 2. There Is Inadequate Consumer Acceptance of E85.

Of equal importance, consumers have rejected E85 even where the infrastructure exists. For example, Minnesota has the most extensive network of E85 stations in the United States.<sup>129</sup> A review of monthly E85 sales compared to the number of stations reveals that despite a growing number of E85 retail outlets in Minnesota, annualized average monthly sales of E85 *declined* by 1.5 percent between 2012 and 2013.<sup>130</sup> In fact, total volume sales of E85 in Minnesota have dropped from a peak of 22 million gallons in 2008 to 15 million gallons in 2012.<sup>131</sup> Further, adding to the challenge of entering the E85 market, the average monthly throughput since 2008 is consistently less than 5,000 gallons per month,<sup>132</sup> which is roughly 4 percent of the average gasoline station's throughput of 128,000 gallons per month.<sup>133</sup> The Minnesota market highlights weak consumer demand for E85 and suggests that building additional E85 stations on a national scale would fail to result in an appreciable (if any) increase in the use of E85.

EPA understands that E85 refueling rates are low, estimating that the current E85 refueling frequency rate is only 4 percent for FFVs with reasonable access to E85. EPA projects that this rate will need to increase to 58 percent to ameliorate the impact of the E10 blendwall.<sup>134</sup> The current low refueling rate highlights consumer reluctance to use E85 as a fuel even when it is an option, likely due to the fuel economy penalty.<sup>135</sup> To date, the drivers of FFVs have overwhelmingly refueled with gasoline and rarely chosen E85. The fuel for a FFV is a consumer choice. A potential requirement for the production of more FFVs will not necessarily result in a large increase in sales of E85 because drivers of FFVs have the option to select E10.

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<sup>124</sup> *Id.* at 23.

<sup>125</sup> *Id.* at 22.

<sup>126</sup> *Id.*

<sup>127</sup> *Id.*

<sup>128</sup> *Id.* at 26-38.

<sup>129</sup> CHARLES RIVER STUDY, *supra* note 64, at 22.

<sup>130</sup> MINN. DEPT. OF COMMERCE, *2013 Minnesota E85 + Mid-Blends Station Report*, available at <http://mn.gov/commerce/energy/images/E-85-Fuel-Use-Data.pdf>. The 2013 available data through June was doubled to create an annual figure.

<sup>131</sup> *Id.*

<sup>132</sup> *Id.*

<sup>133</sup> NACS ONLINE, 2013 NACS Retail Fuels Report: The U.S. Petroleum Industry: Statistics, Definitions, [http://www.nacsonline.com/YourBusiness/FuelsReports/GasPrices\\_2013/Pages/Statistics-and-Definitions.aspx](http://www.nacsonline.com/YourBusiness/FuelsReports/GasPrices_2013/Pages/Statistics-and-Definitions.aspx) (last visited Aug. 10, 2013).

<sup>134</sup> 75 Fed. Reg. 14,670, 14,762 (Mar. 26, 2010).

<sup>135</sup> See Alliance Testimony, *supra* note 72, at 7 (stating that the "primary factors affecting the lack of E85 usage are pricing, availability, total full-tank range, and consumers' willingness to use the fuel").

EPA shares this perspective:

Similarly, EPA believes it is not appropriate to assume that ethanol FFVs will primarily use E85, as there is no extra vehicle cost to purchase an FFV (typically a consumer does not choose between an FFV and a non-FFV of the same vehicle model), E85 fuel is no cheaper and in fact usually more expensive per mile, and use of E85 reduces overall vehicle range since there is only one fuel tank (as opposed to PHEVs and dual fuel CNG vehicles which have two fuel storage devices and therefore the use of the alternative fuel raises overall vehicle range). Further, even with approximately 10 million ethanol FFVs in the U.S. car and light truck fleet, fuel use data demonstrate that ethanol FFVs only use E85 less than one percent of the time.<sup>136</sup>

EPA acknowledged the uncertainty that surrounds E85 in the Agency's recent draft guidance for calculating compliance credits issued to auto manufacturers under the GHG tailpipe emission standards.<sup>137</sup> The GHG tailpipe emission standards provide auto manufacturers with a credit for certain vehicles, such as FFVs, calculated through the use of a weighting factor (the "F value"). Currently, EPA has set the F value for FFVs at 0.50, meaning that the agency assumes a FFV uses E85 fifty percent of the time. In the draft guidance, EPA noted that the limited usage of E85 in FFVs suggests a more appropriate F value closer to zero.<sup>138</sup> FFVs and E85 cannot represent a viable solution to forestalling the blendwall when EPA itself concludes that FFV-owners rarely fuel their vehicles with E85. The limitations of E85 as an RFS compliance option and a lack of viable compliance alternatives will only hasten the arrival of the blendwall. Moreover, low E85 sales translate to an inadequate supply of RINs, which does nothing to forestall the problems caused by the E10 blendwall.

Based on the limited use of E85, EPA reduced the F value from 0.50 to 0.20 for FFVs model years 2016-2019.<sup>139</sup> This drastic change in the F value creates a major disincentive for automakers to build FFVs. The draft guidance points out that there is a historic relationship between an incentive for FFV production, such as the compliance credit, and the production of FFVs, and yet EPA fails to explain how the reduced F value will not adversely affect FFV production.<sup>140</sup> EPA's actions in this arena highlight the inconsistencies that result from the interaction of the GHG tailpipe emission standards and the RFS. The RFS calls for refiners to blend ever-increasing amounts of ethanol with gasoline and now EPA proposes to remove the biggest incentive for auto manufacturers to build a vehicle fleet that can safely run on high-ethanol blends. The GHG tailpipe emission standards do not act in a vacuum and EPA's draft guidance will only serve to frustrate future compliance with the RFS.

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<sup>136</sup> EPA, EPA-420-R-12-017, 2017 AND LATER MODEL YEAR LIGHT-DUTY VEHICLE GREENHOUSE GAS EMISSIONS AND CORPORATE FUEL ECONOMY STANDARDS: RESPONSE TO COMMENTS 6-134 (Aug. 2012), *available at* <http://www.epa.gov/otaq/climate/documents/420r12017.pdf>.

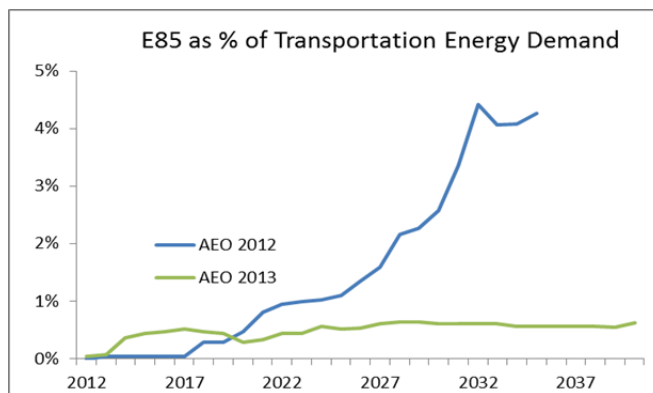
<sup>137</sup> See EPA, DRAFT GUIDANCE LETTER: E85 FLEXIBLE FUEL VEHICLE WEIGHTING FACTOR FOR MODEL YEAR 2016-2019 6 (Mar. 22, 2013), *available at* <http://www.epa.gov/otaq/regs/ld-hwy/greenhouse/documents/draft-ffv-guidance-letter.pdf> [hereinafter DRAFT GUIDANCE LETTER].

<sup>138</sup> *Id.*

<sup>139</sup> *Id.* at 1. Given the historical E85 usage, a 20 percent F value represents an arbitrarily high estimate for E85 refueling rates.

<sup>140</sup> *Id.* at 11.

The chart below shows EIA’s projections in 2012 and 2013 of E85 fuel use as a percentage of transportation energy in the U.S. Note the sharp decrease in the projections – E85 fuel is expected to be *less than 1 percent* of transportation energy demand in the most recent AEO.



As if the foregoing were not sufficient to demonstrate the limitations on E85, automobile manufacturers caution drivers against repeatedly switching back and forth between E85 and gasoline due to concerns that constant shifts in the ethanol content of the fuel can damage car engines.<sup>141</sup> States with their own renewable fuel requirements also warn against fuel switching unless the vehicle requires half a tank or more of fuel, and not without first burning off the remaining original fuel in the tank.<sup>142</sup> Ultimately, this combination of market constraints and concerns related to long-term vehicle maintenance limit the ability of E85 to prevent the blendwall.

**D. Biomass-Based Diesel Is Not a Viable Solution To Prevent the Blendwall.**

Another purported alternative, biomass-based diesel, also fails to provide a viable solution to prevent the blendwall. There are two principal challenges to the increased use of biomass-based diesel. First, as explained above, there is a practical constraint in biomass-based diesel marketability that makes the introduction of blends above B5—a blend of 5 percent biodiesel and 95 percent conventional diesel—for most diesel-powered vehicles impossible; this constraint causes diesel production to incur an unavoidable RIN deficit.<sup>143</sup> Further, the use of biomass-based diesel is also limited by the lack of sufficient biomass-based diesel feedstocks to saturate the diesel pool at B5.<sup>144</sup> Indeed, biomass-based diesel feedstock constraints likely will continue for the foreseeable future, which sets up a diesel deficit as explained in Section I.B, *supra*.

The RFS regulations identify three separate categories of biomass-based diesel: biodiesel, renewable diesel that is not co-processed with petroleum, and cellulosic diesel.<sup>145</sup> Under the regulations, any

<sup>141</sup> See *Tech Tips – E85 Fuel*, GENERAL MOTORS, [http://www.gmfleet.com/content/dam/gmfleet/global/master/nscwebsite/en/Home/Shared\\_Resources/PDFs/GMC1-12-03142-262%20E85%20Ethanol%20Fluid.pdf](http://www.gmfleet.com/content/dam/gmfleet/global/master/nscwebsite/en/Home/Shared_Resources/PDFs/GMC1-12-03142-262%20E85%20Ethanol%20Fluid.pdf) (last visited Mar. 15, 2013).

<sup>142</sup> ILL. DEP’T OF TRANSPORTATION, *Frequently Asked E85 Questions*, <http://www2.illinois.gov/gov/green/Documents/FAQ's%20E85%20ver3.pdf> (last visited Aug. 12, 2013).

<sup>143</sup> CHARLES RIVER STUDY, *supra* note 63, at 35-36.

<sup>144</sup> University of Illinois, *The Ethanol Blend Wall, Biodiesel Production Capacity, and the RFS...Something Has to Give*, (Feb. 13, 2013), <http://farmdocdaily.illinois.edu/2013/02/ethanol-blend-wall-biodiesel-RFS.html> (“the increase in biodiesel feedstock requirements would simply overwhelm feedstock markets”).

<sup>145</sup> See 40 C.F.R. § 80.1401 (defining “Biomass-based diesel” and “Cellulosic diesel”).

combination of these fuels can be used to meet the biomass-based diesel, total advanced, and total renewable fuel mandates.<sup>146</sup> Because biomass-based diesel has an ethanol-equivalence value greater than 1.0,<sup>147</sup> each of these fuels also has the ability to generate additional RINs and could help forestall the blendwall.<sup>148</sup> This potential is offset, however, by significant limitations in the availability of the necessary feedstocks.

The most common type of biodiesel is “FAME” biodiesel, which is produced through the transesterification of plant and animal fats.<sup>149</sup> The resultant fuel is composed of fatty acid methyl esters (“FAME”), which are chemically distinct from petroleum fuels and possess different physical properties.<sup>150</sup> Because its production technology is mature and it requires a lower capital investment than other types of biomass-based diesel production, FAME biodiesel is likely to remain the primary biodiesel stock for the foreseeable future.<sup>151</sup> The availability of affordable feedstocks to produce FAME biodiesel, however, is limited.<sup>152</sup> While biodiesel can be made from a number of different plant and animal fats, soybean oil is the most common feedstock.<sup>153</sup> Because soybean oil and other feedstocks are commercially valuable commodities with numerous other uses, feedstock price and availability will be affected not only by soybean yield but also by market competition for feedstocks.<sup>154</sup>

In addition to feedstock limitations, there are a number of practical constraints to the widespread use of FAME biodiesel. For instance, FAME biodiesel is typified by significant variations in quality, which in turn leads to inconsistent performance, particularly at low temperatures. This leads to a seasonal pattern of acceptance. Further, FAME biodiesel presents its own logistic challenges. In particular, the potential for trailback into jet fuel precludes movements of blends containing FAME biodiesel on many common carrier pipelines. Finally, the vast majority of existing terminals do not currently have the infrastructure to receive, store, and blend FAME biodiesel. Even assuming the necessary infrastructure eventually can be developed, these facilities cannot realistically be constructed in the short term.

In contrast to FAME biodiesel, renewable diesel and cellulosic diesel are pure hydrocarbon fuels.<sup>155</sup> To date, due to economic/technological hurdles, production of renewable diesel and cellulosic diesel has lagged far behind the volumes required by the RFS.<sup>156</sup> In fact, in its proposed volumes for cellulosic and advanced biofuels for 2013, the EPA stated that it expects the vast majority of required volume of biomass-based diesel for 2013 (1.28 billion gallons) to be met by FAME biodiesel—which has its own

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<sup>146</sup> See *id.*; 40 C.F.R. § 80.1405 (setting forth Renewable Fuel Standards for “biomass-based diesel”).

<sup>147</sup> See 40 C.F.R. § 80.1415(b) (assigning equivalence values to various renewable fuels).

<sup>148</sup> See CHARLES RIVER STUDY, *supra* note 63, at 32-33 (analyzing the increased use of biodiesel as blendstock as a potential method to delay breach of the E10 blendwall).

<sup>149</sup> *Id.* at 33.

<sup>150</sup> *Id.*

<sup>151</sup> *Id.* at 34.

<sup>152</sup> *Id.* at 37.

<sup>153</sup> *Id.*

<sup>154</sup> *Id.*

<sup>155</sup> *Id.* at 34.

<sup>156</sup> See Robert Wisner, *EPA’s Proposed Biofuels Mandates for 2013 – Challenges for the Biofuels Industry*, AGRIC. MARKETING RESOURCE CENTER (Mar. 2013),

[http://www.agmrc.org/renewable\\_energy/biofuelsbiorefining\\_general/epas-proposed-biofuels-mandates-for-2013---challenges-for-the-biofuels-industry/](http://www.agmrc.org/renewable_energy/biofuelsbiorefining_general/epas-proposed-biofuels-mandates-for-2013---challenges-for-the-biofuels-industry/) (discussing historical and future problems associated with meeting the RFS’ requirements for biomass-based diesel and cellulosic diesel).

limitations, as noted above.<sup>157</sup> For these reasons, biomass-based diesel production does not provide a viable solution to avoid the blendwall.

The MathPro study shows that biomass-based diesel is not a viable solution to the blendwall (see FAME graph on page 15).

In the scenario assuming no reduction in the total renewable fuel and advanced biofuel volumes in proportion to cellulosic biofuel reduction, the MathPro data show that 2 billion gallons of FAME would be required in 2014 (~40 percent increase vs. 2013), 4.7 billion gallons of FAME would be required in 2015 (~300 percent increase vs. 2013) and by 2020 11.1 billion gallons of FAME would be required by 2020 (~825 percent increase vs. 2013).<sup>158</sup> Per MathPro, “[b]y 2015, the FAME volume would exceed (i) the current 5 vol% limit on FAME blending in diesel fuel, and (ii) the biodiesel industry’s current nameplate capacity of about 2.2 B gal/yr. By 2020, FAME blending would have to account for about 16 vol% of the distillate pool to enable compliance with the volume standards.”<sup>159</sup>

In the scenario where the total renewable fuel and advanced biofuel volumes is reduced in proportion to cellulosic biofuel reduction, the MathPro data show that “FAME use would begin to expand in 2015, by which time the gasoline pool is saturated with ethanol (2012) and carryover RINs have been exhausted (2014). By 2017, FAME blending would exceed the current 5% blending limit in diesel fuel, and FAME production would have to reach 3.6 B gal/y, over 50% higher than the reported current FAME nameplate capacity of about 2.2 B gal/y. By 2020, FAME would have to account for about 6.5 vol% of the distillate pool to enable compliance with the RFS volume standards, which exceeds the current blending limit of 5 vol%.”<sup>160</sup>

#### **E. Deficit Rollover Is Not a Solution to the Blendwall.**

Some have suggested that the ability to roll a RIN deficit over in to the following year could be a solution to the blendwall problem. That is incorrect. In fact, when the first obligated parties opt to carry a deficit, it should be a signal to EPA that the RFS has become infeasible. Although it is permissible to roll a RIN deficit over for one year, EPA’s rules state that the entire deficit and the entire obligation must be met in the second year. Given that the RFS mandates escalate year by year, rolling a deficit over from 2014 in to 2015 will not solve the problem. This is because the rapidly increasing mandated volumes will make it virtually impossible for a party in deficit ever to recover from the deficit. What options would the obligated party have in the second year to remain in compliance with the law except to severely curtail its obligation?

#### **F. When Obligated Parties Reduce Domestic Production Because of the Blendwall, Systemic RIN Shortages Prevent Other Companies from Using It as an Opportunity To Increase Their Domestic Sales Volumes and Market Share.**

In the RFS 2013 final rule, EPA incorrectly dismisses the potential for reduced domestic fuel supplies, resulting from increased fuel exports and/or decreased fuel imports.<sup>161</sup> According to EPA, domestic

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<sup>157</sup> 78 Fed. Reg. at 9,285.

<sup>158</sup> MATHPRO STUDY, *supra* note 57, at Exhibit 1A.

<sup>159</sup> *Id.* at 11.

<sup>160</sup> *Id.* at 13.

<sup>161</sup> 2013 RFS Final Rule, *supra* note 35, at 66-67.

supply is unlikely to drop when certain obligated parties are unable to supply the market because other obligated parties would simply increase sales volumes in an effort to gain market share.<sup>162</sup> This reasoning represents a fundamental misunderstanding of the blendwall problem and ignores the fact that the blendwall affects the entire industry.<sup>163</sup> NERA explains that “the blending percentage standard for total renewable fuel will eventually exceed the maximum feasible level of renewable fuel that can be contained on average in a gallon of transportation fuel given the technological, market, and infrastructure constraints in the economy.”<sup>164</sup> As a result, RINs will become scarce for everyone.<sup>165</sup> A scarcity of RINs likely will result in fewer gallons of gasoline and diesel that may be legally sold—a scenario that cannot be alleviated through the use of E15 or E85, as discussed elsewhere in this Petition. The contraction of the market is due to the fact that every batch of transportation fuel sold in the United States requires a specific percentage of RINs to be obtained. If surplus RINs are not available, no additional fuel may be sold in the domestic market.

As reported by NERA, there are limited compliance mechanisms, and they include reducing the RFS compliance obligation by reducing domestic fuel supplies (e.g., increasing exports, reducing production). NERA uses diesel as a specific example to illustrate how annual percentage standards, applied to both gasoline and diesel, could result in the tightening of the diesel supply initially, and then result in smaller gasoline and diesel supplies.<sup>166</sup>

In the RFS 2013 final rule, EPA also incorrectly asserts that high feedstock prices are a primary driver for RIN price increases.<sup>167</sup> One needs only point out that RINs prices were only a few pennies for years, while relative ethanol and petroleum prices varied, but only just recently shot up in 2013 while the ethanol and petroleum prices did not change significantly from prior year’s variations. What has changed is the ethanol and gasoline consumption data that show we were nearing the blendwall. According to NERA, the cost of RINs depends on available supply, and RIN prices increase when there is an imbalance between supply and demand.<sup>168</sup> While the markets are certainly related, ethanol supply and demand is not necessarily a factor in RIN price. As noted in this Petition, compliance with the RFS is becoming more difficult due to blending requirements exceeding the amount of renewable fuel that can be folded into U.S. transportation fuels. It would be wrong to conclude that RIN prices are increased due to lack of ethanol supplies, especially during a period when the United States is a net exporter of ethanol. If the market demands more ethanol, then market signals via ethanol prices are sufficient.

Last, EPA indicates the impact of increasing RIN prices is not to increase overall transportation fuel costs, but rather to reduce the price of higher renewable content fuels (e.g., E85) relative to the price of other fuels with a lower renewable content (e.g., E10). To use more E85, retailers must drop the price below

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<sup>162</sup> *Id.*

<sup>163</sup> EPA is confusing an initial competitive market dynamic as the blendwall approaches with the blendwall impact itself. All players do not run short of RINs at the same time. While some obligated parties are already constrained and exposed to the full market RIN costs, others have a RINs inventory and lower average RINs costs. Obligated parties with lower costs would be expected to gain market share at the expense of higher cost suppliers. But the supply of RINs relative to demand is shifting and will continue to tighten as the RINs inventory is drawn down and fewer are available for sale as the mandates increase and additional RINs must be found in the marketplace to demonstrate compliance.

<sup>164</sup> NERA STUDY, *supra* note 4, at 26.

<sup>165</sup> *Id.* at 26-30.

<sup>166</sup> *Id.* at 31-34.

<sup>167</sup> 2013 RFS Final Rule, *supra* note 35, at 66.

<sup>168</sup> See NERA STUDY, *supra* note 4, at 29-30.

that of gasoline to overcome the consumers' rejection of its efficiency loss and inconvenience. That has not occurred. According to the AAA, as of August 12, 2013, the national average retail price for E85 was selling at a 17-cent premium to regular gasoline on an energy-equivalent basis.<sup>169</sup> Moreover, the independently-owned retail service stations do not share the compliance burden that obligated parties bear to meet the RFS requirements. EPA's flawed logic assumes that obligated parties can overcome the blendwall merely by encouraging increased E85 consumption through dramatically reduced prices. As discussed in this Petition, this is not so.

#### **IV. A Partial Waiver Can Avoid the Inadequate Domestic Supply and Avoid Severe Economic Harm.**

##### **A. The NERA Study Provides a Fundamentally New Analysis Than Studies Previously Considered by EPA.**

The NERA Study differs in two fundamental respects from prior studies considered and rejected by EPA: (1) with respect to its assumptions about E10 production; and (2) in its economic modeling. In both divergences from prior studies, the NERA Study responds directly to EPA's stated criteria for analyzing waiver petitions.

In its 2008 denial of Texas's waiver petition, EPA explained that it believed the Iowa State model was the best available model to examine the impacts of a RFS waiver because it is a stochastic model and it captures the interaction between the agricultural and energy markets.<sup>170</sup> In its final notice of action, EPA dismissed several studies examining the ability of refiners to decrease ethanol blending because the studies failed to address whether the economics of ethanol and gasoline production would lead refiners to reduce blending rates in the event of a waiver.<sup>171</sup> The prior analyses assumed a departure from the production of E10 and decreased use of ethanol as oxygenate in the event of a waiver, which EPA deemed implausible under current market conditions.<sup>172</sup> In contrast, the NERA Study assumes that all refiners will continue to produce as much E10 as possible and examines a situation in which production of E10 alone is no longer sufficient to meet the RFS.<sup>173</sup> This reflects the actual blendwall that faces the United States now and is an important difference that distinguishes and validates the NERA Study, unlike the prior studies considered and rejected by EPA.

Further, in its prior waiver denials, EPA faulted studies for failing to model interactions between the fuel and agricultural sectors and for valuing ethanol on an energy equivalent, rather than a volumetric,

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<sup>169</sup> <http://fuelgaugereport.aaa.com/?redirectto=http://fuelgaugereport.opisnet.com/index.asp> (last visited Aug. 13, 2013).

<sup>170</sup> 73 Fed. Reg. at 47,174.

<sup>171</sup> *Id.*

<sup>172</sup> *Id.*

<sup>173</sup> EPA also expressed doubts about studies presented in the comment period on its denial of waiver requests in 2012. EPA found that there are a number of business and technical reasons that may prevent refiners from moving away from the production of E10. See 77 Fed. Reg. at 70,767. As with the doubts EPA expressed in its 2008 denial, these concerns have no place in the current evaluation, as the NERA Study makes no assumptions that refiners will shift away from the production of E10. In its prior denials of petitions for waivers under the RFS, the EPA declined to rely upon other studies offered by previous petitioners and other commenters, noting several shortcomings with the studies. The NERA report also does not suffer from these same alleged deficiencies, and its economy-wide analysis is sufficiently robust to serve as the basis of a determination that implementation of the RFS will cause severe economic harm.

basis.<sup>174</sup> EPA has also rejected commenters' submissions of studies on the impacts of the RFS on the livestock industry, finding that these studies "do not focus on the impacts directly related to the RFS."<sup>175</sup> The NERA Study is different because it is focused on the behavior of refiners in response to the blendwall and the cascading effects that such behavior will have on fuel prices and ultimately on the economy as a whole.<sup>176</sup> The study assumes that sufficient ethanol to meet the RFS's volume obligations will remain available and that virtually the entire gasoline pool will be E10. Further, the NERA Study relies upon a broad economic model that examines the interaction among five energy and seven non-energy sectors.<sup>177</sup> Therefore, the NERA Study is not subject to the same shortcomings that have caused EPA to question previous studies submitted by commenters in support of a waiver of the RFS.

**B. The Rationales Supporting Previous Waiver Decisions Do Not Preclude Waiver of the 2014 RFS, and Immediate Action Is Necessary.**

As explained above, this Petition is unlike those that have preceded it because—unlike the prior waiver petitions—the blendwall is now here, and a waiver is concretely necessary. Despite this key difference, it bears mention that EPA has at least twice considered the "standards" to be applied in evaluating whether a waiver petition under section 211(o)(7)(A) would relieve a severe economic harm cause by the RFS. In its 2008 denial of a waiver petition from the state of Texas, EPA first interpreted the language of section 211(o)(7)(A) and concluded that the Clean Air Act requires a "generally high degree of confidence that implementation of the RFS program would severely harm the economy of a State, region, or the United States."<sup>178</sup> EPA rejected the Texas' 2008 waiver petition, finding that a waiver of the RFS would have no impact on ethanol demand during the period of the waiver and therefore would not increase the feed and fuel prices that Texas alleged were the source of severe economic harm.<sup>179</sup> EPA considered a second waiver petition from the Governors of several states in 2012. In considering the 2012 petition, EPA invited comment on its 2008 interpretation of section 211(o)(7)(A).<sup>180</sup> EPA ultimately rejected the waiver petition, concluding that the evidence did not support that the RFS was causing severe economic harm because "the weight of the evidence shows that it is very likely that the RFS volume requirements will have no impact on ethanol production volumes in the relevant time frame, and therefore no impact on corn, food, or fuel prices."<sup>181</sup> In doing so, the EPA determined that its 2008 interpretation of the waiver provision was correct and that "EPA interprets 'severely harm' as specifying a high threshold for the nature and degree of harm."<sup>182</sup>

While Petitioners believe that EPA has, to date, adopted an unnecessarily narrow view of its discretion to issue waivers under section 211(o)(7)(A), that fact is immaterial here because the impacts described in the NERA Study unquestionably rise to the level of severe economic harm upon which a waiver can be based. EPA must immediately issue a waiver to avoid the inadequate domestic supply and severe adverse economic impacts that will be caused by the RFS. Nothing in the Clean Air Act requires that the severe economic harm serving as the basis for the waiver petition must occur in the same year that EPA

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<sup>174</sup> 73 Fed. Reg. at 47,174.

<sup>175</sup> *Id.* at 47,178.

<sup>176</sup> NERA STUDY, *supra* note 4, at 7 (explaining that NERA relies upon its transportation fuel and macroeconomic models in evaluating the impacts of the RFS).

<sup>177</sup> *Id.* at 14.

<sup>178</sup> 73 Fed. Reg. at 47,169.

<sup>179</sup> *Id.* at 47,168-69.

<sup>180</sup> 77 Fed. Reg. 52,715 (Aug. 30, 2012).

<sup>181</sup> 77 Fed. Reg. at 70,775.

<sup>182</sup> *Id.* at 70,756.



issues the waiver.<sup>183</sup> The statutory language governing the application of the severe economic harm test for a waiver provides “implementation of the requirement *would* severely harm the economy or environment of a State, a region, or the United States.”<sup>184</sup> The use of the conditional tense rather than the present tense suggests that future harm is an appropriate basis for granting the waiver.

EPA itself recognized that the agency has “discretion in determining the appropriate time period to analyze” with respect to a severe economic harm analysis in its denial of North Carolina’s and Arkansas’s waiver petitions.<sup>185</sup> Indeed, EPA previously requested petitioners to file waiver petitions 6 months in advance to facilitate EPA’s review of the petition.<sup>186</sup> By its own admission, EPA does not expect to wait 6 months from the time severe harm begins before granting a waiver.

Previously, EPA declined to examine impacts beyond the current calendar year due to an inability to properly assess the relevant variables.<sup>187</sup> The NERA Study fully accounts for fluctuations in fuel prices and availability, and it provides sufficient certainty to conclude severe economic harm will result from reaching the blendwall in the years following 2013.<sup>188</sup> Existing infrastructure cannot support the higher-ethanol blend fuels required to avoid the blendwall. Moreover, the fact that a waiver applies broadly to the entire regulated community—and not simply to an individual party—implies that the waiver provision is meant to serve as a tool to address structural issues that could affect the successful implementation of the RFS.

**C. In Contrast to Earlier Waiver Request Situations, in This Instance, Issuance of a Waiver Will Provide Relief and Avoid the Harms Resulting From the Blendwall.**

The fundamental problem is that RINs are effectively permits to supply gasoline and diesel fuel for U.S. consumption, and that as the mandates exceed the ability of the transportation system to consume the mandated levels of renewable fuel, this will result in a shortage of permits to supply gasoline and diesel fuel. By granting a waiver, EPA will solve this problem and avoid the potentially disastrous impacts of the blendwall by eliminating this limitation on gasoline and diesel fuels for U.S. consumption. EPA must take immediate action to avoid the severe harm that the blendwall will inflict on consumers and the economy. In contrast to earlier waiver requests, where EPA determined that issuance of the waiver would likely not have provided the relief the petitioners sought, in this case, issuance of a waiver will provide relief and avoid the harms that would be inflicted by the blendwall.

**V. There Is an Inadequate Domestic Supply of Cellulosic and Other Advanced Biofuels.**

The RFS contains mandates for total advanced biofuels and two subsets of total advanced fuels (biomass-based diesel and cellulosic fuels). Total advanced fuel requirements are greater than the sum of biomass-based diesel and cellulosic fuels. That surplus over and above biomass-based diesel and cellulosic fuels we will refer to as other advanced fuels. We note that there is little to no concrete

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<sup>183</sup> See 42 U.S.C. § 7545(o)(7)(A).

<sup>184</sup> *Id.* (emphasis added).

<sup>185</sup> See 77 Fed. Reg. at 70,757 (“In considering the time frame used for this technical analysis, EPA recognizes that we have discretion in determining the appropriate time period to analyze.”).

<sup>186</sup> 73 Fed. Reg. at 47,184.

<sup>187</sup> 77 Fed. Reg. at 70,757-58.

<sup>188</sup> See *id.* at 70,758 (noting that a waiver petition based on the blendwall itself could provide a proper analysis of all the relevant factors required to grant a petition based on severe economic harm occurring in a year different than the year of the petition’s filing).

evidence that the domestic supply of either cellulosic biofuels or other advanced biofuels will reach the designated statutory targets.

#### **A. Inadequate Supply of Cellulosic Biofuels.**

The data in the EPA Moderated Transaction System (EMTS) indicates that no cellulosic biofuel was produced in 2011 and very little was produced in 2012. EMTS data show less than 49,000 gallons of cellulosic biofuel production in 2013 to date.<sup>189</sup> These facts suggest that the cellulosic biofuel statutory mandate should be waived based on an inadequate domestic supply. A recent U.S. Court of Appeals decision required EPA to establish a realistic cellulosic biofuel standard pursuant to the Clean Air Act.<sup>190</sup> Even a complete waiver of this mandate, however, would not be enough to abate the crisis caused by the E10 blendwall.

#### **B. An Inadequate Domestic Supply of Advanced Biofuels.**

The 2014 statutory level for advanced biofuels is 3.75 billion gallons. The obligation to blend “advanced” biofuels exceeds the sum of biomass-based diesel and cellulosic biofuels, and EPA expects the difference to be made up with sugarcane-based ethanol and extra biomass-based diesel. A miniscule amount of sugarcane-based ethanol is produced domestically. Most is sourced from Brazil. The mandate results in imports of other advanced biofuels, which is contrary to the goals of EISA to promote energy independence and security. Drawing from the clear language of the section 211(o) waiver provision, only “domestic supply” should be considered when setting the advanced biofuel and total renewable volumes.

Domestic producers cannot meet the EISA’s advanced biofuels requirements. In this regard, EPA recently identified Brazilian sugarcane ethanol as a potential source to meet the RFS advanced biofuel requirements.<sup>191</sup> EPA’s reliance on Brazilian ethanol crowds out the development of domestic advanced biofuels and actually fosters dependence on a foreign fuel source—in direct conflict with the Congressional intent of EISA. More importantly for purposes of addressing the blendwall, Brazilian sugarcane ethanol is simply an ethanol derived from a different feedstock and, therefore, subject to the same blending constraints as corn-based ethanol. The mandate to incentivize the import of Brazilian sugarcane ethanol merely displaces domestically produced ethanol, but does not help address the ethanol blendwall crisis. The RFS has caused significant quantities of sugarcane-ethanol to be imported from Brazil to meet the advanced biofuel mandate, while corn-based ethanol is sent to Brazil to satisfy consumer demand in that country. This *fuel shuffling* between the U.S. and Brazil is an unintended consequence of the RFS.

Putting aside for a moment the fact that Brazilian sugarcane-derived ethanol neither helps the ethanol blendwall problem nor qualifies as a domestic fuel, significant uncertainty exists with respect to Brazil’s ability to export increasing volumes of sugarcane ethanol. EPA’s advanced biofuel volumes for 2013 rely on the import of 666 million gallons of sugarcane ethanol from Brazil.<sup>192</sup> Uncertainty exists whether Brazil can increase exports to actually meet this demand. Idled mills and poor harvests have led

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<sup>189</sup> EPA, 2013 RFS2 DATA – RIN GENERATION AND RENEWABLE FUEL VOLUME PRODUCTION BY MONTH, <http://www.epa.gov/otaq/fuels/rfsdata/2013emts.htm> (last visited July 30, 2013).

<sup>190</sup> *API v. EPA*, 706 F.3d 474 (D.C. Cir. 2013).

<sup>191</sup> 78 Fed. Reg. at 9285.

<sup>192</sup> *Id.*

Brazilian officials to acknowledge that the country most likely cannot increase production and export in 2013 to meet the needs created by EPA's new target levels.<sup>193</sup> Although production of sugarcane has recently increased,<sup>194</sup> local domestic programs, such as new ethanol mandates for gasoline sold in Brazil, may further constrain Brazil's supply of sugarcane ethanol made available for export. Starting June 1, 2013, all gasoline sold in Brazil must contain 25 percent ethanol, up from 20 percent.<sup>195</sup> Unlike in the United States, a large portion of the auto fleet is designed to run on gasoline containing more than 10 percent ethanol.<sup>196</sup> Reliance on imported advanced renewable fuel undermines the Energy Independence and Security Act's goals of enhancing domestic energy security.

The RFS Advanced Biofuel statutory target for 2014 is 3.75 billion gallons. It is likely that the available amount of cellulosic biofuel would be *de minimis*, and may be excluded from this calculation. The *domestic* supplies of biomass-based diesel and cellulosic biofuels are limited and require EPA to waive at least 1.83 billion gallons from 3.75 billion gallons in 2014.

The EPA has the statutory authority to write the advanced mandate down to at least the existing biodiesel production capacity if not further. This may be the only realistic path for implementing the RFS in the next several years.<sup>197</sup>

Even if EPA exercises its authority to reduce the cellulosic biofuel mandate to zero and the advanced biofuel mandate to 1.92 billion (representing the amount of biomass-based diesel RINs that can be feasibly produced), while simultaneously lowering the total RFS mandate by an equivalent amount, the ethanol blendwall problem would remain. To avoid this problem, EPA must go further and waive an even greater amount of the total RFS mandate than is represented by the shortfall in the cellulosic and advanced categories.

## VI. Conclusion

As explained above, this Petition is unlike any that have come before it. The blendwall and its myriad attendant harms are certainly at hand as evidenced by a number of factors. The current RFS, based on projections of demand that have not materialized, directly threatens the economy and energy infrastructure of the United States, as well as the well-being of every American consumer. The EPA must exercise its authority under section 211(o)(7) to waive the requirements of section 211(o)(2) of the Clean Air Act in a manner that—at minimum—is sufficient to delay the ethanol blendwall beyond 2014. The economic impacts of maintaining the status quo are significant, and the harms outlined in this Petition are of a sufficient nature and severity to justify the waiver requested herein. In addition to the inadequate domestic supply of gasoline and diesel, the severe economic harm caused by the RFS volumes also justifies EPA's exercise of its waiver authority. Each of these harms is severe on a regional

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<sup>193</sup> Reese Ewing, *Analysis: Brazil Ethanol Returns to US as Biofuel Rules Pave Way*, REUTERS, Sept. 20, 2012, <http://www.reuters.com/article/2012/09/20/us-ethanol-brazil-exports-idUSBRE88J14J20120920>.

<sup>194</sup> Isis Almeida, *Brazil Sugar-Cane Use for Fuel Seen by Datagro Above Outlook*, BLOOMBERG, July 5, 2013, <http://www.bloomberg.com/news/2013-07-05/brazil-s-sugar-cane-use-for-fuel-seen-by-datagro-beating-outlook.html>.

<sup>195</sup> Erin Voegele, *Brazil to Increase Ethanol Blend Level to 25 Percent*, ETHANOL PRODUCER MAG., Mar. 7, 2013, <http://www.ethanolproducer.com/articles/9628/brazil-to-increase-ethanol-blend-level-to-25-percent>.

<sup>196</sup> See *Brazilian Transportation Fleet*, Sugarcane.org, <http://sugarcane.org/the-brazilian-experience/brazilian-transportation-fleet> (last visited Aug. 12, 2013).

<sup>197</sup> University of Illinois, *The Ethanol Blend Wall, Biodiesel Production Capacity, and the RFS...Something Has to Give*, (Feb. 13, 2013), <http://farmdocdaily.illinois.edu/2013/02/ethanol-blend-wall-biodiesel-RFS.html>.

or national scale, and each could be mitigated if EPA acts now to waive the RFS for 2014, giving farmers ample time to adjust their production decisions accordingly.

To be sure, delaying the ethanol blendwall until 2015 will not solve the underlying problem of accelerating RFS mandates. But EPA has clear authority to grant multiple waivers. Section 211(o)(7)(C) provides that waivers are limited to one year, but may be “renewed” by the Administrator after inter-agency consultation. Given the likelihood that production, supply, and market conditions described in this Petition will continue past 2014 barring a statutory change to the RFS, EPA should also give clear indication in the context of granting a waiver that the methodology used to determine RFS volume waived in 2014 will be used in subsequent years. A clear statement of intent to grant additional waivers if current conditions persist will send a clear message to the marketplace and allow for the most efficient resolution of this matter.

In sum, now is the time for EPA to act. The blendwall cannot realistically be forestalled, and its impact on the United States would be devastating. EPA has the authority to prevent this catastrophe. Petitioners urge EPA to do so by granting the requested waiver.

Petitioners thank EPA for considering this Petition and the information within and appended to it.

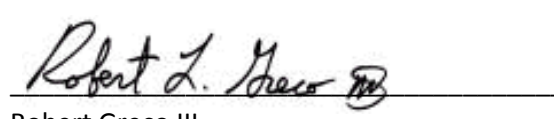
Respectfully submitted,

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