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Biomass Boiler Opportunities for Southeastern based Manufacturers

Manufacturers are facing incredibly difficult economic conditions in conjunction with;

- Unpredictable, fossil fuel energy costs
 - ❖ Example: NC industrial company currently using natural gas to produce 50,000 pph of steam.
 - ❖ 2002 Expenditures: \$2,542,000 (@ \$5.00 DT @ 50K pph)
 - ❖ 2008 Expenditures: \$5,211,000 (@ \$10.25 DT @ 50K pph)
- Voluntary and soon to be Government mandated initiatives to reduce green house gas emissions.

How can industrial steam users respond?

Biomass cogeneration facility

- Annual fuel savings in excess of 50%
- Implements a renewable energy platform
- Green house gas “neutral”
- Exceeds financial and environmental metrics



How are such strong savings generated?

No Magic!

Simply a matter of cost per million Btu input!

Green Wood Chips

**\$2.38 per
MMBtu.**

Assumes \$25 per ton, 48%
moisture, avg. Btu per lb of 5,251



Natural Gas
**\$7.00 per
MMbtu**

Assumes \$7.00 per DT Spot
price Henry Hub. Inc. trans and
distribution

Are biomass boilers a “new” technology? No!

- Biomass boilers are an established, reliable source of producing steam.
- There were 287 permitted biomass boilers in North Carolina as of 2006.
- Biomass has successfully provided a dependable source of steam for forest related industries for more than 150 years.
- Biomass power plants provide 7,000 MW of power to the national power grid and industrial energy users.

Wellons Energy Systems goal:

“Re-position” biomass energy as a viable energy source for industrial manufacturer’s in the southeast.

Economic and Environmental Impact of a 50,000 PPH Biomass Cogeneration System

- \$10,000,000 capital spending, with \$1 to \$3M in local spending for construction services.
- Construction employment during installation of 10-15 craftsman.
- Long-term employment, after construction, 5-6 operators.
- Indirect employment of 5-8 people that will be hired by biomass suppliers to provide solid fuel to the facility.
- The creation of economic value for “dirty chips”, a residual product from logging that has no current economic value, \$1.0-\$1.5M.
- The creation of 3.8m kWh of renewable energy.
- A reduction of 27,000 tons of CO₂ by displacing natural gas fired boilers.
- Direct economic savings by our customer of \$1.1M per year.

In closing, if we can be of service, please let me know.



350 biomass installations

43 cogen installations



Wellon's Energy
Converting
Natural Resources
into Renewable Energy



Thank you.



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