

# RENEWABLE FUEL STANDARD ASSESSMENT WHITE PAPER

## **Energy Policy**

The Committee on Energy and Commerce is issuing a series of white papers as the first step in reviewing the renewable fuel standard (RFS). The RFS is a provision of the Clean Air Act that was added by the Energy Policy Act of 2005 (EPAAct) and greatly expanded under the Energy Independence and Security Act of 2007 (EISA). It sets targets and timetables for four categories of biofuels to be added into the nation's transportation fuel supply. The four categories are: renewable fuel (corn-derived ethanol and advanced biofuel), advanced biofuel (cellulosic biofuel and biomass-based diesel), cellulosic biofuel, and biomass-based diesel. The targets for the four categories total 16.55 billion gallons for 2013, of which not more than 13.8 billion gallons can be corn ethanol. Corn ethanol is capped at 15 billion gallons from 2015 on, while the other categories of renewable fuel continue to rise until the total RFS reaches 36 billion gallons by 2022.

It has been more than five years since the RFS was last revised, and there is now a wealth of actual implementation experience with its use. In some respects, the RFS has unfolded as expected, but in others it has not. Several implementation challenges have emerged that received little if any consideration prior to passage of EISA. Furthermore, the overall energy landscape has changed since 2007. It is time to undertake an assessment of the RFS.

For this reason, the committee is initiating a series of white papers setting out a number of emerging issues with the RFS. Each white paper will provide an overview of an issue and solicit input from interested stakeholders in the form of answers to questions posed. This, the fourth white paper, addresses several energy policy considerations related to the RFS. The final white paper will address RIN fraud and other implementation and enforcement issues. In addition, at the conclusion of the process, stakeholders will be provided an opportunity to comment on any issues not specifically addressed in the white papers.

### **The Energy Policy Backdrop of the RFS**

Maintaining and enhancing energy security has long been an important element of U.S. energy policy, particularly since the 1973 oil embargo. Over the years, the U.S. has pursued energy security through a wide variety of approaches, including increasing domestic oil production, decreasing oil demand through efficiency and fuel switching, diversifying transportation fuels for vehicles beyond oil, diversifying available modes of transportation beyond vehicles, and even reducing the need for transportation altogether through urban planning and telework. The RFS has contributed to U.S. energy security by providing an affordable domestically produced alternative to oil.

When the RFS was enacted in 2005 and expanded in 2007, domestic oil production was in the midst of a decades-long decline while demand for transportation fuels was rising. This scenario heightened concerns about a growing gap between domestic supply and demand to be made up by oil imports. Most of the nations that were believed capable of filling this gap by

substantially increasing exports to the U.S. were members of the Organization of Petroleum Exporting Countries (OPEC).

In this context, many saw biofuels as a potential source of domestic liquid fuels that could be increased to counter dependence on oil imports, thereby mitigating high and volatile global oil prices while providing geopolitical benefits by reducing dependence on OPEC. Proponents of a biofuels mandate anticipated energy security benefits to go along with the economic and environmental ones.

Addressing the rise in oil imports and improving energy security were major goals of both EPAct in 2005 and EISA in 2007. Building upon the tax incentives and other provisions already in place since the late 1970s to encourage production of biofuels, Congress created the first federal biofuels mandate in EPAct with the RFS.

After EPAct, President Bush proposed and Congress considered proposals to broaden the mandate by encompassing a wider variety of alternative transportation fuel sources such as coal, natural gas, hydrogen fuel cells, and electricity.<sup>1</sup> However, these proposals to expand production of high carbon and other fuels were not adopted and EISA focused instead on expanding the biofuels targets in the RFS from 7.5 billion gallons by 2012 to 36 billion gallons by 2022. The RFS was also revised to include four categories of biofuels to diversify the sources of renewables beyond corn-based ethanol and to reduce greenhouse gases.

In addition to the creation of mandates in the RFS, Congress has adopted a number of other measures, in EPAct and EISA as well as other statutes, to enhance energy security by encouraging a variety of alternatives to petroleum-derived fuels.<sup>2</sup> These include tax incentives, research and development programs, grants, loans and loan guarantees, and other measures applicable to transportation fuels, fueling infrastructure, vehicles, and public transit. Congress also sought to reduce petroleum demand through federal fuel economy standards for motor vehicles.<sup>3</sup>

In enacting the expanded RFS, it was the sense of Congress that “the production of transportation fuels from renewable energy would help the United States meet rapidly growing domestic and global energy demands, reduce the dependence of the United States on energy imported from volatile regions of the world that are politically unstable, stabilize the cost and availability of energy, and safeguard the economy and security of the United States.”<sup>4</sup>

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<sup>1</sup> See, *Inhofe Introduces President Bush's "Alternative Fuel Standard Act of 2007"*, Press release, at [http://www.epw.senate.gov/public/index.cfm?FuseAction=Minority.PressReleases&ContentRecord\\_id=0b3ab938-802a-23ad-4f9d-4be8dd2e1c2a&Region\\_id=&Issue\\_id](http://www.epw.senate.gov/public/index.cfm?FuseAction=Minority.PressReleases&ContentRecord_id=0b3ab938-802a-23ad-4f9d-4be8dd2e1c2a&Region_id=&Issue_id).

<sup>2</sup> See, Congressional Research Service, *Alternative Fuels and Advanced Technology Vehicles: Issues in Congress*, April 4, 2013, at <http://www.fas.org/sgp/crs/misc/R40168.pdf>; Joint Committee on Taxation, *Present Law and Analysis of Energy-Related Tax Expenditures*, March 23, 2012, at <https://www.jct.gov/publications.html?func=startdown&id=4414>.

<sup>3</sup> See, Congressional Research Service, *Automobile and Truck Fuel Economy (CAFE) and Greenhouse Gas Standards*, September 11, 2012, at <http://www.fas.org/sgp/crs/misc/R42721.pdf>.

<sup>4</sup> Energy Independence and Security Act of 2007, section 806(a)(4).

## The Energy Landscape in 2013

Energy markets have changed significantly since 2007. To the surprise of many, domestic oil production has reversed its decline and has undergone a substantial increase, largely driven by advances in tight oil production.<sup>5</sup> This growth is projected to continue in the years ahead.<sup>6</sup> Equally surprising has been the decline in gasoline demand, a trend that is also projected to continue due to new CAFE/GHG standards.<sup>7</sup> In summary, the assumptions of falling domestic supply and rising demand have given way to a reality that is precisely the converse.

The percentage of oil imports, which reached 60 percent in 2005, declined to 41 percent as of 2012.<sup>8</sup> The Energy Information Administration (EIA) projects that imports will decline to 34 percent by 2019 and then slightly increase to 37 percent by 2040.<sup>9</sup>

While oil imports have declined overall, the makeup of those imports has also changed. The nation with the largest increase in exports to the U.S. is a non-OPEC member – Canada.<sup>10</sup> Of the shrinking imports into the U.S., 28 percent comes from the Persian Gulf.<sup>11</sup> The International Energy Agency (IEA) projects continued growth in U.S. and Canadian oil production, even projecting that the U.S. will overtake Saudi Arabia as the world's largest oil producing nation by 2020 and North America may become a net oil exporter in 2030.<sup>12</sup>

Despite these trends, IEA also notes that oil is traded on a global market and that prices will still be affected by international events.<sup>13</sup> Indeed, increased domestic production has not led to oil prices returning to historic averages. EIA projects high prices well into the future, for oil and motor fuels. It projects oil at an inflation-adjusted \$163 per barrel in 2040, gasoline at \$4.32 per gallon, and diesel fuel at \$4.94 per gallon.<sup>14</sup>

Part of the reduction in petroleum demand is attributable to the RFS itself. The use of domestic biofuels has grown, displacing petroleum-derived fuels as well as serving other functions such as replacing methyl tertiary butyl ether (MTBE) as an oxygenate and octane enhancer. According to EIA, biofuels consumption will continue to increase but will fall well below the 36 billion gallon target in 2022.<sup>15</sup>

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<sup>5</sup> International Energy Agency, *Medium-Term Oil Market Report: Overview*, May 14, 2013, at [http://www.iea.org/media/news/MTOMR\\_2013\\_OVERVIEW.pdf](http://www.iea.org/media/news/MTOMR_2013_OVERVIEW.pdf).

<sup>6</sup> Id.

<sup>7</sup> Energy Information Administration, *Annual Energy Outlook 2013*, p. 80, at [http://www.eia.gov/forecasts/aeo/pdf/0383\(2013\).pdf](http://www.eia.gov/forecasts/aeo/pdf/0383(2013).pdf)

<sup>8</sup> Energy Information Administration, *Annual Energy Outlook 2013*, p. 32, at [http://www.eia.gov/forecasts/aeo/pdf/0383\(2013\).pdf](http://www.eia.gov/forecasts/aeo/pdf/0383(2013).pdf)

<sup>9</sup> Id. at 83.

<sup>10</sup> Energy Information Administration, *U.S. Imports by Country of Origin*, at [http://www.eia.gov/dnav/pet/pet\\_move\\_impcus\\_a2\\_nus\\_ep00\\_im0\\_mbb1\\_a.htm](http://www.eia.gov/dnav/pet/pet_move_impcus_a2_nus_ep00_im0_mbb1_a.htm).

<sup>11</sup> Energy Information Administration, *How Dependent Are We On Foreign Oil?*, May 10, 2013 at [http://www.eia.gov/energy\\_in\\_brief/article/foreign\\_oil\\_dependence.cfm](http://www.eia.gov/energy_in_brief/article/foreign_oil_dependence.cfm).

<sup>12</sup> International Energy Agency, *World Energy Outlook 2012, Executive Summary*, at <http://www.iea.org/publications/freepublications/publication/English.pdf>.

<sup>13</sup> Id.

<sup>14</sup> EIA, *Annual Energy Outlook 2013*, at 105 (Table 13).

<sup>15</sup> Id. at 83.

According to the Environmental Protection Agency, renewable fuels also provide some cost savings to consumers. The agency projects that the RFS will reduce gasoline prices by 2.4 cents per gallon and diesel by 12.1 cents per gallon by 2022.<sup>16</sup> EPA also estimates that the RFS will decrease oil imports by \$41.5 billion and result in additional energy security benefits of \$2.6 billion.<sup>17</sup>

Since the RFS was adopted, other transportation energy alternatives have also grown. Domestic natural gas production has undergone a significant increase and its use in the transportation sector is also increasing. Electrification of transportation is also making inroads, especially hybrid and plug-in hybrid vehicles. Along with the RFS, these and other potential alternatives are diversifying the transportation sector away from petroleum and enhancing energy security.<sup>18</sup>

### Questions for Stakeholder Comment

1. How vulnerable is the United States currently to major oil supply and price disruptions? In the context of rising domestic oil production and falling demand, how important is it to adopt new and strengthen existing policy measures to further reduce our dependence on oil?
2. How has the RFS contributed to improved energy security? To what degree should the reduction in U.S. oil imports be attributed to the RFS?
3. In the context of rising domestic oil production and falling demand, to what extent does the RFS currently contribute to U.S. energy security and to what extent will it further contribute going forward?
4. How do the costs and benefits of the RFS compare to those of other federal policies to diversify fuels used in the transportation sector, diversify transportation options, and reduce oil dependence through other means?
5. What has been the impact of the RFS on oil prices? What has been the impact on gasoline and diesel fuel prices? What has been the impact on oil and fuel price volatility? How will these impacts change in the years ahead?
6. Could the RFS be modified to enhance energy security further? Should the range of qualifying fuels be expanded? If so, how? If not, why not?

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<sup>16</sup> Environmental Protection Agency, *EPA Finalizes Regulations for the National Renewable Fuel Standard Program for 2010 and Beyond*, February 2010, at <http://www.epa.gov/oms/renewablefuels/420f10007.pdf>.

<sup>17</sup> *Id.*

<sup>18</sup> EIA, *Annual Energy Outlook 2013*, at 70.

Please respond by June 21, 2013, to [RFS@mail.house.gov](mailto:RFS@mail.house.gov). Should you have any questions, you may contact Majority staff Ben Lieberman at (202) 225-2927, or Minority staff Alexandra Teitz at (202) 225-4409.