




United States
Department of
Agriculture

Renewable Energy Programs

A large, stylized graphic in the background of the slide. It features a bright orange sun with rays at the top, and two large, light green leaves with prominent veins below it. The entire graphic is set against a light blue background.

Biomass R&D Board
Technical Advisory Committee Meeting-
USDA Update
September 28-29, 2010

William (Bill) F. Hagy III
Director of Alternative Energy Policy- USDA

USDA is an equal opportunity provider, employer, and lender.

AGENDA

1. Brief Update on Title IX Programs
2. USDA Biofuels Roadmap
3. Sustainability Task Order
4. Biomass Board Update
5. Outreach/Marketing to Producers



Title IX Program Update

- Biomass Crop Assistance Program
 - Biorefinery Assistance Program
 - Repowering Assistance Program
- Advanced Biofuel Payment Program
- Rural Energy for America Program

2008 Farm Bill Title IX



- **Section 9011: Biomass Crop Assistance Program**
 - Supports the establishment and production of crops for conversion to bio-energy in project areas and to assist with the collection, harvest, storage and transportation of eligible material for use in biomass conversion facilities.

- **Section 9003: Biorefinery Assistance Program –**
 - Provides **loan guarantees** of up to \$250 million for the development, construction and retrofitting of commercial-scale bio-refineries

- **Section 9004: Repowering Assistance –**
 - Provides **payments** to existing bio-refineries to replace fossil fuels used to produce heat or power to operate the bio-refineries with renewable biomass.

2008 Farm Bill Title IX *cont.*



- **Section 9005: Bioenergy Program for Advanced Biofuels –**
 - Provides **payments** to eligible agricultural producers to support and ensure an expanding production of advanced bio-fuels
 - Payments of \$14.5 million awarded to 136 producers

- **Section 9007: Rural Energy for America Program**
 - Establishes a grant and loan guarantee program to assist agriculture producers and rural small businesses in purchasing renewable energy systems and making energy efficiency improvements
 - Establishes a grant program for energy audits, technical assistance and feasibility studies

Steps to Boost Biofuels Production

➤ **USDA Biofuels Strategic Production Report**

▪ **Regionalization Strategies**

- Existing eligible feedstock supply and land availability
- Current and potential infrastructure capacity
- Current and potential regional consumer demand
- Additional Investment- 527 new biorefineries totaling \$168 billion investment

▪ **Renewable Biofuels Mandate of 36 bgy by 2022**

- i. Corn Starch Based Ethanol Mandate—15 bgy
- ii. Advanced Biofuel Mandate – 21 bgy
 - 13.4 bgy – dedicated energy crops
 - 0.5 bgy—Oilseeds (soy, canola)
 - 4.3 bgy – crop residues
 - 2.8 bgy – woody biomass

Steps to Boost Biofuels Production

USDA Biofuels Strategic Production Report

Objectives:

- Providing the practical knowledge from the field that can enhance various models for biofuel production;
- Identify challenges and opportunities for expanding the biofuels market;
- Help develop solutions to this massive undertaking.

Assumptions:

- Costs: \$8 per gallon of capacity
- Size: 40 million gallon per year capacity
- Regions: Developed based on crops that are prevalent based on historic planting data and weather, soil and water conditions



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Steps to Boost Biofuels Production

USDA Biofuels Strategic Production Report Regional Contribution

Region	Contribution to 21bg of RSF2
Southeast	49.8%
Northeast	02.0%
Central-Eastern	43.3%
Northwest	04.6%
Western	<0.3%



Booze Allen Strategic Plan

Data Collection/Inventory (Phase I – in progress)

Identify the realm of datasets, models that address sustainability

Sourcing Strategy

- Draw from 13 initial resources identified by USDA
- Independent research
- Outreach to USDA, other agencies

Deliverables



Resource Inventory

Assessment/Screening (Phase II – in Progress)

Evaluate the tools & datasets for relevancy, quality

Approach

- Capture basic information
- Categorize by technical indicator;
- Assess against indicators of quality/ relevancy
- Outreach to experts

Deliverables



Data Assessment Matrix

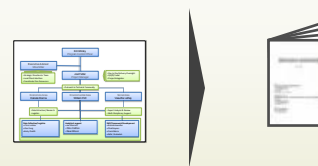
Prototype Development (Phase III)

Aggregate the most useful tools into an analytical framework

Objective

- Provide a discussion document outlining inputs, models/datasets used, weighting factors.

Deliverables



Prototype Summary

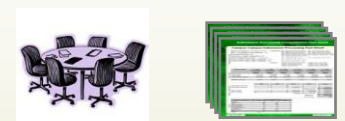
Vetting, testing, briefing (Phase IV)

Gather external perspectives, case test, report outcomes

Key points

- Expert panel to convene pre-thanksgiving
- Road test the methodology
- Briefing to the R&D Board on 12/16

Deliverables



Workshop

Briefing

[September 06 – 30]

[Oct – Dec. 16]

[Sept. 06 – Oct. 15]



Booze Allen Strategic Plan

Resources Identified

Screening process intended to provide objective review of each tool

Data Collection Targets

Pre-identified through initial outreach

- The Local Unit Criteria and Indicator Development (LUCID)
- USDA OEM chartered by 2709 Farm Bill sec. 2709
- International Standard for Environmental LCA
- Chesapeake Bay Comm. 'Chesapeake Biofuels Policies'
- DOE's (JEDI)
- RD's SEBAS,
- DOE's Bioenergy (KDF)
- BioEnergy Evaluation Tool (BEET)
- Int'l Econ. Dev. Council, "The Climate Prosperity Handbook on Green Savings"
- BRDi SIWG Criteria & Indicators Report
- GBEP International Evaluation of Sustainability measures.
- NRC Sustainability Roundtable.
- NAS "Expanding Biofuel Production and the Transition to Advanced Biofuels"

USDA Program

- REE, OCE, Marketing and Regulatory Programs. FSA, FAS, FS, NRCS

Other Government Agencies

- Via the R&D Board's Operations Committee

Independent Research

- To include EU, CARB, Academia, Private Industry

Primary
Screen

Secondary
Screen

Full
Evaluation

Outputs

- Models
- Bridging assumptions
- Known gaps

• Applicability to Question

- Credibility
- "Market share" Feasibility
- Cost
- Adaptability

- Scale of Analysis
- Quality / Fidelity
- Inputs & Outputs
- Gap Analysis of Criteria Measured

Biomass Board Working Group Plan/Outlook

- 1. FEEDSTOCK SOURCES/SUPPLY:** Genetic Improvement, Best Practices
- 2. LOGISTICS AND DISTRIBUTION:** Feedstock Logistics, Fuels Distribution & Infrastructure
- 3. CONVERSION**

Priority Focus Areas for Feedstock Sources/Supply Working Groups

Action Areas

Genetic Improvement

- ▶ Intensify and expand plant breeding for feedstock crops
- ▶ Accelerate development of genomic tools and resources to enhance feedstock improvement and deployment

Feedstock Best Management Practices

- ▶ Accelerate improving unit productivity and cost- and resource-use efficiency in purpose-grown and integrated biofuel feedstock production systems
- ▶ Accelerate development and testing of sustainable feedstock production and management systems for agriculture and forestry
- ▶ Evaluate opportunities for optimizing benefits from the full suite of ecosystem services associated with feedstock production
- ▶ Develop indicators on best management practices for adaptive management and evaluation of long-term effectiveness
- ▶ Improve accessibility of information on site-specific efficacy of BMPs for land managers, land owners and policymakers

Resources and Inputs

Genetic Improvement

- ▶ Board IWG report– Federal Research and Development Planning for Sustainable and Adequate US Biofuel Feedstock Production
- ▶ Agency strategic plans and multi-year program plans
- ▶ National Academy reports
 - ▶ *Achievements of the National Plant Genome Initiative and New Horizons in Plant Biology* (2008)
 - ▶ *A New Biology for the 21st Century: Ensuring the United States Leads the Coming Biology Revolution* (2009)

Priority Focus Areas for Feedstock Logistics and Fuels Distribution Infrastructure Working Group

Challenges for Feedstock Logistics

- Increase bulk/energy density
- Moisture management/stability
- Improve feedstock uniformity/quality
- Systems approach needed at demonstration/industrial scale: harvest and collection; storage; preprocessing; and transport

Challenges for Fuel Distribution

- Capacity limitations and compatible storage options for the transport of richer mixes of ethanol and other biofuels
- Regulations, codes, and standards for future fuels needed to address safe transportation
- Identification of international best practices and potential barriers to transporting alternative fuels

Resources and Inputs

- Interagency Workshop – Joint Collaboration with DOT, USDA, and EPA
- Biomass R&D Board *Feedstock Logistics* Report
- Uniform – Format Feedstock Supply System Design,
- *Roadmap for Agricultural Biomass Feedstock Supply in the United States* – DOE
- Interagency Workshop – Joint Collaboration with DOE, USDA, and EPA
- U.S. DOT White Paper submitted to the Board June 2010
- Dedicated Ethanol Pipeline Feasibility Study EISA of 2007 Section 243
- Geographic Information System Inventory Synopsis

Tentative Priority Focus Areas for Conversion Working Group

Action Areas

- ▶ R&D Coordination
 - ▶ Apply technical, economic, social, human health and environmental performance standards across project portfolio
 - ▶ Foster delivery of R&D project outputs
 - ▶ Best practices synthesis: techno-economic and life cycle analyses studies
 - ▶ Identify gaps and shortfalls: intra-project and intra-technology
 - ▶ Potential funding mechanisms for accelerated response
- ▶ Stimulate Movement to Commercialization for Biomass Conversion Technologies
 - ▶ Better define hand-off points
 - ▶ Identify gaps and shortfalls: meeting EISA targets
 - ▶ Mechanism for feedback for research during commercialization

Resources and Inputs

- ▶ Prior Conversion Working Group report to R&D Board
- ▶ Prior inventories of funded RD&D projects (to be updated)
- ▶ Federal and select stakeholder inputs
- ▶ Industrial Contacts and Input

Outreach and Marketing Initiatives

- Farm Foundation

- Renewable Energy Biomass Education Field Days*** to be Nov. 16-18, 2010 at the Crowne Plaza Hotel, Knoxville, Tenn.
- An educational lecture series specifically designed to provide landowners and land managers, state technical and educational professionals of USDA and the Extension Service, with the information resources they need to make decisions and inform decision makers about implementing renewable energy technologies.

- Hawaii Initiative

- USDA continues to work with the Department of the Navy to promote the use and development of biofuels with Hawaii being the pilot for this project.
- Last week USDA hosted the ***Hawaii Biomass and Bioenergy Ag Conference*** in Hawaii.



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Any Questions?

