

Fink Machine Practical Learning

Arctic Bioenergy Summit - Jan. 28, 2026

Fink Machine Inc



*State of the Art Bio Energy Heating Systems
Revolutionary Wood Heating Technology
Highly Economical for Commercial, Industrial Buildings*

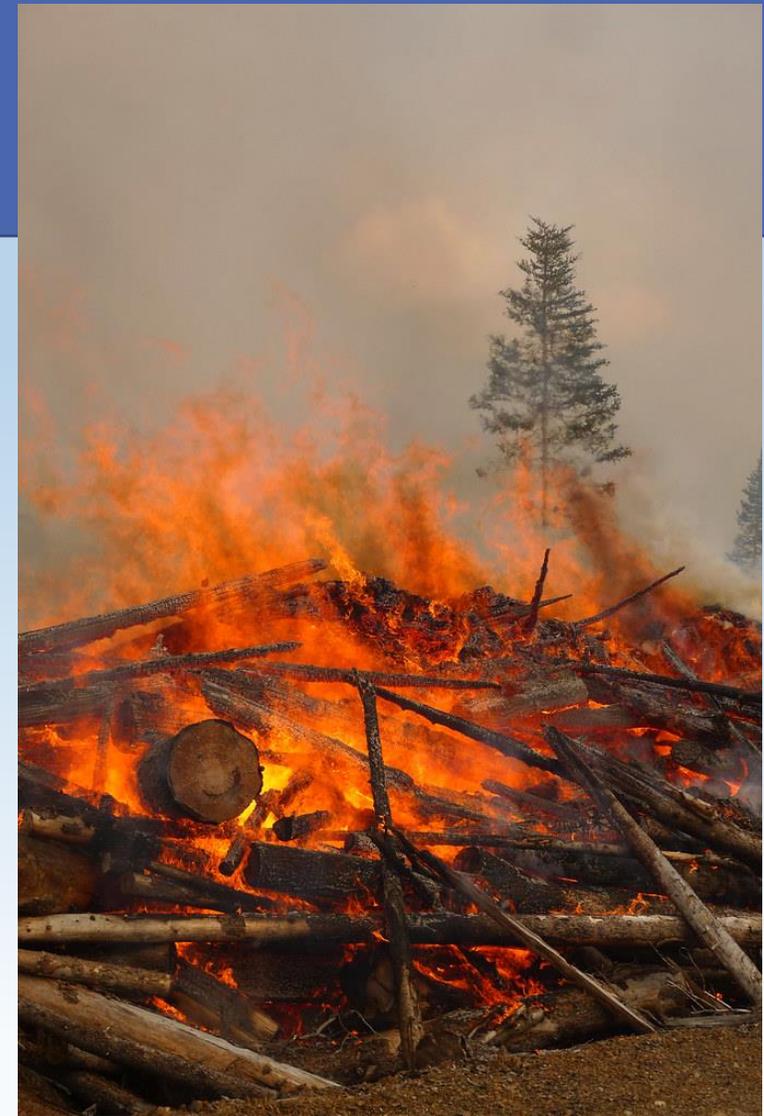
Economic Drivers

- Lower fuel costs
- Economic Development
 - Local Fuel
 - Forest Sector Diversification
 - Energy Sales – ESCO, District Heating, etc.
- Reduce cost/Alternate use of waste



Environmental/Sustainability Driver

- Lower Carbon
- Renewable
- ~~Waste~~ Residue Utilization
 - Diversion from Landfill
 - Avoiding Slash-pile burning
- Lower Toxicity risk
 - Transportation risks
 - Unfunded liabilities from fossil fuel contamination

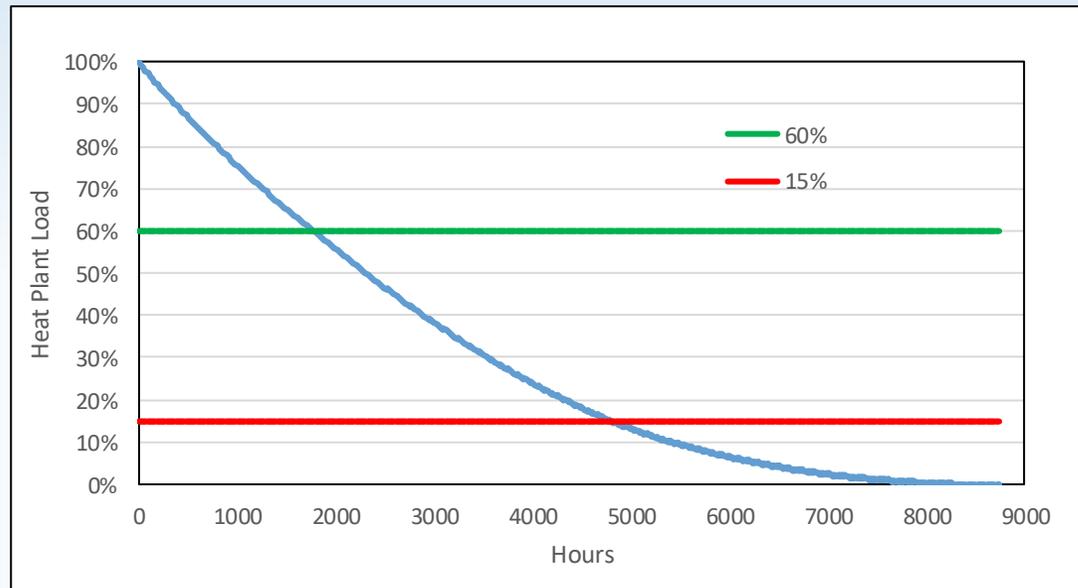


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Heating Boiler Design

- Balance of biomass use and capital and maintenance costs
- Single biomass boiler at approx. 60% will do 80-95% of the demand
 - If adding a second boiler design it around base load
 - Caution - additional boilers add maintenance and operation cost
 - Evaluate additional cost vs energy displaced



Hydronic heating design

DO NOT OVERSIZE THE BOILER.

- simplify plant design
- Use back-up boilers
- Provide high temp water for DH, process heat etc.



Buffer Storage Tank

- Allows for modulation of boiler
- Absorbs Excess heat at shut down
- Faster Response Time
- Prevents Cycling
- Improves efficiencies
- Hydraulic Separator from boiler
- Buffer Tank = Battery
- Best Bang for your Buck!



Selling Biomass Heat Internally – Key for Success

- Operator buy-in is critical - can make or break a project
- Goes beyond just training
- Engage early to DE-mystify and DE-risk
- Knowledge transfer/continuity



Key Take-Aways

- Biomass heating can reduce your current energy costs.
- Biomass heating is a sustainable low carbon energy.
- Biomass fuel can support other goals such as economic development and community resiliency.
- There are a variety of fuels options and based on that choose your boiler system.
- A well-designed biomass boiler system can displace 80-95% of your existing fuel usage.



Final Thoughts

- Operator buy in is more critical than fuel quality
- Good operators can get good results with poor fuel with diligence and commitment
- For smaller systems it is more cost effective for more expensive better-quality fuels than doing increased maintenance (chips/pellets)



Questions?

