Biomass Feasibility Studies

Essential Elements - Common Pitfalls

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Elements of a Biomass FS

- **Biomass Resource Assessment**
  - Access & Ownership
  - Long-term sustainability

- **Heat Load Assessment**
  - Appropriate to available technology?

- **Site analysis**
  - Power, Water, Road, Storage, Available Space

- **Human resources**
  - The most important element!
  - Project Champion + Suppliers, Operator
Essential Characteristics

• Technology-agnostic perspective
• Vendor-neutrality
• Avoid “Engineering Blindness”
• Avoid conventional HVAC design parameters
• Preliminary Environmental review
• Preliminary Economic Analysis
• Technology characterization
  • Outcomes-based model
Great technology-no champion
Pending disaster-No champion
Wood Supply, or go home

- Biomass supply is single most important physical requirement for a biomass project
- Locate and quantify all potential sources of biomass
  - Forests: Tribal, State, Corporate, Private
  - Residues: sawmills and agricultural
- Available quantity? Is it a sustainable supply?
- Competing uses (local firewood cutters)
- Quality
  - Moisture content (MC)
  - Chemical composition (salt?)
- Seasonality (Winter harvesting?)
- Collection, transport, storage: Cost? Who?
A good FS

• Road Map
  – Next steps
  – Pilot project
• Alternatives
  – Sometimes the answer is NO.
• Technology primer
  – Layman’s explanation
• Answers
  – Not just the apparent questions
A brief word from our motivator: Urgency

• Alaska is the US leader in *energy urgency*

• Conventional Energy will *inexorably* be more expensive over time

• Projects need to exploit any available incentives and subsidies
  
  *as if there were no tomorrow!*

• There may not be...
Forces are Conspiring

Peak Oil, Peak Gas, Peak Coal, Peak Uranium

• Author: Richard Heinberg
• “Searching for a Miracle”
• “The End of Growth”

Eye opening, must-read book

• Author: Bill McKibben
  “Eaarth”

Aging infrastructure & growing demand

• Author: Lester Brown (Worldwatch)
  “Plan B 4.0”
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