

Will E15 Solve E10 Blendwall Problem —and When?

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ANNUAL APPLICABLE VOLUMES, 2005 & 2007 ENERGY ACTS and DOE Forecasting Errors

PRX_RFS2_DisplayREV_Start.xls

1	2	3	4	5	6	7	8	9	10
Cal Year	2005 Act Annual Applicable Volumes (RFS-1)	2007 Act Annual Applicable Volumes (RFS-2)	of which Total Advanced	of which Cellulosic	of which Conventional	2007 AEO MoGas Forecast	RFS-2 Conventional inclusion rate	2013 AEO Actual and Forecast	RFS-2 Conventional inclusion rate
	bil gals	bil gals	bil gals	bil gals	bil gals	bil gals	pct	bil gals	pct
2006	4.000	4.000							
2007	4.700	4.700							
2008	5.400	9.000							
2009	6.100	11.100	0.600	n/a	10.500	144.722	7.26%	137.970	7.61%
2010	6.800	12.950	0.950	0.100	12.000	146.103	8.21%	137.846	8.71%
2011	7.400	13.950	1.350	0.250	12.600	147.825	8.52%	134.050	9.40%
2012	7.500	15.200	2.000	0.500	13.200	149.660	8.82%	133.851	9.86%
2013		16.550	2.750	1.000	13.800	151.610	9.10%	133.800	10.31%
2014		18.150	3.750	1.750	14.400	153.858	9.36%	131.912	10.92%
2015		20.500	5.500	3.000	15.000	156.092	9.61%	131.153	11.44%

DOE Error #1
Unrealistic Applicable Volumes,
triggering cellulosic
waiver provision

DOE Error #2
MoGas Forecast
15-20% High,
causing E10
Blendwall in 2013

Congress accepted the DOE forecasts in 2007 and passed a 15-year Renewable Fuel Standard to 2022, extending without sunset—and without qualifications regarding domestic food & feed supply, export volumes, or the volatility of annual crop weather.

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DOE Error #1. Unrealistic Annual Applicable Volumes.

What was once thought of as a long term “mandate” has become—per its own cellulosic waiver provisions— an **Arbitrary Annual Rule**, which threatens each year to incentivize vast amounts of sugar ethanol imports

**PROCESS OF EPA’S ANNUAL WAIVERS
OF CELLULOSIC APPLICABLE VOLUMES
and THE WAIVERS’ FURTHER REGULATORY CONSEQUENCES
— *Simplification of EISA2007, Title II, Section 202, RFS.***

Box A. (e)(2)(7)(D)

When the Administrator of EPA **projects**
that Cellulosic production in the next calendar year
is less than the Applicable Volume for that year,

Box B. (e)(2)(7)(D)

The Administrator **shall reduce**
the Applicable Volume of Cellulosic
by the shortfall projected.

Box C. (e)(2)(7)(D)

The Administrator **may also reduce**
the Applicable Volume of
Total Renewable Fuel and
Total Advanced Biofuel
by the same or lesser amount.

EPA PROPOSED RULE for RFS VOLUMES IN 2013

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Cal Year	Columns						Conventional Biofuel (a - b)		
	a	b	c	d	e	f			
	Total Renewable Fuel	Total Advanced Biofuel	=	Cellulosic Biofuel	+	Biomass-based Biodiesel	+	Other Advanced Biofuel (b - (c+d))	
APPLICABLE VOLUMES, BEFORE CHANGES									
	<i>Actual billion gallons</i>								
2013	16.550	2.750		1.000		1.000		na	
	<i>Ethanol equivalent billion gallons</i>								
2013	16.550	2.750	=	1.000	+	1.500	+	0.250	13.800
AFTER PROPOSED CELLULOSIC WAIVER & RAISED BIODIESEL VOLUME									
2013	16.550	2.750		<i>reduced to</i> 0.014		<i>increased to</i> 1.280		na	
	<i>Ethanol equivalent billion gallons</i>								
2013	16.550	2.750	=	0.014	+	1.920	+	<i>increased to</i> 0.816	13.800
	<i>increased to</i>								
SOME COMMENTS TO EPA URGED FINAL RULE TO BE									
2013	16.150	2.350	=	0.014	+	1.920	+	0.416	13.800

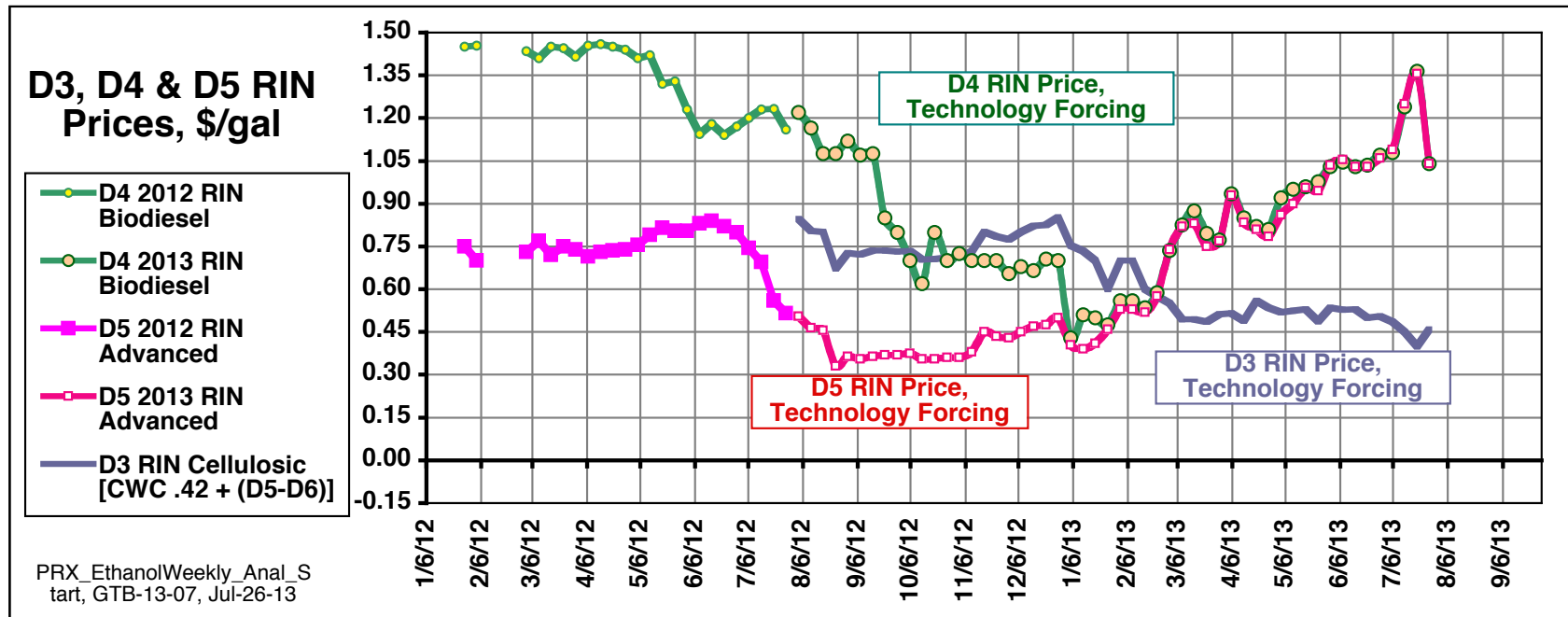
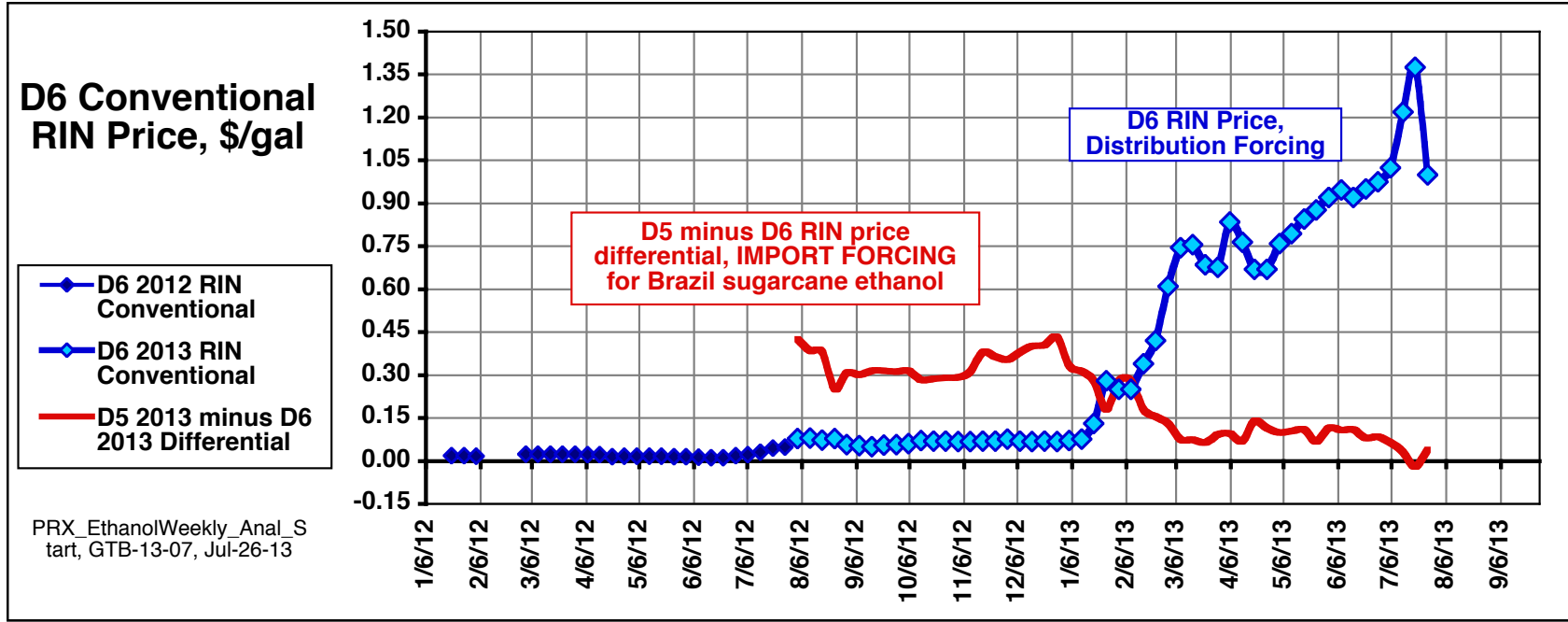
DOE Error #2.

**MoGas
Forecast in
2007 was
15-20% too
high, bringing
E10 Blendwall
into play now,
rather than a
few years
from now.**

RENEWABLE FUEL USE & D6 COMPLIANCE CALCULATIONS, 2012-2014

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Row	Item	Column		
		1	2	4
		Cal	Cal	Cal
		2012	2013	2014
		bil gals	bil gals	bil gals
	<u>EPA Fuel Volumes (from EIA, prev Oct or current STEO)</u>			
1	Gasoline	135.4	133.7	133.2
2	Diesel (excl jet, ocean)	50.7	52.3	52.0
3	less ethanol	-13.3	-12.9	-12.8
4	less biodiesel	-0.9	-1.2	-1.3
5	less exempt gasoline	-4.9	0.0	0.0
6	less exempt diesel	-2.3	0.0	0.0
7	Total Transportation Fuel Obligated Volume	164.7	171.9	171.2
8	Total Renewable Fuels Obligated Volume	15.2	16.55	18.15
9	Total Renewable Fuels Obligated Percent	9.23%	9.63%	10.60%
	<u>Blend Wall vs. Rollover RINs Supply (Current EIA STEO)</u>			
10	Gasoline demand	132.4	133.0	133.2
11	Share receiving ethanol	95.09%	95.00%	96.00%
12	Gasoline receiving ethanol	125.9	126.4	127.9
13	Ethanol inclusion rate	9.99%	10.00%	10.00%
14	Ethanol blended	12.573	12.636	12.791
15	D6 de-nested RIN requirement	13.200	13.800	14.400
16	D6 RINs deficit/surplus	-0.627	-1.164	-1.609
17	Rollover D6 RIN Carryin		2.000	0.836
18	Rollover D6 RIN Carryout	2.000	0.836	-0.772
	(PRX Est. from EPA & Obligated Parties)			



E15 to the Rescue — and When?

- **PRO.** EPA will not waiver the annual Applicable Volumes of RFS.
 - Refiners will be forced, en masse, to make E15 (and its matching BOB) the standard fuel in the distribution system;
 - Fuel retailers will be forced, en masse, to offer E15 to the public.
- **CON.** EPA will need to compromise (volume or timing) due to the fuel retailing system and its existing regulations
 - Some 90 laws in 30 states require change for E15;
 - Majority of carmakers have not changed engine warranties to cover E15;
 - Dispensers in large share of stations may not be compatible with E15;
 - Owners of all 600,000+ Underground Storage Tanks must demonstrate compatibility with E15 to EPA, per (90-page) Notice of Proposed Rulemaking (2-15-12), not scheduled to be Final Rule before Feb-2014.



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Proposal Revises Underground Storage Tank Regulations

EPA is proposing revisions to strengthen the 1988 federal underground storage tank (UST) regulations by increasing emphasis on properly operating and maintaining UST equipment. These revisions will help improve prevention and detection of UST releases, which are one of the leading sources of groundwater contamination. The revisions will also help ensure all USTs in the United States, including those in Indian country, meet the same minimum standards. This is the first time EPA is proposing significant revisions to the federal UST regulations since they were first promulgated in 1988.

- Public comment period closed April 16, 2012.
- [February 15, 2012 Federal Register Notice - Extends Comment Period For Proposed UST Regulations \(PDF\)](#) (2 pp, 148K, [About PDF](#))
- [November 18, 2011 Federal Register Notice - Proposed UST Regulations \(PDF\)](#) (89 pp, 1.6MB, [About PDF](#))

EPA's proposal revises the UST technical regulation in 40 CFR part 280 by:

- Adding secondary containment requirements for new and replaced tanks and piping
- Adding operator training requirements for UST system owners and operators
- Adding periodic operation and maintenance requirements for UST systems
- Removing certain deferrals
- Adding new release prevention and detection technologies
- Updating codes of practice
- Making editorial and technical corrections

EPA is also proposing to update the state program approval (SPA) requirements in 40 CFR part 281 to incorporate the proposed changes to the UST technical regulation listed above.

Resources

[February 15, 2012 Federal Register Notice - Extends Comment Period \(PDF\)](#) (2 pp, 148K, [About PDF](#))

[November 18, 2011 Federal Register Notice - Proposed UST Regulations \(PDF\)](#) (89 pp, 1.6MB, [About PDF](#))

[Comparison Of 1988 UST Regulations And Proposed UST Regulations \(PDF\)](#) (8 pp, 122K, [About PDF](#))

[Wastewater Treatment Tank Systems \(PDF\)](#) (5 pp, 102K, [About PDF](#))

[Red Line Strikeout Of 40 CFR 280 \(PDF\)](#) (119 pp, 571K, [About PDF](#))

[Red Line Strikeout Of 40 CFR 281 \(PDF\)](#) (18 pp, 99K, [About PDF](#))

[Regulatory Impact Analysis \(PDF\)](#) (155 pp, 1.3MB, [About PDF](#))

[Docket For Proposed UST Regulations](#)

THREE CASES OF FUTURE ADOPTION RATES OF E15 TO MEET RFS MANDATES

PRX_RFS2_DisplayREV_Start.xls

Suppose that Oil Industry decides to embrace E15 at retail pumps. How fast can this have effect?

	E10		E15		E10		E15		E10		E15	
	mil gals	mil gals	mil gals	mil gals	mil gals	mil gals	mil gals	mil gals	mil gals	mil gals	mil gals	mil gals
Motor Fuel Supply	133000	133000		132000	132000		131000	131000		130000	130000	
Inclusion rate limit	10%	15%		10%	15%		10%	15%		10%	15%	
Auto fleet eligible	100%	75%		100%	78%		100%	81%		100%	84%	
Adjusted inclusion rate limit	10.00%	11.25%		10.00%	11.70%		10.00%	12.15%		10.00%	12.60%	
Gross Blend Wall	13300	14963	potential new 1663	13200	15444	potential new 2244	13100	15917	potential new 2817	13000	16380	potential new 3380
Share motor fuel recvg ethanol	97%	97%		97%	97%		97%	97%		97%	97%	
Net Blend Wall	12901	14514		12804	14981		12707	15439		12610	15889	
Case A	2014	2014		2015	2015		2016	2016		2017	2017	
Adopted fully by April 1, 2014	25%	75%		15%	85%		10%	90%		10%	90%	
	3225	10885		1921	12734		1271	13895		1261	14300	
		14110			14654			15166			15561	
D6 RVO		14400			15000			15000			15000	
D6 Compliance Balance		-290			-346			166			561	
Crop Year 2013-14	13668		14473		14995		15429		15080			
	PRX Blue Sky #32		PRX Blue Sky #32		PRX Blue Sky #32		PRX Blue Sky #32		PRX Blue Sky #32			
Case B	2014	2014		2015	2015		2016	2016		2017	2017	
Adopted fully by Apr 1, 2015	100%	0%		25%	75%		15%	85%		10%	90%	
	12901	0		3201	11236		1906	13123		1261	14300	
		12901			14437			15029			15561	
D6 RVO		14400			15000			15000			15000	
D6 Compliance Balance		-1499			-563			29			561	
Crop Year 2013-14	13668		13925		14832		15384		15080			
	PRX Blue Sky #32		PRX Blue Sky #32		PRX Blue Sky #32		PRX Blue Sky #32		PRX Blue Sky #32			
Case C	2014	2014		2015	2015		2016	2016		2017	2017	
Adopted fully by Apr 1, 2016	100%	0%		100%	0%		25%	75%		15%	85%	
	12901	0		12804	0		3177	11579		1892	13505	
		12901			12804			14756			15397	
D6 RVO		14400			15000			15000			15000	
D6 Compliance Balance		-1499			-2196			-244			397	
Crop Year 2013-14	13668		13925		14105		15183		15080			
	PRX Blue Sky #32		PRX Blue Sky #32		PRX Blue Sky #32		PRX Blue Sky #32		PRX Blue Sky #32			

E15 Timing affects PRX forecasts of corn demand 2014-2016.

UNITED STATES CORN SUPPLY-DEMAND, 2011-2020

PRX_BS1_OverviewDeck_Start, GTB-13-07, Jul-11-13

Item	Unit	Crop Year									
		11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21
Carry-in	<i>mil bu</i>	1128	988	784	2129	2807	3069	2841	2071	2165	2859
Area planted	<i>mil ac</i>	91.9	97.2	97.4	96.0	95.0	92.0	92.0	92.0	90.0	90.0
Area harvested	<i>mil ac</i>	84.0	87.4	89.1	87.9	87.0	84.2	84.2	84.2	82.4	82.4
Yield	<i>bu/ac</i>	<u>147.2</u>	<u>123.4</u>	<u>155.0</u>	<u>159.6</u>	<u>162.2</u>	<u>163.6</u>	<u>153.7</u>	<u>167.6</u>	<u>187.3</u>	<u>174.7</u>
Production	<i>mil bu</i>	12360	10780	13817	14025	14105	13777	12946	14109	15432	14388
Imports	<i>mil bu</i>	<u>29</u>	<u>150</u>	<u>25</u>	<u>10</u>	<u>10</u>	<u>10</u>	<u>10</u>	<u>10</u>	<u>10</u>	<u>10</u>
Supply	<i>mil bu</i>	13516	11919	14626	16164	16923	16856	15797	16191	17607	17258
Carry-out	<i>mil bu</i>	<u>988</u>	<u>784</u>	<u>2129</u>	<u>2807</u>	<u>3069</u>	<u>2841</u>	<u>2071</u>	<u>2165</u>	<u>2859</u>	<u>2638</u>
Disappearance (Use)	<i>mil bu</i>	12528	11135	12497	13357	13854	14015	13726	14026	14748	14620
Processing	<i>mil bu</i>	6324	5910	6247	6407	6727	6736	6751	6751	6747	6756
of which, Fuel Eth	<i>mil bu</i>	4924	4500	4827	4972	5277	5274	5277	5265	5249	5246
	<i>bil gal</i>	13.8	12.7	13.7	14.1	15.0	15.1	15.1	15.2	15.2	15.3
Corn displaced by DDG	<i>mil bu</i>	1042	865	944	977	1057	1047	1038	1029	1020	1012
Exports	<i>mil bu</i>	1543	725	1200	1700	1877	1979	1900	1900	2301	2414
Feed/Residual Use	<i>mil bu</i>	<u>4661</u>	<u>4500</u>	<u>5050</u>	<u>5250</u>	<u>5250</u>	<u>5300</u>	<u>5075</u>	<u>5375</u>	<u>5700</u>	<u>5450</u>
Total Use	<i>mil bu</i>	12528	11135	12497	13357	13854	14015	13726	14026	14748	14620
Carry-out	<i>mil bu</i>	988	784	2129	2807	3069	2841	2071	2165	2859	2638
Carryout-to-Use Ratio	<i>pct</i>	7.9%	7.0%	17.0%	21.0%	22.2%	20.3%	15.1%	15.4%	19.4%	18.0%
Farm Price	<i>\$/bu</i>	6.22	6.90	5.00	4.77	4.72	4.66	5.01	5.00	4.97	5.16

IMPACT OF E15 DELAY ON BLUE SKY FORECAST (but assuming no major change in RFS)

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Fore- cast	Item	Unit	Crop year			
			2013-14	2014-15	2015-16	2016-17
Blue Sky #32, Little Delay						
	Corn fuel ethanol demand	<i>mil gals</i>	13668	14120	15035	15080
		<i>mil bu</i>	4827	4972	5277	5274
	Corn Carryout	<i>mil bu</i>	2129	2807	3069	2841
	Corn Farm price	<i>\$/bu</i>	5.00	4.77	4.72	4.66
PRX Case C, E15 Delayed until Arp-2016						
	Corn fuel ethanol demand	<i>mil gals</i>		13925	14105	15183
		<i>mil bu</i>		4903	4951	5311
	Change	<i>mil bu</i>		-69	-326	36
	Corn Carryout	<i>mil bu</i>		2876	3464	3131
	Corn Farm price	<i>\$/bu</i>		4.50	3.75	4.00
	Corn Gross income change	<i>\$bil</i>		-3.8	-13.6	-9.2

