



## 3rd Quarter RIN Update

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Today's article provides an update on Renewable Identification Numbers by looking at estimates for RIN carry-in and generation numbers for 2014 based on available data through October from [EPA's EMTS](#). There still exists a significant amount of uncertainty regarding actual mandate levels for 2014 in light of the EPA's [recent announcement](#) that the finalization of rules for 2014 will be delayed into 2015. This post examines the range of 2015 RIN stock scenarios that could occur assuming the final mandate levels range somewhere between proposed and statutory levels for 2014.

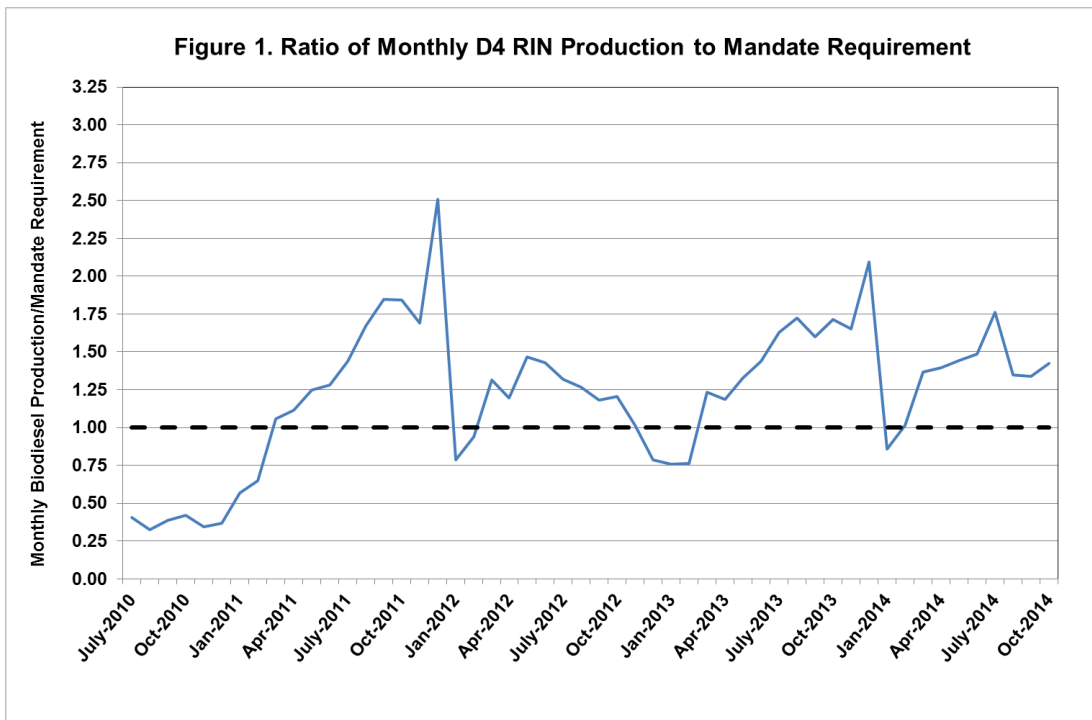
### D4 RIN Generation

Figure 1 plots monthly D4 RIN generation relative to implied monthly mandate needs (annual mandate divided by 12) using data from the EMTS from July 2010 through October 2014. Generation of D4 RINs increased steadily through the first half of 2014, peaking at 280 million RIN gallons in July. Since then, monthly generation of D4 RINs has averaged approximately 220 million RIN gallons per month. Assuming monthly generation of 220 million RINs for November and December, between 2.5 and 2.6 billion D4 RINs will be generated in 2014. This would exceed proposed biodiesel mandate needs (1.92 billion) by more than 600 million RIN gallons. Moreover, it would exceed total proposed advanced mandate needs (2.2 billion gallons) by more than 300 million RIN gallons.

Generation of D5 advanced biofuel RINs increased throughout the early part of 2014 to 15 to 20 million gallons per month from April through July. However, generation of D5 RINs has since declined dramatically, averaging 5 million RIN gallons per month from August through October. Assuming another 5 million D5 RINs are generated in the months of November and December, total generation of D5 RINs for 2014 would be just over 135 million RIN gallons, providing additional RINs for use towards the undifferentiated advanced mandate component of 280 million gallons (2.2 billion total less 1.92 billion biodiesel).

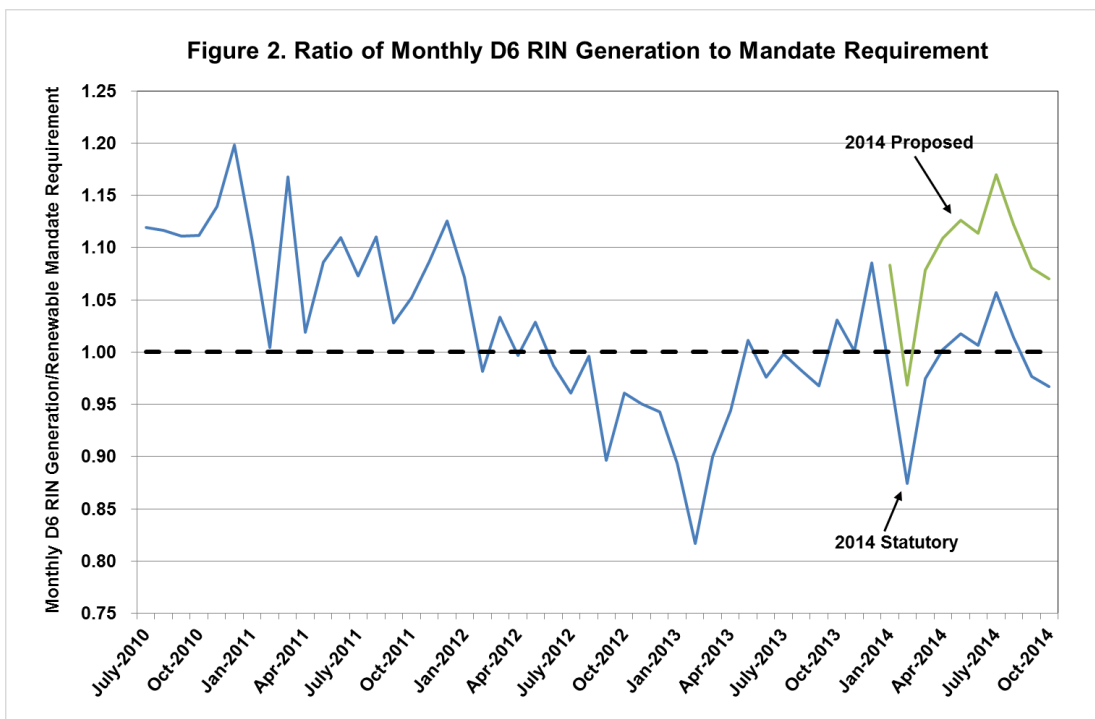
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### D6 RIN Generation

Figure 2 plots D6 RIN generation relative to implied mandate needs since July 2010. Similar to the pattern for D4 RINs, D6 generation peaked at 1.25 billion gallons in July and has since fallen to an average of 1.18 billion from August to October. Total D6 RIN generation is expected to be just over 14.2 billion RIN gallons for 2014. This level of generation falls below the implied need at the statutory mandate level of 14.4 billion gallons for 2014, but well above the needed generation implied by the mandate level of 13.01 billion gallons in EPA’s proposed rule for 2014, as illustrated in Figure 2.



## RIN Carry-In for 2014

The RIN generation data for 2013 suggests that total carry-in for 2014 is approximately 1.875 billion RIN gallons, compared with the estimated 2.666 billion gallons of stocks available coming into 2013. The final mandate levels for 2014 will determine the composition of the total RIN stock level. Using the proposed rule advanced mandate level of 2.2 billion gallons, total advanced carry-in could be as low as 440 million gallons with the balance of 1.435 billion RIN gallons available for use towards the renewable mandate component. The statutory advanced mandate for 2014 of 3.75 billion gallons would allow for total advanced carry-in of 750 million gallons and 1.125 billion RIN gallons available for use toward the 2014 renewable component. See my previous RIN update posts for 2014 for a more detailed discussion of these scenarios ([April 11, 2014](#) and [August 6, 2014](#)).

## Mandate Compliance in 2014

Table 1 combines the RIN carry-in estimates with the generation forecasts for 2014 to illustrate the outlook for RFS mandate compliance in 2014. Mandate levels, carry-in, and generation estimates are included for the biodiesel (D4), undifferentiated advanced (D5), and renewable (D6) components of the mandate. Gross generation estimates are based on the RIN generation data available from the EMTS through October, discussed above. Net generation estimates adjust these values for retirements for non-compliance purposes based on historical percentages for each D code category. The surplus (deficit) estimates for each category are simply equal to carry-in plus net generation less mandate needs. Note that the estimates in table 1 ignore mandate volumes for cellulosic biofuel.

The first column in table 1 provides estimates for a compliance scenario in 2014 assuming the mandate levels are finalized at their *proposed* levels for 2014. Estimated carry-in plus net generation of D4 RINs in 2014 is estimated to be more than sufficient to cover the 1.92 billion RINs required for compliance with the biodiesel mandate, resulting in a surplus of D4 RINs totaling 865 million RIN gallons. Estimates of D5 carry-in plus net generation would fall just short of the required amount for the undifferentiated portion of the 2014 mandate at proposed levels, but the surplus of D4s would allow for a total advanced RIN surplus of 770 million RIN gallons.

Under proposed mandate levels, estimates of carry-in plus net generation of D6 RINs in 2014 would generate a surplus of 1.923 billion RIN gallons after compliance with the 13.01 billion gallon mandate. Combining the advanced and renewable categories would imply a total surplus for carry-in to 2015 of 2.693 billion RIN gallons.

The second column of table 1 provides estimates for a 2014 compliance scenario if the original *statutory* mandate levels are used in the final rule. This scenario does not impact the biodiesel component of the mandate. However, it does result in an estimated deficit of D5 RINs totaling 1.335 billion gallons, and a deficit of total advanced RINs (D4 and D5) of 470 million gallons.

The situation for the renewable component and D6 RINs also changes dramatically with the higher mandate level of 14.4 billion gallons and the smaller carry-in estimate of 1.125 billion gallons. At statutory mandate levels there is still an estimated surplus of D6 RINs for 2014, but at a level of only 223 million gallons.

**Table 1. RFS Mandate Compliance Scenarios for 2014**

	Proposed Mandate	Statutory Mandate
Advanced Mandate	2.200	3.750
Biodiesel Mandate	1.920	1.920
Undifferentiated Advanced Mandate	0.280	1.830
D4 Carry-In	0.384	0.384
D4 Gross Generation	2.587	2.587
D4 Net Generation	2.401	2.401
D4 Surplus (Deficit)	0.865	0.865
Undifferentiated Advanced Carry-In	0.056	0.366
D5 Gross Generation	0.135	0.135
D5 Net Generation	0.129	0.129
D5 Surplus (Deficit)	(0.095)	(1.335)
<b>Total Advanced Surplus (Deficit)</b>	<b>0.770</b>	<b>(0.470)</b>
Renewable Mandate	13.010	14.400
D6 Carry-In	1.435	1.125
D6 Gross Generation	14.208	14.208
D6 Net Generation	13.498	13.498
<b>D6 Surplus (Deficit)</b>	<b>1.923</b>	<b>0.223</b>
<b>Total 2014 RIN Surplus (Deficit)</b>	<b>2.693</b>	<b>(0.247)</b>

Note: Net Generation estimates adjust Gross Generation figures to account for retirements for non-compliance purposes.

## Discussion

Using data through October from EPA's EMTS system, estimates can be obtained for total RIN generation in 2014 across all D code categories. Projecting average pace over the past 3 months for each category through the end of the year results in gross generation estimates of 2.587 billion D4, 135 million D5, and 14.208 billion D6 RINs. These estimates represent marginal increases from those in my mid-year RIN update for the D4 and D6 categories, and a reduction in the estimate for the D5 category.

Adjusting for retirements for non-compliance purposes and combining these with carry-in estimates provides projections useful for examining possible RFS mandate compliance scenarios in 2014. If the mandate levels in EPA's proposed rulemaking for 2014 are upheld, the current pace of RIN generation suggests that a surplus of both advanced and renewable RINs will be available for carry-in to 2015. Examining a scenario at the original statutory mandate levels suggests a deficit of advanced RINs, a small surplus of D6 RINs, and an overall deficit to rollover into 2015.

These estimates suggest that the market's expectation is for finalized mandate volumes to be below statutory levels, as net RIN generation in 2014 plus carry-in from 2013 are estimated to be insufficient to

meet statutory mandate levels for 2014. Generation levels for both advanced (D4 and D5) and renewable (D6) RINs remains well above the pace needed to meet the mandate needs implied by EPA's proposed levels. Thus, the market may expect some increase from proposed levels in the final rulemaking.

## References

Paulson, N. "[Mid-Year RIN Update](#)." *farmdoc daily* (4):146, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, August 6, 2014.

Paulson, N. "[RIN Stock Update](#)." *farmdoc daily* (4):66, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, April 11, 2014.