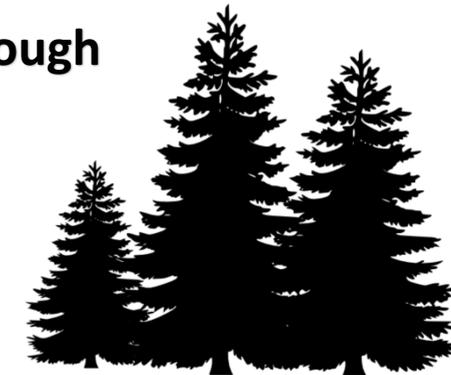


Forest bioenergy barriers: Informing federal and state policy development through key informant interviews

Michelle E. Benedum¹ Dennis R. Becker¹ Karen Abt² Christopher S. Galik³ Greg Latta¹ Marcus Kauffman⁴ Robert W. Malmshiemer⁵ John Schelhas⁶



¹Department of Natural Resources and Society, University of Idaho, Moscow, ID USA
² Forest Science Laboratory, U.S. Forest Service, North Carolina
³ Department of Public Administration, North Carolina State University, Raleigh, NC, USA
⁴ Biomass Research Specialist, Oregon Department of Forestry, Salem, OR, USA
⁵ Department of Forest and Natural Resources Management, SUNY, Syracuse, New York, USA
⁶ Southern Research Station, US Forest Service, Athens, GA, USA



Introduction

U. S. woody biomass markets are driven by national security risks, the need to manage for catastrophic wildfires, and the desire to harness renewable energies.

Woody biomass provides ancillary benefits including:

- Stimulating local economies
- Diversifying wood products industry
- Reducing cost of hazardous fuel reduction treatments

What is the problem?

- Forest bioenergy sector is slow to progress
- Barriers are not well understood
- Minimal research whether policies recognize and address barriers

Objective

Identify woody biomass barriers and opportunities through key-informant interviews

Methods

Semi-structured interviews based on three challenge categories identified through a literature review. Key informants selected based on experience and regional representation

Category	Aim of the questionnaire
Social and political acceptability (7)	<ul style="list-style-type: none"> - Identify the elements of projects triggering social and political responses - Identify public perceptions of forest bioenergy
Supply chain (5)	<ul style="list-style-type: none"> - Identify extent of raw material supply constraints - Identify supply chain characteristics that affect markets
Markets and economics (8)	<ul style="list-style-type: none"> - Identify market and economic barriers to utilizing woody biomass for energy

★ Social and Political Acceptability

○ Markets and Economic Development

▲ Supply Chain



Fig 1. Regional distribution of experts

Findings

Social and Political Acceptability

Unustainable use of forest resources

- Concern if biomass demand increases it will dictate forest mgmt. rather than be a product
- ❖ Certain states implemented specific forest management practices to ensure sustainability; often times these include audits.

Air quality and health related impacts

- Public perceptions do not align with wood energy as a clean burning system
- ❖ EPA alleviated some concern by setting new regulations for quality and efficiency for household boilers

Facility logistics

- Larger facilities become visible to the community; creates an economy to scale issue
- ❖ Addressing concerns in a prompt and direct manner; articulate a clear message about the benefits and impact of a facility

Market and Economic Development

Competition with other energy sources

- Fossil fuels are artificially inexpensive because there is no recognition of the net carbon addition
- Uneven support across renewable energy sector
- Use of biomass requires an establish supply chain and facility operators
- ❖ Legislators could force utilities into negotiations with biomass plants

Markets are reactive

- California is experiencing millions of dead or dying trees, policies are now
- ❖ Numerous forest health and utilization of woody biomass policies enacted

Uncertainty leads to risky investments

- Twenty-year contracts are problematic because it is difficult to reliably predict long-term fluctuations of support
- ❖ Industry needs a robust, long-term policy signal suggesting forest bioenergy is politically supported

Supply Chain Logistics

Demand before supply

- Resistance to remove material unless there is an end use;
- Lack of demand undermines capacity
- ❖ When demand increased in the NE, investors and manufacturers had the confidence to progress with large investments

Quality rather than quantity

- Quality standards differ for industrial vs. residential uses
- ❖ A small percentage of contractors have modified practices to produce a de-barked, clean chip, and have access to the market

Synergy and adaptable businesses

- Relationships between traditional wood products industry and bioenergy through integrated harvesting techniques
- ❖ A broader sweep of contracting services and diversified business models to utilize more biomass

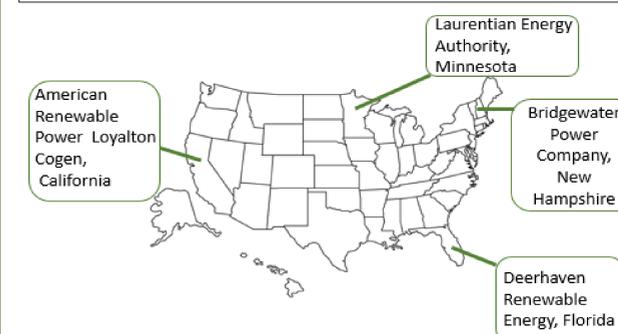
Conclusion

1. Use of woody biomass is socially and politically accepted but not politically supported
2. Woody biomass provides an economic opportunity for rural communities but is unable to economically compete with other energy sources
3. Lack of demand directly impacts supply chain capacity but there is an opportunity to facilitate synergistic relationships across the supply chain

Next steps – case studies

Objectives

1. Identify conditions necessary for facilities to be successful
2. Evaluate how facilities respond to policy changes.
3. Identify the role of policy innovation in influencing facility operations



ARP Loylton Cogen
http://www.biomasspowerassociation.com/profiles/membership_ARP.php



Deerhaven Renewable
<http://earthtechling.com/2010/12/big-florida-biomass-plant-gains-backing/>



Laurentian Energy Authority
<http://biomassmagazine.com/articles/5144/building-the-biomass-industry>



Bridgewater Power Company
<https://supportnhibiomass.wordpress.com/n-h-biomass-plants-impacted/>

Acknowledgements

USDA Office of the Chief Economist Cooperative Agreement Number 58-0111-17-008

For additional questions please contact: Michelle E. Benedum at mbenedum@uidaho.edu