

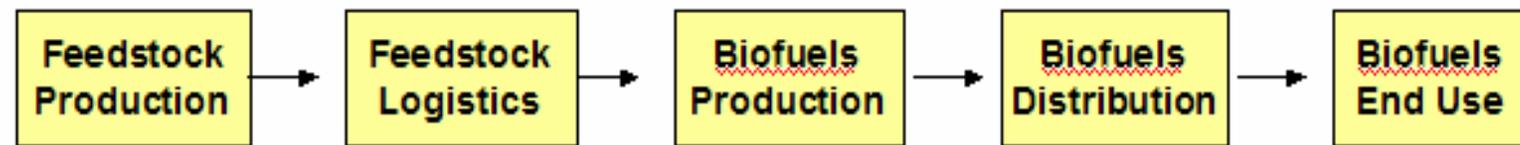
EPA Biofuel Strategy

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Science Advisory Board

Integrated Nitrogen Committee

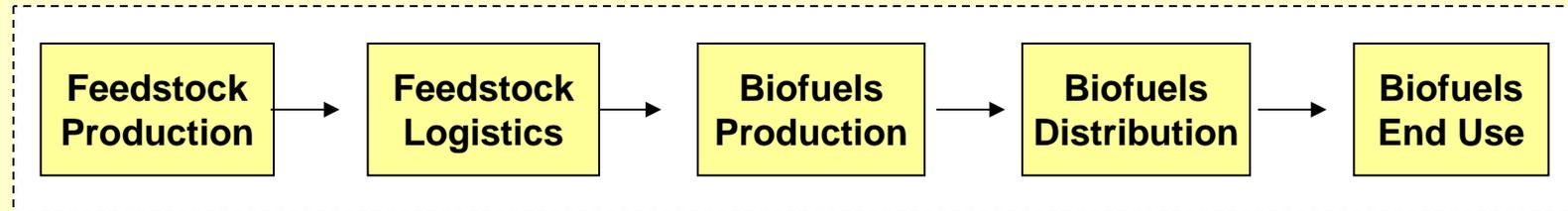
April 10, 2008



Background

- The rapidly growing biofuel industry impact all programs' mission responsibilities and performance goals
- NACEPT recommended that EPA develop a *Biofuel Strategy*
- Administrator accepted recommendation. ORD, OAR, Region 7 and Agricultural Counselor coordinated Strategy development.
- *National Biofuel Action Plan* under development
- 2007 EISA added new EPA mandates
- Revise and finalize for presentation to Administrator in June 2008

The Biofuel System is the Framework for EPA Strategy



Ag Crops
 Ag Residues
 Energy Crops
 Forest Residues
 Wastes
 Algae



Harvesting & Collecting
 Storage
 Pre-Processing
 Transportation



Fuel types
 Biochemical Conversion
 Thermochemical Conversion
 Biological Conversion
 Chemical Conversion



Distribution by barge, truck, rail, pipeline
 Storage in tanks
 Dispensing



Transportation fuels in light & heavy duty vehicles & trucks, Off - Road vehicles, Locomotives, Flight technologies, Boats/Ships
 Power & Generators
 Chemical Feedstocks for Manufacturing

Energy and Independence Security Act (EISA) Has Major Impacts on EPA

- Requires EPA to develop new **Renewable Fuel Standard** to achieve goal of expanding biofuels to 36 billion gallons by 2022
- Requires **lifecycle assessments** of different fuel types and blends compared to petroleum fuel
- Requires that biofuel production does not adversely impact the environment or natural resources
 - **EPA to assess and Report to Congress** on environmental impacts of biofuel system
 - Particular recognition of impacts to water quality, EISA amends the Clean Air Act to integrate *water quality* into a fuel assessment analysis

EISA Impacts Renewable Fuel Standards

- EPA Renewable Fuel Standard-1 (Before EISA) analysis assessed first order impacts
 - GHG impacts of corn and soybean acres in US
- RFS-2 (After EISA) more complete assessment of domestic and international impacts
 - Corn and soybeans plus other crops
 - Land use changes
 - International impact of decreased US exports
 - Increased crop production in other countries adds GHG
 - Land use impacts critical

Renewable Fuel Standard Based on Lifecycle Assessment

- Lifecycle assessment required to determine which fuels meet mandated GHG performance thresholds compared to petroleum fuel replaced
 - 20% reduction for new facility renewable fuel
 - 50% reduction for biomass-based diesel
 - 60% reduction for cellulosic biofuel
- Lifecycle assessment must include impacts on domestic and foreign land use
- Corn based ethanol capped at 15 billion/gallons by 2015

EISA Section 204 EPA Report to Congress

SEC. 204. Not later than 3 years after the enactment of this section and **every 3 years thereafter**, the Administrator of the Environmental Protection Agency, in consultation with the Secretary of Agriculture and the Secretary of Energy, shall assess and report to Congress on the impacts to date and likely future impacts of the requirements of section 211(o) of the Clean Air Act on the following:

- (1) Environmental issues, including air quality, effects on hypoxia, pesticides, sediment, nutrient and pathogen levels in waters, acreage and function of waters, and soil environmental quality.
- (2) Resource conservation issues, including soil conservation, water availability, and ecosystem health and biodiversity, including impacts on forests, grasslands, and wetlands.
- (3) The growth and use of cultivated invasive or noxious plants and their impacts on the environment and agriculture.

In advance of preparing the report required by this subsection, the Administrator may seek the views of the National Academy of Sciences or another appropriate independent research institute.

EISA Section 232 Promotes Sustainable Biofuel Production

“Develop cellulosic and other feedstocks that are less resource and land intensive and that promote **sustainable use of resources**, including soil, water, energy, forest and land, and ensure protection of air, water, and soil.”



Outline of EPA Biofuel Strategy

1. Purpose
2. Environmental Benefits and Impacts
3. Role of EPA
4. International Impacts
5. Research Gaps and Challenges
6. Actions Items

Aim of the Strategy

Position EPA to strategically:

- Address biofuel issues in an integrated cross-media manner
- Ensure EPA environmental strategic goals can be met
- Advance biofuel industry in a sustainable manner
- Respond to public and industry concerns
- Meet national biofuel goals
- Identify new research and technical opportunities and promote solutions to address environmental or health impacts