

Overview of Federal Policies and Programs that Influence Wood-Based Bioenergy Production

Ned Stowe
Environmental & Energy Study Institute
www.eesi.org

Wood-Based Biofuels, Biomass & Bioenergy:
Opportunities and Challenges in Louisiana
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- Promoting sustainable societies through innovative policies
- Independent non-profit, founded in 1984, by a bipartisan Congressional Caucus
- Provides timely information and analysis on environmental and energy science, technology and policy
- Conducts 30+ Congressional briefings a year
- Program areas:
 - Climate and Energy
 - Transportation and Energy
 - Sustainable Biomass and Energy
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EESI approach to sustainable biomass energy

- Part of a portfolio of approaches needed to address climate change and energy needs
- Variety of uses: Biofuels, Biopower; Biomass thermal and combined heat and power
- Assuring sustainability is key



This presentation will

- Survey key federal policies driving woody biomass energy industry today in each of these areas
- Point to policy issues and trends that may change the direction in the future.



Federal policy priorities for biomass energy today:

- Top priority: RDD&D next generation cellulosic biofuels industry
- Distant second, but rising on the horizon: Biopower
- Far distant third: Biomass thermal and combined heat and power

All of this may change soon with new federal climate and or energy legislation



High level priority for biofuels reflected in extensive legislation, including

- *Energy Policy Act of 2005* (EPACT, P.L. 109-58)
- *Energy Independence and Security Act of 2007* (EISA, P.L. 110-140)
- *Food Conservation and Energy Act of 2008* (Farm Bill, P.L. 110-246)
- *American Recovery and Reinvestment Act of 2009* (ARRA , P.L. 111-5)



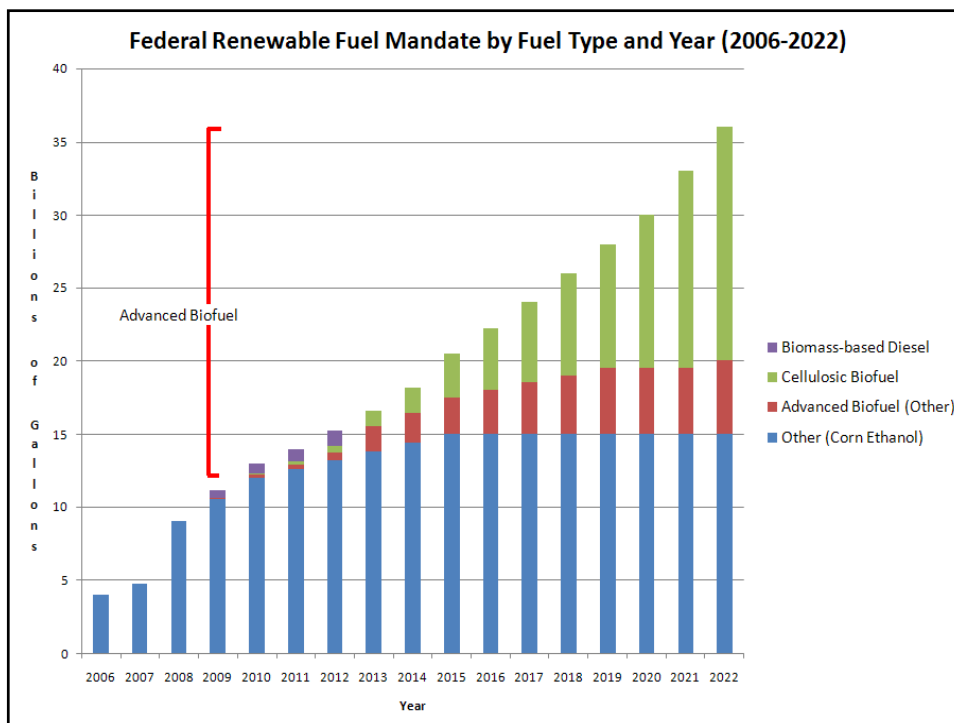
Renewable Fuel Standard 2 (EPA 2005 & EISA 2007)

- Fuel refiners required to blend 36 billion gallons per year into fuel supply by 2022
- EPA lead agency
- Must include
 - 16 billion gallons from cellulosic feedstocks
 - 1 billion gallons of biodiesel
 - 4 billion gallons of other advanced biofuels

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DOE Biomass Program

- In Dec. 2007, DOE announced over \$1 billion in multi-year funding for biorefineries
- Integrated Biorefinery Demonstration Program (EPACT 2005, Sec. 932[d]) and other authorities
 - \$625 million for 15 commercial and demonstration scale cellulosic biorefineries
- Loan Guarantee Program

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American Recovery and Reinvestment Act of 2009 (ARRA, P.L. 111-5)

- Amplified existing DOE biofuels programs
- \$800 million more for cellulosic and other DOE advanced biofuel RDD&D
- Expanded DOE loan guarantees (\$6 billion) for advanced energy technologies
 - Includes advanced biorefineries

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2008 Farm Bill

- Administered by USDA
- Also focused primarily on promoting cellulosic feedstocks and advanced biofuel RDD&D
- \$1.1 billion mandatory funding over five years (through 2012)
- \$1.0 billion additional discretionary funding authorized over five years
- Includes more R&D, grants, loan guarantees, plus key tax incentives

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Biomass Crop Assistance Program (BCAP)

(Farm Bill, Sec. 9011)

- Multi-year payments to producers for establishing perennial and woody energy crops
- Up to \$45 per ton matching payment for collection, harvest, storage, transport (CHST)
- Mandatory spending: Such Sums As Necessary
- Spending may reach \$2 billion or more

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BCAP (cont.)

Eligible woody biomass feedstocks Include:

- Bark
- Forest slash and thinnings
- Fuel wood
- Hardwood and softwood chips
- Post-disaster debris



BCAP (cont.)

As of April 2, 2010, USDA had approved

- 4605 contracts for the delivery of
- 4.2 million tons of biomass, and
- Matching payments of more than \$165 million

In Louisiana, USDA so far has approved

- 25 biomass conversion facilities
- 126 contracts with biomass producers
- \$2.8 million in matching payments



BCAP (cont.)

- Program on hold for now as USDA finalizes rule
- Public comment period on draft rule ended April 9
- Final rule by summer?
- OMB and congressional authorizing committees will be looking closely

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BCAP (cont.)

Unintended consequences from initial implementation in 2009:

- Sign ups exceeded expectations; broke the budget
- Drove up feedstock prices for pressboard manufacturers
- BCAP not intended to compete with existing higher value forest products industries
- Concern that funding going to established industries instead of new bioenergy industries

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Other Farm Bill Provisions

Volumetric Ethanol Excise Tax Credit (VEETC) (Sec. 15331):

- Ethanol blender tax credit (oil refiners)
- Farm bill reduced it to \$0.45 per gallon
- Worth more than \$5 billion in 2010
- Expires this year 12/31/10 unless renewed

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Other Farm Bill Provisions (cont.)

Cellulosic biofuel producer tax credit (Sec. 15321):

- Up to \$1.01 per gallon – less VEETC and small producer tax credits
- Expires at the end of 2012
- Not much demand for this yet
- Will anybody be able to take advantage of it, or will it be renewed?

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Other Farm Bill Provisions (cont.)

- Biorefinery Assistance (Sec. 9003) - competitive grants and loan guarantees to construct and retrofit biorefineries that produce advanced biofuels
- Bioenergy Program for Advanced Biofuels (Sec. 9005) - payments to biofuel producers to support and expand production of advanced biofuels

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Is this enough?

- Will need 200-400 new commercial-scale advanced biorefineries operating by 2022 to meet the RFS goal
- Each will cost \$250 – \$500 million to construct and finance
- Zero commercial-scale plants are operating today
- Falling behind the RFS mandated pace
- Many pilot and demo-scale plants coming on line
- Much economic, technological, and policy uncertainty clouding future

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Gotta wonder. . .

- What will it take to deliver first billion gallons of cellulosic ethanol?
- What more should the federal government be doing?
- What should the federal government be doing differently?

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What's next for federal biofuels policy?

- Expand and accelerate grants and loan guarantees for commercial-scale biorefineries?
- Extend Dept. of Treasury grants in lieu of tax credits for advanced biofuel biorefineries?
- Expand definition of renewable biomass to include additional sources of woody biomass?
- Enact biomass feedstock sustainability standards?
- Regulate GHG emissions from biorefineries?

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What's next for federal biofuels policy? (cont.)

- Renew and extend various biofuels producer and blender tax credits?
- Move ethanol blend wall?
- Increase number of flex fuel vehicles on road?
- Expand ethanol distribution infrastructure?
- Promote shift from ethanol to other drop-in fuels?

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BIOPOWER

- State level renewable portfolio standards have driven the development of biopower the most.
- Federal policies were ramped up in 2008-2009 to accelerate economic recovery.

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ARRA

Extension of placed in service dates for production tax credits (PTC) through 12/31/13:

- Includes open- and closed- loop biomass power
- PTC extends for ten years from date placed in service
- Note: PTC for open-loop biomass power plants placed in service prior to 2005 expired 12/31/09

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ARRA (cont.)

Treasury grants in lieu of tax credits for up to 30% of the cost of construction:

- Includes biomass power plants
- Construction must start in 2010
- Plants must be placed in service by 12/31/13

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ARRA (cont.)

Investment tax credits of 30% in lieu of PTC extended:

- Includes open- and closed-loop biomass power plants
- For plants placed in service by 12/31/12.

Increased funding \$1.6 billion for Clean Renewable Energy Bonds:

- To incentivize financing for public utilities to construct new power plants
- Includes open- and closed-loop biomass power

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Let's not forget EPA

EPA plays critical role regulating the biopower industry for air quality:

- Plants must meet strict clean air standards
- Additional complexity siting plants in some regional airsheds
- New rules pending re Maximum Achievable Control Technology for industrial boilers

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What's next for federal biopower policy?

- Set a price on non-renewable GHG emissions?
- Enact a national RES?
- Renew and extend PTC for older open-loop biomass power plants?
- Establish PTC parity for biopower PTC with other types of renewable energy?
- Enact biomass feedstock sustainability standards?
- Regulate GHG emissions from biopower plants?

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BIOMASS THERMAL AND CHP

- Big potential
- Little policy support
- Missed opportunity



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ARRA

Dept. of Treasury grants for CHP systems up to 10 percent:

- Construction must start in 2010
- Must be placed in service by 2017

USFS woody biomass energy projects:

- \$50 million worth of projects announced

Tax credits for energy efficient residential wood stoves:

- 30% up to \$1500
- Must be at least 75% efficient and placed in service in 2010



Farm Bill provisions promoting biomass thermal energy market development

- Rural Energy for America Program (REAP) (Sec. 9007) - grants, loan guarantees, incentive payments for agriculture producers and rural small businesses for renewable energy systems (including biomass), energy efficiency improvements, and feasibility studies
- Rural Energy Self-Sufficiency Initiative (Sec. 9009) – cost-sharing grants for rural community energy systems that reduce conventional energy use and increase renewable energy sources; helps communities develop wood energy plans and purchase wood energy systems for use in public buildings



Farm Bill provisions promoting biomass thermal energy market development (cont.)

- Forest Biomass for Energy Program (Sec. 9012)
USFS competitive research and development program to encourage the use of forest biomass for energy

- Community Wood Energy Program (Sec. 9013) -
USFS funds projects that use low-value wood from forest restoration activities in national forests, including hazardous fuels reduction, insect and disease mitigation, and clean-up after catastrophic weather events.

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What's next for federal biomass thermal energy and CHP policy?

- Could see biggest policy change in this area.
- Set a price on carbon?
- Enact a national RPS with renewable thermal provisions?
- Incentivize most energy efficient applications for biomass?
- Establish parity for biomass thermal applications with other renewable energy?
- Enact feedstock sustainability standards?
- Regulate GHG emissions from bioenergy sources?

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Final thoughts

- Looming debates on Capitol Hill will shape future of woody biomass energy industry
- How to advance priorities in a rapidly deteriorating fiscal environment
- Whether and how to reduce the greenhouse gas intensity of the US economy
- What roles for bioenergy in addressing climate and energy needs
- Whether and how to account for greenhouse gas emissions from bioenergy
- How to assure sustainability

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Future Issues: Sustainability

- Sustainability is of **prime** concern
 - Means different things to different people
 - Broad concern for biodiversity, ecosystem function, soil productivity, recreational opportunities, no risks to old growth
- Climate change is a big part of sustainability
 - Bioenergy must demonstrate that it is truly a climate-friendly source of energy.
 - Bioenergy must not conflict with carbon sequestration efforts in forests.

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Recent EESI Policy Papers

- “Developing an Advanced Biofuels Industry: State Policy Options for Lean and Uncertain Times,” Feb. 2010
- “Sustainable Forest Biomass: Promoting Renewable Energy and Forest Stewardship,” July 2009



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For More Information Contact

Ned Stowe, Policy Associate
Sustainable Biomass and Energy
(202) 662-1885
nstowe@eesi.org

Carol Werner, Executive Director
(202) 662-1881
cwerner@eesi.org



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