

NASEO 2007 ANNUAL MEETING

Agriculture and Rural Development Task Force
Session

Biobased Products Tool Kit: Market Development
for Biobased Technologies and Products

by

New Uses Council, Environmental and Energy
Study Institute, and North Carolina Solar Center
/NCSU via North Carolina State Energy Office

Biobased Products

- **USDA and DOE responding to National Energy Issues**
- **Important technical breakthroughs and federal/state policies are helping respond to national energy goals**
- **Why Buying Biobased Products is important**
- **Using Biobased products in programs**
- **Audience discussion**



What Is the Legal Driver?

Farm Security & Rural Investment Act

Sect. 9002

- Federal agencies will purchase certain designated products with biobased content
- USDA designates the products
- The program is similar to that for recycled products, allowing justified exceptions of the CAP (cost, availability, performance)

Federal Procurement of Biobased Products

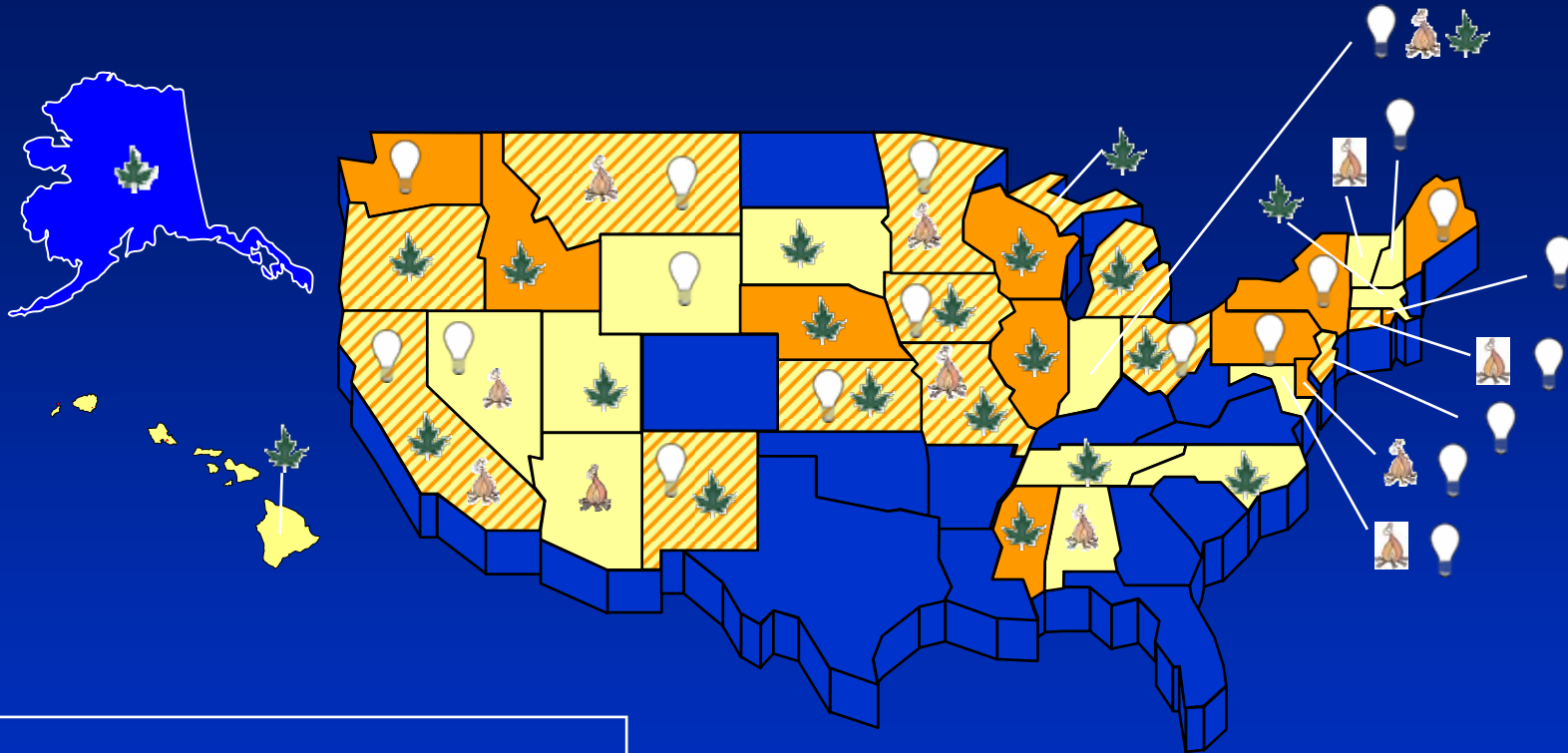
- Requires Federal agencies to purchase biobased products that meet price, availability, and performance standards
- Provides for a voluntary labeling program of certified “biobased products”
- Provides financial assistance for testing of biobased products by manufacturers
- Labelling program slow to be implemented
- Round 4 of proposed rules designating items
 - For a full list visit: <http://www.biobased.oce.usda.gov/public/index.cfm>

Federal Agency Collaboration

- **Healthy Forest Restoration Act of 2003, Title II**
- **Memorandum of Understanding (MOU) for Woody Biomass Utilization (DOE/USDA/DOI)**
- **Biomass Research and Development Act of 2000**
 - Biomass R&D Technical Advisory Committee
 - Vision for Bioenergy & Biobased Products in the US
 - Roadmap for Bioenergy & Biobased Products in the US
 - Biomass R&D Board
- **Farm Bill 2002, Title IX**
 - Federal Procurement of Biobased Products (Section 9002)
 - Renewable Energy Systems and Energy Efficiency Improvements (Section 9006)
 - Biomass Research and Development (Section 9008)
 - Joint DOE/USDA Solicitation for FY 02, FY 03, & FY04
 - Continuation of the Bioenergy Program (Section 9010)
- **Energy Policy Act of 2005**
 - Authorizations for Biomass Research, Renewable Fuel Incentives, Grants, Demonstrations, Reports, Education, and Assessments that will guide technology development in future years.



State Biomass Incentives



Incentives Available

Credit/Exemptions
/Rebates



Grants/Loans



Both Incentives



Biomass Applications

Electricity



Heating



Multiple Biomass
Applications



State Actions on Biomass

- New York
 - Renewable fuels available at service stations all across the state
 - Renewable fuel tax-free
 - Incentives for biorefineries
- Renewable Fuel Standards
 - Hawaii - 85% of gasoline to contain 10% ethanol (starting in '06)
 - Minnesota - 20% of its transportation fuels must be renewable by 2012
 - Montana - 10% after in-state production of 40 million
 - California - 10% of fuel should be ethanol by 2007
- 21 States including D.C. have Renewable Portfolio Standards (RPS)

(Cont'd)

- Pro-active multi-agency approaches and collaboration can be very effective
 - MN Dept. of Commerce and Dept. of Agriculture efforts and MN Lung Association helped achieve strong ethanol and biodiesel growth
 - California developing a strategic biomass plan with multi-agency collaboration
 - IL labor agreement requirements

State Initiatives

- Arkansas—Biobased Products Act of 2005
- Michigan—Mid-Michigan Innovation Alliance \$15m/3yr grant
- Ohio—Bioproducts Innovation Center
- Oklahoma—Biofuels Development Act
- Wisconsin—Executive Order to establish a Consortium of Biobased Industry

The New Industrial Biorefinery



Biomass Feedstock

- Trees
- Grasses
- Agricultural Crops
- Agricultural Residues
- Animal Wastes
- Municipal Solid Waste

Conversion Processes

- Enzymatic Fermentation
- Gas/liquid Fermentation
- Acid Hydrolysis/Fermentation
- Gasification
- Combustion
- Co-firing

USES

Fuels:

- Ethanol
- Renewable Diesel
- Hydrogen

Power:

- Electricity
- Heat

Chemicals

- Plastics
- Solvents
- Chemical Intermediates
- Phenolics
- Adhesives
- Furfural
- Fatty acids
- Acetic Acid
- Carbon black
- Paints
- Dyes, Pigments, and Ink
- Detergents
- Etc.

Food and Feed

What Types of Biobased Products Displace Petroleum?

adhesives

cleaners and solvents

construction materials

fibers

fuels & fuel additives

inks

lubricants

papers

packaging

plastics

sealant/coatings



Where Are Bioproducts Found?

- Biofuels, lubricants, car parts
- Paints, solvents, cleaners, fertilizers
- Paper, packaging, clothing, fabric
- Shampoo, cosmetics, soap
- Shingles, deck boards, insulation, sealants
- Fiberboard, linoleum, carpeting

Biobased Roof Coating/Sealant for Low Slope Roofs



Track Record

- Shedd Aquarium, Chicago
- Coca Cola Distribution Ctr, Niles, IL
- ING Clarion, Houston
- McDonalds, Greenwich
- Medical Center, Northridge, CA
- Women's Club, Austin

Meets Same Specs as Oilbased Sealant

- Energy Star approved
- Single-coat application
- Exceeds UL
- Class A Flame Ratings
- 100% Resistant to mold, algae, bacteria (ASTM D3273)
- 10-year labor and material warranty

Biobased Products Toolkit for Training and Outreach

Tools include:

- Why Buying Biobased Products is important
 - Benefits: Natural Resources; Public Health; Economic; National Security
- Factoid Sheets on various biobased products
 - Products to be included in the portfolio of government purchasing programs
- Federal initiatives
 - Legislation & Collaboration
- Federal Success Stories
 - USDA; DOE; DOI; DOD

Tool Kit-cont.

- General Procurement Guide
 - Objectives; Supplier Initiatives; Procurement Process; Resources
- Factoid on the conceptual 'biorefinery'
 - DOE/NREL's biorefinery development activities
- Fact sheet on the biorefinery
 - Technical Overview from the Production side

Tool Kit-cont.

- Biomass Coordinators and Information
- State Biobased Product Initiatives
 - Actions to foster Biobased Products
- Synopsis on Barriers & Strategies to overcome them

Websites

- **Department of Energy – Buy Bio**
<http://www.eh.doe.gov/p2/epp/buybio/index.html>
- **Department of Energy – Green Purchasing**
<http://www.eh.doe.gov/p2/epp/index.html>
- **Department of Agriculture**
<http://www.biobased.oce.usda.gov/public/index.cfm>
- **Office of Federal Environmental Executive**
<http://www.ofee.gov>

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Discussion:

- **What, if anything, would preclude your agency from using biobased products?**
- **How can vendors of biobased products best introduce their product to you?**