

What is a RIN, and why should you care?

RFS2 Presentation to NASEO

Sandra Dunphy

Director, Energy Compliance Services

Weaver and Tidwell, L.L.P.

November 1, 2013

- Ranked the largest independent accounting firm in the southwest U.S. by *Accounting Today* magazine
- Nationally ranked as a top 50 firm – No. 42 by *Accounting Today* No. 39 by *INSIDE Public Accounting*
- FY 2012 revenues of approximately US\$75 million
- More than 60 years of experience
- 500 employees, including 64 partners
- International reach through Baker Tilly International membership



Austin



Dallas



Fort Worth



Houston



Midland/Odessa



San Antonio



Stamford, CT

- RFS and RIN Basics
- Who's who in the RFS world
- The overall US market – biomass sources, biofuel production facilities, retail outlets
- How RINs work
- The Blend Wall
- 2014 and Beyond
- How EPA's actions will affect the US economy

- The Clean Air Act (1970) and Energy Policy Act (2005) required EPA to implement regulations implementing a renewable fuels standard program
- First program was called “RFS1” - effective date Sept. 1, 2007
 - Renewable Fuels goals:
 - 9 Billion gallons by 2008; 22 billion gallons by 2022
 - RINs were born and they were intended to be:
 - The “currency of compliance”
 - Generated by producers of renewable fuels
 - Gasoline producers & importers were “obligated” to own RINs
 - RINs were 38 digit numbers and prone to transfer errors

But not before long, on Dec 19, 2007 Congress passed The Energy Independence and Security Act of 2007 (“EISA”)

STATED GOALS: Reduce dependence on foreign oil; reduce GHG emissions; increase US employment in green sector

HOW?

- Increase volume of renewable fuels required to be blended into gasoline, diesel, heating oil and jet fuel to 36 Billion gallons by 2022 and
- Moving the focus of renewable fuels from traditional sources to “advanced” and “cellulosic” biomass feedstocks

.....and EPA was to create regulations to implement EISA within 12 months of this date

- February 3, 2010: EPA signs final rule to implement EISA
 - => RFS 2
 - Effective July 1, 2010 (except for RVO calcs)
 - Feedstock focus switched to “renewable biomass”
 - Implemented biodiesel, cellulosic and advanced biofuels
 - Retained RIN system for compliance and trading program
 - RINs are still the “currency” of compliance and trading
 - Established new EPA software program for RIN transactions
 - Included diesel fuel volumes in addition to gasoline for obligation calculations

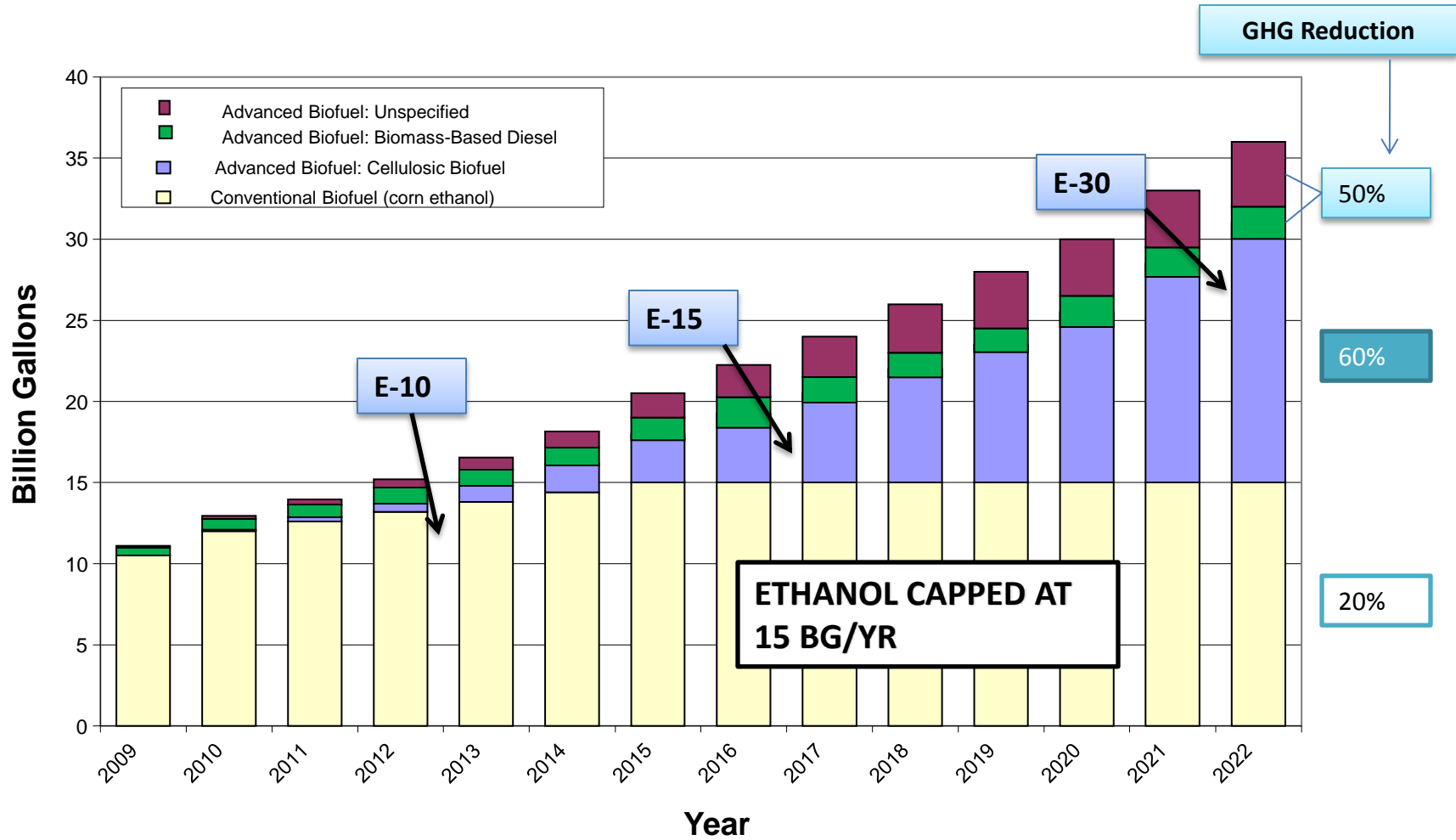
Wow, that seems easy enough....

Abbreviations used today

- **RF = Renewable Fuel**
- **RIN = Renewable Identification Number**
- **OP = Obligated Party**
- EMTS = EPA Moderated Transaction System
- **BBD = Biomass-based Diesel**
- **AB = Advanced Biofuel**
- **CB = Cellulosic Biofuel**

- EV = Equivalence Value
- **RVO = Renewable Volume Obligation**
- **GHG = Greenhouse Gas**
- LCA = Lifecycle Analysis
- MV = Motor Vehicle
- NR = Non-Road
- LM = Locomotive/Marine
- HO = Heating Oil
- QAP = Quality Assurance Plan

RFS2 Renewable Fuel Volumes



Four Separate Standards for Compliance

(RINs that must be owned and used by Obligated Parties)

- **Cellulosic Biofuel: 16 BG by 2022 60% GHG Reduction [D codes 3, 7]**
 - Small volumes of cellulosic production to date
 - Courts vacated the 2012 cellulosic waiver requirement
 - EPA has proposed to voluntarily refund 2011 cellulosic waiver credit payments due to lack of production
- **Biomass-Based Diesel: 1.28 BG in 2013; ??? by 2022 50% GHG↓ [D codes 4, 7]**
 - Volume is determined by EPA based on feedstock/production analysis
- **Advanced Biofuel: 21 billion gallons by 2022 50% GHG reduction [D code 5]**
 - Includes cellulosic biofuels and biomass-based diesel plus an additional 4 billion gal
 - Essentially anything but corn starch ethanol
 - Has included mostly sugarcane ethanol
- **Total Renewable Fuel: 36 billion gallons by 2022 20% GHG Reduction* [D code 6]**
 - Includes up to 15 billion gallons conventional biofuel (ethanol derived from corn starch or any other qualifying renewable fuel)
 - * Existing (2007) facilities grandfathered exemptions up to plant baselines

“Do do that voodoo that you do
so well...”

- To achieve the RFS2 objectives, renewable fuels must be used (in neat form) or blended into US transportation, heating oil and/or jet fuels
- Which market participants have to ensure that this objective is met and how do they do this?
 - Producers of renewable fuels – generate RINs
 - Blenders of renewable fuels – separate RINs
 - Obligated Parties – use RINs for compliance

- RINs are generated by renewable fuel producers and US importers who import renewable fuel produced by foreign producers
 - Producers and Importers generate RINs based on (denatured) production volume (temp-corrected) and the Btu content of the fuel
 - RINs can ONLY be generated if the feedstock meets the definition of “Renewable Biomass” using an EPA-approved pathway, classifying the fuel by its GHG reduction versus the petro fuel it displaces
 - RINs can ONLY be generated for fuel that will be used in the U.S. for transportation, heating oil or jet fuel purposes

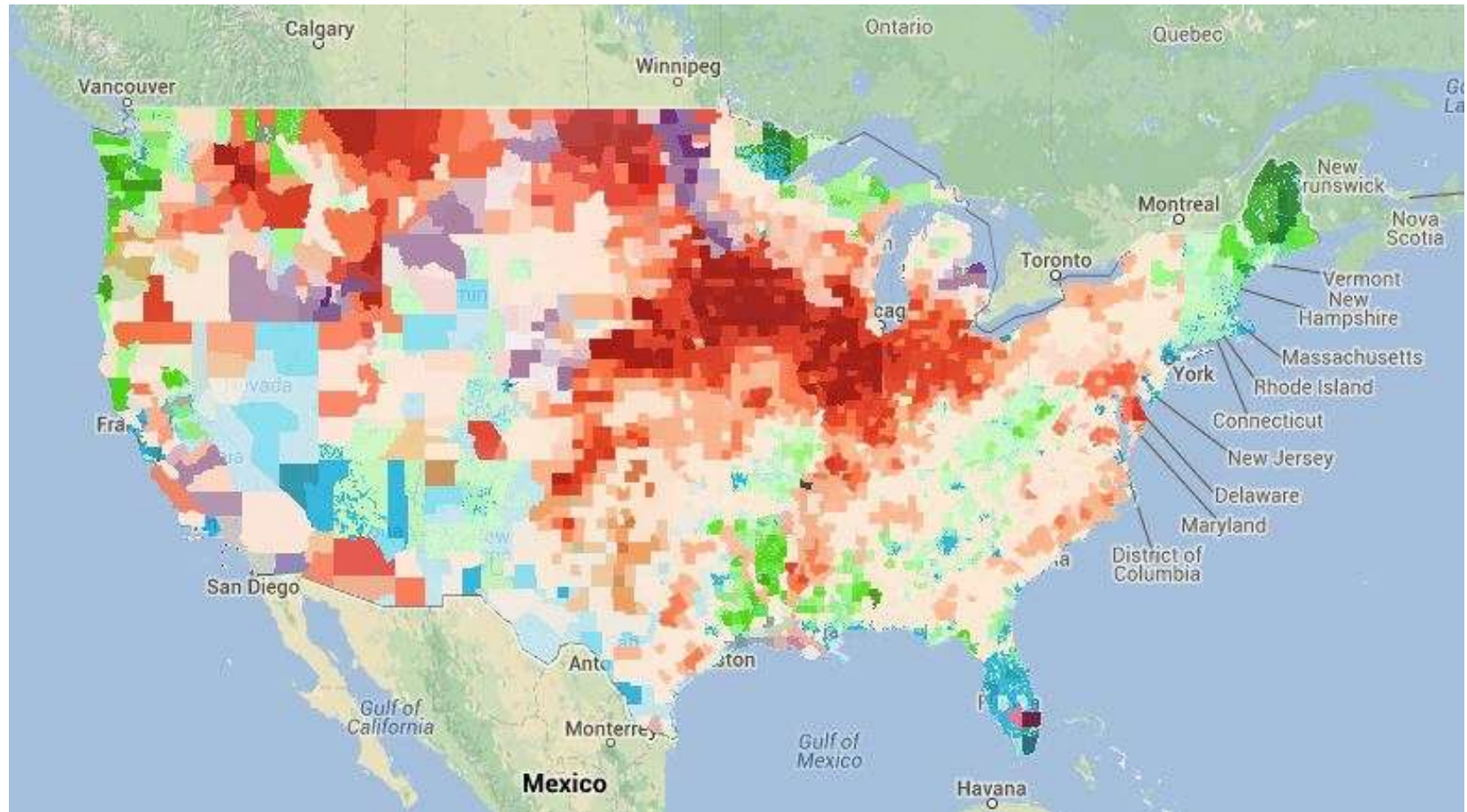


- Renewable biomass means each of the following:
 - **Planted crops and crop residue** harvested from existing agricultural land cleared or cultivated prior to December 19, 2007 and that was non-forested and either actively managed or fallow on December 19, 2007.
 - **Planted trees and tree residue** from a tree plantation located on non-federal land ... that was cleared at any time prior to December 19, 2007 and actively managed on December 19, 2007.
 - **Animal waste material and animal byproducts.**
 - **Slash and pre-commercial thinnings** from non-federal forestland ... that is not ecologically sensitive forestland.
 - **Biomass** (organic matter that is available on a renewable or recurring basis) **obtained from the immediate vicinity of buildings** and other areas regularly occupied by people, or of public infrastructure, **in an area at risk of wildfire.**
 - **Algae.**
 - **Separated yard waste or food waste**, including recycled cooking and trap grease, and materials described in §80.1426(f)(5)(i).

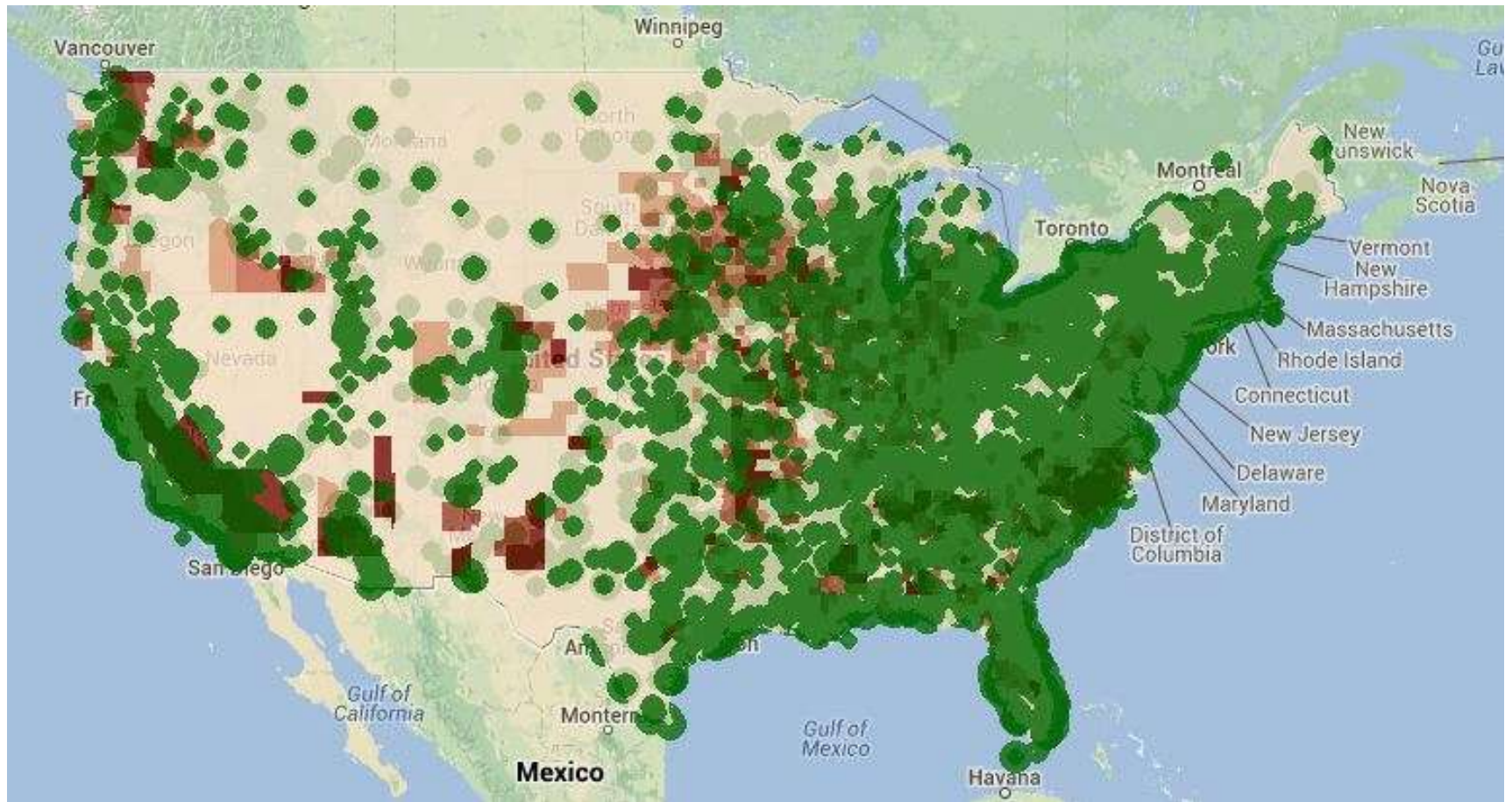
Examples of Pathways

<u>Fuel Type</u>	<u>Feedstock</u>	<u>Production Process Reqmts</u>	<u>D Code</u>
Ethanol	Corn Starch	Drymill process	6
Ethanol	Sugarcane	Fermentation	5
Biodiesel	Chicken fat, soybean oil, etc.	Transesterification	4
Renewable Diesel	Chicken fat, soybean oil, etc.	Hydrotreating (no coprocessing/coprocessing)	4 / 5
Cellulosic Diesel, Jet, Heating Oil	Cellulosic biomass	Any cellulosic production process	7
Cellulosic Biofuel	Separated MSW	Fischer-Tropsch or any other cellulosic production process	3
Biogas	Landfills	Any	5*
Renewable Jet, Heating Oil, Ethanol	Separated food wastes	Any separated food wastes process	5

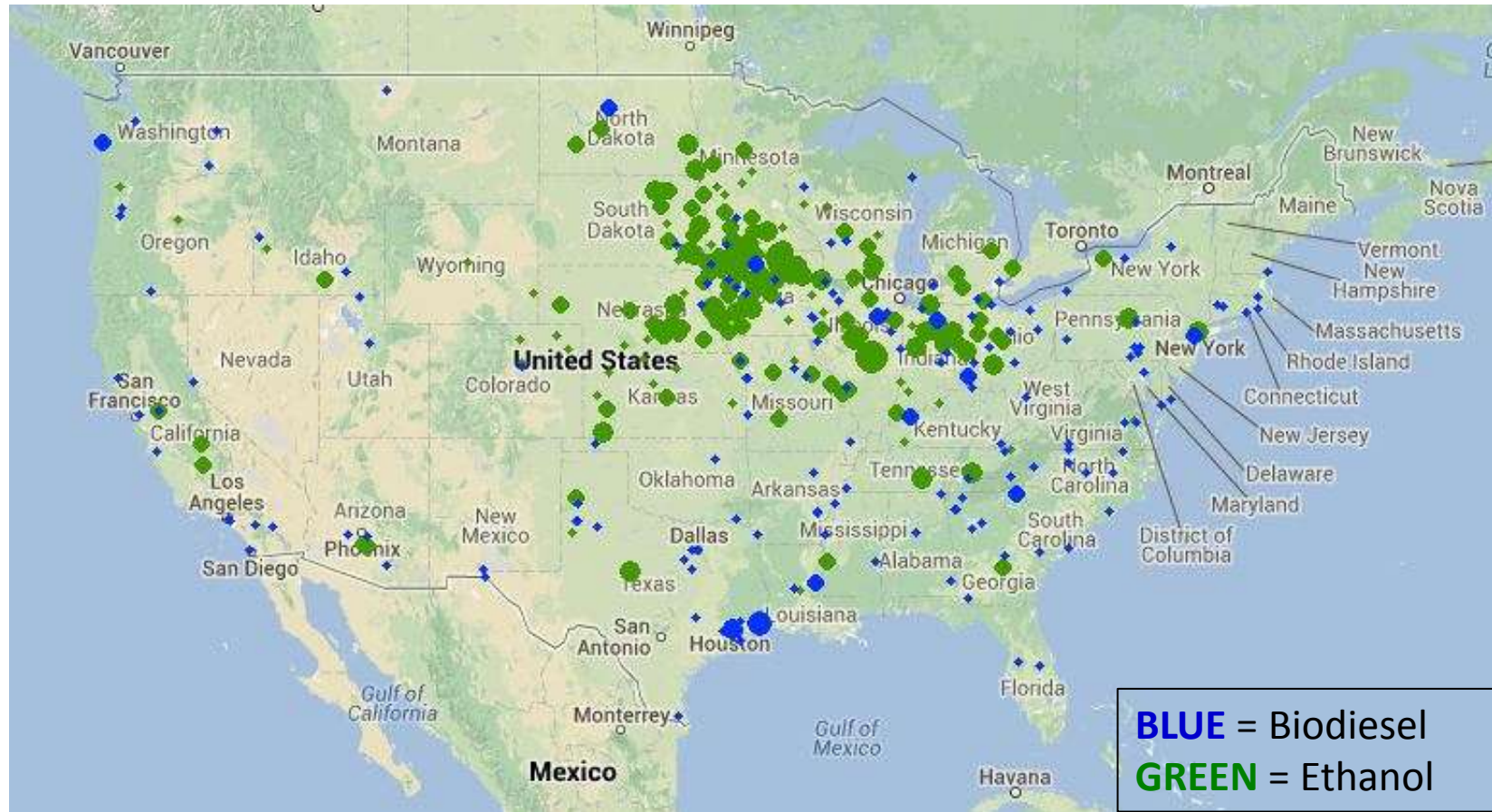
* EPA has proposed changing this pathway to a D3 RIN; also proposed changes to RIN generating entity



Information from NREL interactive website: <http://maps.nrel.gov/biomass>

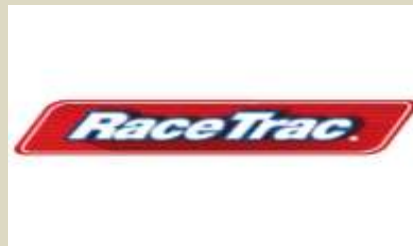


Information from NREL interactive website: <http://maps.nrel.gov/biomass>



Information from NREL interactive website: <http://maps.nrel.gov/biomass>

- Blenders generally purchase Renewable Fuel and blend it into gasoline or diesel
 - **Ethanol to E-10, E-15 or E-85 blend levels; Biodiesel to B2, B5, B20**
- Upon blending the blender can sell the two commodities – the blended physical fuel and the separated RIN
- Many blenders are also Obligated Parties
- The largest independent blenders of biodiesel are truckstops
- In 2013, biodiesel blenders receive a \$1.00/gallon federal excise tax credit

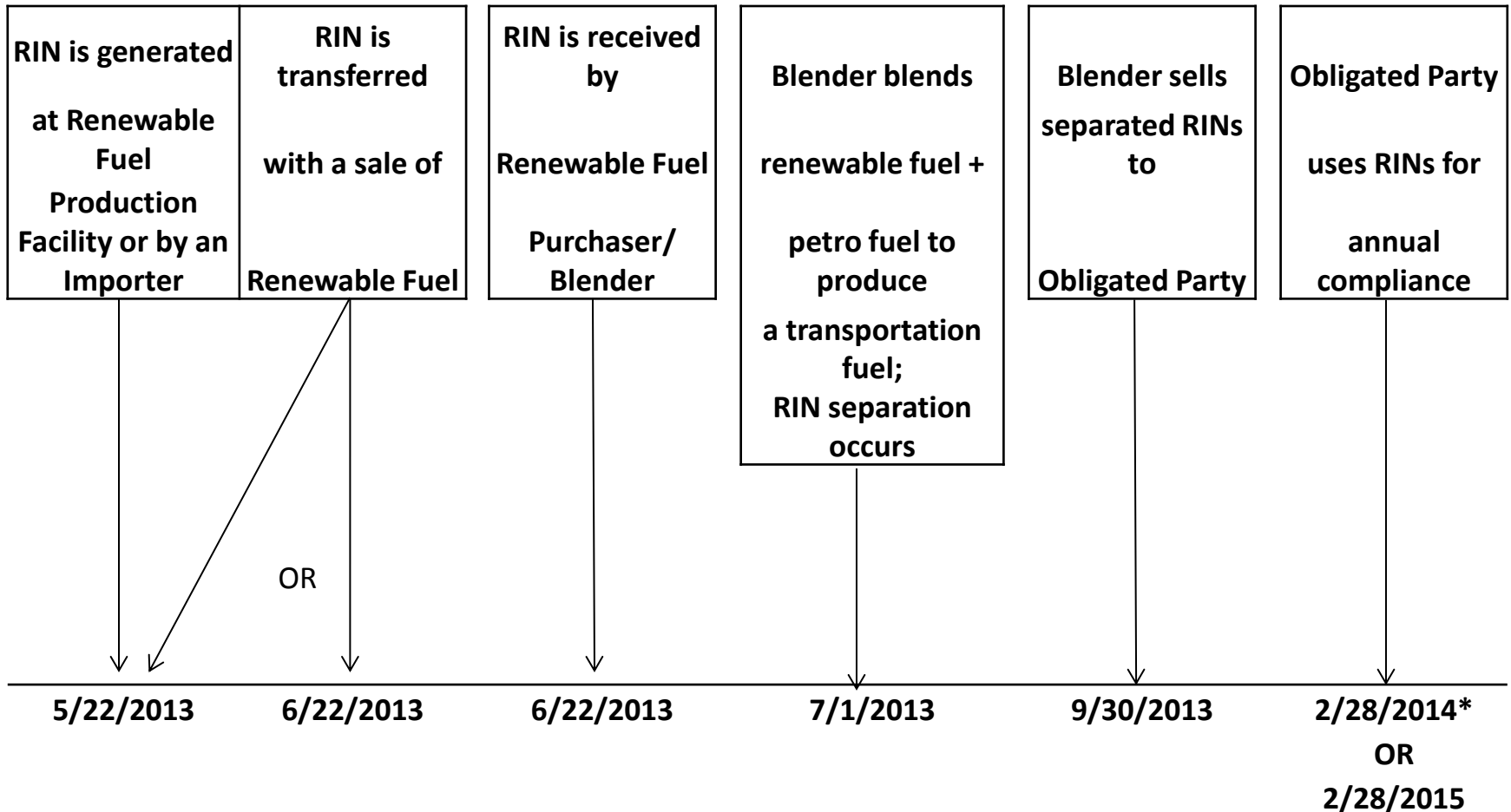


- Obligated Parties

- Companies who produce or import petroleum gasoline or diesel fuel in a given calendar year
- Do not have to blend physical renewable fuel
- Must satisfy their RFS compliance obligations using RINs and/or cellulosic waiver credits
- Acquire RINs through the purchase of physical fuel with RINs or through RIN-only transactions

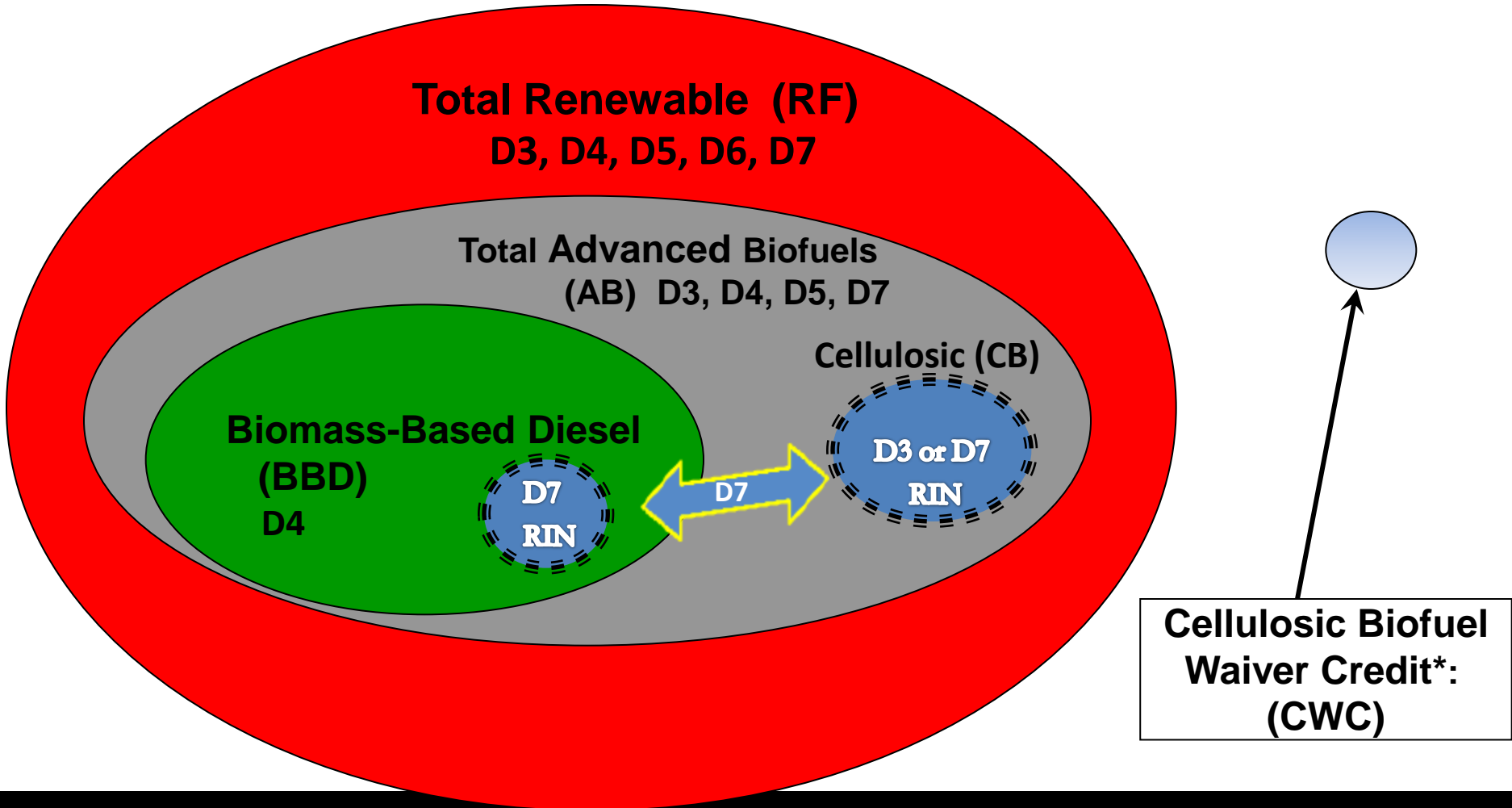
The ExxonMobil logo, featuring the word "ExxonMobil" in red, italicized, sans-serif font.

The life of a 2013 RIN



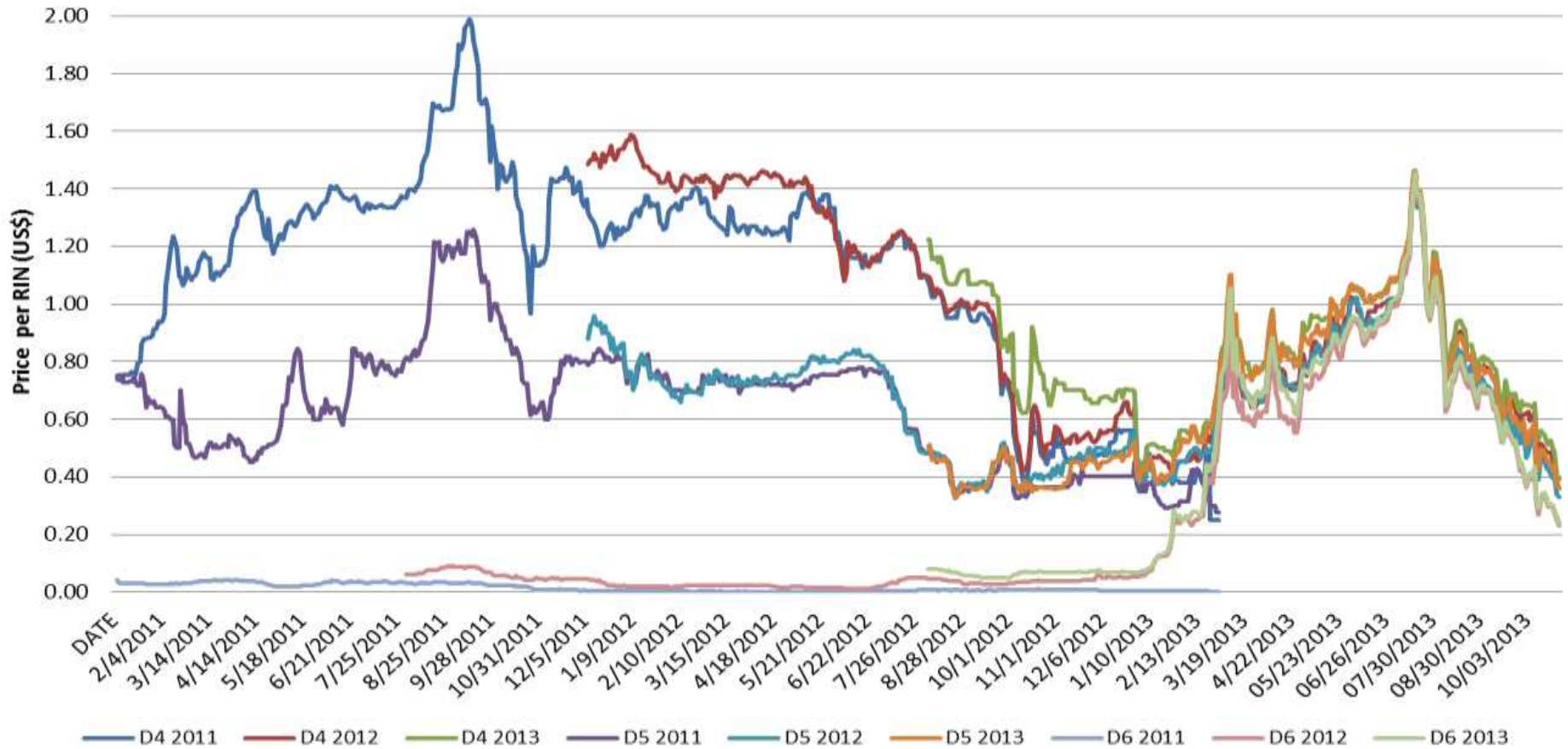
* June 30, 2014 (2014 only)

RFS2 Nested RVO Concept – using Cellulosic RINs



* EPA Cellulosic Waiver Credits cannot be applied to AB or RF RVOs₂₀

OPIS AVERAGE RINS PRICES 2011 - 2013



Now that you know what a RIN is, why should you care?

- RIN prices get passed along to the consumer
 - Although most ethanol RINs transfer with renewable fuel to blenders at no “cost” ...
 - Blenders have to have the infrastructure to accommodate the renewable fuel and be able to blend it
 - Ethanol cannot move through pipelines so rail and truck transport is most common (cost/safety)
 - “Merchant” refiners pay the full value of the RIN
- For advanced biofuels, the RIN price often represents the profit margin for the producer – if RIN prices are too low, smaller, non-integrated producers struggle
- And of course, there’s the *blend wall*....

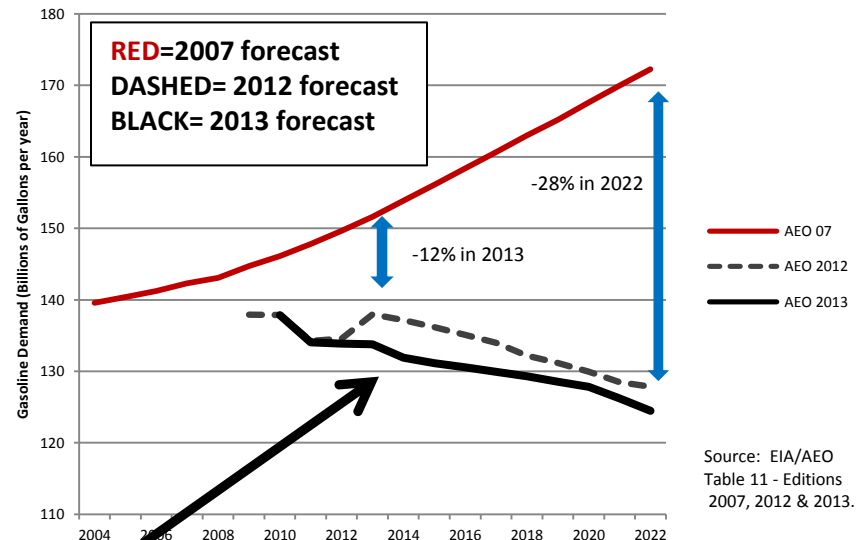
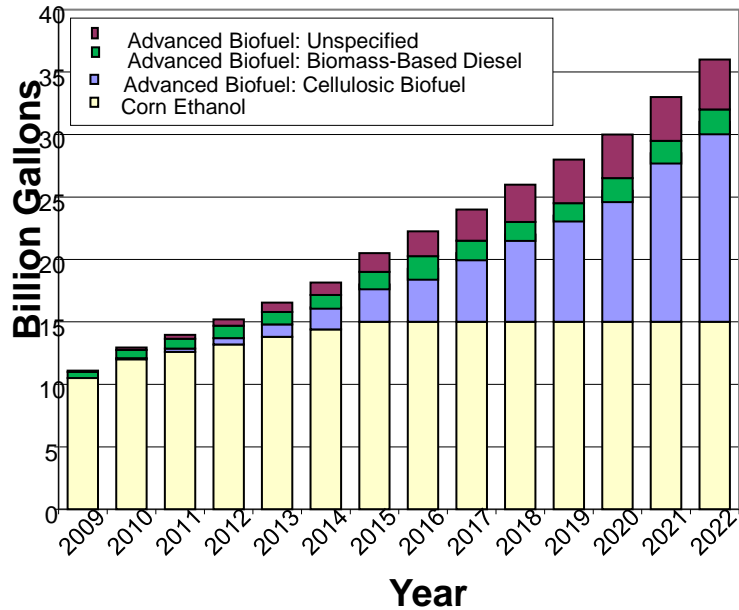
RVO percentages are set by EPA each year by Nov 30 (in theory)

$$RVO \% = \frac{EISA/EPA \text{ annual volume for a given D Code category}}{\text{Gasoline + Diesel projected to be used in coming year}}$$

Gasoline + Diesel projected to be used in coming year

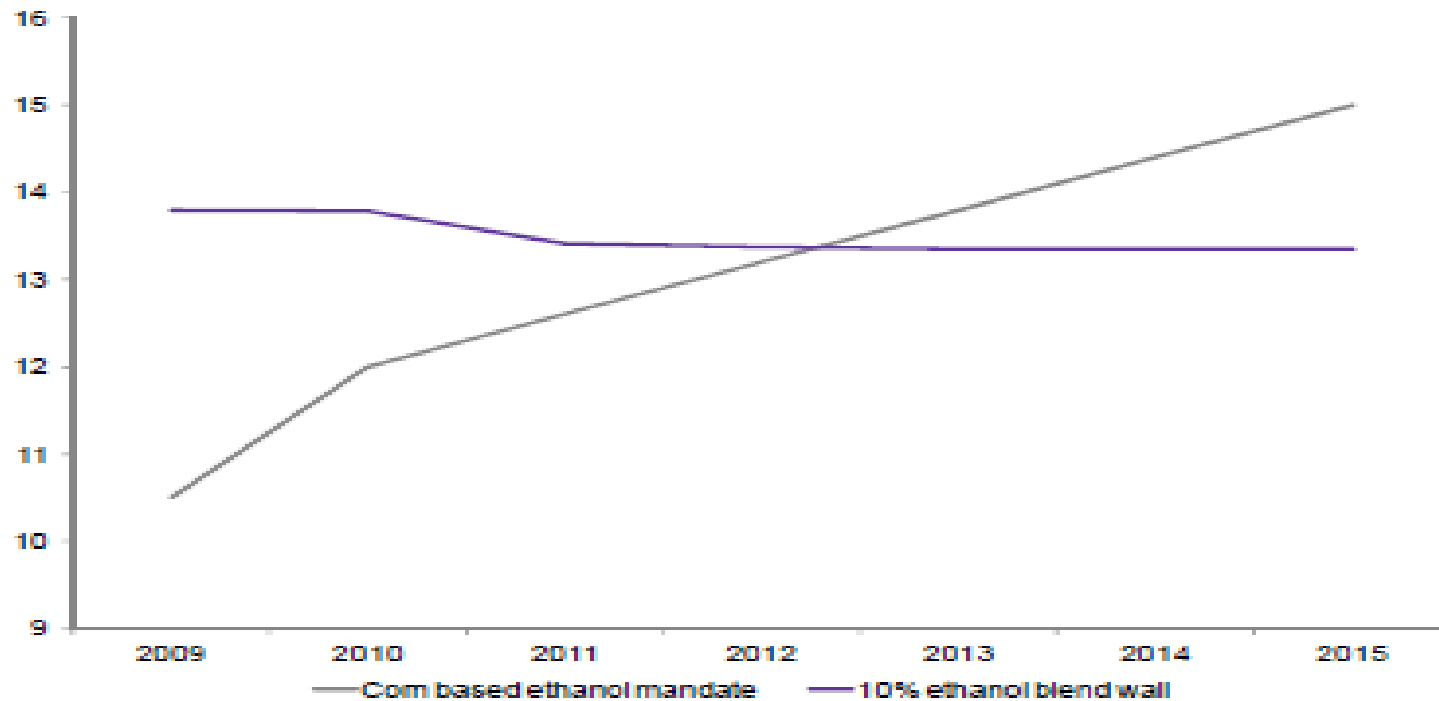
Numerator ↑

Denominator ↓



Source: EIA/AEO
Table 11 - Editions
2007, 2012 & 2013.

Exhibit 9: The requirement to blend conventional ethanol surpassed the capacity to blend ethanol in 2012
Billion gallons



Source: EPA, EIA, Goldman Sachs Global ECS Research estimates.

Exhibit 10: The rally in RIN prices has incentivized a record level of ethanol blending in US gasoline
Thousand barrels per day



Source: EIA.

Should Your Car Run on E15?
Only 5% of vehicles on the road today are approved by manufacturers to run on E15.



Automaker Positions on E15 in Non Flex-Fuel Vehicles



DO NOT APPROVE

BMW/Mini
Chrysler
Honda/Acura
Hyundai
Jaguar Land Rover

Kia
Mazda
Mercedes-Benz
Mitsubishi
Nissan/Infiniti

Subaru
Toyota/Scion/Lexus
Volkswagen/Audi
Volvo



APPROVE IN NEWER MODELS

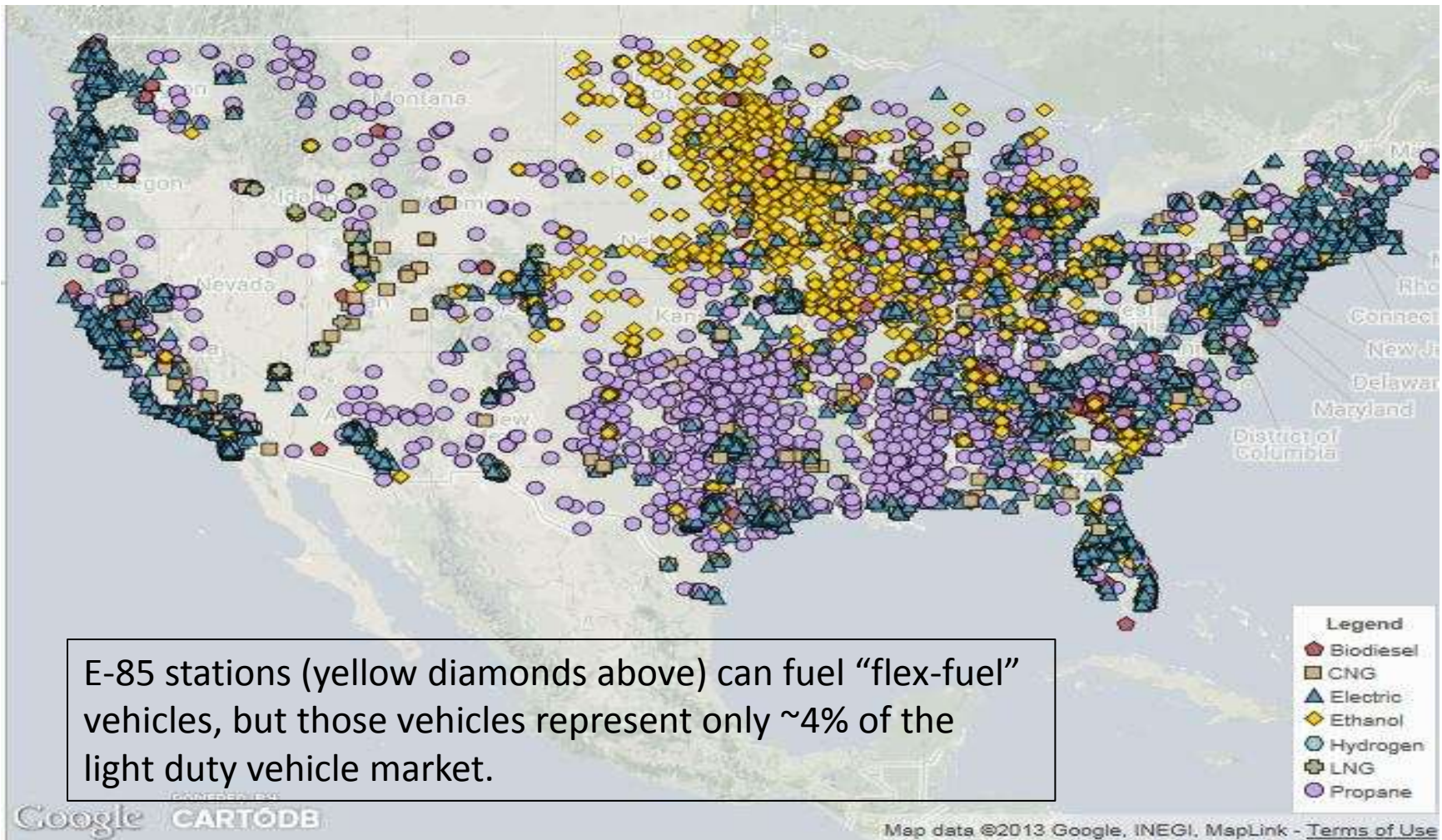
Ford (model year 2013)

General Motors (model year 2012 and newer)



APPROVE

Porsche (model year 2001 and newer)



Intended Consequences

- Displacement of petroleum gasoline, diesel in motor vehicles
- Rural green employment growth
- GHG reductions
- New technologies
- New fuels

Unintended Consequences

- Import of sugarcane eth while exporting corn eth
- Increased exports of diesel fuel and gasoline
- Food v Fuel
- Dependence on foreign renewable fuel
- RIN Fraud

- The Blend Wall has caused EPA to consider revising the RFS standards for 2014 downward for all obligation categories:

Standards for	<u>2013 BR¹</u> (EISA/EPA)	<u>2014 BR¹</u> (EISA)	<u>2014 BR¹</u> (Proposed) ²
Cellulosic biofuel	1.0/0.006 ³	1.75	0.023 ³
Biomass-based diesel	1.92 ⁴	1.5+ ⁴	1.92
Advanced biofuel	2.75	3.75	2.21
Renewable fuel	16.55	18.15	15.21
Corn Ethanol (de facto)	13.80	14.40	13.00

¹ Billions of RINs

² As included in a document leaked in September 2013

³ EPA evaluates cellulosic production capabilities each year and can adjust this volume

⁴ EISA set BBD at minimum 1.0 BG; EPA can adjust upward if warranted by production/feedstocks

- EPA can adjust the yearly standards if they can show:
 - implementation would severely harm the economy or the environment; OR
 - there is inadequate domestic supply
(Waiver period of one year, but may be renewed)
- In proposing the new standards, EPA has used “inadequate domestic supply” (of gasoline) as the reason for reducing the 2014 standards.
- The official comment period has yet to start but already 84 industry executives have visited the White House since Oct. 21st, 70% of which have represented biofuel interests *Reuters 10/30/13*
- The official proposed standards document is expected to be released some time before Nov. 15, 2013

If EPA reduces the standards as proposed:

- Ethanol RIN prices may go back to pennies
- Lower Advanced Biofuel RIN prices will disproportionately impact smaller producers
- Corn, soybean prices will fall
- Investments in Advanced Biofuel plants will come to a halt
- Gasoline pump prices will not be affected
- Foreign RF will not come to US

If EPA leaves the standards under EISA (only lowering the cellulosic reqm't)

- RIN prices will move upward
- Some smaller and merchant refiners may close
- Gasoline/diesel exports will continue to increase
- Advanced biofuels will have to fill in the blendwall shortfall (at higher prices than ethanol)
- Foreign RF imports will increase
- Pump prices may increase
- Corn, soybean prices stay strong

Thank you for the opportunity to speak with you today

Sandra B. Dunphy *Contact Information:*

Weaver & Tidwell, L.L.P.

Phone: 832-320-3218

Cell: 281-610-4750

Fax: 713-850-1673

Email: Sandra.Dunphy@Weaver.com

Twitter and Yahoo IM: ***RINderellatx***

Website/Free Blog: www.Weaver.com