

Ethanol From Biomass



How to Get to a Biofuels Future Future

Governors' Ethanol Coalition

Southern Bioproducts and Renewable Energy Conference

April 16-18, 2007



Ethanol From Biomass: How to Get to a Biofuels Future

Status of the the Coalition's 2005 Recommendations

- Established RFS. Implementation (regulations) by EPA completed April 2007; Industry production will exceed 2012 goal of 7.5 billion gallons a year in 2007.
- Expanded RD&D. Coalition focused on increasing funding for the DOE Biomass Program. The result, a more than doubling of funding to \$199 million for RD&D, large biorefinery solicitation, 10% small-scale demonstration solicitation; DOE loan guarantee program initiated; DOE genomics program funded; USDA Biomass R&D funding remains limited.
- Established Reverse Auction Cellulosic Incentive. DOE analyzing implementation options, communicated with Appropriators need for start-up funds in FY'07 (additional joint resolution funds could be used); President's FY'08 budget requests \$5 million start-up funds with no incentive funds.
- Create DOE Loan Guarantees. \$7 million for start-up and increased cap on program guarantees from \$2 to \$4 billion.



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Coalition's 2007 Recommendations

- Expand RFS
 - *12 billion gallons a year by 2010, with 500 million gallons in cellulosic by 2012.*
 - *RFS expands to 15% of motor fuels consumption by 2015 and 25% by 2025, or about 60 billion gallons.*
 - *Includes biodiesel and ethanol.*

- Provide Production Tax Credit for Cellulosic Ethanol
 - *Production tax credit approach accrues to producer to aid in reducing investment risk and to address higher initial costs.*



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Coalition's 2007 Recommendations (continued)

● Vehicles and Infrastructure

- Establish performance standards for major gas station owners and branders (e.g., 100 or more fueling stations) to provide at least one E85 pump at 95 percent of stations in at least one region over five years.
- Create a high profile DOE “city-to-region infrastructure challenge” that provides \$10 million in cost-shared funds for three metropolitan areas in up to three regions. Requires teams of state, local, auto, fuel interests to transform market over five years.
- Establish a timetable for transition to flexible-fuel vehicle standard of not less than 70 percent of light duty vehicles sold in the United States within 10 years. Provide manufacturer incentives (e.g., \$100 for each vehicle).
- Provide \$8 million in new funds for E85 infrastructure expansion and education efforts to be conducted by the DOE Biomass Program.
- Provide not less than \$1 million in new funds for the DOE Biomass Program to conduct needed ethanol logistics studies and analyses (e.g., pipeline).



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Coalition's 2007 Recommendations (continued)

- Continued, Consistent Funding for Implementation of RD&D
 - \$251 million for DOE Biomass Program's research, demonstration, and deployment, including funds for small scale cellulosic demonstrations.
 - \$154 million for DOE Genomics to Life program including funding for three bioenergy research centers for each of five years.
 - \$250 million, a one-time appropriation, for the reverse auction cellulosic production incentive authorized by the *Energy Policy Act of 2005*.
 - \$200 million for USDA's Biomass R&D program (operated with DOE).
 - \$11.4 million for ongoing U.S. EPA implementation of the RFS.
- Farm Bill Opportunities
 - Enhancement of the USDA loan guarantee program already used for some ethanol facilities to include provisions for higher loan limits and greater risk.
 - Additional recommendations under development by the Coalition.



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2007 Implementation Approach and Recent Activities

- Encourage President and Congress to expand RFS, Incentives, Infrastructure, and Biofuel RD&D Funding
 - Letter to the President, communications with staff on FY'08 funding request (October 2006).
 - Letters to House and Senate leaders on FY'07 funding (September 2006).
 - Meetings with key House and Senate offices (e.g., Pelosi, Dingell, Visclosky, Reid, Dorgan, Nelson, Lugar, Harkin, Obama, Durbin) (ongoing).
 - Meetings with DOE/USDA on FY'08 priorities (e.g., small scale demonstrations).
 - Testimony before Senate Energy and Natural Resources Committee on 2007 recommendations and funding issues (January 2007).
 - Work with Senate staff to encourage DOE to use additional FY'07 funds for biofuels priorities (February 2007).
 - Communications with key House and Senate staff on FY'08 funding (ongoing).



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2007 Implementation Approach and Recent Activities (continued)

- Emerging Senate and House Bills in Support of Coalition Recommendations:
- S. 987 Biofuels for Energy Security and Transportation Act of 2007 (Bingaman, Domenici)
 - RFS of 8.5 billion gallons of renewable fuels in 2008, increases to 36 billion gallons by 2022; increased loan guarantees; state grants for renewable fuels corridors; grants for infrastructure to transport biomass; higher R&D funding.
- S. 23 Biofuels Security Act of 2007 (HR 559 - Delahunt, Herseth, Inslee)
 - RFS of 60 billion gallons by 2030; 50% of gas stations to offer E85 in 10 years; 100% FFV production in 10 years; Harkin, Lugar, Dorgan, Biden, Obama.
- S. 133 American Fuels Act of 2007
 - Creates Director of Energy Security; \$100 credit for FFV production; retail E85/70 sales credit of \$0.35 a gallon to 2010, reduced to \$0.10 by 2012; prohibits restriction of alternative fuel pump installation by franchisers; excise tax credit for production of cellulosic ethanol (2.5 /1 credit); Obama, Harkin, Lugar.
- H.R. 670 Drive Act of 2007 (S 339 - Bayh, Lugar, and 23 cosponsors)
 - Comprehensive bill includes RFS expansion, 500 million cellulosic RFS in 2014; use of CAFE penalties to fund Clean Cities; expanded reverse auction incentives, etc. Representative Engle (NY) and 67 cosponsors.



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Near-Term Challenges:

- Build on *legislative* progress to develop and pass key measures - RFS expansion, production tax credit, infrastructure support (e.g., S.987, S. 133 and S. 23).
- Build on *appropriations* momentum to ensure funds are provided for RD&D recommendations and improve agency and stakeholder implementation.
- Improve coordination of state, federal, local and industry activities to leverage resources and expedite delivery of biofuels.
- Identify Farm Bill opportunities.



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More Information:

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State and Local Energy Institutions' Collaborative Technology Development and Transfer

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Southern Bioproducts and Renewable
Energy Conference

ASERTTI

[Overview of ASERTTI]

- ASERTTI Founded in 1990 to support public interest energy R&D, tech transfer, and commercialization
- Programs in clean energy production and efficiency
- 41 State and local members in the U.S. and Canada
- New members: Oregon Energy Office, Long Island Power Authority, Quebec Hydro, NJ-CEEEP, NY-RPI
- Increased activities with land grants and universities
- Increased national advocacy activities

Ongoing Collaboration to Encourage Adoption of Emerging Technologies

- DG/CHP Performance Database
 - Enabling informed decisions by the marketplace
- Energy and Schools Collaborative
 - Transferring the results of R&D
- Regional Buildings Application Center
 - Delivering “Truly Technical” assistance
- Compressed Air Best Practices
 - Transforming the market based on R&D results
- Digester Performance Evaluation
 - Enabling informed decisions by the marketplace

Collaboration to Encourage Adoption of Emerging Technologies

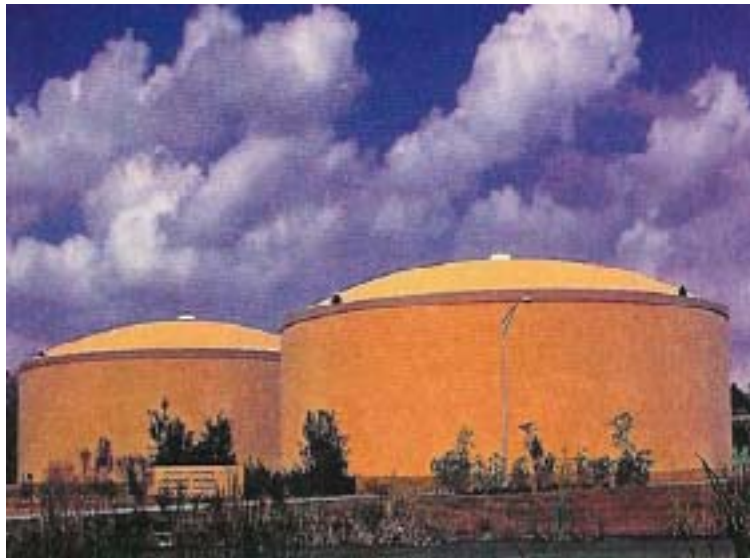
■ ASERTTI Digester Performance Evaluation

- Digesters offer CHP opportunities, environmental benefits
- Increasing investment in digesters by State, local, federal governments and farmers (\$40M+ over several years)
- Indications of rising failure rates causing concern
- ASERTTI formed collaborative (MS, IA, NC, WI, CA, Quebec, IL, NY, USDA, EPA) to fund development of performance protocols resulting in indicators of success for digester design and feedstock combinations
- Digester Evaluation Protocols finalized, digester data collection database to be developed in 2007, results 2008
- The goal is to use the data and analysis to better predict the right combination of feedstocks and digesters to achieve better performance and project success - increasing investment in this key ag-energy opportunity

Collaboration to Develop and Apply Emerging Technologies

- **Digester-CHP Innovation in Nebraska: Closed Loop High Efficiency Ethanol Production**
- Combined ethanol plant, digester, CHP, 30,000 head of cattle feedlot
- Digester gas meets 95-100 percent of energy needs in ethanol production through use of biogas, CHP unit and efficiency applications – 90%+ reduction in fossil fuel inputs to production
- Mitigates feedlot odor and emissions issues
- Mitigates transportation energy/cost of DDGS
- Patented process, publicly traded

Collaboration to Develop and Apply Emerging Technologies



Questions?

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