Ponsford Biomass Energy Workshop Wrap Up

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Fueling the Future:

The Role of Woody Biomass for Energy Workshop

March 26, 2009

Ponsford

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Using Woody Biomass for Energy – The Right Thing To Do

- Locally Produced Energy
- Renewable or Green Energy
- Wisely using MN's Abundant Forest Resources
- Utilization of slash, wasted wood
- Reduce use and dependence on fossil fuels
- Local job creation and economic development
- Mutual Benefits- wildlife openings/invasive species removal/clearing/storm damage/landfill reduction, etc
- Carbon cycle and sequestration rather than carbon dioxide into air when burning in field

But what is its value for biomass energy?

Potential value to landowner for biomass energy

- Negative value – Have to pay someone to remove it, taking up space for trees, crops, unsightly, in my yard. No market, land fill costs
- No value – It is just wood laying in a field, miles from a market. Economic loss to haul it so burn it.
- Some value – Where is market, what does it cost to gather, dry, chip, deliver and what are market specs and gate price

Even at zero to landowner, don't forget site to factory gate benefits

- Jobs and economic development:
  - Handling and gathering material
  - Drying
  - Chipping
  - Trucking
- Value to energy plant: jobs, reduce fossil fuel footprint, carbon reduction, energy efficiency, locally produced energy rather than paying someone in ND coal plant, lower plant operating costs at ethanol plant and save jobs
- Site Cleanup

- Even at Zero to landowner sure beats a can of gas and a match putting CO2 back into the air.

All about economics

- Wood for energy, lower value than pulp, lumber, OSB because in past considered “waste wood” so competitive priced that way by market
- Higher end products removed first to make it pay
- Need more markets and competition for wood
- Distance- transportation costs eat up profits- location, location, location
- Market specifications- Chipping costs (varying sizes), drying costs (everything from 20%, 30%, to “green” 50% for cellulosic ethanol)

Industry familiar with harvesting, machinery, handling, processing, value and costs to deliver the logs for pulp, paper, sawlogs, OSB, etc

But what to do with this? Added value for biomass energy?

Costs to operate/move in expensive chipping equipment for utilizing slash after harvest for biomass?

Does/will technology help to improve abilty and reduce costs to collect, store, process, woody biomass?

- Huge pile of slash left from hybrid polar harvest
- John Deere 1490D slash bundler or "Energy Wood Harvester" demonstration on hybrid poplar site west of Alexandria 2004.

Timberjack Slash Bundler Harvester

Ability to bundle wood for later energy use

- Slash is compressed into slash log: dries, stores, handled, and transports easier.
- 1 Megawatt hour of energy per log
- Approx 100# per foot- these were 8 feet
- Equipment costly to own and transport.

Do we want to utilize forest resources more efficiently, providing energy for our country's needs, additional economic development

Note amount of merchantable logs vs remaining woody biomass – Utilize or pile and burn putting CO2 in air???

Needs/Problems to Overcome

- Need more/new markets dispersed near wood/forest resources
- Handling/processing/transportation costs and economic research
- Harvesting/Processing/Handling Equipment Research and Development
- Field demonstration projects
- Education for landowners/govt agencies/loggers/businesses
- Financing for projects
- Environmental concerns/Permitting
- A price for the landowner/forest owner
- Transportation/Handling/Storing/ Bulkiness- Could pelletization help? (Costs and net energy loss?)

Promising Future for Woody Biomass in MN

- MN has vast forest resources and wood industry
- Woody biomass cleaner for burning (Chlorine in Corn Stover requires NaOH)
- Woody biomass denser for transporting
- Not a food or livestock feed
- Many projects started have gone to wood
- AURI work with pelletization
- DNR/RC&D work with dedicated energy crops (hybrid poplars)
- Many partnerships started with priority concern – UM, DNR, RC&D's, CERTS, USDA, SWCD's, MN Forest Resources Council, Tribes, AURI, etc
- State support: MN Governor's 25 by 2025

Promising Future for Woody Biomass

- Resurge of National Support (Pres. And Congress)
  - Renewable Energy
  - Locally Produced energy
  - National security
  - Carbon Sequestration/global warming reduction
  - Reduction of fossil fuel use (ethanol plants)
  - Cellulosic Ethanol/Bioenergy- CMEC Little Falls
  - Much Federal Grant support coming

Local Benefits

- Increased Return from resources while maintaining environmental protection
- Jobs and Economic Development- Loggers, truckers, aggregators, energy plant, equipment sales,
- Wish: More $ for landowner in future

Current Greatest Potential

- Dual Benefits Great Potential:
  - Thinning and Timber Stand Improvement
  - Fire control
  - Wildlife Openings, Prairie Restorations, Brush clearing
  - Logging residue removal/cleanup
  - Coppicing of Hybrid Poplars??
  - Willow and Alder Bogs (Small stems- winter harvest)
  - Land clearing/Construction Projects
  - Urban storm damage, trimmings
  - Diseased Tree/invasive species control

Coppicing of HP: Second and successive crops without replanting

Save root system and replanting costs- but multistem biomass crop

What's Next?

- Collaboration
- Business ventures
- Research
- Grant Writing and Financing
- Field Demonstrations
- Education
- Foundation and Private Business Support
- Local, State, Federal Support
- Legislative support




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Resource Conservation and Development

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