

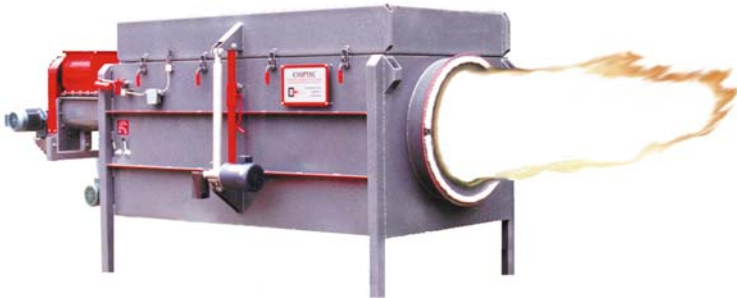
CHIPTEC®

WOOD ENERGY SYSTEMS

CHIPTEC sells state of the art, patented, biomass energy equipment for heat, steam, and power generation. We have the most experienced team, proven technologies, successful installations, and satisfied customers of anyone in our product niche.

Our Mission is to reduce and stabilize your long term energy operating costs.

The **Phoenix Series**, is from 1MM to 18 MM B.T.U.'s/Hr. It is the simplest, cleanest, most responsive system we have built yet. It has effective, elegant control features. It has extraordinary load following, idling, and demand recovery characteristics. It is very carbon efficient, has low maintenance, and long run times. It has a 20:1 turn down ratio.



Phoenix Series



B-Series

The **B-Series**, is from 10 MM to 65 MM B.T.U.'s/Hr, It is suited for long run times, with no internal maintenance, or boiler cleaning required, for up to six months. Ideal for steady state steam loads such as industrial heat and steam loads, turbines, and chillers.

Cool Advantage: We produce pyrolysis gas in a relatively cool chamber from 1000F to 1400 F. We can operate with a wide variety of materials, including those with high mineral content, without moving or fluidized grates, or suspension burn systems. This reduces labor and maintenance costs. The relatively cool gasifier eliminates clinkers and allows automated removal of ash, with limited grate cleaning required. Use of “marginal” fuels with various types and concentrations of minerals, with lower fusion temperatures, can lower operating and disposal cost. We have experience with up to 22% mineral fuels.

Hot Advantage: We oxidize the gasses in a hot chamber, the boiler, at up to 2300 F. That’s hot enough to oxidize most volatile organics in the gas stream, reducing air quality treatment needs. We also oxidize complex organics from fuel like creosote, formaldehyde resins, and organic glues, increasing the range of appropriate fuels. This efficient use of carbon content in the fuel leads to reduced ash removal costs, and high fuel efficiency.



54 Echo Lane, Unit #1
Williston, VT 05495
802-658-0956
Fax: 802-660-8904
www.chiptec.com

CHIPTEC®

WOOD ENERGY SYSTEMS

Air Quality: We are permitted in the strictest zones with simple, inexpensive, multi-cyclone stack cleaning devices. Many systems are in the middle of towns, with no char, smoke, ash, or negative consequences. We have never been refused a permit.

Pollutants	Chiptec Emission Rates	USA Federal Government
	(Wet & Dry Fuel)	AP-42 Emission Factors(Wet & Dry Fuel)
	lb./MMBtu	lb./MMBtu
Total Particulates*	0.1 -0.2	0.22-0.3
Oxides of Nitrogen:	0.2	0.22 -0.49
Carbon Monoxide:	0.2	0.6
* Emission factors for systems utilizing mechanical particulate collection devices		

Moisture Content: We successfully operate with fuel with a 6% to 60% Moisture Content, wet basis. This range allows fuel switching at any time due to supply or price.

Operations: Many of our systems run for long periods of time with an operator on a beeper, who can be doing other productive work. Systems will run through three day weekends with no operator requirements. Some models have operated for up to 6 months with no internal maintenance what so ever. Maintenance is basic “tractor maintenance”.

Elegant Installation: Using smart system configurations and control strategies, from fuel receiving to stack treatment, our technologies “disappear” a system from your mind’s eye. Advanced, but easy P.L.C. controls, efficient fuel storage equipment, gasifier ash removal, boiler purging, and simple stack gas cleaning, normalize the system.

Financing: Most financiers will look at existing cash flow expensed for fossil fuels as a source of repayment. You can move the cost of energy from your income statement to your balance sheet, amortize it, and get rid of it. Chiptec technologies maximize fuel efficiency, minimize manpower requirements, reduce maintenance, and create the best possible cash flow and R.O.I. Systems often create positive cash flow immediately.

Safety: We utilize a well developed and proven series of safety systems for the protection of the operator, equipment and the process. The safety systems cover water, air, fuel, hardware and the boiler . The system is intelligent and can send out an alert over a modem, network or a pager

We have offices and employees in North America and Europe ready to serve you



54 Echo Lane, Unit #1
Williston, VT 05495
802-658-0956
Fax: 802-660-8904
www.chiptec.com