



# CHIP ENERGY CLEAN RENEWABLE FUEL

401 W. Martin Dr. PO BOX 85  
GOODFIELD, IL 61742  
PH 309-965-2005 Fax 309-965-2905

## The Chip Energy Biomass Furnace and Dragon Unit

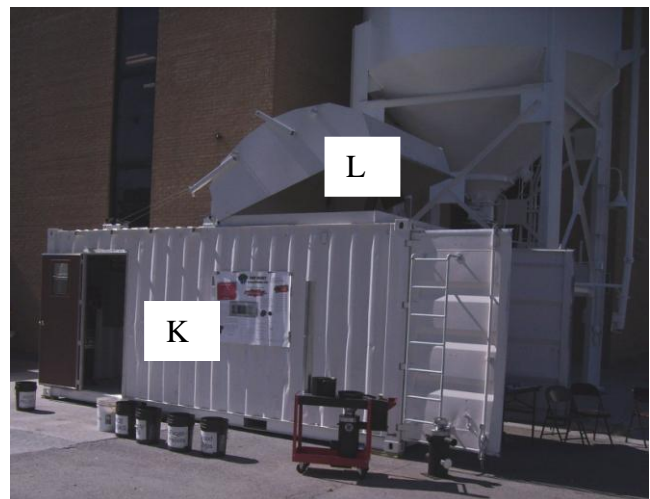
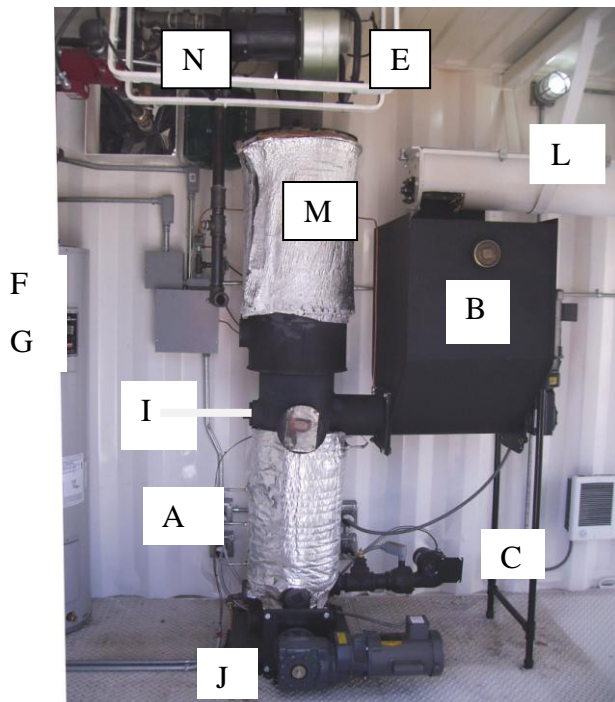
Chip Energy has designed and built a virtually smokeless, high efficiency gasifier and combustor that can use many diverse biomass fuels in chip or pellet form. It produces 60 kW<sub>thermal</sub> (200,000 BTU/hr). The gasifier is available in two product configurations: the full-featured Biomass Furnace with hydronic heat capture, and the limited-featured "Dragon that puts fire into your application when and where you want it." In addition to heat, both products create high-quality biochar (the co-product of pyrolytic micro-gasification of biomass. For optimal operation and safety, both the Chip Energy Dragon Unit and Biomass Furnace have been tested to ensure automated electronic control, safety, fuel feed compatibility, removal of consistent biochar, and low emissions.

## Components and Options

- A. Gasifier 200K BTU (60 kW<sub>thermal</sub>)
- B. Basic Fuel Hopper w/ Air Lock
- C. Primary Air Blower
- D. Secondary Air Blower
- E. Draft Inducer Blower
- F. Electronic System Controller
- G. Controller Screen
- H. Thermal Probes & Sensors
- I. Auger for Fuel Entry
- J. Auger for Biochar Removal

*For the Biomass Furnace Only:K*

- K. 20-ft. Shipping Container
- L. Large main fuel hopper, with Auger
- M. Flash Boiler 200K BTU
- N. Hydronic Pump and Pipes
- O. Advanced Electronic System Controller and Screen



**Chip Energy Biomass Furnace:**  
Installed and operational at a municipal  
waste recycling facility.



## Chip Energy Biomass Gasifier in a “Dragon” configuration:

Shown constructed on a steel pallet that can be transported and even operated in a pick-up truck (but it does not power the truck). The air-to-air heat exchanger (lower left in the above photos but not included in the most basic unit) is an example of what could sit on top of the gasifier to utilize the heat.



The combustible gases and flames exit from the top of the gasifier, assisted by the induction fan (shown), and can be directed in any direction, including downward on the outside of the Dragon unit. Literally, “the Dragon puts fire into your application when and where you want it.”

Prices are determined by the product configuration and range from US \$15,000 for the minimal unit (“Dragon” class) to US \$50,000 for the fully-equipped Biomass Furnace.

## REFERENCES

At the Chip Energy Website [ [www.chipenergy.com](http://www.chipenergy.com) ] is further information:

[http://chipenergy.com/images/pdf\\_docs/biomass%20furnace%20project%208-19-2009.pdf](http://chipenergy.com/images/pdf_docs/biomass%20furnace%20project%208-19-2009.pdf)

or contact by Email Paul W. Wever, President: [pwever@chipenergy.com](mailto:pwever@chipenergy.com)