

## **Denial of AFPM Petition for Waiver of 2016 Cellulosic Biofuel Standard**

This document is in response to the request from the American Fuel & Petrochemical Manufacturers (“AFPM”), on behalf of its U.S. refining members who are obligated parties under the Renewable Fuel Standards (“RFS”) program, dated December 28, 2016, for a waiver of the 2016 cellulosic biofuel standard on the basis of an inadequate domestic supply of cellulosic biofuel. EPA has determined that a waiver of the 2016 cellulosic biofuel standard is not warranted.

On December 14, 2015, the EPA promulgated a rule establishing the renewable fuel standards for 2014, 2015, and 2016, and the applicable volume of biomass-based diesel for 2017 (“the 2014–2016 rule”). As part of this rulemaking, EPA projected that 230 million gallons of cellulosic biofuel would be produced in 2016. Consistent with the requirements of CAA 211(o)(7)(D)(i), EPA established the cellulosic biofuel percentage standard for that year based on this 230 million gallon projection rather than the 4.25 billion gallon applicable volume referenced in the statute. EPA also used data provided by the Energy Information Agency (“EIA”) in October, 2016, in deriving the 2016 cellulosic biofuel percentage standard.

AFPM requests that EPA “grant a partial supplemental waiver of the 2016 cellulosic biofuel standard in an amount equal to the shortfall of cellulosic [Renewable Fuel Identification Numbers, or] RINs available for compliance,” due to an inadequate domestic supply of cellulosic biofuel RINs. See CAA 211(o)(7)(A)(ii). AFPM projects that approximately 173.8–190 million gallons of cellulosic biofuel were produced in 2016, approximately 40–60 million gallons short of the 230 million gallons assumed necessary for compliance with the 2016 cellulosic biofuel standard.

AFPM asserts that if its refining members are unable to acquire enough cellulosic biofuel RINs, obligated parties will be required to purchase cellulosic waiver credits (“CWCs”) in order to meet their compliance obligations. AFPM estimates the cost of acquiring sufficient CWCs to be approximately \$50–75 million across all obligated parties. AFPM characterizes this purchase of CWCs as an unjust penalty on obligated parties who cannot impact cellulosic biofuel production.

### **Cellulosic Biofuel RINs and Cellulosic Waiver Credits Available for Compliance**

Although the 2016 cellulosic biofuel percentage standard was based on a projected production volume of 230 million gallons, the actual number of cellulosic biofuel RINs or waiver credits that will need to be retired for compliance will not be known until the compliance deadline, when obligated parties report to EPA their gasoline and diesel production and import for 2016. See, e.g., 40 CFR 80.1451 and 80.1427(a). As the compliance obligation is calculated on a percentage basis, if the gasoline and diesel volumes are different from the EIA estimate used to derive the percentage standard, the actual amount of cellulosic biofuel RINs or waiver credits required may be different than the production projection used to derive the standard. Based on the January 2017 EIA estimate of gasoline and diesel demand, the most recent estimate available, obligated parties would be required to retire 227 million cellulosic RINs or waiver credits for compliance with the 0.128% 2016 cellulosic standard. This value represents the most up-to-date assessment of 2016 cellulosic biofuel compliance obligations. Derivation of this updated estimate is explained in an accompanying technical memorandum.<sup>1</sup>

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<sup>1</sup> See “Estimate of Cellulosic Biofuel Volume Requirement for 2016,” Attachment A. Although we rely on the 227 million gallon estimate for purposes of this document, EPA would reach the same conclusions, for the reasons stated below, using a projection that 230 million RINs would need to be retired for compliance.

As of January 1, 2017, approximately 178 million RINs have been generated for cellulosic biofuel in 2016. However, based on cellulosic biofuel RIN generation data from 2015, EPA expects an additional approximately 19 million 2016 cellulosic biofuel RINs to be generated after January 1, 2017. These cellulosic biofuel RINs would represent cellulosic biofuel that was produced and used as transportation fuel in 2016. Our estimate of an additional 19 million RINs is based on the percentage of total 2015 cellulosic biofuel RINs that were generated after January 1, 2016. That is, we have assumed that 10.9% of the total 2016 cellulosic biofuel RINs will be generated after January 1, 2017, similar to the documented situation with respect to 2015 cellulosic biofuel RINs. This additional volume of 2016 cellulosic biofuel RINs would bring the total volume of 2016 RINs to 197 million gallons.<sup>2</sup>

In addition, we believe that 39 million cellulosic biofuel “carryover RINs” will be available for compliance with the 2016 cellulosic biofuel standard. See 40 CFR 80.1427. These RINs represent actual cellulosic biofuel that was produced in 2015, but were not used for compliance either because more RINs were generated than required, or because obligated parties elected to use cellulosic waiver credits for compliance rather than cellulosic biofuel RINs.<sup>3</sup>

Finally, we note that in accordance with CAA 211(o)(7)(D)(ii) and 40 CFR 80.1456(a)(2), EPA will make 2016 cellulosic waiver credits (“CWCs”) available for purchase by obligated parties who have insufficient cellulosic biofuel RINs (including carryover RINs) for compliance. These waiver credits may be used as an alternative or supplement to the use of 2016 cellulosic biofuel RINs or carryover RINs for compliance.

### **Statutory Background**

CAA 211(o)(7)(A) provides EPA with the discretion to issue a waiver of the renewable fuel standards under specified circumstances. One such circumstance is where EPA finds that there is an inadequate domestic supply. CAA 211(o)(7)(A)(ii).

EPA used this authority when setting the 2014–2016 renewable fuel standards to reduce volumes of total renewable fuel. In doing so, EPA interpreted the ambiguous term “inadequate domestic supply” with respect to total renewable fuel. EPA interpreted this phrase to refer to actual renewable fuel (or RINs representing such fuel) projected to be supplied to consumers in the compliance year. 80 Fed. Reg. at 77,435-36; 77,484-85. Under that interpretation, carryover RINs are not part of the “supply.” However, EPA considered the availability of carryover RINs in determining the extent to which it should exercise its discretion to issue a waiver of total renewable fuel volumes, on the basis of an inadequate domestic supply of physical gallons. 80 Fed. Reg. at 77,484–85.

EPA also had occasion to consider the term “inadequate domestic supply” in the context of our response to petitions by AFPM and other obligated parties and trade groups for a waiver of the 2011 cellulosic biofuel standard. In our response to those petitions we noted that the availability of waiver credits as an alternative means of demonstrating compliance is unique to cellulosic biofuel, and that the ambiguous term “supply” could logically be interpreted to include the sum of RINs generated during the compliance year, carryover RINs and cellulosic waiver credits. May 22, 2012 Petition Response at 16–17. EPA

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<sup>2</sup> EPA’s estimate for 2016 cellulosic biofuel RIN generation after January 1, 2017 was calculated by multiplying the number of RINs generated as of January 1, 2017 by 1.109 to represent the additional 10.9% of 2015 cellulosic biofuel RINs expected to be generated after January 1, 2016. See memorandum entitled “Projecting 2016 Cellulosic RIN Generation On or After January 1, 2017” for further detail on this calculation, Attachment B.

<sup>3</sup> See the technical memorandum, “2016 Cellulosic Biofuel Carryover RINs Calculation,” for EPA’s calculation of available cellulosic biofuel carryover RINs, Attachment C.

declined to resolve the matter, ultimately determining that even if the term “supply” were interpreted to refer solely to RINS generated for actual cellulosic biofuel, and not cellulosic waiver credits, that the petitions were appropriately denied.

EPA is taking a similar approach today. We are not deciding whether the phrase “inadequate domestic supply” should include an assessment of available cellulosic waiver credits, since we have determined, for the reasons explained in the next section, that even if we interpret the phrase as referring only to physical gallons produced or imported during the compliance year that the AFPM petition for a supplemental waiver of the 2016 cellulosic biofuel standard should be denied.

### **EPA’s Response to Request for a Waiver of 2016 Cellulosic Biofuel Requirements**

AFPM requests that EPA issue a supplemental waiver of the 2016 cellulosic biofuel requirements on the basis that there is an inadequate domestic supply of cellulosic biofuel available for compliance. EPA has evaluated this request, and has determined that a waiver is not warranted.

As noted above, we currently project that 197 million 2016 cellulosic biofuel RINs will be generated. Assuming that the term “supply” refers solely to RINs generated for physical gallons produced or imported in the compliance year, this estimate demonstrates the potential for an inadequate domestic supply of cellulosic biofuel for 2016. However, EPA has the discretion to grant or deny a waiver request where inadequate domestic supply exists. As in the 2014–2016 rule, we believe it is appropriate to consider the availability of carryover RINs in deciding whether or not to exercise this discretion. In the context of the 2014–2016 annual rulemaking, EPA noted the importance of an adequate bank of carryover RINs to provide compliance flexibility for obligated parties and to provide important program benefits such as RIN market liquidity and the possibility of avoiding waivers of established standards when unforeseen circumstances result in less supply than was anticipated in standard-setting. See 80 Fed. Reg. at 77,484–85. In the 2014–2016 rule, EPA assessed the size of the bank of carryover RINs that could be used for compliance with the 2014-2016 total renewable fuel standards and, based on the considerations noted above and other considerations, decided to exercise its discretion to issue a waiver based on inadequate domestic supply that would not assume a draw-down in the limited bank of carryover RINs. In contrast to these considerations in the 2014–2016 rulemaking, the current request is for EPA to provide a supplemental waiver of an established standard. In this context, we believe that it is appropriate for EPA to assume in exercising its discretion that carryover RINs can and will be used for compliance purposes, thus mitigating the need for a waiver.

In determining that it is appropriate to assume the draw-down of carryover RINs as a basis for declining to exercise our discretion to grant a waiver on the basis of inadequate domestic supply, we have considered the possible impact on the program of issuing waivers where projections used during standard-setting fall short. We believe that if obligated parties believed that such waivers would be granted even in situations where use of available carryover RINs would allow compliance with the unadjusted standard, that obligated parties may decide to postpone acquisition of cellulosic biofuel or cellulosic RINs in future years, based on hopes of a waiver, thereby potentially harming the prospects of cellulosic biofuel producers who rely on ongoing sales of their product to remain profitable and competitive and undermining the articulated goals of Congress in establishing the RFS program. If a significant number of obligated parties delay the purchase of cellulosic biofuel and/or cellulosic biofuel RINs from cellulosic biofuel producers or fuel blenders this could significantly depress the demand for, and therefore investment in, the production of cellulosic biofuel and cellulosic biofuel RINs. Such actions by obligated parties would likely lead to lower production volumes of cellulosic biofuel as cellulosic biofuel producers and/or blenders may be unable or unwilling to store cellulosic biofuel or hold cellulosic biofuel RINs

until after the end of the compliance year. Even if storage capacity existed, the cost of storing fuel for an entire year on the hopes that obligated parties would be required to purchase it would make doing so unworkable. In an extreme case, obligated parties may wait to purchase cellulosic biofuel or cellulosic RINs until the end of the year with the intention of impeding cellulosic biofuel production and ultimately reducing their cellulosic biofuel obligation. Such actions would be relatively low risk to obligated parties as they have the option of purchasing cellulosic waiver credits to satisfy their cellulosic biofuel obligations if they are unable to acquire a sufficient number of cellulosic biofuel RINs. The risk that obligated parties would operate in such a manner could add to the investment risks already experienced by this nascent industry and diminish the potential for future growth.

For all of these reasons we believe that it is generally appropriate for EPA to exercise its discretion to avoid waivers of established cellulosic biofuel standards where use of RINs generated for fuel produced in the compliance year and available carryover RINs would enable compliance. This is the case with respect to the 2016 cellulosic standard. We recognize that in taking this approach the bank of available carryover RINs will likely be reduced. However, on balance we find this acceptable – particularly since cellulosic biofuel carryover RINs are of less importance for program liquidity and compliance flexibility than other types of carryover RINs, in light of the availability of cellulosic waiver credits. As noted in a technical memorandum developed to inform this decision, we believe that 39 million carryover RINs can be used by obligated parties for compliance with the 2016 cellulosic biofuel standard.<sup>4</sup> Use of this volume of cellulosic biofuel carryover RINs for compliance, together with the expected total number of 2016 cellulosic biofuel RINs, will allow compliance by obligated parties with the established 2016 cellulosic biofuel standard, without necessitating the use of CWCs. We believe that these facts provide a reasonable and appropriate basis for EPA to deny the AFPM waiver request.

In total, the number of cellulosic biofuels RINs we expect to be generated for fuel produced in 2016 (197 million), and the available cellulosic biofuel carryover RINs (39 million) equals 236 million RINs, greater than the 227 million RINs expected to be necessary for compliance. Thus, we anticipate that compliance will be possible with the 2016 standard based only on use of RINs generated to represent actual cellulosic biofuel. However, we recognize that this assessment is based in part on our projection of 2016 cellulosic biofuel RINs that will be generated after January 1, 2017. While we believe our estimate is reasonable, we note that even if no additional 2016 cellulosic biofuel RINs were generated in 2017, obligated parties would be able to achieve compliance through additional mechanisms, including use of CWCs and the ability to carry forward a deficit. In this unlikely scenario, the use of these additional compliance mechanisms would be relatively limited, amounting only to the 10 million gallon difference between the 227 million-gallon estimated volumetric requirement and the 217 million gallon sum of the cellulosic biofuel RINs generated in 2016 (178 million) plus cellulosic biofuel carryover RINs (39 million). Thus, even in the unlikely event that no additional 2016 cellulosic biofuel RINs are generated in 2017, we believe that compliance can readily be achieved, and that a denial of the AFPM petition would be appropriate.

AFPM asserts that the use of CWCs to allow compliance in the event of a shortfall in cellulosic biofuel production would amount to “an unjust penalty.” As noted above, the best information currently available to EPA indicates that compliance with the unmodified 2016 cellulosic biofuel standard will be possible without reliance on CWCs. Thus, we believe this argument to be irrelevant. However, even if use of CWCs ultimately proved necessary for compliance with the 2016 cellulosic standard, we disagree that

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<sup>4</sup> See the technical memorandum, “2016 Cellulosic Biofuel Carryover RINs Calculation,” for EPA’s calculation of available cellulosic biofuel carryover RINs, Attachment C.

their use would amount to an unjust penalty. EPA is required to set the cellulosic biofuel standard with a neutral aim at accuracy. The fact that EPA may slightly over-estimate or under-estimate production from year-to-year does not establish that a slight over-estimate creates an unjust “penalty,” just as the availability of carryover RINs from years where EPA underestimated volume when setting the standard should not be seen as an unjust boon or bonus. The statute requires that EPA make a forward-looking projection in advance of the compliance year, and it is unlikely given the many variables influencing actual production that EPA’s projection will ever prove 100% accurate. We believe that the compliance mechanisms built into the program, including use of carryover RINs, CWCs, and carry forward deficits, are appropriately used to avoid the uncertainty in program implementation and disincentives to growth of the renewable fuel industry that would ensue from granting waivers based on insufficient production and import of cellulosic biofuel during the compliance year. Moreover, obligated parties have been aware of the 2016 cellulosic requirement since issuance of the final 2014–2016 rule in November, 2015, so they should have anticipated compliance costs associated with the standard. These costs are similar whether compliance is achieved through purchase of RINs or waiver credits and, therefore, compliance through use of CWCs is not more burdensome for obligated parties than would be the case if cellulosic biofuel production matched EPA’s projection in establishing the standard.<sup>5</sup> Furthermore, in the hypothetical situation where CWCs would be used for compliance with the 2016 cellulosic standard, the moneys spent on such CWCs would help avoid the need for a waiver, thereby stabilizing the RIN market, and enhancing the investment certainty for expanded cellulosic biofuel production that is the fundamental purpose of the RFS program.<sup>6</sup> Therefore, the expenditure would be appropriate under the statute, and neither “unjust” or a “penalty.”

## **Conclusion**

Our assessment of the anticipated volumes of 2016 cellulosic biofuel RINs and cellulosic biofuel carryover RINs indicates that obligated parties will be able to readily comply with the unmodified 2016 cellulosic biofuel standard. Moreover, even in the unlikely event that EPA’s estimate of 2016 cellulosic biofuel RINs to be generated after January 1, 2017 proves to be too high, compliance will still be possible through the use of cellulosic waiver credits or by carrying a deficit into 2017. On the other hand, we believe that a supplemental waiver of the cellulosic biofuel standard would be injurious to the program.

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<sup>5</sup> A single cellulosic biofuel RIN can be used towards satisfying the cellulosic, advanced and total renewable fuel standards. However, a CWC can only be used for compliance with the cellulosic biofuel standard. To obtain comparable compliance value when using a CWC, an obligated party would need to also purchase an advanced biofuel RIN (which can be used to satisfy both the advanced and total renewable fuel standards). 2016 cellulosic waiver credits can be purchased from EPA for \$1.33 per credit. See EPA Report EPA-420-B-092, November 2015. Advanced biofuel RINs cost \$0.89 on average in 2016, and were \$1.04 on December 28, 2016. Thus, the total cost for an obligated party using a CWC rather than a cellulosic biofuel RIN for compliance would be \$2.22 using the average 2016 price of an advanced biofuel RIN, or \$2.37 using the price of an advanced biofuel RIN on December 28, 2016. On the other hand, the average price of a 2016 cellulosic biofuel RIN was \$2.01 and the price on 28, 2016 was \$2.47. All RIN price data is collected from Argus Media.

<sup>6</sup> AFPM notes that the 2011 and 2012 cellulosic standards were rescinded in response to a court decision; that the 2013 standard was reduced in response to a petition for reconsideration based on new facts; and that the retroactive 2014 and 2015 cellulosic standards were largely set to equal actual production volumes. All of these situations reflected aberrations from the standard-setting anticipated by the statute, and reflected in the 2016 standard, where a prospective standard is established to reflect a production projection that is based on a neutral aim at accuracy. Thus, there is no reason that EPA should attempt to emulate these past examples in its response to AFPM’s petition for waiver of the 2016 cellulosic standard.

For these reasons and other reasons described above, we believe that the program is best served by maintaining the existing 2016 cellulosic biofuel standard, and denying the AFPM petition.

# **Attachment A**

## MEMORANDUM

Date: January 10, 2016

Subject: Estimate of cellulosic biofuel volume requirement for 2016

From: David Korotney  
Office of Transportation and Air Quality, U.S. Environmental Protection Agency

To: Christopher Grundler  
Director, Office of Transportation and Air Quality, U.S. Environmental Protection Agency

The volume obligations under the Renewable Fuel Standard (RFS) program are given in terms of % standards in 40 CFR 80.1405, and are used by each obligated party to determine the number of RINs they must acquire and retire each year. Each standard applies to the sum of all non-renewable gasoline and diesel produced or imported.

The % standard for cellulosic biofuel in 2016 is 0.128%, based on a volume of 230 million gallons of cellulosic biofuel and non-renewable gasoline and diesel demand for 2016 projected in EIA's October, 2015 Short-Term Energy Outlook (STEO).<sup>1</sup> The actual volume of cellulosic biofuel needed to meet the 0.128% applicable standard may differ from 230 million gallons if the actual volume of non-renewable gasoline and diesel used in 2016 differs from the volume that was projected in the October, 2015 STEO. In this memorandum we have estimated the actual volume requirement for cellulosic biofuel in 2016 based on the volume of non-renewable gasoline and diesel projected to have been used in 2016 in the January, 2017 STEO.

The attached tables duplicate the calculations provided in the document "Calculation of % standards for 2016" provided in docket EPA-HQ-OAR-2015-0111, with the following exceptions:

- The following volume projections are derived from the January, 2017 version of the STEO:
  - 50-state gasoline consumption
  - 50-state ethanol consumption
  - 50-state diesel consumption
  - 50-state biodiesel consumption
- The estimate of fuel use in Alaska has been updated to reflect a more recent edition of EIA's State Energy Data System (SEDS)
- Rather than using the volume of cellulosic biofuel to determine the applicable % standard as was done in the 2014-2016 rulemaking (i.e. 0.128% calculated from a

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<sup>1</sup> 80 FR 77499, December 14, 2015.



volume of 230 mill gal), we instead determined the volume of cellulosic biofuel needed to ensure that the applicable % standard of 0.128% was met given updated estimates of non-renewable gasoline and diesel volumes. Thus, rather than calculating  $Std_{CB,i}$  from a given value of  $RFV_{CB,i}$ , we instead calculated  $RFV_{CB,i}$  from  $Std_{CB,i}$  (formula from 80.1405(c)).

$$Std_{CB,i} = 100 * \frac{RFV_{CB,i}}{(G_i - RG_i) + (GS_i - RGS_i) - GE_i + (D_i - RD_i) + (DS_i - RDS_i) - DE_i}$$

Based on these calculations, the volume of cellulosic biofuel needed in 2016 to ensure that the 0.128% standard is met is estimated to be 227 million gallons.

## Table 1: Determination of volume corresponding to cellulosic biofuel standard of 0.128%

All volumes in bill gal except for cellulosic which is in mill gal

Calendar year: 2016

		Volume	% standards
RFV <sub>CB</sub>	Cellulosic biofuel required volume	227	0.128%
RFV <sub>BBD</sub>	Biomass-based diesel required volume	1.90	
RFV <sub>AB</sub>	Advanced required volume	3.61	
RFV <sub>RF</sub>	Total renewable fuel required volume	18.11	
G	Gasoline consumption in 48 contiguous states + Hawaii	142.34	
RG	Renewables contained in G	14.37	
GS	Gasoline consumption in Alaska or territories, if they have opted in	0	
RGS	Renewables contained in GS	0	
GE	Gasoline produced by exempt small refineries and small refiners	0.00	
D	Diesel consumption in 48 contiguous states + Hawaii	51.79	
RD	Renewables contained in D	2.22	
DS	Diesel consumption in Alaska or territories, if they have opted in	0	
RDS	Renewables contained in DS	0	
DE	Diesel produced by exempt small refineries and small refiners	0.00	

## Gasoline projections

Table 2: 50-state gasoline consumption (E0 + E10 + E15 + E85)

Table 4a of the STEO, "Motor Gasoline" consumption

Version of STEO: Jan, 2017

	Days per month	Mill barrels per day
January	31	8.670042
February	29	9.206241
March	31	9.399116
April	30	9.21289
May	31	9.436246
June	30	9.663389
July	31	9.597257
August	31	9.594815
September	30	9.492063
October	31	9.094933
November	30	9.047733333
December	31	8.935646903

Total mill barrels per day	9.28
Total mill barrels	3,396
Total mill gallons	142,633

Alaska gasoline consumption (E0 + E10 + E15 + E85)

Total mill barrels	6.89
Total mill gallons	289

Table 3: 50-state ethanol consumption (denatured ethanol)

Table 4a of the STEO, "Fuel Ethanol blended into Motor Gasoline" consumption

Version of STEO: Jan, 2017

Mill barrels	Mill barrels per day
26.67	0.860444323
27.25	0.939554172
29.25	0.943456419
27.09	0.903160333
29.10	0.938726613
29.00	0.966536333
29.94	0.965957258
30.19	0.973969258
27.97	0.932374667
28.26	0.911682839
28.43	0.94754411
29.61	0.955230042

343	0.94
14,396	

Alaska ethanol consumption (denatured ethanol)

0.62
26

## Diesel projections

Table 4: 50-state diesel consumption (diesel + biodiesel)

Source: <http://www.eia.gov/forecasts/steo/query/>  
Date of query: 1/10/2016

	Days per month	Mill barrels per day
January	31	3.16
February	29	3.32
March	31	3.55
April	30	3.54
May	31	3.56
June	30	3.71
July	31	3.48
August	31	3.63
September	30	3.73
October	31	3.76
November	30	3.55
December	31	3.3
Total mill barrels per day		3.52
Total mill barrels		1,290
Total mill gallons		54,172

Table 5: 50-state biodiesel consumption

Table 8 of STEO  
Version of STEO: Jan, 2017

Quadrillion Btu	Mill barrels
0.0152	2.83
0.0172	3.21
0.0190	3.54
0.0183	3.41
0.0237	4.42
0.0239	4.45
0.0285	5.32
0.0301	5.62
0.0292	5.45
0.0277	5.16
0.0258	4.81
0.0250	4.66
	0.14
	53
	2,221

### Ocean-going vessels

Total mill barrels per day	0.136	Source: Letter from EIA
Total mill barrels	50	
Total mill gallons	2,091	

Alaska diesel consumption (diesel + biodiesel except that used in ocean-going vessels)

Total mill barrels	6.93
Total mill gallons	291

Alaska biodiesel consumption

0.00
0

## Table 6: Consumption of gasoline and diesel in Alaska

Source: <http://www.eia.gov/state/seds/seds-data-complete.cfm?sid=US#Consumption>  
 State Energy Data System (SEDS): 1960-2014 (Complete)  
 Consumption / Full Reports & Data Files / All Consumption Estimates / in Physical Units / CSV

Release date: 6/29/2016  
 Year that the data represents: 2014  
 Date of query: 8/12/2016

Thousand barrels

MSN code (mnemonic series name)	Distillate fuel oil consumed by the transportation sector DFACP	Biodiesel	Motor gasoline total consumption MGTCP	including denaturant, total consumption ENTCP
Alaska ("AK")	5,738	0	6,603	580
50 states ("US")	1,068,654	52,886	3,256,107	320,095
Fraction of nationwide gasoline which is consumed in Alaska		0.002028		
Fraction of nationwide denatured ethanol which is consumed in Alaska		0.001812		
Fraction of nationwide diesel which is consumed in Alaska		0.005369		
Fraction of nationwide biodiesel which is consumed in Alaska		0.000000		

# **Attachment B**

## MEMORANDUM

Date: January 11, 2017

Subject: Projecting 2016 Cellulosic RIN Generation On or After January 1, 2017

From: Dallas Burkholder, Office of Transportation and Air Quality, U.S. Environmental Protection Agency

To: Christopher Grundler, Director, Office of Transportation and Air Quality, U.S. Environmental Protection Agency

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### I. Introduction

The purpose of this memorandum is to detail the calculations performed by the EPA to estimate the total number of 2016 cellulosic RINs that will be generated on or after January 1, 2017.

### II. Generation of 2016 Cellulosic Biofuel RINs in 2017

As part of EPA's consideration of the AFPM petition to issue a partial supplemental waiver of the 2016 cellulosic biofuel standard, EPA assessed the number of 2016 cellulosic biofuel RINs likely to be generated. While the majority of the 2016 cellulosic biofuel RINs are expected to be generated in the 2016 calendar year, historic RIN generation data suggests that it is likely that a significant number of 2016 cellulosic RINs will be generated on or after January 1, 2017. In considering whether or not to grant the requested partial supplemental waiver it is important to consider any 2016 cellulosic biofuel RINs generated after January 1, 2017 as these RINs represent cellulosic biofuel production in 2016 and can be used to demonstrate compliance with the 2016 standard.

Cellulosic biofuel RIN generation from 2011–2013 was minimal, with a combined generation of less than one million RINs in all three years combined. Cellulosic RIN generation in these years therefore provides little insight into the likely number of 2016 cellulosic RINs generated after January 1, 2017. Cellulosic RIN generation increased significantly beginning in August 2014, with EPA's determination that CNG/LNG derived from biogas from a number of sources qualifies as a cellulosic biofuel. Prior to August 2014, registered facilities were eligible to generate advanced biofuel RIN for biogas from a number of sources when used as transportation fuel. In projecting the number of 2016 cellulosic biofuel RINs likely to be generated after January 1, 2017, EPA examined data for cellulosic biofuel RINs generated in 2014-2016, as well as advanced biofuel RINs generated in 2011-2013.<sup>1</sup>

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<sup>1</sup> EPA did not consider advanced biofuel RIN generation in 2014-2015, as we assumed that all biofuel producers using sources of biogas eligible to generate cellulosic RINS updated their registration to generate cellulosic biofuel RINs starting in August 2014.

In examining this data, EPA found that a relatively small proportion of 2011-2013 advanced RINs generated for biogas used as transportation fuel and 2014 cellulosic biofuel RINs were generated after the end of the calendar year (See Table 1 below). However, a relatively large proportion of 2015 cellulosic biofuel RINs were generated after the end of the calendar year.

Table 1  
RINs Generated During and After the End of the Calendar Year (2011-2015)<sup>A</sup>

RIN Year	Fuel Type	RINs Generated During the Calendar Year	RINs Generated After the End of the Calendar Year	Percentage of RINs Generated After the End of the Calendar Year (Relative to RINs Generated During the Calendar Year)
2011	Advanced Biogas	1,400,737	23,157	1.65%
2012	Advanced Biogas	2,820,343	61,666	2.19%
2013	Advanced Biogas	25,526,474	408,339	1.60%
2014	Cellulosic Biofuel	32,490,048	929,817	2.86%
2015	Cellulosic Biofuel	128,362,942	13,952,614	10.87%

<sup>A</sup>All RIN generation data in this table, as well as in Tables 2 and 3 below, is from EPA's EMTS system and was accessed through DART. The results of the queries used to access this data can be found in Appendix A

EPA believes that the significant increase in the proportion of RINs generated for biogas-derived fuels (2011-2013) and all cellulosic biofuels (2014-2015) after the end of the calendar year in 2015 relative to previous years is a result of a change in the RIN generation practices of producers generating RINs for CNG/LNG derived from biogas. To generate RINs these producers must compare records of the quantity of CNG/LNG derived from biogas that they produce and records of the quantity of CNG/LNG that they can verify as used for transportation fuel. The number of RINs they are eligible to generate is equal to the lesser of these two quantities. Prior to 2015, parties that generated RINs for CNG/LNG derived from biogas (advanced or cellulosic) generally estimated the volume of qualifying fuel used as transportation fuel and generated RINs on this basis during, or shortly after the end of each month using the best available data. These companies then used remedial actions to correct the number of RINs generated when official records became available; either by retiring RINs if excess RINs were initially generated or generating additional RINs if too few RINs were initially generated.

In 2015 EPA received inquiries from several registered companies requesting that EPA allow producers of cellulosic RINs for CNG/LNG derived from biogas to delay the generation of RINs until the RIN generator had obtained the necessary records required for RIN generation. This would allow the companies to avoid unnecessary remedial actions and simplify the process of generating and marketing RINs. EPA responded to these inquiries, approving the request. An example of EPA's response to these companies can be found in Appendix B. The approved practice (waiting to generate RINs until the official records are obtained) is now standard in the industry. EPA subsequently issued additional guidance that while the timing of the generation of RINs for CNG/LNG derived from biogas could be delayed until the necessary records became available, the RIN vintage must be consistent with the date the fuel was produced and used as



transportation fuel (i.e. even though RINs may be generated in January 2016 for CNG/LNG derived from biogas that was produced and used as transportation fuel in December 2015, the RINs generated must be 2015, rather than 2016 RINs). EPA’s guidance on this manner can be found in Appendix C. The result is that a far greater proportion of RINs generated for CNG/LNG derived from biogas (and therefore a far greater proportion of all cellulosic biofuel RINs, since a large majority of all cellulosic RINs are generated for CNG/LNG derived from biogas) were generated after the end of the calendar year in 2015 as compared to previous years. We expect this practice has continued in 2016, and note that a majority of total cellulosic biofuel RINs expected to be generated in 2016 are for CNG/LNG from biogas. Therefore, a significant number of 2016 cellulosic biofuel RINs are expected to be generated after the end of the calendar year.

Based on the discussion above, EPA believes it is reasonable to use the percentage of 2015 cellulosic biofuel RINs generated after the end of the calendar year (relative to the number of 2015 cellulosic biofuel RINs generated during the calendar year) to project the number of 2016 cellulosic biofuel RINs that will be generated after January 1, 2017. Using this methodology, we project that approximately 19 million 2016 cellulosic biofuel RINs will be generated after January 1, 2017, and a total of 197 million 2016 cellulosic biofuel RINs will be generated. This calculation can be found in Table 2 and Table 3 below.

Table 2  
Projecting Cellulosic Biofuel RINs Generated After January 1, 2017

RIN Year	Fuel Type	RINs Generated During the Calendar Year	Percentage of RINs Generated After the End of the Calendar Year (Relative to RINs Generated During the Calendar Year)	RINs Generated After the End of the Calendar Year
2015	Cellulosic Biofuel	128,362,942	10.87%	13,952,614
2016	Cellulosic Biofuel	177,908,146	10.87%*	19,338,009

\*Projected

Table 3  
Projection of the Total Number of 2016 Cellulosic Biofuel RINs

2016 Cellulosic Biofuel RINs Generated Before January 1, 2017	177,908,146
2016 Cellulosic Biofuel RINs Generated After January 1, 2017 (Projected)	19,338,009
Total Number of 2016 Cellulosic Biofuel RINs Generated (Projected)	197,246,155

# APPENDIX A

OTAQ Data Reporting (DART) 2.0.1

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RIN Year	Sum RIN Quantity
2011	1,400,737

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RIN Year	Sum RIN Quantity
2011	23,157

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OTAQ Data Reporting (DART) 2.0.1

WELCOME DBURKH01

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RIN Year	Sum RIN Quantity
2012	2,820,343

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WELCOME DBURKH01

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RIN Year	Sum RIN Quantity
2012	61,666

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RIN Year	Sum RIN Quantity
2013	20,526,474

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RIN Year	Sum RIN Quantity
2013	408,339

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### AQ Data Reporting (DART) 2.0.1

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Q [v] Go 1 Primary Report [v] [v] [v] Rows 15 [v] Actions [v]

Edit Group By [x]  
 Fuel D-Code = Cellulosic Biofuel (D=3I) [x]  
 RIN Year = 2014 [x]  
 EMTS Submission Date = 01/01/2015 [x]

1 - 1 of 1.

RIN Year	Sum RIN Quantity
2014	32,430,743

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### AQ Data Reporting (DART) 2.0.1

Welcome: DBJPKH01 Logout

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Q [v] Go 1 Primary Report [v] [v] [v] Rows 15 [v] Actions [v]

Edit Group By [x]  
 Fuel D-Code = Cellulosic Diesel (D=7I) [x]  
 RIN Year = 2014 [x]  
 EMTS Submission Date = 01/01/2015 [x]

1 - 1 of 1.

RIN Year	Sum RIN Quantity
2014	59,306

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Edit Group By  
 Fuel D-Code = Cellulosic Biofuel (D=3I)  
 RIN Year = 2014  
 EMTS Submission Date >= 01/01/2015

1 - 1 of 1.

RIN Year	Sum RIN Quantity
2014	829,817

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Edit Group By  
 Fuel D-Code = Cellulosic Diesel (D=7I)  
 RIN Year = 2014  
 EMTS Submission Date >= 01/01/2015

No Generate transaction was found for the specified criteria.

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Edit Group By  
 Fuel D-Code = Cellulosic Biofuel (D=3)   
 RIN Year = 2015   
 EMTS Submission Date = 01/01/2016

1 - 1 of 1.

RIN Year	Sum RIN Quantity
2015	129,087,627

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Edit Group By  
 Fuel D-Code = Cellulosic Diesel (D=7)   
 RIN Year = 2015   
 EMTS Submission Date = 01/01/2016

1 - 1 of 1.

RIN Year	Sum RIN Quantity
2015	275,215

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Edit Group By  
 Fuel D-Code = Cellulosic Biofuel (D=3)   
 RIN Year = 2015   
 EMTS Submission Date >= 01/01/2016

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RIN Year	Sum RIN Quantity
2015	13,952,614

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Monthly Transactions Counts

Q Go 1 Primary Report Rows 15 Actions

Edit Group By  
 Fuel D-Code = Cellulosic Diesel (D=7)   
 RIN Year = 2015   
 EMTS Submission Date >= 01/01/2016

No Generate transaction was found for the specified criteria.

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Edit Group By  
 Fuel D-Code = Cellulosic Biofuel (D=3I)  
 RIN Year = 2016  
 EMTS Submission Date = 01/01/2017

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RIN Year	Sum RIN Quantity
2016	177,373,717

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Edit Group By  
 Fuel D-Code = Cellulosic Diesel (D=7I)  
 RIN Year = 2016  
 EMTS Submission Date = 01/01/2017

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RIN Year	Sum RIN Quantity
2016	534,429

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## APPENDIX B

Greetings,

The purpose of this message is follow-up guidance previously provided in relation to the proposed **Biogas RIN Generation Protocol** for **[COMPANY NAME, COMPANY ID]**.

The previous guidance (message below) stated that it would not be appropriate to exercise the proposal related to Biogas RIN Generation.

After further consideration and internal discussion, specifically with John Weihrauch (Fuels Compliance Center - Center Director), the monthly gas pipeline statements described in the **Biogas RIN Generation Protocol** appear to be the most reliable and accurate information available to RIN Generators.

As a result, EPA determined the proposed Biogas RIN Generation Protocol for **[COMPANY NAME, COMPANY ID]** dated **[INSERT DATE ON LETTER]** is appropriate. EPA updated your registration currently on file by adding the letter to your company's registration. No further action is required at this time.

Thank you for your understanding and patience while EPA reviewed the information provided by your company. Please let us know if you have any further questions by responding directly to this message.

Respectfully,

## APPENDIX C

Greetings,

We continue to receive a number of questions about RIN generation protocol for biogas RINs generated between December 2015 and January 2016. We have interpreted the regulations to allow parties to generate RINs mid-month based on the provisions that allow for the generation of biogas RINs on no more than a calendar months' worth of production. This leads to a scenario where biogas produced and used as transportation fuel in 2015 could be generated as 2016 vintage RINs under this flexibility. Additionally, it would be difficult for parties to generate 2015 RINs because of the 5 business day limitation in EMTS. The point of this e-mail is to make it clear that RINs produced from biogas and used as transportation fuel in 2015 must generate 2015 vintage RINs.

When we allowed parties to generate based on actual data during the middle of a month, the intent was to help insure that parties used the best quality data to generate RINs and avoid unnecessary remedial actions. We did not intend for parties to gain an economic advantage by exploiting price differentials between RIN vintages. Therefore, if a RIN is generated from biogas produced and used as transportation fuel in 2015, a 2015 RIN must be generated for that volume of biogas. We understand that this may cause remedial actions or may result in the generation of RINs from lower quality data. However, in order to remain consistent and provide a level playing field, parties must generate RINs in this manner. We will do our best to work with affected companies to ensure that the appropriate amount of 2015 and 2016 RINs are generated.

We apologize for any confusion based on any previous guidance. Please let us know if you have any further questions.

# **Attachment C**

# MEMORANDUM

Date: January 10, 2017

Subject: 2016 Cellulosic Biofuel Carryover RINs Calculation

From: Nick Parsons, Office of Transportation and Air Quality, U.S. Environmental Protection Agency

To: Paul Machiele, Director, Fuels Center, Office of Transportation and Air Quality, U.S. Environmental Protection Agency

---

## I. Introduction

The purpose of this memorandum is to detail the calculations performed by the EPA to estimate the number of 2015 cellulosic biofuel carryover RINs that may be available for compliance with the 2016 cellulosic biofuel standard.

## II. 2016 Cellulosic Biofuel Carryover RINs Calculation

In order to calculate the number of 2015 cellulosic biofuel carryover RINs available for compliance with the 2016 cellulosic biofuel standard, we began with the 2015 cellulosic biofuel compliance data in Table 1 below. From this data, we calculated that approximately 113 million total cellulosic biofuel RINs were used for compliance with the 2015 standards. Of this total, approximately 101 million 2015 cellulosic biofuel RINs and 12 million 2014 cellulosic biofuel carryover RINs were used.

**Table 1: Cellulosic Biofuel RINs Used to Demonstration Compliance 2015<sup>a</sup>**

RIN Type	RIN Year		Total <sup>b</sup>
	2014	2015	
D3	11,962,278	100,964,193	112,926,471
D7	0	100,000	100,000
<b>Total</b>	11,962,278	101,064,193	113,026,471

<sup>a</sup> Compliance data current as of December 12, 2016, and compiled from <https://www.epa.gov/fuels-registration-reporting-and-compliance-help/annual-compliance-data-obligated-parties-and>

<sup>a</sup> More detailed data on the RINs used to demonstration compliance can be found in Table A-1.

Next, we calculated the net number of cellulosic biofuel RINs that were generated in 2015. To do this, we needed to take the total number of cellulosic biofuel RINs generated in 2015 and then remove any RINs that were generated in error, as well as any RINs that were retired for purposes other than demonstrating compliance (e.g., spills, remedial actions, enforcement obligations, etc.). Using the data in Table 2 below, we calculated that a net of approximately 140 million cellulosic biofuel RINs were generated in 2015.

**Table 2: 2015 Net Cellulosic Biofuel RINs Generated<sup>a</sup>**

RIN Type	Total RINs Generated	RIN Errors <sup>b</sup>	Other RIN Retirements <sup>c</sup>	Net RINs Generated <sup>d</sup>
D3	142,040,241	2,024,139	100,100	139,916,002
D7	275,315	27,530	0	247,785
<b>Total</b>	<b>142,315,556</b>	<b>2,051,669</b>	<b>100,100</b>	<b>140,163,787</b>

<sup>a</sup> RIN generation and retirement data current as of December 10, 2016, and compiled from <https://www.epa.gov/fuels-registration-reporting-and-compliance-help/2015-renewable-fuel-standard-data>

<sup>b</sup> More detailed data on 2015 RIN Errors can be found in Table A-2.

<sup>c</sup> More detailed data on 2015 Other RIN Retirements can be found in Table A-3.

<sup>d</sup> Net RINs Generated = Total RINs Generated – (RIN Errors + Other RIN Retirements)

To determine the total number of 2015 cellulosic biofuel carryover RINs available for compliance with the 2016 cellulosic biofuel standard, we first subtracted the number of 2015 cellulosic biofuel RINs used for compliance with the 2015 cellulosic biofuel standard from the net number of 2015 cellulosic biofuel RINs generated, as shown below in Table 3. We then further reduced the number of available 2015 cellulosic biofuel carryover RINs by subtracting out the 2015 cellulosic biofuel compliance carry-forward deficits, which must be satisfied at the time of compliance with the 2016 standards,<sup>1</sup> as well as any announced notices of violation or settlements that affect the number of available cellulosic biofuel RINs. This calculation is provided in Table 4 and shows that there are currently approximately 39 million 2015 cellulosic biofuel carryover RINs.

**Table 3: 2015 Cellulosic Biofuel Carryover RINs**

RIN Type	Net 2015 RINs Generated	2015 RINs Used for Compliance	2015 Carryover RINs
D3	139,916,002	100,964,193	38,951,809
D7	247,785	100,000	147,785
<b>Total</b>	<b>140,163,787</b>	<b>101,064,193</b>	<b>39,099,594</b>

**Table 4: Net 2015 Carryover RINs**

RFS Standard	RIN Type	2015 Carryover RINs	2015 Carry-Forward Deficits <sup>a</sup>	Enforcement-Related Deficits <sup>b</sup>	Net 2015 Carryover RINs
Cellulosic Biofuel	D3+D7	39,099,594	0	0	39,099,594

<sup>a</sup> Carry-forward deficit data current as of December 12, 2016, and compiled from <https://www.epa.gov/fuels-registration-reporting-and-compliance-help/annual-compliance-data-obligated-parties-and>

<sup>b</sup> Enforcement data current as of January 9, 2017, and can be found at <https://www.epa.gov/enforcement/civil-enforcement-renewable-fuel-standard-program>

We then compared the number of 2015 cellulosic biofuel carryover RINs to 20% of the 2016 cellulosic biofuel standard to see if the 20% carryover limit would impact the use of 2015 cellulosic biofuel carryover RINs in 2016. As shown in Table 5, the 20% carryover limit is not constraining for the cellulosic biofuel standard. Thus, we expect that the total number of 2015

<sup>1</sup> See CAA Section 211(o)(5)(D) and 40 CFR 80.1427(b).

cellulosic biofuel carryover RINs will be available to be used to satisfy the cellulosic biofuel obligation in 2016.

**Table 5: 2016 Cellulosic Biofuel Carryover Limit**

<b>RFS Standard</b>	<b>RIN Type</b>	<b>Net 2015 Carryover RINs</b>	<b>2016 Volume Standards (RINs)<sup>a</sup></b>	<b>2016 Carryover Limit (20% of Standard)</b>	<b>Carryover RIN Use Limited by Cap?</b>
Cellulosic Biofuel	D3+D7	39,099,594	230,000,000	46,000,000	No

<sup>a</sup> Standards reflect the volumes in Table I-1 of the 2014-2016 RFS RVO rule. See 80 FR 77422 (Dec. 14, 2015).

## Appendix

**Table A-1: Importer, Refiner, and Exporter 2015 Cellulosic Biofuel Compliance Data<sup>a</sup>**

<b>RIN Type</b>	<b>Year</b>	<b>Importers</b>	<b>Refiners</b>	<b>Exporters</b>	<b>Total</b>
D3	2014	195,488	11,766,790	0	11,962,278
	2015	2,645,552	98,318,641	0	100,964,193
D7	2014	0	0	0	0
	2015	0	100,000	0	100,000
<b>Total</b>		2,841,040	110,185,431	0	113,026,471

<sup>a</sup> Compliance data current as of December 12, 2016, and compiled from <https://www.epa.gov/fuels-registration-reporting-and-compliance-help/annual-compliance-data-obligated-parties-and>

**Table A-2: 2015 Cellulosic Biofuel RIN Errors<sup>a</sup>**

<b>RIN Type</b>	<b>Invalid RIN</b>	<b>Volume error correction</b>	<b>Total</b>
D3	2,024,139	0	2,024,139
D7	27,530	0	27,530
<b>Total</b>	2,051,669	0	2,051,669

<sup>a</sup> RIN error data current as of December 10, 2016, and compiled from <https://www.epa.gov/fuels-registration-reporting-and-compliance-help/2015-renewable-fuel-standard-data>



**Table A-3: Other 2015 Cellulosic Biofuel RIN Retirements<sup>a</sup>**

<b>RIN Type</b>	<b>Reported spill</b>	<b>Contaminated or spoiled fuel</b>	<b>Enforcement Obligation</b>	<b>Renewable fuel used or designated to be used in any application that is not transportation fuel heating oil or jet fuel</b>	<b>Remedial action - Retirement pursuant to 80.1431(c)</b>	<b>Remediation of Invalid RIN Use for Compliance</b>	<b>Import Volume Correction</b>	<b>Total</b>
D3	0	0	0	0	100,100	0	0	100,100
D7	0	0	0	0	0	0	0	0
<b>Total</b>	0	0	0	0	100,100	0	0	100,100

<sup>a</sup> RIN retirement data current as of December 10, 2016, and compiled from <https://www.epa.gov/fuels-registration-reporting-and-compliance-help/2015-renewable-fuel-standard-data>