Ready, Willing and Able: Advanced Biofuels

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Presentation Overview



Foundation for Key Discussions

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KNOWLEDGE:

No one knows this program better than the staff in EPA's Office of Transportation and Air Quality. However.....

CHALLENGE:

- This Program has been, without question, the most challenging program to be a regulator of in my experience.
- It's not just about setting standards, it's about every other issue surrounding what's in the law, what the divergence of interests are and the constantly evolving changes necessary to support implementation.

► ISSUES:

The issues with the program have caused the Agency to take a careful look at how to proceed on all fronts – causing gridlock / significant delays

SOLUTION:

- While it is prudent to be cautious, it is also important to make decisions that are critical to continued success of the program and to achieve the intended goals.
- Today's discussions are focused on a few relatively simple things that can be done without new regulations. We will also highlight what could potentially be done with new regulations.

"The" RFS

RFS 1 – Complex – Only at that time.

RFS 2 – Upped the Ante and Complexity

- National Standard -- 4 categories
- Significantly increased volumes
- Extended Timeline No Sunset
- Expanded coverage -- gasoline and diesel, on/non-road
- Explicit definitions for qualification
 - Land (Renewable Biomass)
 - Types of Feedstocks
 - Some specifics on process technoloies
 - Full Lifecycle GHGs (First Ever)
- Grandfathering
- Waivers and Exemptions!
- Other specific qualification requirements
- Reset AND MORE!!!!!

The RFS: Congress Established a Law. How hard can it be?

Multiple Inputs -- Parties -- Perspectives -- Varying Interests Making Sense of All the Input

Infrastructure

Economics

Federal / State Incentives

Energy Security, Diversity and Sustainability

> **Environmental Protection: Multi-Media Issues**

Public Policy

Global Influences

Sustainable Feedstocks

Metrics: Lifecycle, Energy, Hybrid

Vehicles/Engines

Fleet Efficiency

Fuel Types and Usage Scenarios

Fuel Blends / Market Absorption

Regulations





Things Considered in Establishing Past Regulations Still Necessary to Consider to Progressively Implement the Policy

Where Do Things Stand? Success on Foundational Level

Congressional Volume Target for Renewable Fuel



Nested Fuel Categories: What Remains



Past and Current Year Volume Standards - What Will Shape Future Standards? -

Billions of Gallons	2014	2015	2016	2017	2018	2019 Proposed	2020* +
Cellulosic biofuel (million gallons)	33	123	230	311	288	381	Reset 2020 • What is it and What
Biomass-based diesel (bgs)	1.63	1.73	1.9	2.0	2.1*	2.1 Final	to 2022
Total Advanced biofuel (bgs)	2.67	2.88	3.61	4.28	4.21	4.88	Set Post •What is it and What Can Be
Total Renewable fuel (bgs) Conventional Fuels =15BGS	16.28	16.93	18.11	19.28	19.29	19.88	2022 Done Later?

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*BBD Standard for 2020 is already set at 2.43 bg



Moving Forward: Paths of Least Resistance and Highest Value

What to Consider?

What can be done!! - Immediately - Soon

Tiering Actions In Terms of Level of Effort

Tier 3	• Heavy Lift: Requires Legislation – But may be necessary to support true change / growth in the Future
Tier 2	 Moderate: Existing Authority but Expected to Require Regulatory Action
Tier 1	 Relatively Easy: Allowed Under Current Regulations – Administrative in Nature – Still requires Agency to make supporting decisions

Tier 3 Decisions – Legislative Action

- Program Repeal Highly Unlikely at This Time
- Program Reform Most Likely if Any Legislative Efforts are Made

► Type of Reform

► Complete Reform

▶ Partial Reform – Not Sure this is Feasible



Tier 2 Decisions - Regulatory

- Examples of Potential Tier 2 Opportunities More Comprehensive List Can Be Developed
 - Feedstock Pathways
 - Multiple Opportunities for Consideration
 - Example: Complete existing Tree pathways proposed in REGS Rule
 - Revisit Renewable Biomass Applications
 - Example: Qualifications of currently approved feedstocks from naturally regenerative managed forests
 - Retail Comingling of Compliant Products
 - Potentially being addressing under EPA Streamlining Efforts



Focus on Tier 1 – Administrative Decisions





Legal and Regulatory Authority

- Act Allows and calls for it
 Existing Regulations Can Support it
- Agency can address one key issue by Finalizing Proposed REGS OR
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- OAllow for registration and oversight under current regulations



Pathway to Produce a Qualified Fuel

- Ouse of Existing Approved Pathways (Feedstock to Fuel)
- @Example: Wood Residues
- Contributes to Advanced and Cellulosic Fuels
- Drop-In Fuels
- **OUSE of existing infrastructure**
- / transparency to supply, distribution, storage and use



Supports Program Goals

- Domestic Energy Production and Security
- @Rural Development
- Reduce Greenhouse Gas Emissions (Best Performing)
- Increased Volumes Conventional is Already
- Achieved
- Next volumes must be cellulosic and other advanced

SMALL ACTIONS

BIG CHANGES

Key Impacts of Positive Tier 1 Decisions



Tier 1 Decisions - Administrative

Key Tier 1 Opportunities

- <u>Bio-intermediates</u> Not explicitly prohibited under existing Regs
 - ▶ EPA preferred approach New Regulatory Requirements for Market Oversight (REGS Rule)
 - ▶ HOWEVER, Can be accomplished through specific registration requirements
 - Consideration of Limited Interim Program / Test Program
 - Selective Policy that alleviates compliance concerns
- Feedstock Co-Mingling Two Potential Opportunities
 - Compliant / Non Compliant Policy
 - 2 Types of Compliant Comingled Feedstock Policy Example: Advanced and Cellulosic
 - Mass Balance / Proportionality Approach Not explicitly restricted under existing regulations
 - Could potentially be addressed via policy / guidance
 - Allowed for Agricultural Feedstocks under Aggregated Compliance Approach
 - For Cellulosic Adapt approach at facilities, not at land
 - Multiple Compliant Feedstock Allowances (i.e. Advanced / Cellulosic)
- <u>Alternative Testing Procedures</u> Currently allowed for under existing regs Just few if any approvals of alternative methods
- Final Determinations on Wastes Waste determinations are difficult for many reasons however a more rational approach to application could free up waste feedstock for use in this program



Upcoming Reset or Set – These are Potential Vehicles for Addressing Tier 2 Issues

What is Reset – Addresses 2021 and 2022

- 211(o)(F) of the Clean Air Act Requires the Agency Reset the Congressional Volumes when the standards have been reduced by 20% or more in 2 consecutive years or 50 % or more in one year.
- > If the final 2019 standards remain as proposed, all categories will have effectively been triggered to initiate a reset process
- ▶ Timing: Should establish standards within one year So they would apply to the 2020 Standards through 2022
 - Expect a Proposal early next year, likely included in 2020 RVO
- Criteria 6 Main Factors ~20 Plus Overall Factors (paragraph (2)(B)(ii))
 - ▶ Little guidance on how to weigh factors (See next Slide) in determining decisions
- While the Agency sets volume standards each year anyway, this would actually change the congressional volumes from those stipulated in the Act
- Agency should account for all volume potential under Tier 1 and Tier 2 in establishing any new volumes.

What is Set – Addresses 2023 and Beyond

- The RFS Program doesn't end. The Act requires the Agency take a similar approach to above However, with no volumes stipulated in the Act post 2022, the program could potentially change in other material ways
- Some Guidance but pretty much a blank slate
- Agency should prioritize Cellulosic / Advanced Fuels



Reset and Set ---- Required Analyses

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- New volumes must be based <u>on a review of implementation of program to date</u> and evaluation of ~20 factors
- Agency must also "coordinate" with DOE and USDA Go Through Public Process
- Economic impacts
 - ► Food prices
 - Cost to consumers of transportation fuel
 - Cost to transport goods
 - Job creation
 - Rural economic development
 - Price of agricultural commodities
 - Other
 - Expected annual rate of future commercial production
 - Energy security
 - Supply of agricultural commodities
 - Infrastructure, including :
 - Deliverability of materials, goods, and products other than renewable fuel
 - Sufficiency of infrastructure to deliver and use renewable fuel
 - Water supply



- ► Environmental impacts
 - ► Air quality
 - Water quality
 - Climate change
 - Conversion of wetlands
 - Ecosystems
 - Wildlife habitat

Conclusions

- Congress Prioritized Cellulosic / Advanced Biofuels in the Act beginning in 2016 and beyond.
 - All incremental volumes are to be advanced and cellulosic.
 - These <u>can include</u> on and off-road fuels <u>as well as Jet and Heating Oil.</u>
- The Agency has also indicated cellulosic and better performing advanced biofuels are their priorities going forward.
- There are real opportunities in todays market to utilize cellulosic feedstocks, that have existing pathways, that have demonstrated technologies deployed to produce these very low GHG fuels, including drop-in fuels that are transparent to todays vehicles, engines and infrastructure.
- These can deploy quickly and under existing regulatory structures if the Agency would opt to apply administrative allowances that still support appropriate oversight of the necessary supply chains.
- ► Tier 1 Decisions Can Be Implemented Almost Immediately!
- Reset is a potential vehicle to collectively address Tier 2 issues and should strongly consider it as an opportunity to further Congressional Goals.

Thank You!



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