



2016 Mid-Year RIN Update

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Today's article provides the second quarterly update on Renewable Identification Number (RIN) generation in 2016 based on available data from EPA's EMTS through the first 6 months of 2016. Previous quarterly updates covered RIN generation throughout 2015 (*farmdoc daily* [March 3, 2016](#), [November 4, 2015](#), [April 29, 2015](#), and [July 23, 2015](#)) and for the first quarter of 2016 (*farmdoc daily* [May 12, 2016](#)).

The RIN generation figures are combined with RIN retirement data from EMTS, ethanol export data from the US Department of Commerce (DOC) via the [USITC DataWeb](#), and biodiesel export data from the [Energy Information Administration](#) (EIA) to compare estimated net RIN generation to targeted RFS mandate needs based on EPA's [final rulemaking](#) for 2016.

Advanced RIN Generation

Generation of D3 RINs increased to nearly 47 million in the second quarter of 2016, compared with just under 32 million over the first quarter. Total generation through June stands at nearly 79 million, suggesting generation for the year will reach nearly 160 million D3 RINs. Through June, a total of 1.8 million of the D3 RINs generated have already been retired for non-compliance purposes. Even with the increase seen in the 2nd quarter, the pace of D3 generation will need to increase considerably to meet the 2016 mandate requirement of 230 million RIN gallons.

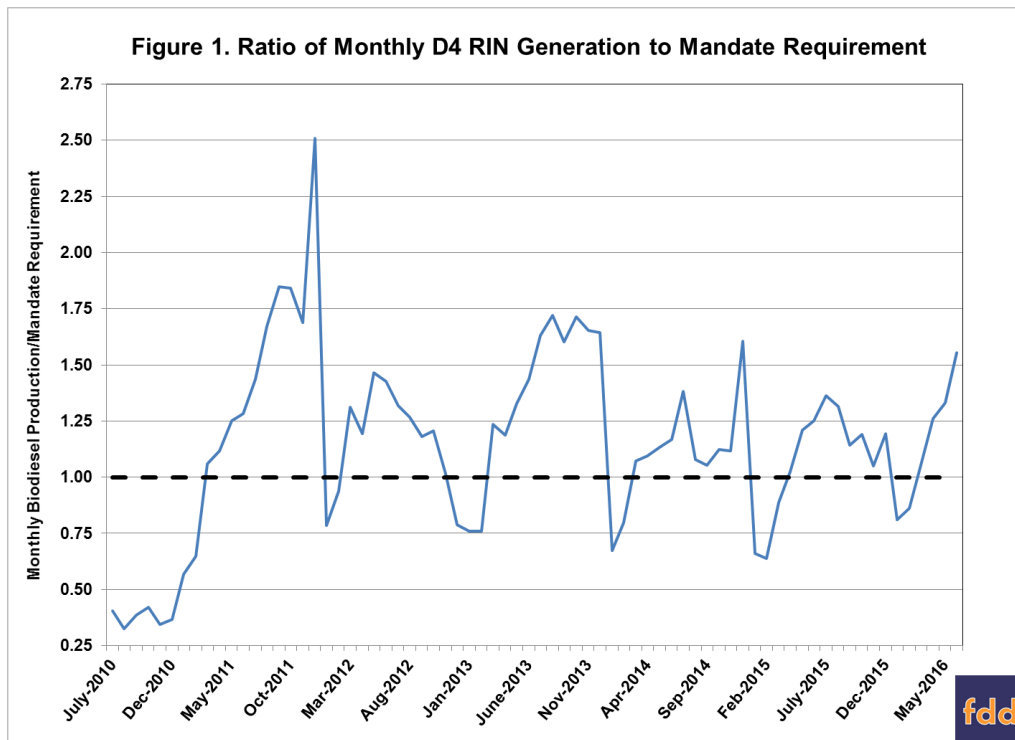
Figure 1 plots monthly D4 RIN generation relative to implied monthly mandate needs (annual mandate divided by 12) using data from the EMTS through June 2016. Gross generation of D4 RINs averaged 217 million per month during the first quarter, but has been steadily ramping up throughout the year averaging over 328 million per month during the second quarter. Total generation of D4 RINs stands at 1.636 billion through June, suggesting total generation for the year will surpass 3 billion. This increase in D4 RIN generation is consistent with historical biodiesel production patterns related to the scheduled expiration of the biodiesel tax credit at the end of 2016 (for more discussion on this see the [July 27, 2016 farmdoc daily](#) article).

If the increase in generation observed during the second quarter of the year continues, more than enough D4 RINs will be generated to cover compliance with the 2.85 billion RIN mandate target for the year.

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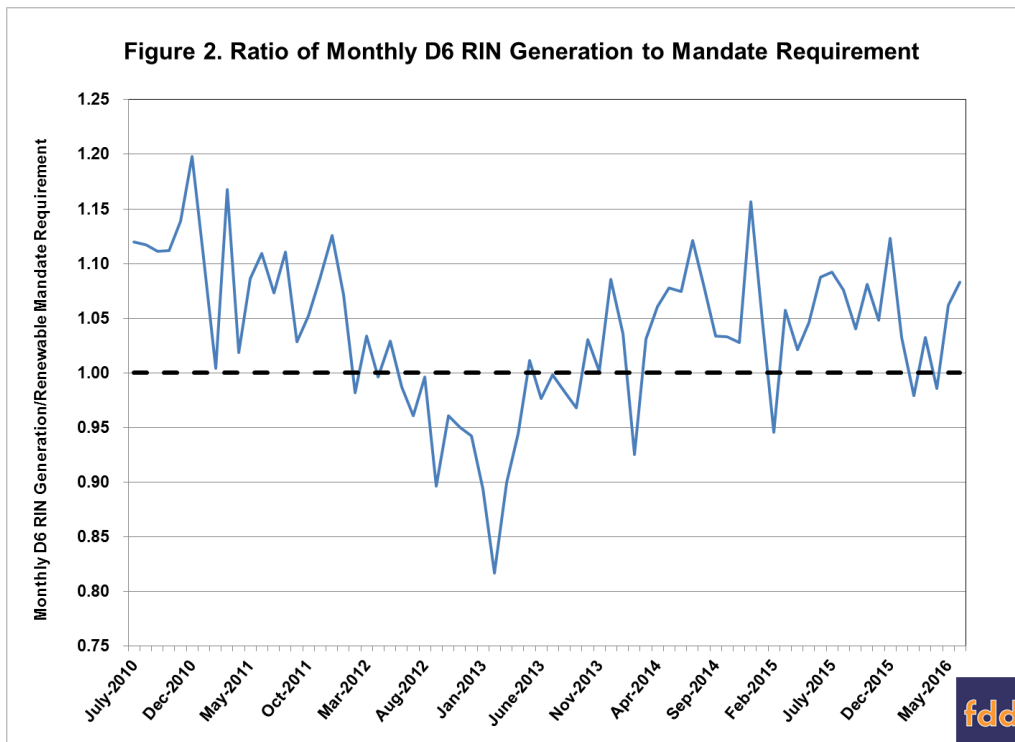
However, non-compliance retirements of D4 RINs are 14 million through June, and data from EIA shows that biodiesel exports have also increased reaching 24 million gallons through April. Extrapolating the current pace of exports through the end of the year and adjusting for an assumed 1.5 equivalence value implies RIN-equivalent biodiesel exports could reach nearly 110 million gallons. This would reduce the level of D4 RINs available for the 2016 biodiesel and advanced mandate compliance.

Gross generation of D5 RINs has also increased from an average of 4.2 million per month during the first quarter to more than 6.7 million per month during the second quarter. Total D5 generation stands at nearly 33 million through the first half of the year, suggesting total generation of 66 million D5 RINs for 2016. Even with the increase in generation during the second quarter, this would still fall well short of the advanced gap of 530 million gallons. The advanced gap represents the difference between the total advanced mandate (3.61 billion RINs), and the biodiesel and cellulosic mandate levels (2.85 billion and 230 million RINs, respectively). Note that this advanced gap would not need to be filled using D5 RINs, rather it could be filled with D4 or D3 RINs if they are available beyond the specific biodiesel and cellulosic mandate requirements. Through June, a small amount (16,532) of D5 retirements for non-compliance purposes have been reported in the EMTS.



D6 RIN Generation

Figure 2 plots D6 RIN generation relative to implied mandate needs through June 2016. Monthly gross generation through the first quarter averaged 1.226 billion RINs. The pace of generation increased to 1.261 billion per month during the second quarter. Through June, a total of 7.46 billion D6 RINs have been generated, suggesting total generation for the year could exceed 14.9 billion. While this exceeds the 14.5 billion gallon portion of the mandate target which can be filled with D6 RINs, ethanol exports and retirements of RINs for other non-compliance purposes will reduce the total available for mandate compliance. Denatured ethanol exports through the first quarter averaged nearly 50 million gallons per month, but declined to 37 million gallons in April and 31 million gallons in May. Extending the observed pace of exports through the end of the year suggests a total of 520 million gallons. In addition, retirements of 2016 D6 RINs for other non-compliance purposes are reported at just over 60 million RINs through the first half of the year. Accounting for projected exports (520 million) and non-compliance retirements (120 million) suggests net generation of 14.26 billion D6 RINs in 2016, or 240 million RINs shy of the 14.5 billion gallon targeted mandate level for the year.



Summary

RIN generation and retirement data from EMTS, and export data from the EIA and DOC through the first half of 2016 suggest that the pace of RIN generation has increased across the D3, D4, D5, and D6 RIN categories. Projections for net generation for the year suggest that some level of RIN stocks may be needed to meet target mandate levels for 2016.

The projections suggest a 74 million D3 RIN deficit for the cellulosic mandate. While projected D4 RIN generation is projected to be sufficient to cover the biodiesel specific mandate target, total net generation of D4 and D5 RINs is still projected to fall short of the non-cellulosic advanced mandate target by 180 million RINs. Projected net generation of D6 RINs based on data through the first half of the year also implies a deficit of 218 million RINs available for the 2016 conventional mandate target of 14.5 billion gallons.

The most recent estimate of available RIN stocks (*farmdoc daily* [March 3, 2016](#)) reported over 500 million in D4 stocks, which would be sufficient to cover the projected non-cellulosic advanced deficit of 180 million RINs. The estimate of more than 1.5 billion in D6 stocks would be more than sufficient to cover the projected deficit of 218 million for 2016 compliance.

These mid-year estimates should continue to be interpreted with care. The projected deficit levels across mandate categories fell in size compared with projections from the first quarter of 2016. The projections provided here based on available data through June assume that the average RIN generation and export rates observed thus far will continue through the end of the year. However, if generation remains at the higher levels observed in the second quarter and if the rate of exports remains at what was observed in March and April, net RIN generation in 2016 would likely reach sufficient levels for mandate target compliance without reducing current RIN stock levels.

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