

# The Energy Independence and Security Act – RFS 2



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Global Bioenergy Partnership Task Force Meeting  
March 6, 2008

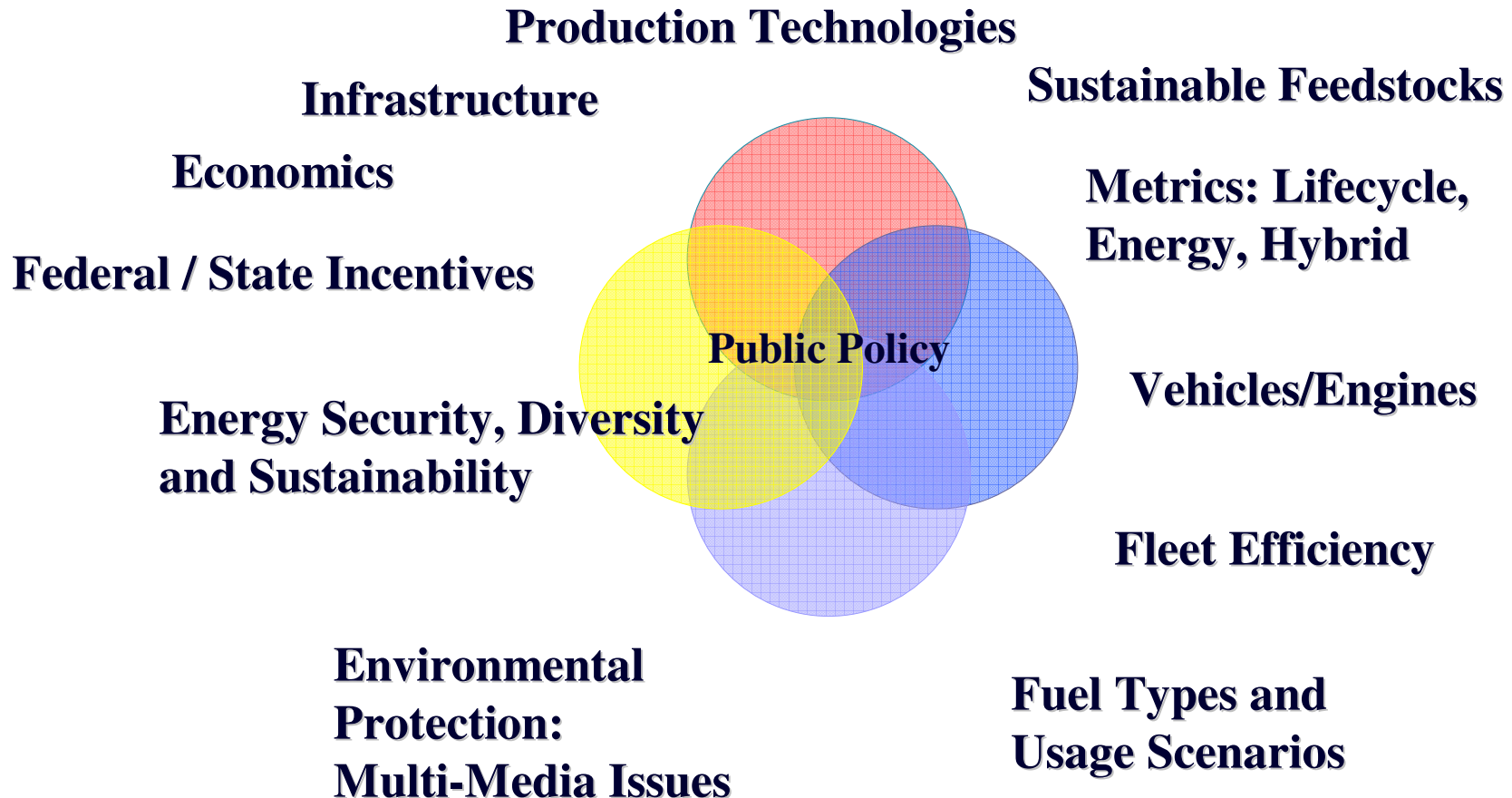


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# Multiple Inputs -- Multiple Parties -- Multiple Perspectives -- Varying Interests

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# Reflection on Energy Policy Act of 2005 & Renewable Fuel Standard Program

## □ Ethanol Equivalent Volumes Required

- **2006: 4.0 billion gallons/yr**



- **2012: 7.5**
- **2013+: Constant %, 0.25 Bgal cellulosic std**



## □ “Equivalence Value” for various renewables based on volumetric energy content in comparison to ethanol:

- **Corn-ethanol: 1.0**
- **Biodiesel (alkyl esters): 1.5**
- **Renewable diesel: 1.7**
- **Biobutanol: 1.3**
- **Cellulosic biomass ethanol: 2.5 (Mandated by Act thru 2012)**



# Other Factors and Driving Forces



- **January 23, 2007 - President calls for a commitment to reduce petroleum-based gasoline consumption by 15% by 2017 through renewable and alternative fuels**
  - **15% reduction in 2017 translates into a target of ~35B gallons of renewable and alternative fuel use in transportation system.**
  - **5% through vehicle efficiency improvements; equivalent of ~4% per year**
- **April 2, 2007 - Supreme Court rules that EPA must take action under Clean Air Act regarding greenhouse gas emissions from motor vehicles**
  - **CO2 is a pollutant**
  - **EPA must use different criteria to base decision on whether or not to regulate (Endangerment finding)**
- **May 14, 2007 - President signs Executive Order requiring coordination among federal agencies tasked with development of any regulations affecting greenhouse gas emissions from motor vehicles**



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# Energy Independence and Security Act (EISA) Passed – December 19, 2008

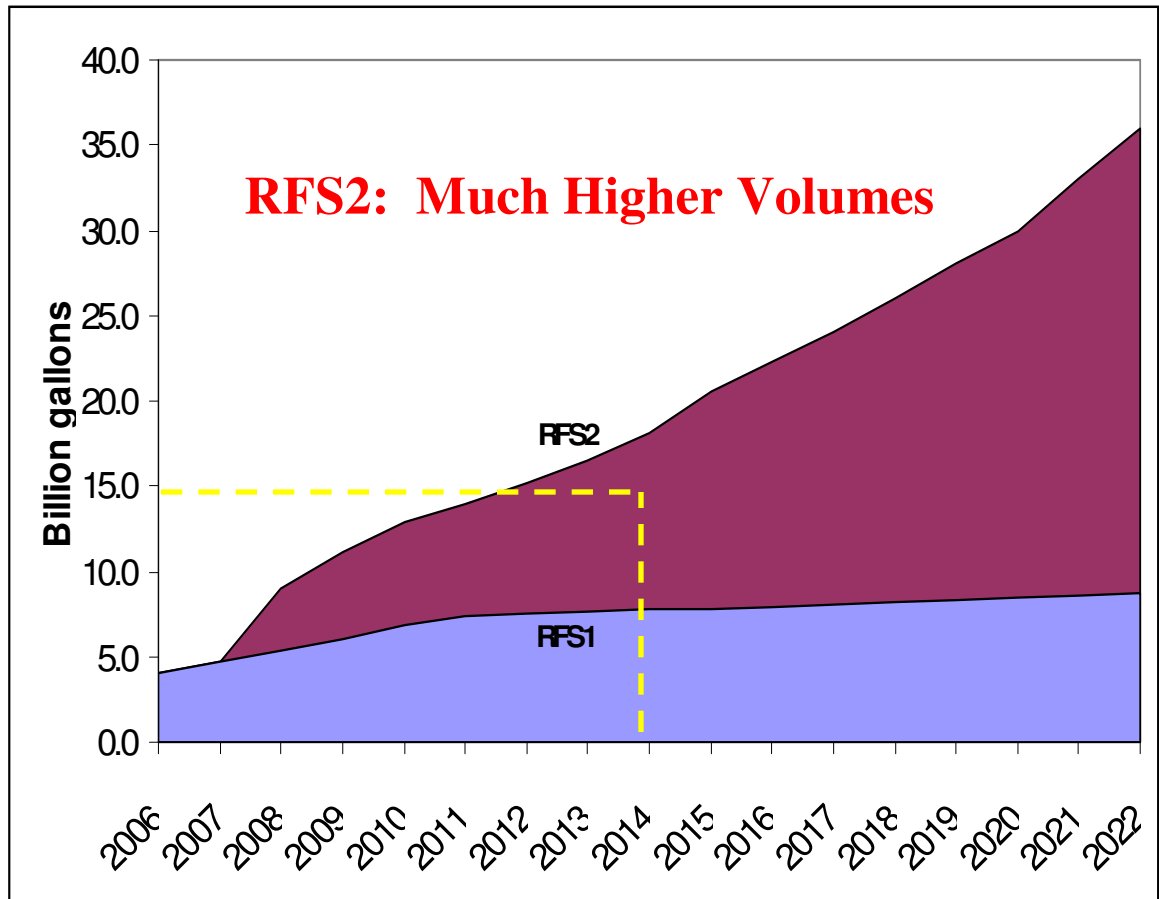
# New RFS – Process and Timeline



- **Another rule required on an even shorter schedule than under EPAct 2005**
  - Final RFS 2 Rule required by December 19, 2008
  - Required to be effective January 1, 2009
    - Currently evaluating multiple development and implementation options
  
- **EISA also increases volume under RFS1 for 2008**
  - Volume changed from 5.4 to 9.0 bill gal
  - Implemented administratively thru new Federal Register Notice
  - No rule changes for 2008 – Use RFS 1
  
- **RFS 2 can build off of the foundation of RFS1**
  - RIN system may remain virtually intact
  - Intent of legislative drafters
  
- **Currently working through what EISA will really mean**
  - Several new challenging provisions
  - High volumes make every key issue important
  
- **Picking up where we left off from RFS1 with our stakeholders**
  - Engage early and often throughout the process

# Primary EISA Renewable Fuel Standard Provisions

- Modifies Current RFS program
  - Volumes increase to 36 bgy by 2022
  - Establishes new renewable fuel categories and eligibility requirements
  - Provides new waivers and paper credit provisions
  - Includes new obligated parties
  
- New studies and reports



# New Renewable Fuel Definitions

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- Significantly changed from RFS1
- Creates new categories
- Eliminates some old categories
  - Waste-derived ethanol
  - "90%" cellulosic ethanol
- Definitions now include new elements
  - Lifecycle GHG reduction thresholds
  - Existing cropland criterion



# Four Categories of Fuels

Type of Fuel	BGY
<b>Total Renewable Fuels by 2022</b>	<b>36 BGY</b>
<b>Corn Ethanol</b>	<b>15 BGY cap</b>
<p><b>Advanced Biofuels</b> – Includes imported biofuels and biodiesel.            Includes 1 billion gpy biodiesel starting in 2009            All must achieve <math>\geq 50\%</math> reduction of GHG emissions from baseline*</p>	<b>21</b>
<p><b>Cellulosic Fuels</b> – Includes cellulosic ethanol, biobutanol, green diesel, green gasoline            All must achieve <math>\geq 60\%</math> reduction of GHG emissions from baseline*</p>	<b>16</b>
<p>*Baseline = average lifecycle GHG emissions as determined by EPA Administrator for gasoline or diesel (whichever is being replaced by the renewable fuel) sold or distributed as transportation fuel in 2005</p>	

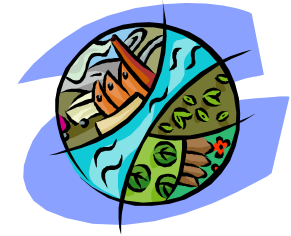
# New Obligations and Outlets

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- Standard extended to:
  - Diesel fuel in addition to gasoline
  - Nonroad fuel in addition to highway
  
- Obligated parties now include refiners, importers, blenders of these fuels (gasoline and diesel)
  
- Jet fuel and heating oil aren't covered, but renewable sold into these markets can generate RINs (credits)

# New Lifecycle GHG Criteria



- Renewable fuels must now meet a 20% lifecycle GHG threshold relative to the gasoline or diesel fuel they displace
  - EPA must determine lifecycle performance the various fuels
  - Including emissions resulting from international land-use changes
- Plants that commenced construction prior to EISA are grandfathered
  - Though no clear guidance on what this means
- Anticipate extensive interaction with stakeholders

# Four Renewable Fuel Categories with LC Standards

- Biomass-Based Diesel
  - E.g., Biodiesel (FAME), “renewable diesel” if fats and oils not co-processed with petroleum
  - Must meet a 50% Lifecycle GHG threshold
  - 20-50% still counts as renewable fuel
- Cellulosic Biofuel
  - Renewable fuel produced from cellulose, hemicellulose, or lignin
  - E.g., Cellulosic ethanol, BTL diesel
  - Must meet a 60% Lifecycle GHG threshold
- Advanced Biofuel
  - Essentially anything but corn starch ethanol
  - Includes Cellulosic Ethanol and Biomass-based diesel
  - But must meet a 50% Lifecycle GHG threshold
- Provisions for EPA to adjust the lifecycle GHG thresholds by as much as 10



# What Ifs: EISA Waiver Authorities

- **General:** Anyone subject to the requirements can now petition for a waiver or relaxation of any of the four standards
  - Severe harm to the economy; Inadequate supply
  - EPA must approve or disapprove within 90 days but requires opportunity for notice and comment
  - Limited to one year, but can be renewed
  
- **Biomass Based Diesel:** EPA can lower the standard in the Act
  - If significant supply or other market circumstances lead to high prices
  - Up to 15% or 30% if renewed
  - Can reduce advanced biofuel and total renewable fuel standards accordingly
  
- **Cellulosic Biofuel Standard:** Irrespective of the volumes required in the Act
  - The Administrator must set the cellulosic standard each November for the following year “Based on” October EIA projections
  - If the cellulosic standard is set less than the volume required in the Act EPA must make EPA-RINs available for sale at the greater of
    - 25 cent/gallon
    - \$3.00 per gallon less the wholesale price of gasoline (at today’s prices this equates to ~70 c/gal)
  - EPA can reduce the standards for advanced biofuel and total renewable fuel accordingly

# New “Existing Cropland” Criteria

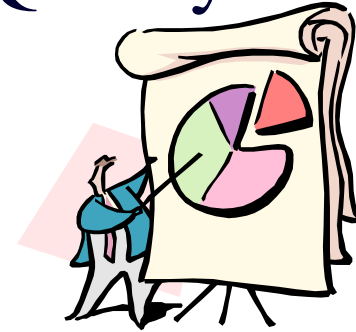
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- Renewable fuels must now be produced from renewable biomass harvested from land “cleared or cultivated” prior to EISA
  
- Development of this provision will require extensive stakeholder interaction
  - Renewable fuel producers usually do not know the source of their feedstocks – enforcement?
  - How far back could it have been cropland – pre-colonial times?
  - How applied/enforced internationally?

# Analyses for Rulemaking – Expect this and Much More

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- ❑ Co-pollutant Inventory, Air Quality and Benefits
- ❑ Water and Soil Impacts
- ❑ Macroeconomic Impacts
- ❑ Energy Security
- ❑ Agricultural Sector Impacts
- ❑ GHG Lifecycle Modeling, Inventory, and Benefits



# Next Steps

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- RFS1 remains in place
  
- FR Notice for 2008-Completed in February
  - Volume changed from 5.4 to 9.0 bill gal
  
- Rulemaking process Underway
  - Stakeholder outreach
  - Analysis Plan

# Questions

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**Thank you**

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