



F. H. STOLTZE LAND & LUMBER CO

Tailoring a Sustainable Biomass Supply Chain for Your Facility

Ongoing Lessons and Experiences

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Mission Statement

- Meet the needs of current generations without compromising the ability of future generations to do so.
- Healthy Forests
- Healthy Families
- Healthy Communities



102 years of Success



Long Term Vision

- Quality
- Stewardship
- Employees / Contractors
- Community
- Diversity



F.H. Stoltze Land & Lumber Co.

Manufacturing

- Multi- Species – Multi product mill
 - Dimension and boards
 - Specialty products and pattern, dry kilns.
 - Use most western conifers, DF, WL, ES, LPP, AF, GF
 - Smallest log 5" top 10'6 minimum length, no max log diameter, maximum length 41'
- Use 40+mmbf logs annually (8000 log trucks/ year), Enough lumber to build roughly 4,400 homes.
- 120 employees, another 65-70 contractors.
- Put roughly \$28,500,000 into our local economy annually.



WHY Invest In Co-Gen?

- 100 year old boilers
- Need up to 30,000lbs/hr steam for lumber dry kilns
- Need more dependable – diversified outlet for biomass generated from our manufacturing and forest management activities.
- Desire to improve air quality over the 100 yr old 159' tall natural draft stack and open burning of logging slash.
- Need to diversify our business portfolio beyond solid wood products.





Final Proposal

- **2.5mw turbine, 40,000lb boiler located at Stoltze. 30,000bdt/yr fuel consumption.**
- **Meets current and potential future industrial steam load.**
- **Could use up to 20% forest management generated fuels if cost of fuel is affordable. (up to 6,000 bdt/yr @ 45% MC = 9,250 green tons - 300 truckloads/yr)**
- **Uses mill residuals as primary fuel.**





Operational Realities

- All Biomass is not created equal.
- Clean is a relative term.
- Cost is no object.....to engineers.
- You can not buy Biomass on Amazon.....with next day shipping and your choice of moisture content.
- Available biomass per acre of forestland does not really mean “available” to YOU.
- There is competition for the material you need.



Building a Supply Chain



- Contractor
- Landowner
- Purchaser

Contractors

- Dependability and predictability are **GOLD** to suppliers.
- Set the correct expectations from day one.
- Build partnerships, not contracts.
- Understand unique logistical challenges of your area.
- Develop a culture where quality is as important as cost.
- Communication lines need to work both ways.
- Understand the business end of your supply chain. Track costs and trends.
- Biomass must be included in the planning process for land management activities.
 - Quality starts at the stump.
 - Efficiencies only exist if they are planned for.



Landowner Relations



Landowner Relations

- Starts well before plant opens up and you start buying fiber. Especially agencies!
- Set Expectations right out of the box. VALUE – Quality – Volume
- Be realistic about what your market will mean for in woods management. Infrastructure? Cost or Gain?
- Understand the “Is Biomass good or bad” Issue.
- Regulatory benefits of biomass utilization – smoke, slash reduction etc....



Fiber Procurement Manager



Fiber Procurement Manager

- Find a balance and act as interpreter!
- Experience in Forest Management more important than experience in Biomass.
- Know the details of both sides of the operation.
- Fully understand biomass specifications and seasonal volume needs.
- Understand existing local markets
- Understand the economics
- Listen.



Costs and availability



Costs and availability

- Biomass is never “free”ANYWHERE!
- All feasibility studies under estimate cost and over estimate availability!
- Understand existing markets and impact of competition.
- You get what you pay for.
- Effects of regulatory change – Minimum wage, Hours of service.
- Buy equipment and hire employees then you can talk about COSTS!
- Big difference between “available biomass” and “biomass available”.



Take Home's

- Value of Dependability
- Deliver Consistent Message from day One
- Build Diversity into Supply Chain
- Quality starts at the stump
- There is NO Free Biomass





QUESTIONS?

F.H. STOLTZE LAND & LUMBER CO.

EST. 1912

100 YEARS AND STILL GROWING

**HEALTHY FORESTS
HEALTHY FAMILIES
HEALTHY COMMUNITIES**



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