

Developing Bioenergy in the Southeast



**Southern States Energy Board
DOE Southeastern Regional
Biomass Energy Program**

Energy Matters!



- United States:
- 6% of world population
- 25% of world energy use

Biomass--land and water vegetation and materials derived from this vegetation.



Examples:

Forestry crops and harvesting residues

Forestry processing residues

Agricultural crops and harvesting residues

Agricultural crop processing residues

Food processing wastes

Animal manures

Municipal solid wastes and certain industrial wastes

Use of Industrial Wood Energy SERBEP Region (tons per year)



- 44,300,000 fuelwood
- 41,700,000 black liquor
- 86,000,000 total

**Source:
DOE SERBEP**

Economic Impact of Industrial Wood Energy Use (SERBEP Region)



- 74,600 net jobs created
- \$1.66 billion net income generated
- \$93.2 million in state taxes
- \$266.3 million in federal taxes

Source:

DOE SERBEP

1990 Data

Value Ranking: Timber Products vs. Major Agricultural Crops



- 1st: AL, GA, LA, MS, SC, VA
- 2nd: NC, OK, TX
- 3rd: AR, FL, TN

**Source: USDA
Forest Service**

Ranking Forest Industry Wages vs. other Manufacturing Industries



- 1st: AL, AR, MS
- 2nd: GA, NC, TN, VA
- 4th: LA, SC
- 6th: FL
- 9th: TX
- 10th: OK

**Source: USDA
Forest Service**

Biomass Potential in the SE



- 2.85 Quads current national bioenergy use
- 1.59 Quads 1995 SE bioenergy use (56% of current national use)
- 4.0 Quads SE conservative potential (140% of current national use)

Source: Recommendations of the Southeast Bioenergy Roundtable, 1996

1 Quad = 1 quadrillion Btu or 1,000,000,000,000,000 Btu

Economic Development & Security



- *Creates Jobs and Income.* The construction of facilities and equipment and the production, distribution, and use of biomass energy produces jobs and tax revenues (studies have shown a net increase in jobs and tax revenues with increased biomass energy use).
- *Energy Expenditures Kept Local.* The use of locally produced fuels keeps energy expenditures in local communities, where they produce economic growth and improve the quality of life (studies have shown that up to 80% of the money spent for petroleum fuels imported into a community leaves that community)
- *Rural Jobs.* The production of biomass creates jobs in rural areas—where jobs are most desperately needed.

Economic Development & Security (continued)



- *Value Add.* The use of wastes and residues for energy can provide a lower cost method of disposal and create value for these resources
- *Lower Cost Fuel.* Historically, biomass fuels have been among the least cost and most stably priced fuels over the last 25 years.
- *Industrial Recruitment.* The availability of biomass fuels can be an attractant for industries looking for new plant sites with low cost fuels.
- *Cleaner Fuels.* The use of clean fuels such as biofuels can provide a cleaner environment in communities that helps to attract other industries.

Economic Development & Security (continued)



- *Drought/Flood Resistant Crops.* The production of perennial energy crops such as trees and grasses can provide rural communities with crops that are drought and flood resistant.
- *Crop Diversity.* The production of new crops diversifies the agricultural community's economic base and reduces the chances of crop failures due to disease.
- *Reduces Tax Burdens.* The production and use of biomass energy can reduce the need for government subsidies.
- *Generates Technology Exports.* The development of a biomass energy industry provides technologies, equipment, and services that are exportable (approximately 70% of all energy used in developing countries comes from biomass, and 14% of all use in the world is currently from biomass. This use is projected to grow significantly from now on).

Environmental Protection and Improvement



- *Prevents Landfilling.* The use of waste biomass resources prevents their landfilling, thus protecting groundwater and eliminating their decomposition in landfills to methane—a potent greenhouse gas.
- *Cleaner Burning Fuels.* The combustion of biofuels produces fewer and less toxic air emissions than fossil fuels—thus providing cleaner energy sources
- *Fewer GHG Emissions.* The use of biomass fuels for transportation, power generation, and other uses reduces combustion related emissions of global climate change gases.

Environmental Protection and Improvement (continued)



- *Biodegradability.* Biofuels such as biodiesel and ethanol are biodegradable, thus minimizing environmental damage from accidental spills.
- *Reduce Soil Erosion.* The production of perennial energy crops such as trees and grasses can, relative to traditional row crops, greatly reduce soil erosion by wind and water.

Energy Security



- *Naturally Stored.* Biomass naturally comes in a form that is already stored and is readily storable.
- *Many Plant Types.* Biomass comes in many vegetative forms, thus minimizing the chances for destruction whether by disease or enemy actions.
- *Geographically Dispersed.* Biomass grows in land and water and is geographically dispersed, facilitating its availability and dispersed (distributed) energy production.
- *Dispersed Energy Generation.* The production of energy from dispersed locations provides greater energy security
- *Cogeneration.* The production of distributed energy allows for implementation of combined heat and power systems, thus greatly improving our energy use efficiency and prolonging our energy supplies.

Energy Security(continued)

- *Can Substitute or Supplement Other Energy.* Although not always cost effective, biomass energy can supplement or substitute for any other energy source used in the United States including all forms of liquid, gaseous, and solid fuels--even including nuclear energy.
- *Reduces Imported Oil Dependence.* The production and use of indigenous, renewable energy sources reduces our dependence on imported fuels and the associated supply risks.
- *Increases Economic Security.* The production and use of indigenous fuels over imported fuels reduces our trade imbalance and improves our nation's economic security.

Energy Security(continued)



- *Renewable Liquid Fuels.* Biomass is our *only* renewable source of *liquid* fuels—fuels that are the lifeblood of our economy since they are vital for transportation and commerce.
- *Reduces Military Expenditures and Exposure.* The use of indigenous energy resources reduces our cost for and exposure to military confrontations related to energy security.
- *Local Energy Security.* The use of locally produced fuel from multiple sources increases the fuel security of energy users and provides a stably priced fuel, thus protecting our local economic bases.

Southeastern Regional Biomass Energy Program



- DOE national program
- Southeast one of 5 Regions
- Covers 13 states + DC, VI, and PR
- Mission: To promote the production and use of biomass for energy.
- RFP and State cost-shared projects
- \$176,000,000 in economic impact over the last 15 years.

Where do we go from here?



- Create SSEB Bioenergy Task Force
- Task Force:
 - Coordinates and performs activities common to states
 - Creates “template” for states to develop biomass energy

Where do we go from here?



- Template for state programs:
 - Assess biomass resources and demand for resources
 - Determine energy use and needs
 - Determine bioenergy potential relative to energy needs
 - Develop strategies for the development and widespread implementation of sustainable bioenergy
 - Develop policies and programs to support strategies