Washington Update – Creating Demand and Value Within the Current Policy Structure for Biofuels

Emerging Issues Forum
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2013-- It was the Best of Times, It Was the Worst of Times

- Ethanol Production and Use at all Time High
- RFS Has Met & Surpassed Every Goal & Objective
- Most Successful Alt Fuel Program in US History

But.....

- Petroleum, Feeder, Marine and Other Industries in *Relentless* Attack on Biofuels and the RFS
- Market Realities of Blend Wall Limiting Use
- Ethanol Gone From Hero to Villain....Losing the PR Battle, draining energy & resources.--RFS has turned out to be a bigger challenge than being "subsidized"

The State of Renewables Across America—Dazed and Confused

- Florida - - Repealed State RFS, Legislation Renouncing Federal RFS
- The Chicken Governors opting out
- KS Senate Voted to Repeal state RPS
- IN Repealed State Efficiency Program
- California Schitzo– LCFS –ILUC
- Various States eliminating requirements. Incentives, etc.
- New Citibank Study – A New Dawn for Renewables

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The E in Ethanol May as Well Stand for EPA

- Clean Air Act of 1990 was rebirth to ethanol, now we are under the jurisdiction of EPA.

- Every option to break through blend wall and gain access to the market dependent on EPA
  - E10, E15, E30, E85.....
    - -- Vapor Pressure/Tailpipe Emissions
    - -- Modeling and weighting--Land Use as well as Emissions
- CAFE, Greenhouse Gas/CO2, RFS, Tier 3,
- Then there is the Big Hammer-- the Reset of RFS Levels

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Adjusting the RFS

- EPA Required (Shall) to Promulgate a Rule if...
  - 20% of volume is waived for 2 years
  - 50% for one year
- Administrator can modify volumes for all years following the year of the waiver-- any time after 2016.
- EPA/DOE/USDA to consider:
  - ***Environment***
  - Energy Security
  - ***Infrastructure***
  - ***Rate/Status of Commercialization***
  - Cost
  - Jobs, ag/food impacts, prices, etc..

Accusations of Failure

- The Old Faithfuls -- Net Energy Balance, Food vs. Fuel, mileage loss, water usage, land change, emissions, etc..

- *Specific to the RFS…….*
- Nowhere to put the fuel (RIN Run up 2013)
- No Distribution Infrastructure for FFVs
- Not Enough FFVs
- Cannot Produce Enough of the - "Phantom Fuel" -- buying cellulose credits

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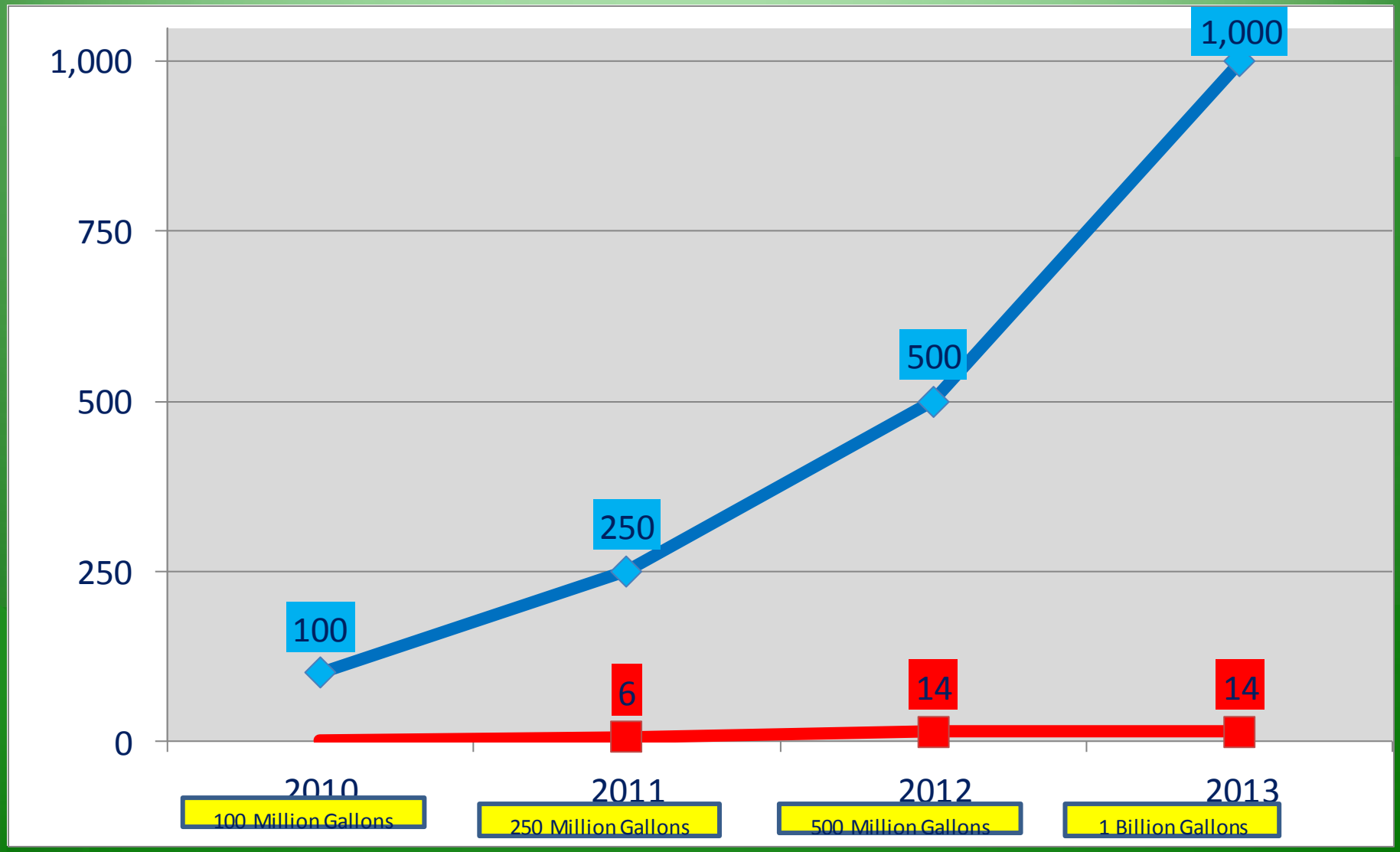
Cellulose Requirements VS Reality



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Where to Put It?

- All Conventional Vehicles approved for 10%
- 2001 and Newer Approved for 15%,or 80% of all cars on the road
  - E15 extremely controversial, Retailers very slow to adopt
    - -- Vapor Pressure/Seasonal Restrictions
    - -- Opposition by Oil/Feeders/Small Engine/Marine interests
- Flex Fuels & E85 Handicapped by Big Oil – they claim no demand but don't offer them

Enter 2014...

- EPA's assessment of Market Realities and Practicalities...
  - Continuing decline in gasoline consumption = smaller blend pool, hence, the dreaded "blend wall"....

- RFS Schedule called for the 16.5 BGPY in 2013 to increase to a total of 18 Billion..... Instead, proposed volumes of

Cont.

- 15.21 billion gal of total renewable fuel, and a range of 15-15.52 billion gal (down from 18.15 billion as originally envisioned);
- 13.01 billion gal of conventional biofuel (mostly comprised of corn-based ethanol and down from 14.4 billion gal as originally envisioned);
- 2.20 billion gal of advanced biofuel, and a range of 2-2.51 billion gal, (down from 2.75 billion gal as originally envisioned);

Where to From Here

- Good thing ?
  - Reducing the requirements addresses a number of issues--
    -- RINS
    -- Slows Imports From Brazil under Advanced
    -- Lessens the push for legislation that could be worse (Feinstein)
    -- Generally calms the issue down
    -- Could get us back on track

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- Bad thing
  - Reducing the requirement sets a precedent of giving in to anti biofuel interests, certainly anti ethanol interests.
  - Takes away incentive to solve some of the market problems--helps build the blend wall
  - Could result in an annual fight like we see now
  - Absolutely chokes off investment
  - In 2017 EPA has the authority to permanently re-set

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Starting a Firestorm

- EPA proposal ignited an unprecedented response– huge resource drain
- EPA handled it wrong but may be backing down in the face of the backlash
- Ethanol Industry Lawsuit would be ill advised– could take years.
- “Freezing” at 2013 levels = a “timeout”

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Ethanol Cannot Allow Itself to be Defined by the RFS

- Obsession w/ RFS Numbers Underscores Flaws in Current Approach
  - (Percentages Rather than Hard Numbers)
- Must Have a ***Value*** Proposition to Move Beyond RFS and Create ***Demand***
- Incentives Rather than Mandates—for both Vehicles & Fuels
- Key is access to market –Pathway to that market is through EPA

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CFDC Working to Create New Value & Demand

Auto Industry: "Help Wanted-- Low Carbon, High Octane Fuels to Meet CAFE & Future GHG Requirements"

- *Ford, 2012: While additional work is needed to quantify and optimize the costs and benefits, …it appears that substantial societal benefits may be associated with capitalizing on the inherent high octane rating of ethanol for future high octane needs.*

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Value and Demand continued:

- *Chrysler, 2012: Ethanol Offers Low Carbon Content and Less GHG Emissions....and offers most expedient and least expensive means to lessen CO2 for Liquid Fuels.*
- *General Motors, 2012: Ethanol can be used to produce new, higher octane fuels that can be used more efficiently.....using ethanol to increase octane of fuels could be a cost effective means of to reduce GHG.....*

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Value to Automakers

- Chrysler– “Not an automaker today who is not concerned with Octane” (2014)
  - “GHG Reductions and CAFÉ The most Daunting Challenge to them in the last 30 years”
- “Need New Minimum For Octane”
  - “Need to take that story to EPA”
  - Mercedes: E30/high Octane= “Ridiculous Power and performance”

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Value and Demand continued:

- U.S. CAR & ethanol industry meetings to identify best ways to use
- E30 May be sweet spot utilizing strengths, minimize weakness
  - Less mileage penalty than E85, could add 6pts octane
  - Initially in FFVs, eventually in optimized vehicles
- Small bore, high compression engines need high octane.

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Pathway Forward

- Short term: Poke through the blend wall with E15, E85
  - RVP Waiver, Minimum Octane
- Mid Term: Develop Significant and *sustainable* FlexFuel Market—which means cars, pumps, and consumers.
  - CFDC/NEB FlexFuel Awareness Program
- Long Term: Move towards greater efficiency blends, e.g optimized E30

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Critical Role of FFVs

- Nearly 20 MM on the Road Today-- a doubling from just 3 years ago

- With Proper Incentives, Automakers could continue to produce

- New CAFE/GHG Rule Significantly Reduces Value of FFVs to Automakers
  - Phase out of MPG credits and transition to GHG
  - EPA Says CO_2 emissions 5% < Gasoline at E85 vol
  -- Limited Use of E85 assumed to be 20% of time to = *1%!*

  Ethanol Needs to Demand Parity w/ EVs, NGVs, & other Alternatives Clearly Favored in Regulatory Structure---

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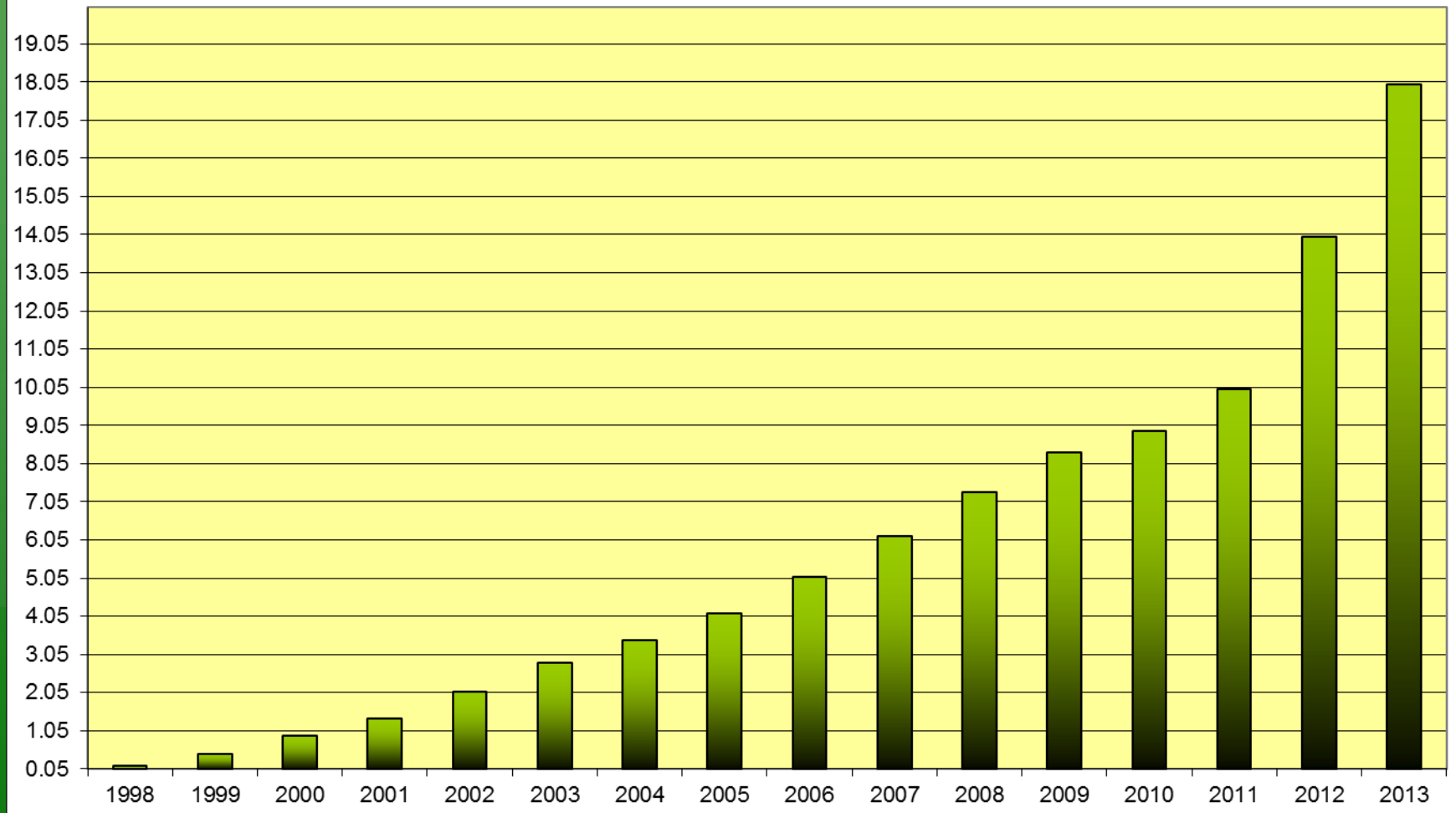
FFVs in Use in the U.S.



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Pathway Forward, cont.

- So How do we help automakers get the value *they* say *we* have?

  -Reinstate FFV Incentives (no cost to consumers, taxpayers)

  - Improve CarbonFootprint Modeling

  - Commit to Refueling Infrastructure

    A Padd II Approach?

  - Get them the octane they need

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Ethanol's Ace In the Hole…….Not all Octane is Created Equal

- Urban Air Initiative focusing on this issue.
- Octane derived from the most toxic, carbon intensive, and harmful components in oil-- aromatics.
- Regulated under Air Toxics, CAA 1990 Requires EPA to limit
  - Benzene, Toluene, Xylene
- Modest but Meaningful Reductions in Air Toxics could result in significant demand for Clean and Low Carbon Octane
- EPA Acknowledges Octane Value of Ethanol
  - Models do not reflect Gasoline Contribution to PM
  - High Ethanol/Oxygen Content would significantly reduce Black Carbon, particulates, and positively impact health
  - Need to allow splash blending on E10.

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RVP Waiver

An extensive set of vapor pressure data for ethanol blends with market gasolines and blendstocks of varying volatility (ASTM D4814 Class AA to Class E) [12] was reported in the study by API [4]. RVPs for blends of ethanol in three representative gasoline blendstocks spanning a wide range of volatility classes are shown in Figure 1.

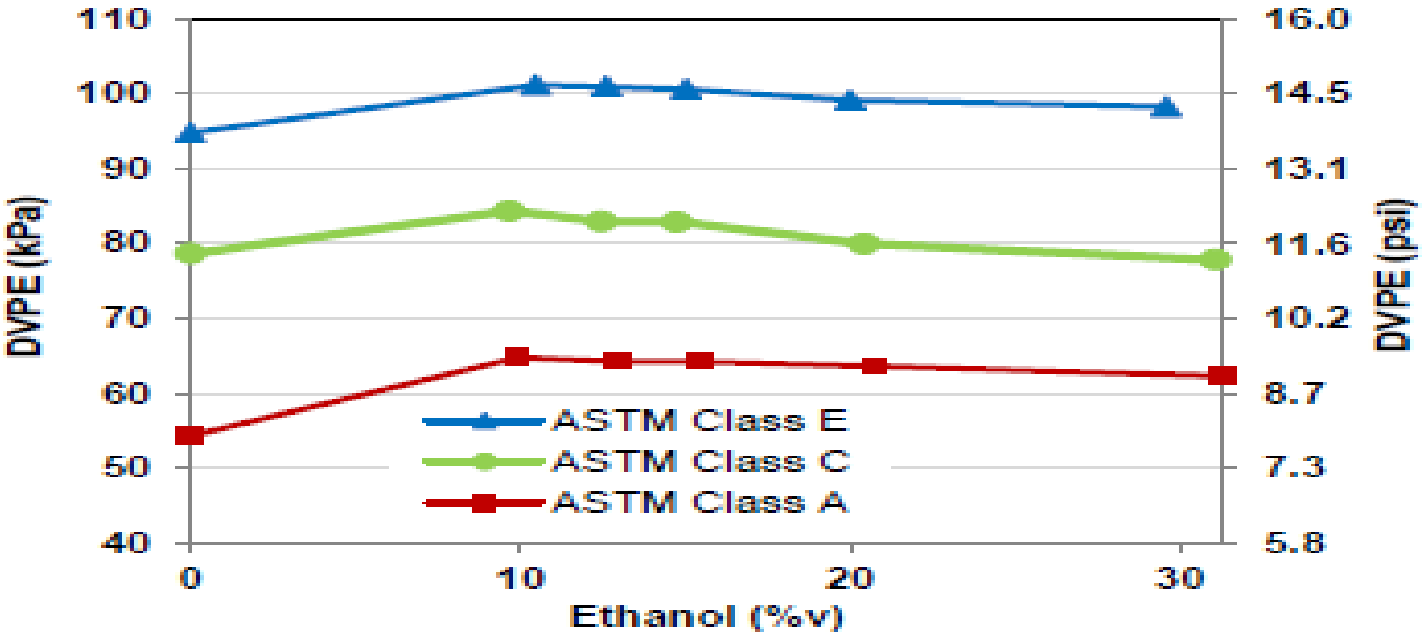

Figure 1 – Reid vapor pressures (Dry Vapor Pressure Equivalent) for ethanol-gasoline blends of varying volatility [4]. The ASTM volatility classes shown are for the base gasoline without ethanol (E0).

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Other Washington Issues

Tax Credits: Wind, Solar, Etc. Expired 2013, now being taken up again for 2yr. Ext. . Cellulose and alt fuel credits likely

Budget/Sequestration: Dollars are tighter than ever and DOE, USDA programs unable to offer much help to Ethanol

Farm Bill: Latest 5 year Extension passed, Retains some biofuel programs, ($1BB) but Denies Funding for Blender Pumps

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Ethanol Needs Rebirth as an Alt Fuel

- Unfairly Denied Status Among the Alternatives– EPACT 1992
- Alt-Fuel Tax Incentive of 50cpg
- Arguably the Best Defense we have for CO2, Efficiency/Petroleum Reduction, etc
- Ethanol Denied Incentives and Programs for NGVs, Evs, Propane, even Methanol
- Advance Technology Motor Vehicle Program has **$16 B** in Loan Authority to reduce carbon and produce efficient cars

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in E-85
E-85 mark
UNIVERSAL
Expanding E-85 market crucial for ethanol future
E-85 market called crucial for future

Conclusion & Crystal Ball

- Cellulose is extremely challenged to meet the original goals
- Slow progress will retard development of vehicles and infrastructure
- At some point E15 will provide a relief as all cars eventually are approved
- Smaller volumes but higher values from the octane drivers
- Congressional Action Unlikely but EPA remains key to the future, and last months ruling gives a glimpse to that future.

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Crystal ball, cont.

- The RVO Rule is Sucking all the Oxygen out of the Room
- CFDC, Urban Air, many others Believe a Legal challenge to the RVO is Not the Answer Unless Tied to the Toxics Issue
- The Battle Has to be Fought on Higher Ground--Health, Environment, Climate/Carbon
- That said, it must be Reversed or E15, E30, E85 will never grow and Failure becomes a self fulfilling prophecy for the oils

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Wonder Why They are Fighting Us So Hard?

- Life Before The RFS For Petroleum Industry
  - 2005-2007 Gasoline Market 145 bg,
  - With RFS less 10 BGPY= 135

- 2030 projected decrease in gasoline to 110 bgpy
  - Less .30 bgpy
  - Now Gasoline Market = 77bgpy

- Going from 140 to 77.....no wonder they are fighting.

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Nebraska Ethanol Board Administrator Todd Sneller and FlexFuel Campaign Director Doug Durante have been promoting flex fuels for years!

Thank you!

For more information log on to

www.cleanfuelsdc.org
www.ethanolacrossamerica.net

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FLEXFUEL AWARENESS CAMPAIGN
WWW.FFV-AWARENESS.ORG

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