

West Virginia Bioenergy Markets



What are W.Va.'s current wood residue markets?

Steam use

Pellets

Charcoal

Landscape

Paper

Poultry litter

What are W.Va.'s future wood fiber markets?

W.Va. Energy Opportunities Document

- Coal-biomass-to-liquid plants
- Cellulosic ethanol

What are W.Va.'s current transportation biofuels markets?

Biodiesel

- Production: AC&S (Nitro); Emerald Biofuels (Institute); River Valley BioRefinery (New Martinsville)
- Users: 22 county school systems, 1 public transit authority, passenger vehicles
- Availability: B100 at Inwood Farmers Market; B5 at Martin's Food Store, Charles Town

What are W.Va.'s current transportation biofuels markets?

Ethanol

- Production: None
- Users: Passenger vehicles
- Availability: Exxon (Bridgeport); Dulaney Oil (Morgantown)

Coal-biomass-to-liquid plants

- 100,000 bbl/day from CTL plants would offset W.Va.'s imported petroleum use
- 1.5 billion gallons of CTL/year

Coal-biomass-to-liquid plants

- Same impact as conventional oil
 - ✓ 15-50 percent biomass co-fired
 - ✓ Carbon sequestered

Idaho National Laboratory study

- www.baardenergy.com/press.htm
- CTL fuels can yield 46 percent less emissions of carbon dioxide and other greenhouse gases than conventional low-sulfur diesel transportation fuels
- 30 percent biomass co-feed, carbon capture and storage technology, and combined cycle, co-generation processes.
- Emission reductions measured on a wells-to-wheels basis using the Argonne National Lab GREET (Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation) model

Resources for CBTL plant

- Water: 6 million gallons/day
- Biomass: 15-50 percent on BTU basis
- Coal: 4 million tons a year (without biomass)
- Sites for sequestration
- Level acreage
- Multibillion-dollar capital investment estimated

Does W.Va. have resources?

- Water: Study under way with W.Va. Geological and Economic Survey
- Biomass: 3rd most forested state
- WVU studying collection system
- Coal: 2006 production: 148,483,816 tons.
- Sites for sequestration: Study underway with W.Va. Geological and Economic Survey
- Few sites meet size requirements
- Investment community issues

Project finance 101

- Feedstock
- Offtake
- O&M
- Permits
- Technology
- Utilities
- Site
- EPC

W.Va.'s cellulosic ethanol advantages

- Existing chemical industry infrastructure
- Abundant wood resources
- Access to markets

W.Va.'s approach to cellulosic ethanol

- Support/establish biomass-to-chemical Center of Excellence at WVU
- Pursue federal demonstration funding
- Educate public/industry on cellulosic ethanol opportunity

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