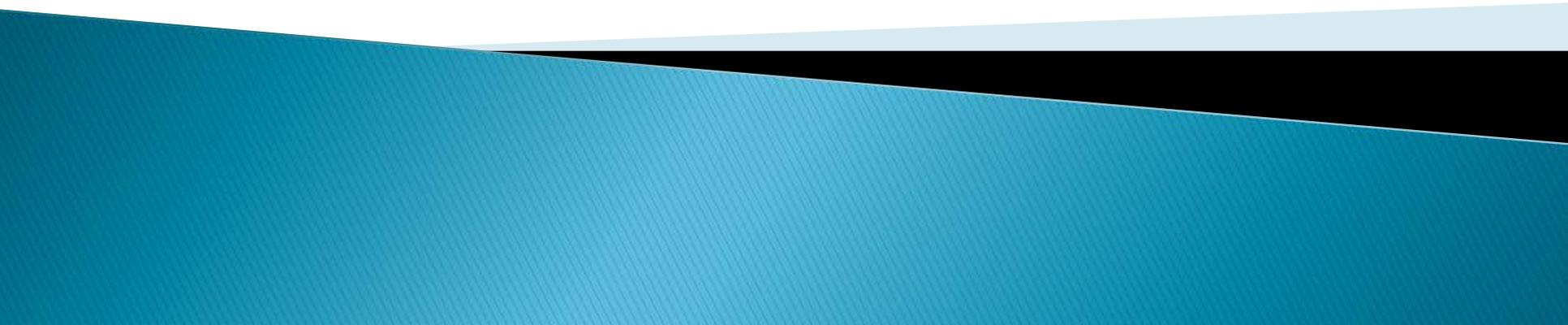


Biomass Energy Recommendations

Biomass Workgroup
Intergovernmental Collaboration Committee



The biomass sector

- ▶ Seven wood-to-electricity
 - Cadillac Renewable Energy 36 MW
 - Genesee Power Station 36 MW
 - Grayling Generating Station 36 MW
 - Hillman Power Co. 18 MW
 - L'Anse Warden Electric (*co-gen*) 18 MW
 - Viking Energy / Lincoln 18 MW
 - Viking Energy / McBain 18 MW

The biomass sector

▶ Other facilities

- TES Filer City 9 MW co-fire, co-gen
- Verso
 - Quinnesec 25 MW biomass
 - Escanaba 100 MW co-fire, co-gen
- NMU idle
- CMU idle
- MSU idle

The biomass sector

- ▶ Fuelwood economics
 - 26% of wood fiber resources (2012)
 - 1.57% of total generation (2012)
 - Significant baseload renewable
 - 2012... 28%
 - 2013... 23%
 - 2014... 32%
 - Economics (2013)
 - 686 jobs
 - \$33M labor costs
 - \$62M production output

TAC biomass objectives

- ▶ Align feedstock and energy policy
 - Optimize existing biomass capacity
 - Determine feedstock potential & opportunities
 - Identify barriers
 - Integrate with other industries
 - feedstock producers, energy customers (*utilities*)
 - Alignment of programs, regulations, etc.
 - Identify & define potential “roles” for biomass

ICC biomass workgroup

- ▶ Intergovernmental Collaborating Committee
 1. Biomass education: forest products markets
 - Resource managers
 - Forest products industry
 - Power providers and users
 - Policy makers
 2. Investigate policy and other impediments

ICC biomass participants

- ▶ **Nadia Abunasser**
MEDC
- ▶ **Brian Ballinger**
MPSC
- ▶ **Julie Baldwin**
MPSC
- ▶ **Salvatore Gaglio, Attorney**
Treasury
- ▶ **James Goodheart**
MDEQ
- ▶ **Mike DiBernardo**
MDARD
- ▶ **Mark Sargent**
MDNR
- ▶ **Michael Stone**
Department of Military and Veterans
Affairs
- ▶ **Bruce Goodman**
Attorney, Varnum Law
- ▶ **Zachary Halkola**
PM Power
- ▶ **Gary Melow**
Michigan Biomass
- ▶ **JR Richardson**
PM Power
- ▶ **Tom Vine**
Viking Energy of McBain, Inc.
- ▶ **Tracie Bonner**
MDNR
- ▶ **Donna Stine**
MDNR
- ▶ **Donna LaCourt**
MDARD
- ▶ **Bill O'Neill**
Chief, MDNR–Forest Resources
Division
State Forester

Format

- ▶ “No regrets” energy future
 1. Adaptability
 2. Reliability
 3. Affordability
 4. Protect the environment
- 

1. Adaptability

- ▶ Reduces waste
 - Beneficial reuse: material “waste”
 - Distributed generation: line loss elimination
- ▶ Diversifies energy portfolio

2. Reliability

- ▶ Distributed generation
 - Reduce outage impacts
 - Grid support
 - Voltage stabilization
- ▶ Energy security
 - Local resources
 - Less affected by national/international disruptions
 - Low volatility
 - Hedge on commodity fuel pricing

3. Affordability

- ▶ Reduces ratepayer risk
 - Cap ex born by investors, not ratepayers
- ▶ Fix-priced long-term contracts
 - Predictable, stable costs
- ▶ Economic support
 - Local jobs
 - Local spending
 - Local tax base

4. Environment

- ▶ Reduced air emissions
 - Mercury, ozone, sulfur oxides (coal)
 - Carbon neutral
 - Preserves non-renewable resources
- ▶ Promotes forest health
 - Forest debris removal
 - Wildfire risk
 - Regeneration
 - Disease, infestation
- ▶ Preserves landfill space

Recommendations

1. Enhance the competitive environment for self-generation, IPPs and utilities
 2. Review statutes, rules and utility tariffs related to self-generation and IPPs
 3. Determine the full value of biomass power
 4. Maximize Michigan's biomass resources available to energy markets
- 

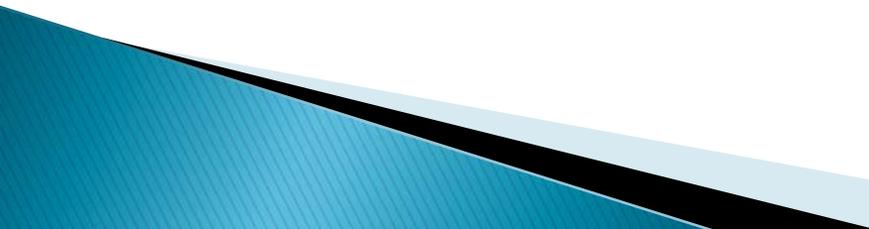
1. Competitive environment

- ▶ Provide incentives / remove impediments to non-utility generation
 - Shared development of biomass energy projects
 - Parity between new/existing PPAs (*RPS*)
 - Competitive solicitation to meet needs
 - Integrated Resource Plan

2. Review

- ▶ Rules, statutes, tariffs affecting self generation, IPPs
 - Ratemaking for standby rates
 - Interconnection costs & implementation

3. The value of biomass

- ▶ Quantify the “value added” of biomass energy
 - Grid support
 - Jobs, economics
 - Environmental benefit
 - Waste management
 - Beneficial reuse
 - ▶ Education & outreach
 - Financial markets
 - Government agencies/regulators
 - Legislature
- 

4. Maximize biomass resources

- ▶ Biomass = recycling (beneficial reuse)
 - Viable component for recycling programs
 - Identify opportunities
 - New wood fiber markets
 - Industrial wood wastes
 - Storm debris
 - Forest management
 - Timber harvests

Status today

- ▶ **Integrated Resource Plan**
 - Where does biomass fit in?
 - Cost & reliability
 - Baseload, renewable
 - Distributed generation
 - Economic, ecological, environmental benefit
 - CPP / Sec. 111(d) / State Implementation Plan (SIP)
- ▶ **Expiring contracts (*52 MW by 2018*)**
 - Michigan Public Service Commission
 - Energy legislation
 - Impact on forest products industry
 - Future opportunities

Summary

- ▶ Forest resource policy
 - Maximize resources available for energy
- ▶ Energy policy
 - Recognize biomass “value added”
 - Economics: jobs, rural communities
 - Grid support
 - Cost competitive, reliable
 - Role in SIP
 - Allows biomass to compete (IRP)
 - Ability to compete
 - Level playing field

Contact

Gary Melow

gary.melow@michiganbiomass.com

989.763.0672

www.michiganbiomass.com

Michigan 
Biomass