# Secondary Stakeholders

- *Preliminary Finding No. 2*
  - *Factors limiting industry expansion include:*
    - *Large capital investment needed to build or upgrade plants*
    - *Availability of skilled, reliable, local labor*
    - *Misinformation & suspicion by local residents & authorities*
    - *Mistrust based on previous failure of biomass industry 20-30 years ago, where people got "burned"*

# Secondary Stakeholders

- *Preliminary Finding No. 2*
  - *Implication: Simply demonstrating technical feasibility is just the first & perhaps most straightforward of many hurdles…*

# Secondary Stakeholders

- *<u>Preliminary Finding No. 3</u>*
  - *Current biomass operations are largely break-even businesses that rely on special "financial incentives" such as those obtained by selling products out-of-state (e.g., credits for green electrical power)*

# Secondary Stakeholders

- *Preliminary Finding No. 3*
  - *Current biomass operations are largely break-even businesses that rely on special "financial incentives" such as those obtained by selling products out-of-state (e.g., credits for green electrical power)*
  - *Implication: Businesses & communities must be convinced that there is a sustained and local return before the large investment & risk will be accepted*

# Secondary Stakeholders

- *Preliminary Finding No. 4*
  - *Unfortunately, wood composites provide an example of what not to do – i.e., dazzle an array of new & unfamiliar products in front of a community without first demonstrating commercial feasibility throughout the value chain*

# Secondary Stakeholders

- *Preliminary Finding No. 4*
  - *Unfortunately, wood composites provide an example of what not to do – i.e., dazzle an array of new & unfamiliar products in front of a community without first demonstrating commercial feasibility throughout the value chain*
  - *Implication: BioProducts expansion must show that it will yield salable products with viable distribution channels that will be sustainable for the long-term*

# Next Steps…

- Continue Stakeholder Interviews
  - *BioEnergy*
  - *BioProducts*
  - *Higher-level Management*
  - *TIMOs, Venture Capital & Private Equity Funds, Institutional Investors…*
- General Population Mail Survey

# Preliminary Findings

- The potential impacts of increased biomass harvests & an emerging BioProducts industry are largely unknown…
  - *Ecological impacts*
  - *Economic impacts*
  - *Social impacts*

- Education & outreach efforts are needed across all stakeholder groups – including the research community…


# University's Role in BioProducts

- Research vs. Advocacy
  - *Identify tradeoffs*
  - *Inform debate*
  - *Serve as an objective, credible "Honest Broker"*
- Recognize that decisions are likely to be political, with "science" being just one of many inputs…
  - *Local, state, federal & beyond…*

# University Role in BioProducts

- Current & On-going Research
  - *Resource Base, Processes, Products…*
- Additional Research is Needed to Anticipate & Respond to Emerging Concerns
  - *Biophysical (forest health, soil nutrients…)*
  - *Social (human health…)*
  - *Economic (rural development, tax base…)*
- Education & Outreach

# A Cautionary View…

- Forest practices in the U.S. have generated controversy for over a century…
  - *Clearcutting*
    - Adirondacks
    - Monongahela
    - Bitterroot Controversy
  - *Timber harvesting in late successional forests*
    - From "*Old & Decadent*" to "*Ancient*" (& irreplaceable)

# Some Recent Successes…

- Communities across the West are starting to understand the links between:
  - *fuels*
  - *wildfire danger*
  - *forest management*

# Getting it "Right"

- And recognizing the need for a healthy forest products industry…
  - *Wildland fuel treatments*
  - *Rural economic development*
  - *An alternative to subdivisions…*

# On the Positive Side…

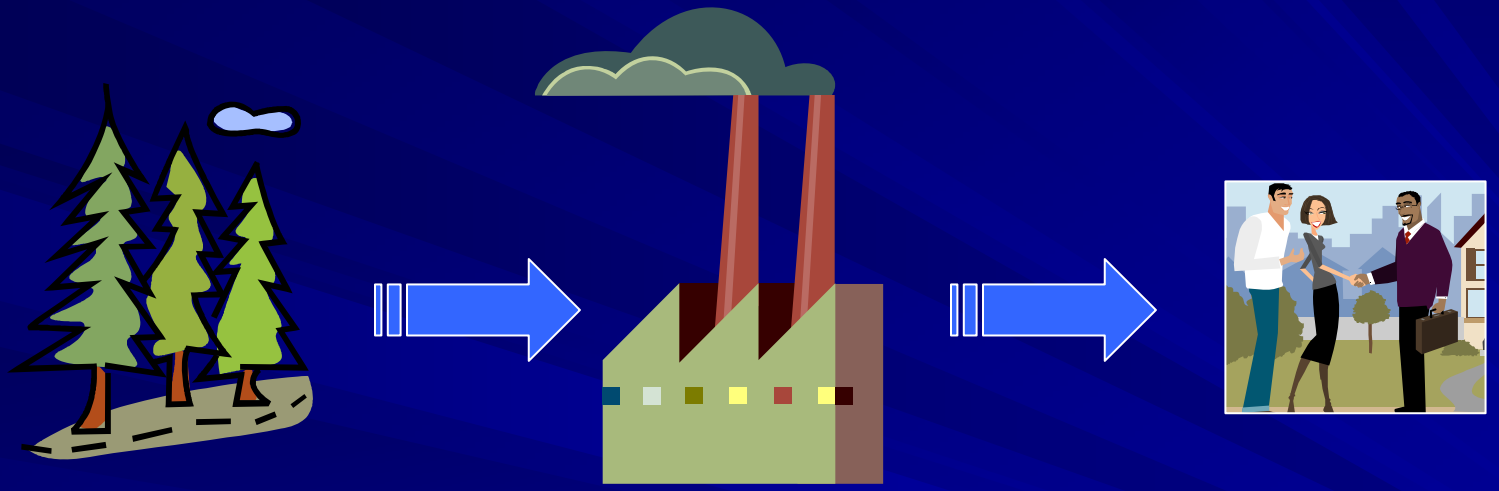
- BioProducts & BioEnergy reduce use of non-renewable fossil fuels and lower greenhouse gas emissions…
  - *Sustainable*
  - *Carbon neutral*
  - *Rural economic development*
  - *Energy/resource independence*

# But…

- While public concerns over climate change, use of non-renewable fossil fuels, and energy dependence are widespread & growing…

- These trends have not alleviated concerns over alternative energy:
  - *Nuclear Power*
  - *Hydro Power*
  - *Wind Power*

# Stakeholder Interests



Source or extraction process

Processing

Use or Consumption

| Product | Source | Processing | Use |
|---|---|---|---|
| GMOs | | | |
| Fluoridation | | | |
| Irradiated Foods | | | |
| Nuclear Power | | | |
| Hydro Power | | | |
| Wind Power | | | |
| BioEnergy | | | |
| BioProducts | | | |

| Product | Source | Processing | Use |
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| BioEnergy | | | |
| BioProducts | | | |