25x'25
AMERICA'S ENERGY FUTURE

Biomass South-2008 Conference

Charting a Course for Biomass Resource Use

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America's Energy Future
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ENERGY

The Linchpin of Our Economy

- Fundamental to our prosperity
- Contributes to our quality of life
- Historically has been abundant and affordable

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Fossil based energy systems are not sustainable

- World oil reserves are limited in supply and located in volatile parts of the world
- Dependence on foreign oil is increasing

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- Costs of oil, natural gas and electricity are skyrocketing
- Emissions from burning of fossil fuels are impacting the environment

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The Reality

- Fossil fuel **resources are finite and diminishing**
- Global energy **consumption is increasing** (nearly 60% by 2030)
- The world **population is growing** (9.1 billion by 2050)
- Fast-developing **economies** like India and China **are demanding more resources**
- Greenhouse gas **emissions are increasing** (World carbon dioxide emissions expected to increase by 1.9% annually between 2001 and 2025)

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Our Vision:

By the year 2025, America's farms, ranches and forests will provide 25 percent of the total energy consumed in the U.S. while continuing to produce safe, abundant and affordable food, feed and fiber.

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We will meet this goal by:

- Producing transportation fuels
- Harnessing wind energy
- Converting biogas emissions
- Capturing solar and hydro energy
- Providing biomass for generating heat and power

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This is a food, feed, fiber *and* fuel vision, that is economically viable for our society.

With emerging technology we can produce *multiple* commodities.

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What's in it for ag and forestry?

- Increased farm income
- Added value uses
- Alternative enterprises
- More productive uses of marginal lands
- Assist in resolution of air, water and soil quality problems
- Reduced reliance on government payments
- Enhanced rural economies

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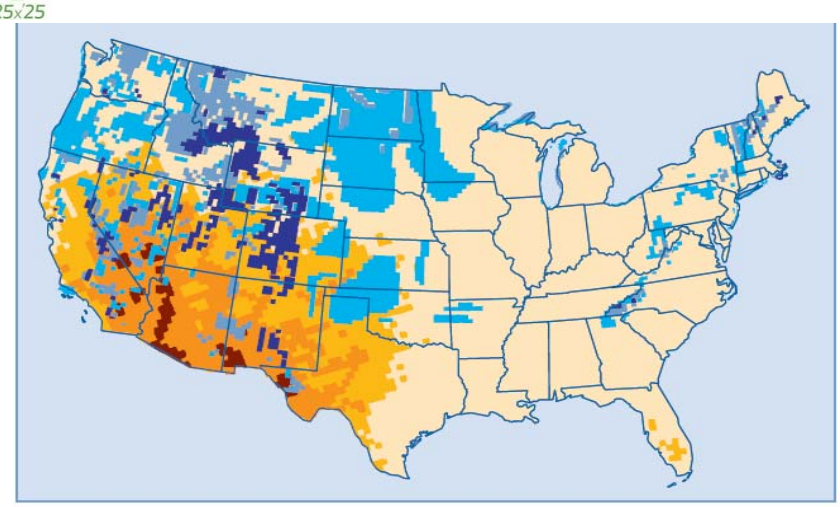

Data Source: Adapted from National Renewable Energy Laboratory, 2004

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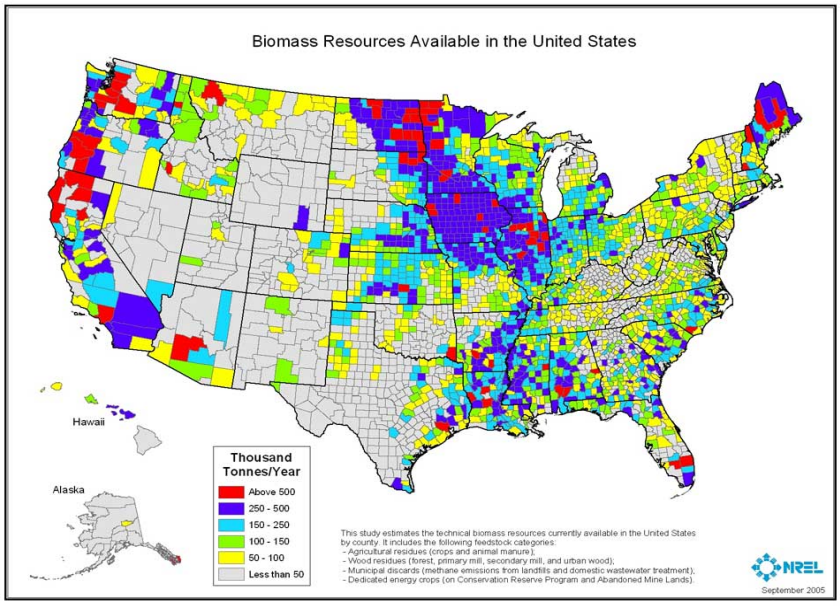

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Southeast Biomass Resources

- 209 million acres of forestland
- 86 million acres of traditional cropland
- 120 million acres of pasture/hayland
- 8.5 million acres of CRP land
- 7.5 billion head of poultry
- 43 million head of livestock
- 151 million tons of municipal solid waste
- Many other unique biomass resources

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Over 750 partners including:

- North Carolina Solar Center
- North Carolina Farm Bureau Federation
- National Corn Growers Association
- Forest Landowners Association
- Deere & Company
- Ford, Chrysler and GM
- American Wind Energy Association
- National Wildlife Federation
- Environmental Defense Fund

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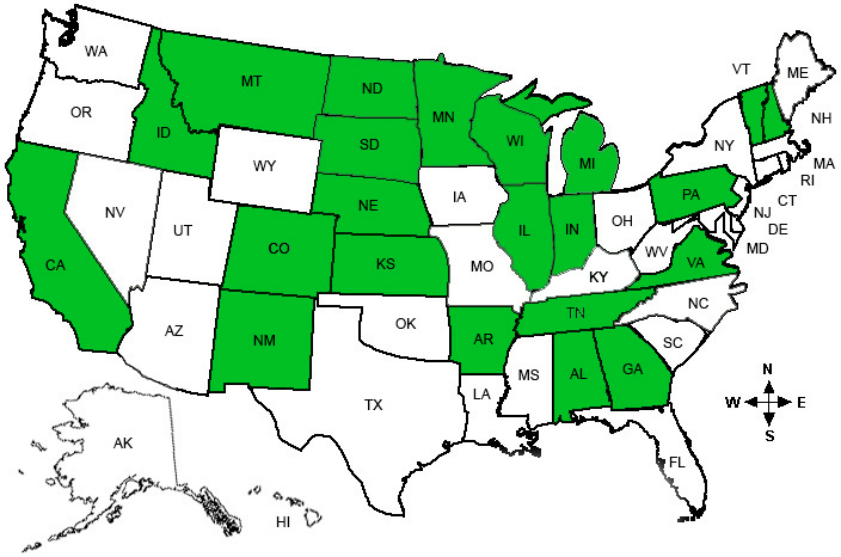
Governors' Endorsements



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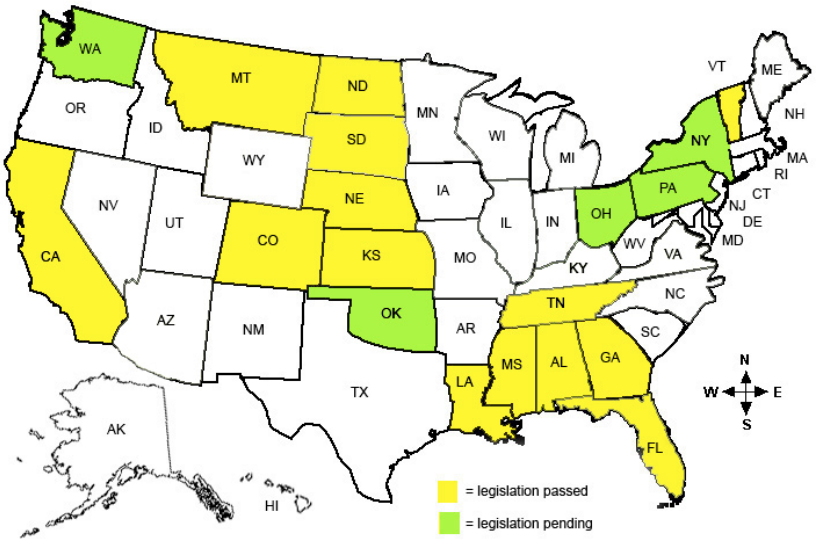
State Legislature Resolutions



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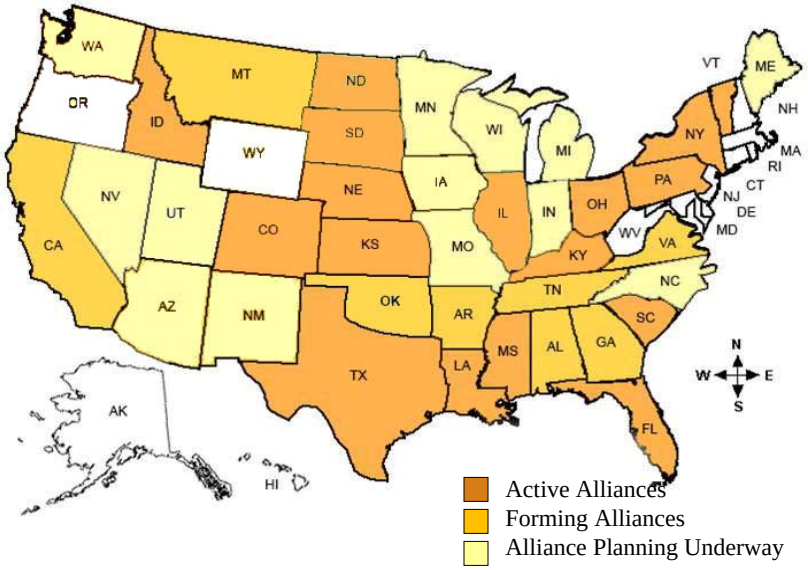
State Alliance Activity



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25x'25 is now a national renewable energy goal!

- Passed by Congress as part of HR6
- Signed into law by President Bush on December 19, 2007

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Phase IV Mission:

Document and affirm the fact that America's working lands can secure 25 percent of it's energy needs from renewable sources.

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Critical Challenges & Opportunities

- Biofuel pushback
- Sustainability issues
- Role of agriculture and forestry in a reduced carbon economy
- Woody biomass contributions

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Biofuels are an important part of our nation's renewable energy portfolio

- While not perfect, biofuels provide a critical pathway to a sustainable, cleaner and more secure energy future
- Technology is leading us to more efficient, cleaner, less costly solutions

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Sustainability

25x'25 Definition:

Biomass production and use must conserve, enhance and protect natural resources and be economically viable, environmentally sound and socially acceptable.

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Sustainability Principles

- Biodiversity
- Biotechnology
- Air Quality/Greenhouse Gas Emissions
- Invasive Species
- Land Use
- Public Lands
- Soil Quality and Quantity
- Water Quality and Quantity
- Wildlife Habitat and Health

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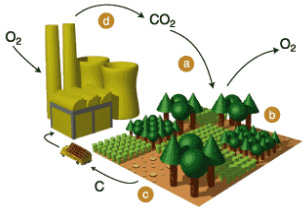
25x'25 Carbon Work Group

Charge: Analyze agriculture and forestry's role in a reduced-carbon economy and develop recommendations for how each sector can capitalize on efforts to reduce and capture carbon and greenhouse gas emissions.



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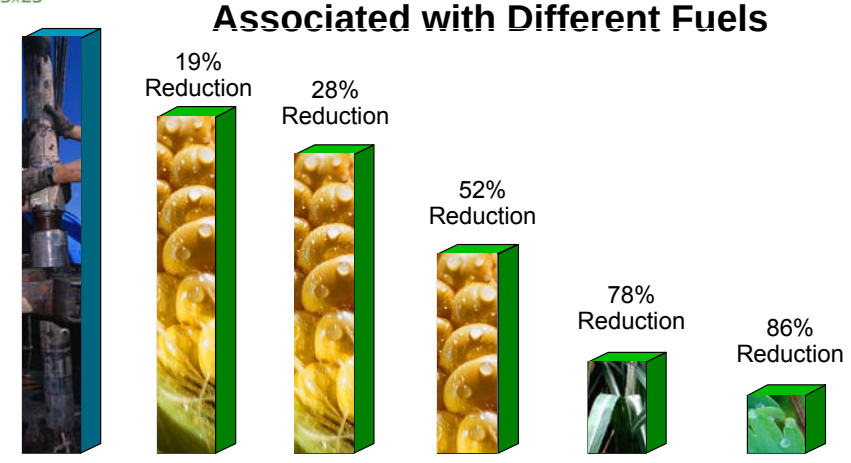
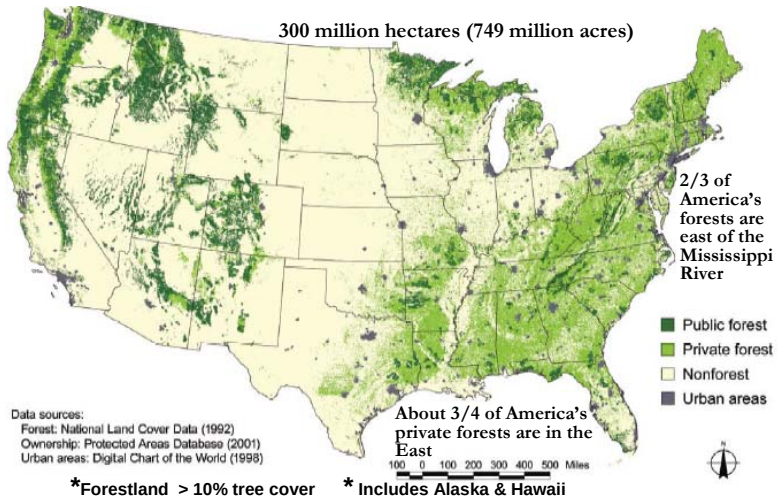
Lifecycle Greenhouse Gas Emissions Associated with Different Fuels



Sources: Wang et al, *Environ. Research Letters*, May 2007; Wang et al, *Life-Cycle Energy Use and GHG Implications of Brazilian Sugarcane Ethanol Simulated with GREET Model*, Dec. 2007.

America's Forest Resource*



*Forestland > 10% tree cover * Includes Alaska & Hawaii

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The Opportunity & Potential

Biomass Feedstock

- Ded. Energy Crops
- Ag and Forest Residues
- Hazardous Fuel Treatments
- Short Rotation Woody Crops
- Wood Waste

Conversion Processes

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

USES

Fuels:
- Bio/Renewable Diesel
- Ethanol

Electricity and Heat

Biobased Products
– Composites
– Specialty Products
– New Products
– Chemicals
– Traditional Products

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America needs a new energy future that is:

- cleaner
- improves national security
- strengthens the economy
- contributes positively to the quality of life of all

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America needs a comprehensive, long-term energy plan that will:

- accelerate the production of all forms of renewable energy
- create new renewable energy markets
- deepen our commitment to conservation of natural resources, sustainability and protection of the environment

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The 25x'25 Alliance calls on the Congress and next President to take the steps necessary to achieve the 25x'25 National Goal and set the nation on the path to a clean, prosperous and secure energy future.

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25x'25's Overarching National Energy Plan Recommendations

10 **Recommendations**

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Public Policy

- Increasing production
- Delivering renewable energy to markets
- Expanding renewable energy markets
- Improving energy efficiency and productivity
- Strengthening conservation and protecting the environment

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Critical Questions

- What is the south's *vision* for the role of biomass in America's energy future?
- How will you participate?
- What has to happen for your vision to be realized?
- Who is at the policy table representing your interests?

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Please Join Us!

www.25x25.org