



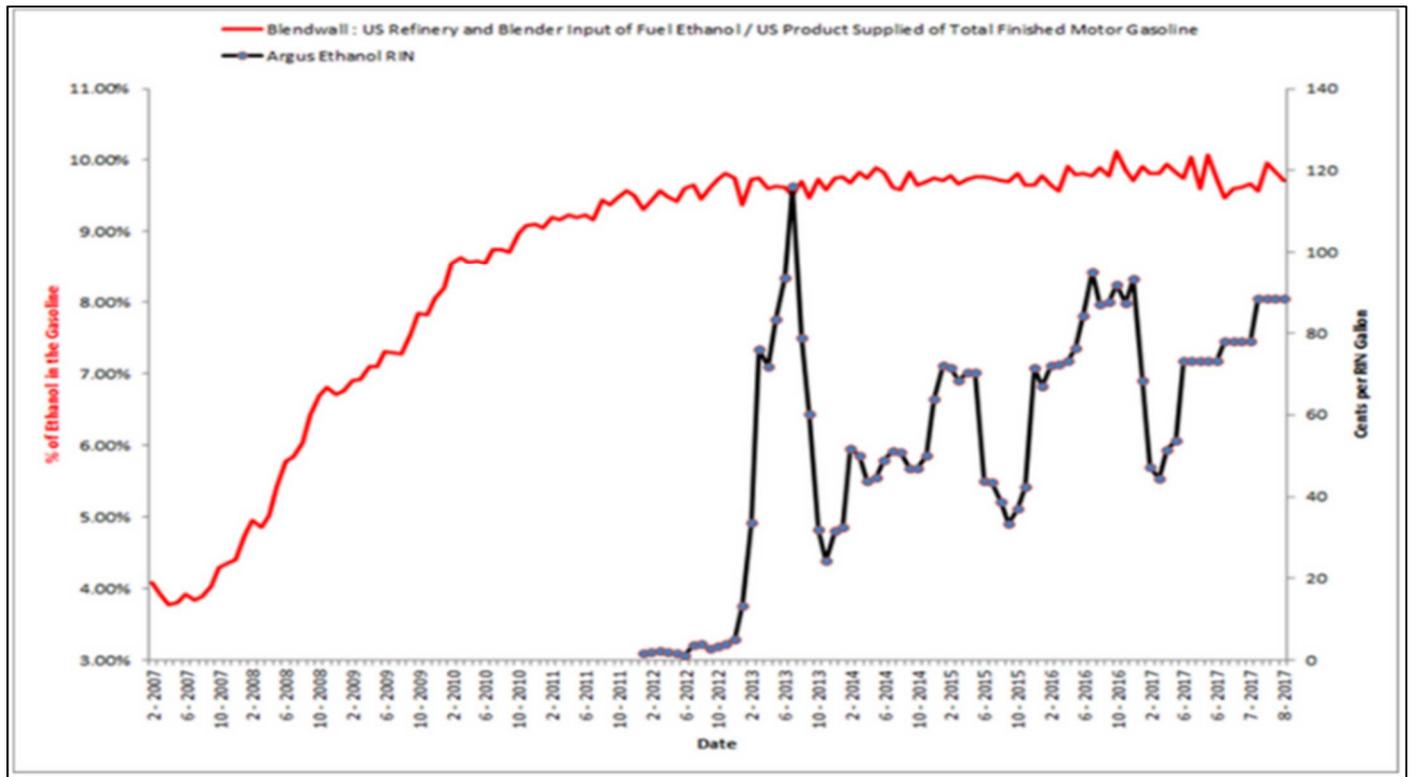
The Relationship Between RINs Prices and Ethanol Blending

April 2018

The ethanol lobby has been up in arms about the Environmental Protection Agency’s (EPA) decision to grant numerous small refinery economic hardship waivers, as well as discussions (without any subsequent Administrative action) between Congress and the Administration about directly controlling the cost of RINs. Advocates for the biofuel mandate claim that both of these measures are already “destroying demand” for ethanol. However, a closer look at the facts proves otherwise. Evaluating the historic and current performance of the RFS program highlights there is no evidence that indicates RIN prices impact ethanol blending or demand. Additionally, with the recent reports of several small refiners receiving temporary exemptions from the program, there is no significant backtracking in ethanol use.

RINs & the Blend Rate

First, a historic look at the program shows there is no correlation between RINs and the percentage of ethanol blended into the fuel supply (“the blend rate”). RINs fluctuate wildly, making several hundred percent swings one way or the other, but the blend rate barely changes.

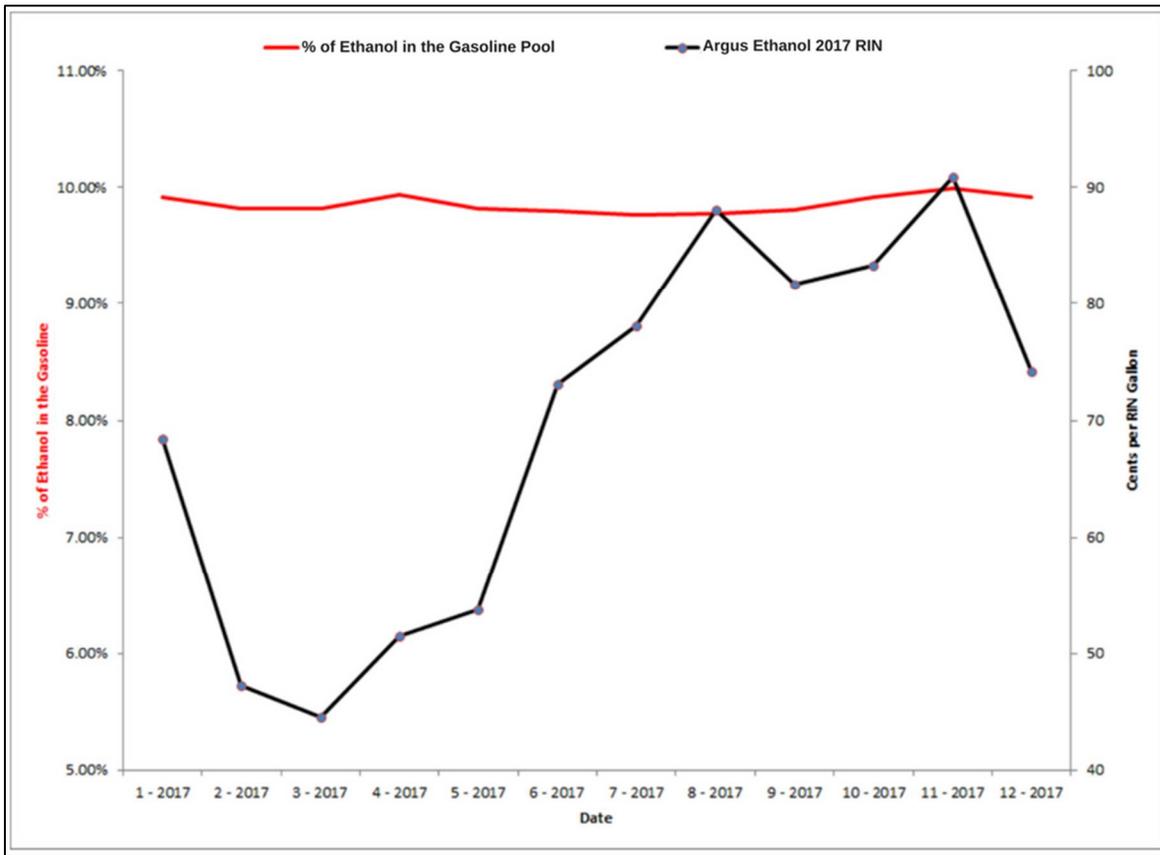


The red line is the Blendwall: US Refinery and Blender Input of Fuel Ethanol/US Product Supplied of Total Finished Motor Gasoline.

The black line is the Argus Ethanol RIN.



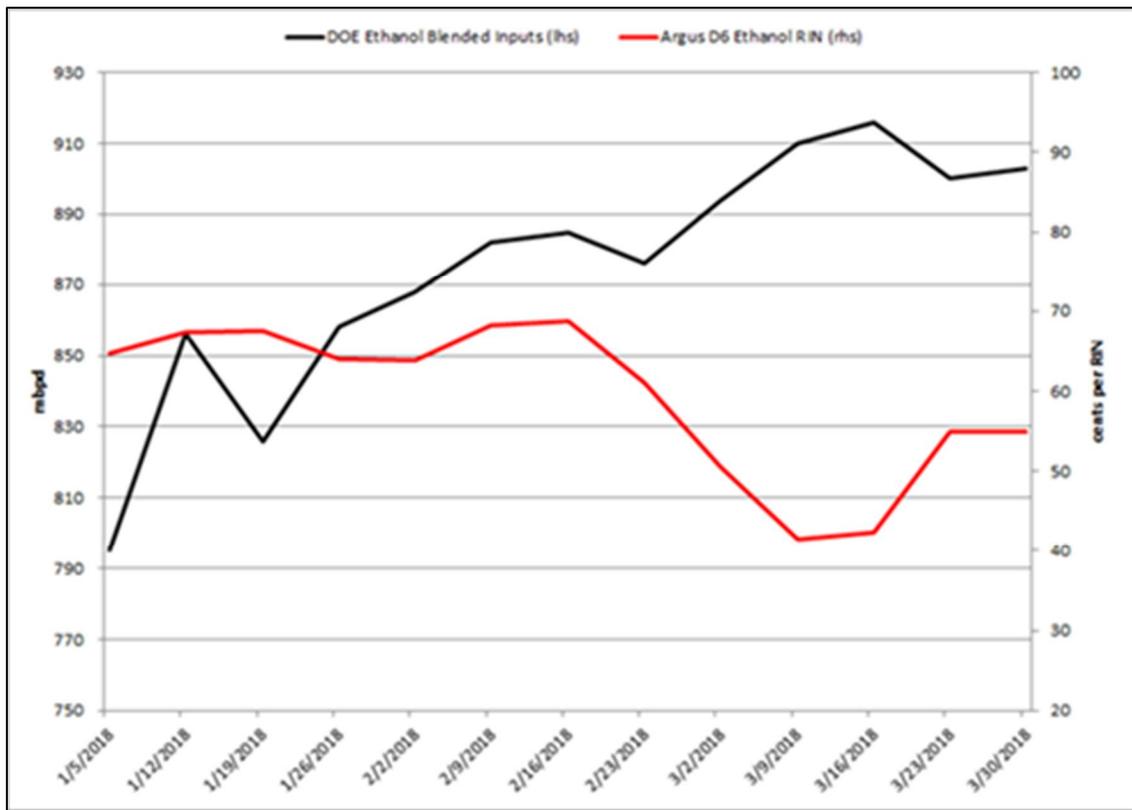
A close up look at 2017 provides more color on this point.



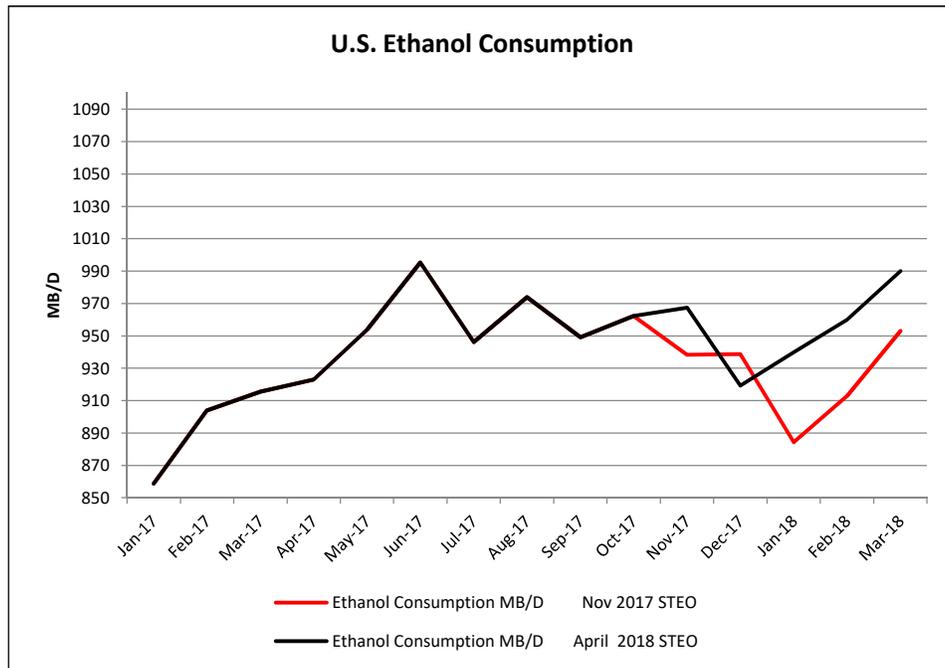
As the data from last year highlights, the blend rate remained static around 10 percent even when RINs dropped to nearly 40 cents in March and then doubled over the rest of the year.

RINs & Ethanol Demand

Looking at physical ethanol supply also highlights the fact that there is little correlation between RINs and ethanol demand. The following chart tracks physical quantities of ethanol blended into the fuel supply using the Department of Energy’s (DOE) Petroleum Supply Monthly (PSM) data (left y axis) compared to RIN prices (right y axis). It is evident that as RINs crashed, ethanol demand *increased significantly*. In fact, there appears to be a *negative correlation* between RIN prices and ethanol demand; meaning RIN price *decreases* correlate more closely with ethanol demand *increases*.



One could argue that ethanol demand would have been greater had RINs been more expensive. However, the data does not support that conclusion either. In November, when RINs exceeded 90 cents per gallon, DOE projected ethanol demand for the first quarter of 2018 would average 920,000 barrels per day, with about 953,000 barrels per day of demand in March. Preliminary DOE data indicates ethanol consumption in March *greatly exceeded* estimates, reaching around 990,000 barrels per day. The chart below tracks DOE ethanol consumption projections from the November Short Term Energy Outlook (STEO) compared to the actual and updated projections for ethanol consumption from the latest STEO.



This *increase* in ethanol consumption over last year’s projections occurred as RIN prices have continually decreased since the beginning of the year, recently trading in the 35-40 cent per gallon range.

Small Refiner Waivers & the Blend Rate

Despite these facts, the Inside-the-Beltway ethanol lobby still makes the claim that the RIN crash and EPA's reported issuance of several temporary small refiner economic hardship waivers has significantly eroded ethanol demand. A recent Renewable Fuels Association (RFA) blog post claims DOE data on the blend rate proves this fact. A closer look at the appropriate data points disproves this thesis. RFA's conclusions are based on a comparison of the DOE weekly demand data. However, DOE provides a more precise estimate of demand when it issues its Petroleum Supply Monthly (PSM) data, which is more reflective of actual fuel consumption. The PSM data often differs significantly from the weekly supply data, as the chart below indicates.

	Gasoline Demand		
	PSM	Weekly Avg.	Weekly - PSM
Jan-18	8,742	8,806	64
Dec-17	9,196	9,109	(87)
Nov-17	9,141	9,247	106
Oct-17	9,347	9,348	1
Sep-17	9,329	9,397	68
Aug-17	9,770	9,699	(72)
Jul-17	9,573	9,760	187
Jun-17	9,766	9,529	(237)
May-17	9,590	9,597	7
Apr-17	9,248	9,215	(33)
Mar-17	9,352	9,298	(54)
Feb-17	8,986	8,681	(305)
Jan-17	8,501	8,222	(279)

The most relevant data points are the significant increases in actual fuel consumption (the PSM column) compared to the average weekly estimates for the first quarter of last year. Since demand was much greater than the average of weekly estimates initially projected, relying on weekly estimates for determining the blend rate greatly exaggerates that rate. In fact, assessing the blend rate using the more accurate PSM data reveals ethanol consumption never exceeded 10 percent of gasoline consumption in 2017.

	Weekly Implied Blend Rate Month Avg.	PSM Blend Rate	Argus Monthly Avg. Ethanol RIN Price
1/31/2017	10.09%	9.92%	68.41
2/28/2017	10.00%	9.82%	47.24
3/31/2017	9.75%	9.82%	44.51
4/30/2017	9.98%	9.94%	51.46
5/31/2017	9.84%	9.82%	53.78
6/30/2017	9.84%	9.80%	73.13
7/31/2017	9.59%	9.77%	78.09
8/31/2017	9.77%	9.77%	88.14
9/30/2017	9.73%	9.81%	81.67
10/31/2017	9.93%	9.92%	83.31
11/30/2017	9.96%	10.00%	90.94
12/31/2017	9.92%	9.85%	74.20
1/31/2018	9.47%	9.76%	66.32

Additionally, the data reinforces the lack of correlation between RINs and the blend rate. For example, the blend rate was 9.82 percent in March 2017, when RINs averaged just over 47 cents, but it was 9.77 percent when RINs averaged nearly twice the price at around 88 cents in August of 2017. A more accurate assessment of the blend rate once again shows there is little, if any, correlation between RINs and the blend rate. Coupled with the previous charts highlighting ethanol demand, this data reinforces that neither falling RIN prices, nor small refiner economic hardship waivers, are resulting in ethanol demand destruction. To the contrary, ethanol demand is increasing in this environment. One primary reason for this trend, particularly in light of the small refiners, is that ethanol is economic to blend without a mandate and most of the exempted small refiners have little control over blending. *Fuel from exempted refineries is still going to a marketer, which gains value by blending ethanol, since it is economic in the absence of a RIN.*

A Note on E15

Some critics may claim that even if low RIN prices and small refiner economic hardship waivers are not resulting in decreasing ethanol demand, they are failing to drive greater E15 penetration. First, despite RIN prices averaging over 70 cents per gallon for the last few years, only 1600 out of 150,000 service stations nationwide offer E15 and only in very small volumes (where volume data is even available). Regardless of RIN prices, the first 10-years of the RFS did little to greatly advance E15. However, while E15 sales volume is scant, the information available anecdotally supports the thesis that there is no relationship between high RIN prices and ethanol penetration. The Minnesota Bio-fuels Association reported record E15 sales in January, a month in which RINs declined in value and were significantly lower than their November and December 2017 highs. As the association notes:

“The volume sold in January was the second straight month E15 sales in Minnesota were above the 4-million-gallon mark. In fact, the volume in January was identical to the volume recorded in December 2017 (4.6 million gallons).

On a year-on-year basis, however, the volume in January 2018 was nearly six times the volume sold in January 2017 (835,298 gallons).”¹

While this data is regional, it provides another indicator highlighting the fact that falling RIN prices and several small refiner waivers are not resulting in lower ethanol demand. Despite the biofuel lobby’s claims, a close look at the data shows that RIN costs can be controlled without hampering domestic ethanol consumption.

¹ <https://www.mnbiofuels.org/media-mba/blog/item/2215-e15-sales-in-january-hit-4-6-million-gallons>