



EISA 2007: Renewable Fuels Standard Program

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Presentation Overview

- **Overview of Renewable Fuels Standard Provisions In EISA 2007**
- **Reflection on Current Renewable Fuel Standard (RFS Program) as Established under EPAAct 2005**
- **Highlights - Energy Independence and Security Act of 2007**
 - **The New RFS (RFS2) – What’s New and Important**
 - **Overview of other Key Related Studies, Reports and Processes**
- **What’s Next**

Energy Independence & Security Act - RFS 2 A General Timeline and Process

- **EISA signed by the President December 19, 2007**
- **EISA - Final RFS 2 Rule required by December 19, 2008**
- **EISA increases volume under RFS1 for 2008**
 - Volume changed from 5.4 to 9.0 bill gal
 - Implemented administratively thru new Federal Register Notice (Feb 2008)
 - No rule changes for 2008 – Use RFS 1
- **Major modifications to the current RFS program beginning in 2009**
- **RFS 2 – Plan to build off of the foundation of RFS1**
 - Rule development process similar to RFS 1
 - Engage early / often with stakeholders throughout the process
 - Continue w/close consultation – DOE, USDA, Other federal partners

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Renewable Fuels: Reflection on EAct 2005 RFS Program

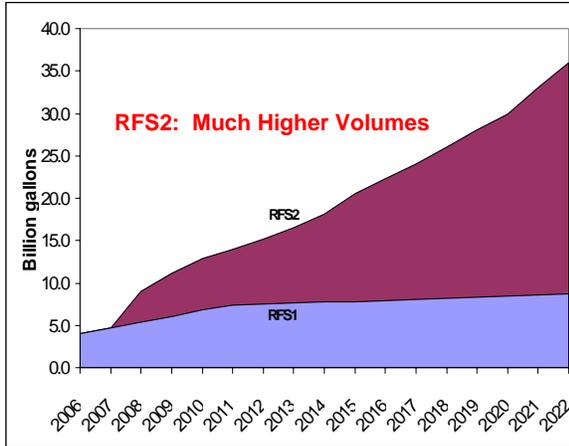
- **Default Rule Applied for 2006**
- **Final Renewable Fuel Standard (RFS)**
 - Final Rule Published May 2nd 2007
 - Official Program Start - Sept 1, 2007
- **EPA converts RFS into percent of gasoline production**
 - Obligation Applies to refiners, importers, gasoline blenders
 - 4.0 billion gallons/yr in 2006 -- growing to 7.5 bgy in 2012
- **Major Compliance Element - Trading and Banking Provisions**
 - Flexible Program - Based on a RIN – Renewable Identification Number (i.e. credits)
 - Allows for compliance when, where, and how it makes the most sense
- **Renewable values based on volumetric energy content compared to corn ethanol**
 - Corn-ethanol: 1.0
 - Biodiesel (alkyl esters): 1.5
 - **Cellulosic biomass ethanol: 2.5**
(As specified in EAct)



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EISA of 2007: New Challenges and Direction

- Volumes increase to 9 Bgal/yr in 2008 – escalating to 36 Bgal/year by 2022
- Establishes new renewable fuel categories and eligibility requirements, including GHG reduction thresholds!
- Provides new waivers and paper credit provisions
- Includes new obligation for fuels
- Includes new studies and reports



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RFS2: 4 Nested Standards (bill gal)

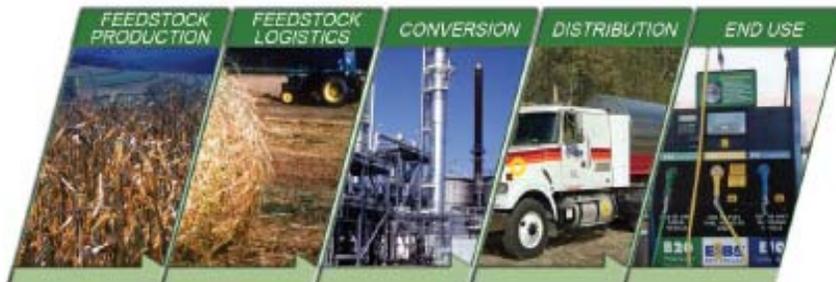
Year	Conventional Biofuels (Grandfathered or 20% Reduction)	Advanced Biofuel			Total Advanced Biofuel	Total Renewable Fuel
		Biomass-Based Diesel (50% Reduction)	Non Cellulosic Advanced (50% Reduction)	Cellulosic Biofuel (60% Reduction)		
2006	4.00					4.0
2007	7.70					4.7
2008	9.00					9.0
2009	10.50	0.5	0.1		0.6	11.1
2010	12.00	0.65	0.2	0.1	0.95	12.95
2011	12.60	0.80	0.3	0.25	1.35	13.95
2012	13.20	1.0	0.5	0.5	2.0	15.2
2013	13.80	1.0	0.75	1.0	2.75	16.55
2014	14.50	1.0	1.00	1.75	3.75	18.15
2015	15.00	1.0	1.50	3.0	5.5	20.5
2016	15.00	1.0	2.00	4.25	7.25	22.25
2017	15.00	1.0	2.50	5.5	9.0	24.0
2018	15.00	1.0	3.00	7.0	11.0	26.0
2019	15.00	1.0	3.50	8.5	13.0	28.0
2020	15.00	1.0	3.50	10.5	15.0	30.0
2021	15.00	1.0	3.50	13.5	18.0	33.0
2022	15.00	1.0	4.00	16.0	21.0	36.0

Key New Obligations and Definitions

- Standard extended from Gasoline to Gasoline and Diesel - Nonroad fuel in addition to highway
- Jet fuel and heating oil aren't covered, but renewable fuel sold into these markets can generate RINs
- Definitions significantly changed from RFS1 and / or now include new elements
 - Lifecycle Defined and Thresholds Established
 - Facility Grandfathering Provisions
 - New Renewable Biomass Definition / Land Restrictions
- Creates new categories of renewable fuel with green house gas thresholds

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RFS 2 – Expanded Program Considerations Throughout the Supply Chain



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A Critical Element of EISA: Lifecycle Assessment

- **Each fuel category required to meet mandated GHG performance thresholds (reduction compared to 2005 baseline petroleum fuel replaced)**
 - **Conventional Biofuel** (ethanol derived from corn starch)
 - Must meet 20% lifecycle GHG threshold
 - Only applies to fuel produced in new facilities
 - **Advanced Biofuel**
 - Essentially anything but corn starch ethanol
 - Includes cellulosic biofuels and biomass-based diesel
 - Must meet a 50% lifecycle GHG threshold
 - **Biomass-Based Diesel**
 - E.g., Biodiesel, “renewable diesel” if fats and oils not co-processed with petroleum
 - Must meet a 50% lifecycle GHG threshold
 - **Cellulosic Biofuel**
 - Renewable fuel produced from cellulose, hemicellulose, or lignin
 - E.g., cellulosic ethanol, BTL diesel, green gasoline
 - Must meet a 60% lifecycle GHG threshold
- **EISA language permits EPA to adjust the lifecycle GHG thresholds by as much as 10%**

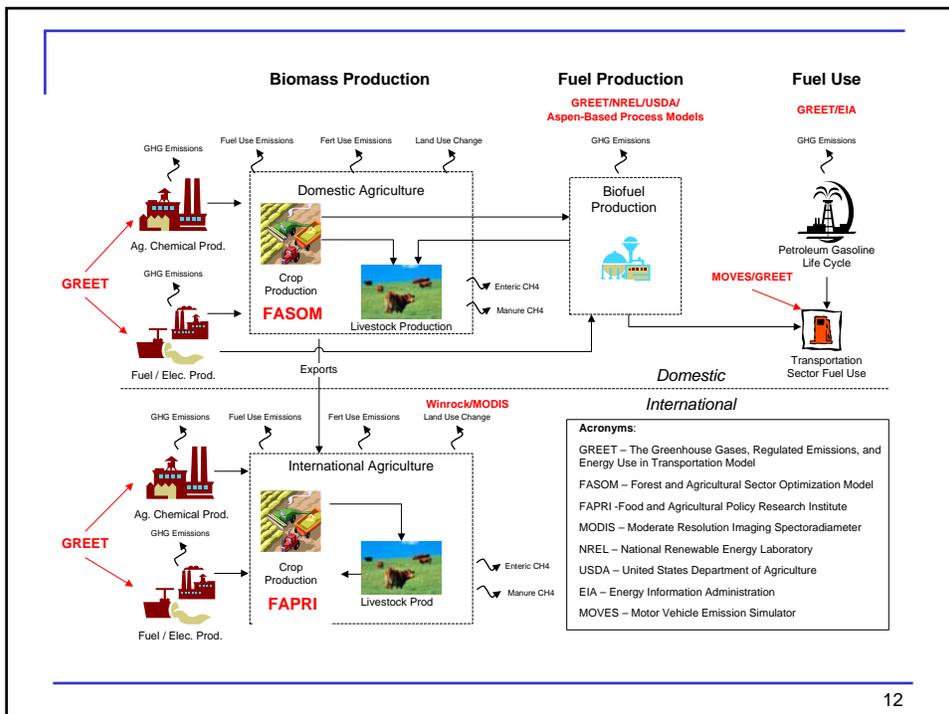
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Definition of Lifecycle GHG Emissions

“(H) LIFECYCLE GREENHOUSE GAS EMISSIONS.—The term ‘lifecycle greenhouse gas emissions’ means the aggregate quantity of greenhouse gas emissions (including direct emissions and significant indirect emissions such as significant emissions from land use changes), as determined by the Administrator, related to the full fuel lifecycle, including all stages of fuel and feedstock production and distribution, from feedstock generation or extraction through the distribution and delivery and use of the finished fuel to the ultimate consumer, where the mass values for all greenhouse gases are adjusted to account for their relative global warming potential.

Lifecycle Analysis – What’s Considered?

- Domestic and International agricultural sector
 - Direct GHG emissions from producing feedstock, indirect impacts on other crops (e.g., less rice production), animals (fewer cattle), land use change
- Fuel production
 - Energy use and GHG emissions at production facility
- Fuel / feedstock distribution
 - Transporting feedstock to plant
 - Transporting fuel to end use
- Tailpipe emissions
 - Vehicle GHG emissions
- Baseline petroleum fuel
 - GHG emissions associated with producing gasoline and diesel fuel



LCA – Summary and Next Steps

- In developing the lifecycle methodology, our approach has been to use the best models, tools and resources available
 - Using sensitivity analysis and examining multiple approaches to address key areas of uncertainty
- The notice of proposed rule-making (NPRM) provides an important opportunity for EPA to present our work and to seek comment on proposed approaches and alternative approaches
 - Planning to hold workshops on lifecycle analysis following release of the NPRM
- Engage experts between proposal and final to ensure expert-level feedback
 - Seeking advice from EPA's Science Advisory Board (SAB)
 - Plan to conduct formal external peer-reviews of key components
- This input along with the additional analysis we will be conducting between now and the final rule will further improve our methodology
- Anticipate 3-5 year cycles for updating the analysis

Analyses for Rulemaking

- Renewable fuel production and use projections, technology and cost assessments
- GHG Lifecycle Modeling, Inventory, and Benefits
- Other Pollutant Inventory, Air Quality and Benefits
- Agricultural Sector Impacts
- Water and Soil Impacts
- Macroeconomic Impacts
- Energy Security

Status of Proposed Rulemaking

- Package is undergoing inter agency review
- Next steps
 - Revise per comments from interagency process
 - Signature by EPA Administrator
 - Package to be Published in Federal Register
 - Public Comment Process
- Final Intended for Summer 2009
- Implementation Planned for 2010

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Two Key Air / Environmental Impact Studies/Reports in EISA

Authority / Section	Action (Reg, Research or Report)	Title	Overview of Requirement	Lead / Timing
Sec. 204 (Primary)	Study/ Report	Env. and Resource Conservation Impacts	EPA shall assess and report to Congress on the impacts to date and likely future impacts of Section 211(o) of CAA.	EPA - Within 3 years and every 3 years after.
Sec. 209 (Primary)	Study/ Report/ Potential for Regulatory Action	Anti-backsliding	Study whether renewable fuel volumes adversely affect air quality as result of changes in vehicle emissions. Includes study of different blend levels. Requires promulgation of fuel regs to mitigate to greatest extent possible any adverse impacts.	EPA - Study within 18 months. Promulgate regulations within 3 years.

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Questions



Thank you