

Renewable Fuel Standard Program 2014 Volume Standards – Proposed Rule

February, 2014



Background

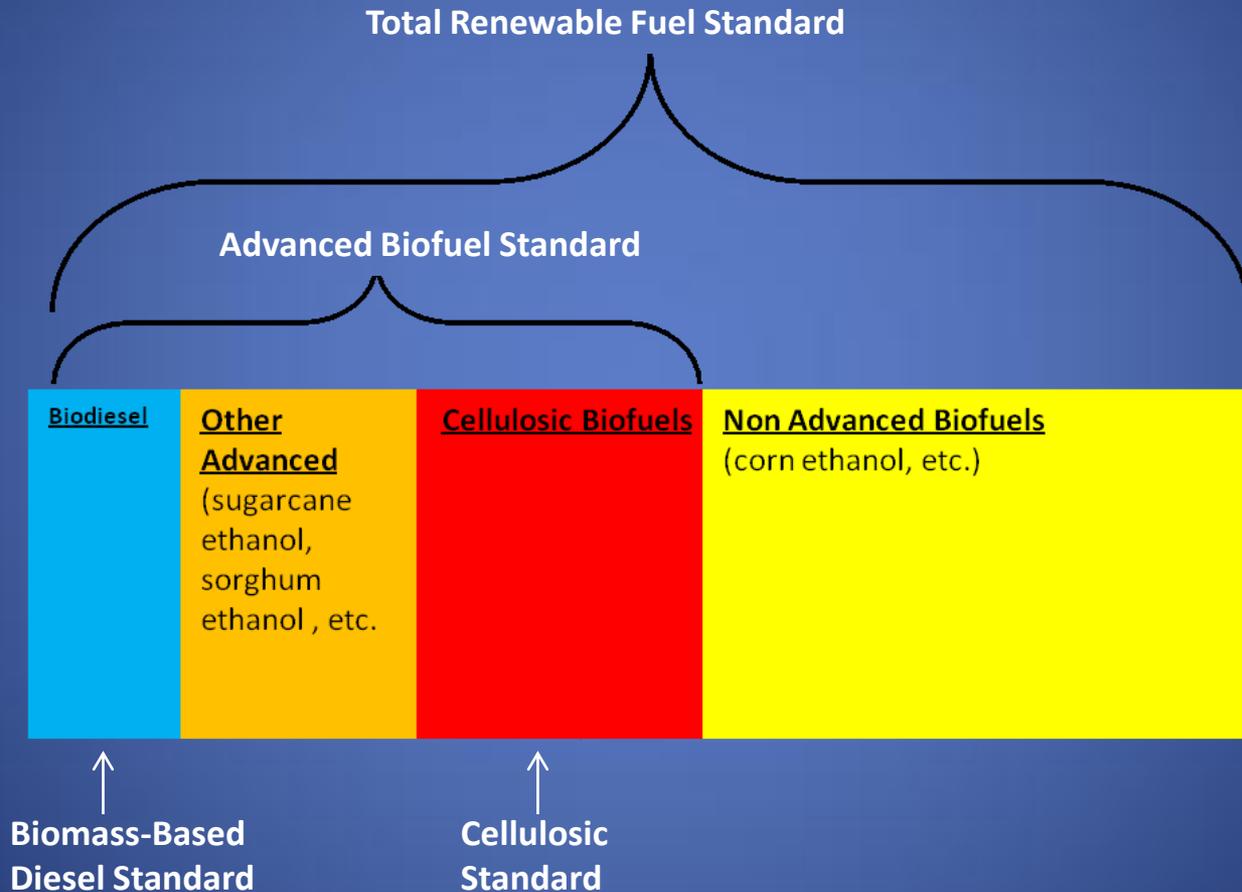
- The Energy Independence and Security Act of 2007 (EISA) set year-by-year the volume of renewable fuel that generally must be used in transportation fuel, reaching a total of 36 billion gallons by 2022.
- EISA requires that each year EPA publish the annual standards for use of total, advanced, biomass based diesel, and cellulosic renewable fuels that apply to obligated parties, which are typically refiners and importers of gasoline and diesel.
- EPA sets a percentage requirement for obligated parties based on gasoline and diesel projections from the EIA
- EISA authorizes EPA to reduce volumes from the statutory requirements under certain circumstances
- Etc. Etc. Etc.....

Statutory Volumes

	Cellulosic biofuel	Biomass-based diesel	Advanced biofuel	Total renewable fuel	"Conventional" (total renewable minus advanced)
2009	na	0.5	0.6	11.1	10.5
2010	0.1	0.65	0.95	12.95	12
2011	0.25	0.8	1.35	13.95	12.6
2012	0.5	1	2	15.2	13.2
2013	1	a	2.75	16.55	13.8
2014	1.75	a	3.75	18.15	14.4
2015	3	a	5.5	20.5	15
2016	4.25	a	7.25	22.25	15
2017	5.5	a	9	24	15
2018	7	a	11	26	15
2019	8.5	a	13	28	15
2020	10.5	a	15	30	15
2021	13.5	a	18	33	15
2022	16	a	21	36	15

a: statute sets 1b gal minimum, but EPA may raise requirement

Interaction Between Standards



2014 RFS Volume Proposal – Key Points

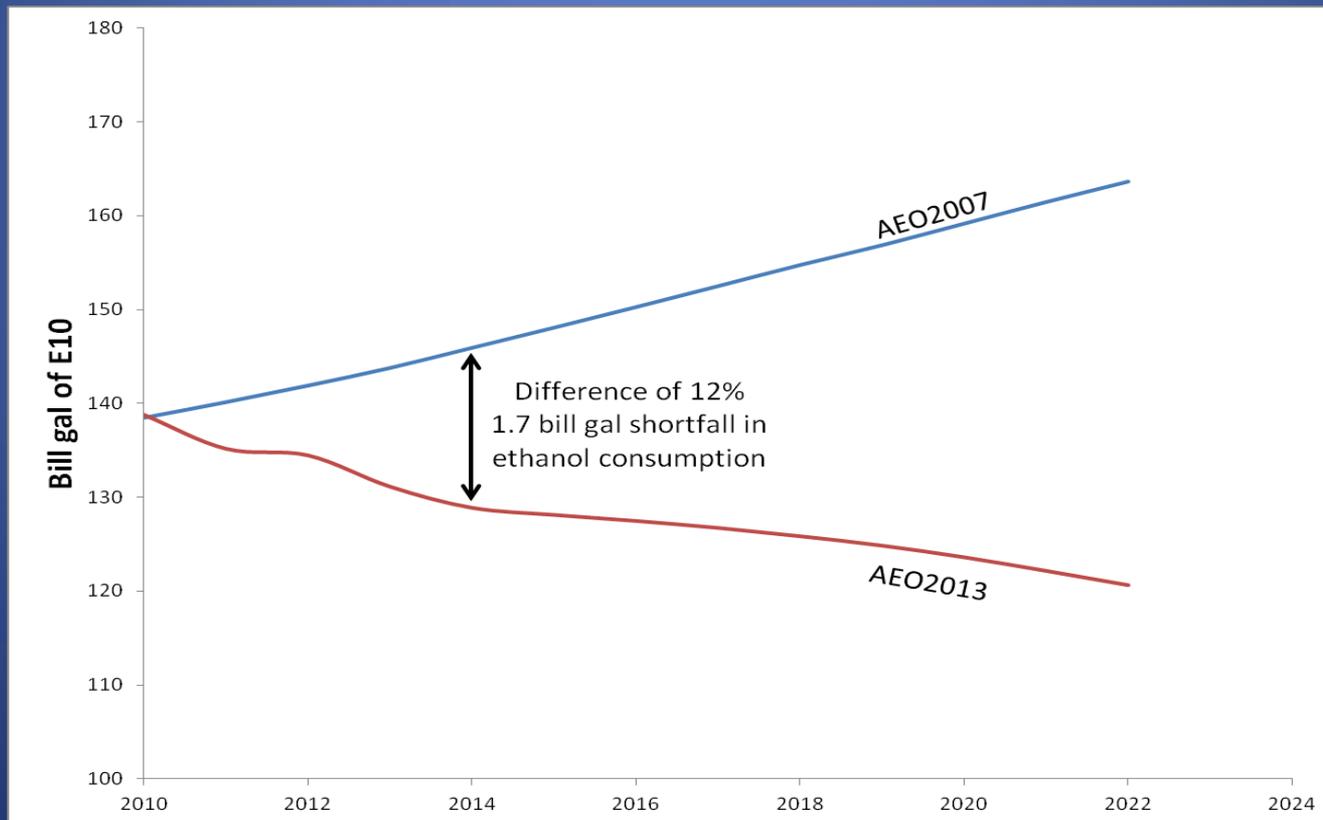
- The rulemaking proposes volume requirements for the RFS program for 2014, and outlines a potential path forward for 2015 and beyond
- 2014 brings a number of new issues that EPA must consider in setting the standards
- A key issue this year is what is commonly referred to as the ethanol “blendwall” – challenges associated with supplying more ethanol to the market than can be provided through blending up to 10% ethanol in gasoline (E10).
- For the first time, EPA proposed adjustments to the total renewable fuel and advanced biofuel standards to address these market issues
- EPA’s intention in this rulemaking is to put the RFS program on a manageable trajectory that will support continued growth in renewable fuels

Adjusting the RFS Volumes

- The statute provides EPA with several waiver authorities to adjust required volumes
- In the past we have only used the cellulosic waiver authority to lower the required cellulosic volume to what was projected to be produced
- EPA has the ability to lower the other standards as well:
 - Cellulosic waiver authority: EPA may reduce total and advanced volumes by up to the same amount as cellulosic reduction
 - General waiver authority: Standards may be waived in whole or in part if ... after public notice and opportunity for comment...EPA determines there is inadequate domestic supply, severe harm to the economy or the environment
- For 2013 final rule, EPA did not adjust the advanced or total volumes, though some commenters recommended that EPA should, in light of blendwall concerns
 - In the 2013 final rule EPA determined adequate RINs would be available, but noted that we anticipate proposing to use our waiver authority to adjust 2014 volumes to address both blendwall and fuel availability concerns

Then and Now - Gasoline Demand

- Under AEO2007 projections of 2014 gasoline demand, up to 14.4 bill gal of corn-ethanol could have been consumed as E10
- However, gasoline consumption has been declining while RFS mandates continue to grow
 - Result: ethanol in the gasoline pool as E10 in 2014 is limited to about **13 billion gallons**



Deliberative - Do not distribute

2014 Differs from Previous Years

- Total renewable fuel
 - Statutory target of 18.15 bill gall total renewable fuel exceeds what fuel system can consume – when considering reasonable expectations of ethanol use in E10 plus other forms such as E15 or E85 and non-ethanol biofuels (drop-in fuels, home heating oil, etc.)
 - The 2014 volume for non-advanced renewable fuel alone (composed almost entirely of corn-ethanol) is 14.4 billion gallons (a level above the projected E10 blendwall)
- Advanced biofuel
 - The proposal includes our estimate that that the availability of non-cellulosic advanced biofuels is insufficient to make up for the projected reduction in cellulosic biofuel volume
 - Statute would require an increase in advanced biofuels of 1.0 Bgal for 2014
- Increased Market Uncertainty
 - The market and obligated parties need to know how EPA will be implementing the RFS program in 2014 and beyond to make their compliance decisions

Authorities for Setting the 2014 Standards

- Proposes to use two different waiver authorities to adjust volumes
 - The cellulosic authority allows EPA to reduce both advanced and total by up to the amount of the reduction in cellulosic
 - The general waiver authority allows us to further reduce the total renewable fuel standard based on our finding of inadequate domestic supply
- For advanced biofuel, EPA discusses various approaches to reducing the RFS volumes to address both the E10 blend wall and limited availability of advanced biofuels to make up for the shortfall in cellulosic biofuel
- For total renewable fuel, EPA projected total use of ethanol and non-ethanol renewable fuels for 2014, recognizing the practical limits to the use of ethanol
- Includes ranges for a number of key inputs related to biofuel production and consumption, and seeks comment on multiple aspects of our proposed approach
- Would establish a durable methodology that could be used in 2015 and beyond to reduce market uncertainty and ensure steady growth in renewable fuel

Proposed Advanced and Total Renewable Volumes

- Step 1: determine the total renewable volume
 - Sum of the volume of ethanol that could be consumed if all gasoline was E10 and the market took reasonable steps to produce and sell some E85 + volume of non-ethanol biofuel we believe will be available
- Step 2: determine how much of the total renewable standard would be met with advanced vs. non-advanced (conventional) biofuels
 - Proposal discusses three options, but proposes one option which sets the advanced volume at the sum of cellulosic + biomass-based diesel + available volumes of non-ethanol advanced biofuel
- Once the advanced biofuel standard is set, the market will still decide the exact mix of fuels used to comply (could be biodiesel, sugarcane ethanol, etc.)

Approaches

- **Approach 1: Base advanced volume on Availability of Advanced**
 - Determine the availability of advanced biofuels for 2014 and set advanced standard accordingly.
 - Emphasizes growth in advanced biofuels, including advanced ethanol biofuels
 - Results in a greater reduction in conventional
- **Approach 2: Base advanced volume on the Full Reduction in Cellulosic**
 - Set advanced standard by reducing advanced by same amount as cellulosic reduction
 - Minimizes reductions in conventional
- **Approach 3: Base advanced volume on Availability of Advanced Biofuels but Considering the Blendwall**
 - Set the advanced volume at the sum of the cellulosic volume, the BBD volume, and all available volumes of non-ethanol advanced
 - Ensures both non-advanced and advanced play a role in addressing the blendwall while simultaneously accounting for limited availability
 - Volumes of Approach 3 fall between results of Approach 1 and 2
- **NOTE:** The market will decide the exact mix of fuels used to comply under any of the approaches
 - E.g., while the advanced standard is set assuming only a certain amount of volume of ethanol is possible due to the blendwall, if more ethanol can be sold as E85, more of the advanced volume could be met with ethanol

Proposed 2014 Volume Requirements

Category	Volume (Mean) ^a	Range
Cellulosic biofuel	17 mill gal	8 - 30 mill gal
Biomass-based diesel	1.28 bill gal	1.28 bill gal ^b
Advanced biofuel	2.20 bill gal	2.0 – 2.51 bill gal
Renewable fuel	15.21 bill gal	15.00 – 15.52 bill gal

^aAll volumes are ethanol-equivalent, except for biomass-based diesel which is actual volume.

^bEPA is requesting comment on alternative approaches and higher volumes.

Ranges for 2014 Proposed Standards (mill gal)

Category	Volume requirements for 2013	Statutory volumes for 2014	Ranges in Red NPRM for 2014
Cellulosic biofuel	6	1,750	8 - 30 (17)
Biomass-based diesel	1,280	1,280 ^a	1,280
Advanced biofuel	2,750	3,750	2,004 - 2,507 (2,202)
Total renewable fuel	16,550	18,150	14,995 - 15,515 (15,207)

^a Statutory volume is 1,000 mill gal
All volumes are ethanol-equivalent except for biomass-based diesel

Miscellaneous, Closing and Questions