

## Focus on Fuels

### In This Issue

#### TM&C Services

#### Can Biodiesel Save the Renewable Fuel Program in 2016?

August 2015

Volume 5, Issue 9

The volumes of renewable fuel to be blended into transportation fuel for 2014, 2015 and 2016, proposed by the EPA are summarized in the table below.

#### Proposed (5/29/15) Renewable Fuel Obligations, billion gallons

	Cellulosic (D3)	Biomass Based Diesel (D4)	Advanced (D5)	Renewable Fuel (D6)
2014	0.033	1.63	2.68	15.93
2015	0.106	1.70	2.90	16.30
2016	0.206	1.80	3.40	17.40



**Tom Hogan, P.E.**  
Senior Vice President

### Can Biodiesel Save the Renewable Fuel Program in 2016?

*by Tom Hogan*

#### The RFS Obligation

The 2014 proposed volumes were based on actual 2014 blending because the obligation was not set until 2015. The obligation for 2015 is similar to the 2014 level and is not expected to create significant difficulties for the obligated parties to meet. The obligation for 2016 is more difficult to meet, primarily due to the potential to be restricted by the blendwall limit of 10% ethanol in gasoline.

For this discussion, you need to understand three basics of the program. *First*, the obligations are "stacked." That means that the Cellulosic obligation is a subset of the Advanced category. Similarly, the Biomass Based Diesel category is also a subset of the Advanced biofuel. In turn, the Advanced biofuel is a subset of the Renewable fuel obligation. Theoretically, cellulosic biofuel could

#### TM&C Services in Fuel Regulations

TM&C provides a full range of services in its fuels regulatory practice. Some of these services are listed below.

- Preparing, reviewing and submitting fuels reports, including CDX submissions.

- Facility audits for compliance with fuels programs.
- Interaction with EPA to pose fuels-related questions.
- Industry specialist assistance for required gasoline attestations.
- Industry specialist assistance for in-line blending audits.
- Assistance in setting up a fuels compliance group/program.
- Personnel reviews of compliance-related groups.
- Compliance status reviews and recommendations.
- Negotiations/consultation during EPA enforcement actions.
- 3rd-Party Engineering reviews.
- Due diligence reviews of facilities and companies in RFS RINs Program.

satisfy the cellulosic obligation, all of the advanced biofuel obligation, and all of the renewable fuel obligation. Biomass based diesel could satisfy the biomass based diesel obligation, all of the advanced biofuels obligation, and the entire renewable fuel obligation. However, this will probably never happen because that would result in no regulatory requirement to include ethanol from corn in transportation fuels. The ethanol producers, corn farmers and others with a vested interest in ethanol derived from corn are too strong of a political force to ever allow the EPA to set the mandate at a level that excludes corn ethanol.

*Second*, the renewable fuel obligation is set on an ethanol equivalent energy basis. Since biomass based diesel contains about 1.5 times the amount of energy in ethanol, the production of 1 gallon of biomass based diesel counts as 1.5 D4 RINs.

*Third*, the cellulosic production is likely to be ethanol and some of the D5 RINs are also ethanol.

### **The Problem**

Therefore, the amount of ethanol that must be blended into gasoline to meet the 2016 obligation would be 17.4 billion gallons less 2.7 billion ethanol equivalent biomass based diesel RINs (1.8 X 1.5) or 14.7 billion gallons of ethanol. E85 production in the United States is projected by the EPA to be around 400 million gallons in 2016. This equates to about 280 million gallons of ethanol because E85 averages about 70% ethanol due to seasonal quality constraints. E15 demand in 2016 is expected to be essentially zero. These assumptions result in a need to blend about 14.4 billion gallons into E10.

Assuming 98% of gasoline is blended with 10% oxygen, 14.4 billion gallons of ethanol blended would equate to gasoline production/demand of 146.9 billion gallons or a demand of about 9.6 million barrels per day. TM&C's latest gasoline demand forecast for 2016 is about 9.1 million barrels per day. If that forecast is correct, the actual demand for ethanol would be about 0.7 billion gallons less than the proposed obligation.

### **A Solution**

How could this shortfall be satisfied? The first option is to run down prior year RIN inventory. The regulations allow up 20% of the obligation to be met by prior year RINs. There should be an adequate supply of RINs to meet the shortfall in 2016. The second option would be to increase production of biomass based diesel above the mandated volume. In that case, biomass based diesel consumption would need to increase by about 0.5 billion gallons to about 2.3 billion gallons. This would be equivalent to about 3.5 billion ethanol equivalent RINs. Figure 1 shows that total biomass based diesel RINs generated peaked in 2013 and 2014 at about 2.7 billion, which equates to a production of about 1.8 billion gallons. This might indicate that the current biodiesel capacity is not

adequate to take care of the renewable fuel shortfall; however, Figure 2 tells a different story.

**Figure 1**  
**Biomass Based Diesel RINs Generated**

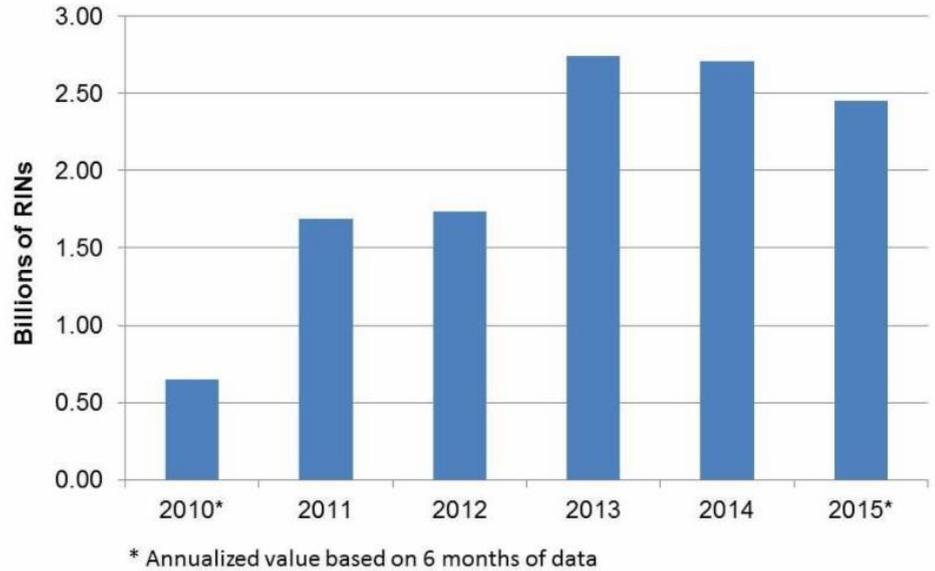
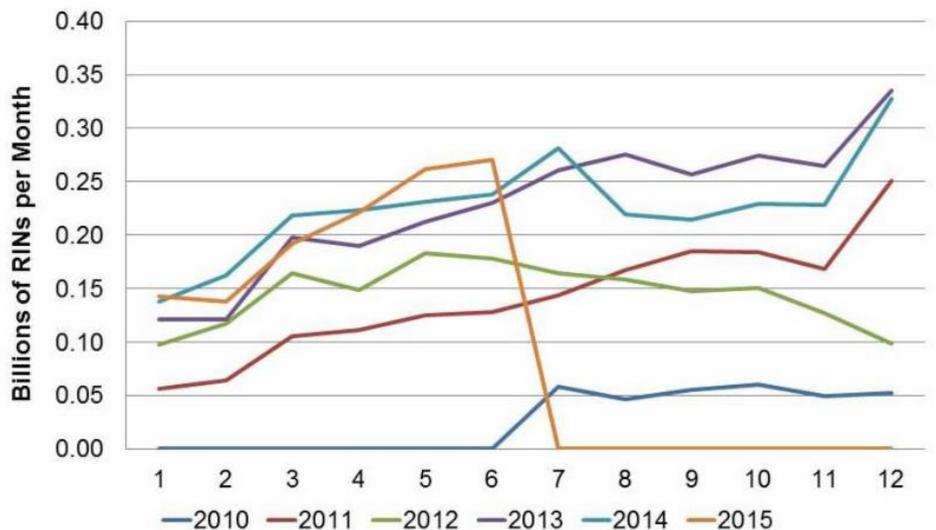


Figure 2 shows the monthly production of biomass based diesel for the past six years through June 2015. The biomass based diesel showed a seasonal trend in three of the five years. This same seasonal trend appears to be likely in 2015 as well. Total biomass based diesel RINs generated in December of 2013 and 2014 were about 0.33 billion. This level projected for 12 months would be almost 4 billion RINs. Therefore, it appears that the production facilities could meet the required level if there was enough demand and enough feedstock.

**Figure 2**  
**Biomass Based Diesel RINs Generated**



The seasonal trend in biodiesel production could be explained by various phenomena. One possibility is that producers maximize

production at the end of the year to maximize the blender's tax credit (BTC) they will receive. Blenders of biodiesel receive a \$1 per gallon tax credit; however, the BTC has a checkered history on when the authorizing legislation is passed. The table shows that the BTC can be authorized as late as in a subsequent year. It is interesting to note that the BTC for 2012 was not approved until the following year, and there was no production spike (see Figure 2) in December 2012. Although the biodiesel tax credit for 2015 has not yet been passed, a bill is expected to be introduced (which is also expected to be passed) in the Senate in the near future to extend the credit through 2015 and 2016.

### **Biodiesel Tax Credit**

<b>Year</b>	<b>Authorization Date</b>
2010	March 2010
2011	December 17, 2010
2012	January 1, 2013
2013	January 1, 2013
2014	December 19, 2014
2015	Not Yet Approved

It appears that the push for production in December to capture the BTC results in an increase in Biodiesel inventory, which further results in low production in the early months of the year as the inventory is consumed. This could explain the sharp drop off from the high December production to the lower January production in recent years.

Also, biodiesel has a relatively high cloud point, which limits the amount that could be absorbed into the diesel pool in colder climates during the winter. Because of that, it appears that the RIN generation curve for 2012 is probably more representative of the market demand with lower production in the winter months and higher production in the summer months.

Finally, biodiesel in the United States is generally held below 5% due to labeling requirements. The addition of less than 5% biodiesel to petroleum based diesel requires no special labeling. If the addition exceeds 5%, the product transfer documents must denote the biodiesel content. Total diesel demand in the United States is on the order of 61 billion gallons per year. At 5%, there is room for about 3 billion gallons of biodiesel or about 4.5 billion RINs.

### **Summary**

The proposed 2016 renewable fuel mandate of 17.4 billion gallons will be difficult to meet with the current blendwall restriction. The shortfall could be around 0.7 billion gallons of ethanol. Biodiesel

production could possibly be increased to make up that shortfall, although prior year RINs will probably be used to make up some if not all of the shortfall.

The biodiesel blender's tax credit has not yet been approved for 2015, although it is expected to be renewed through 2016. Without approval, biomass based diesel RINs may not be available to make up any shortfall.

Also, if the United States Senate Finance Committee's proposed amendment to shift the tax credit from the blender to the producer is approved, it is unknown how that might impact the incentive to produce or import biodiesel. It seems likely that removing the biodiesel blending credit from foreign biodiesel might impact the total amount of biodiesel available to blend into transportation fuel.

TM&C stays abreast of the renewable fuels program and other fuels regulatory programs. Contact us for help in any of these areas.

---

**Turner, Mason & Company** |  
**CONSULTING ENGINEERS**

2100 Ross Ave, Suite 2920

Dallas, TX 75201

Phone: 214-754-0898

Fax: 214-754-5915

[www.turnermason.com](http://www.turnermason.com)