
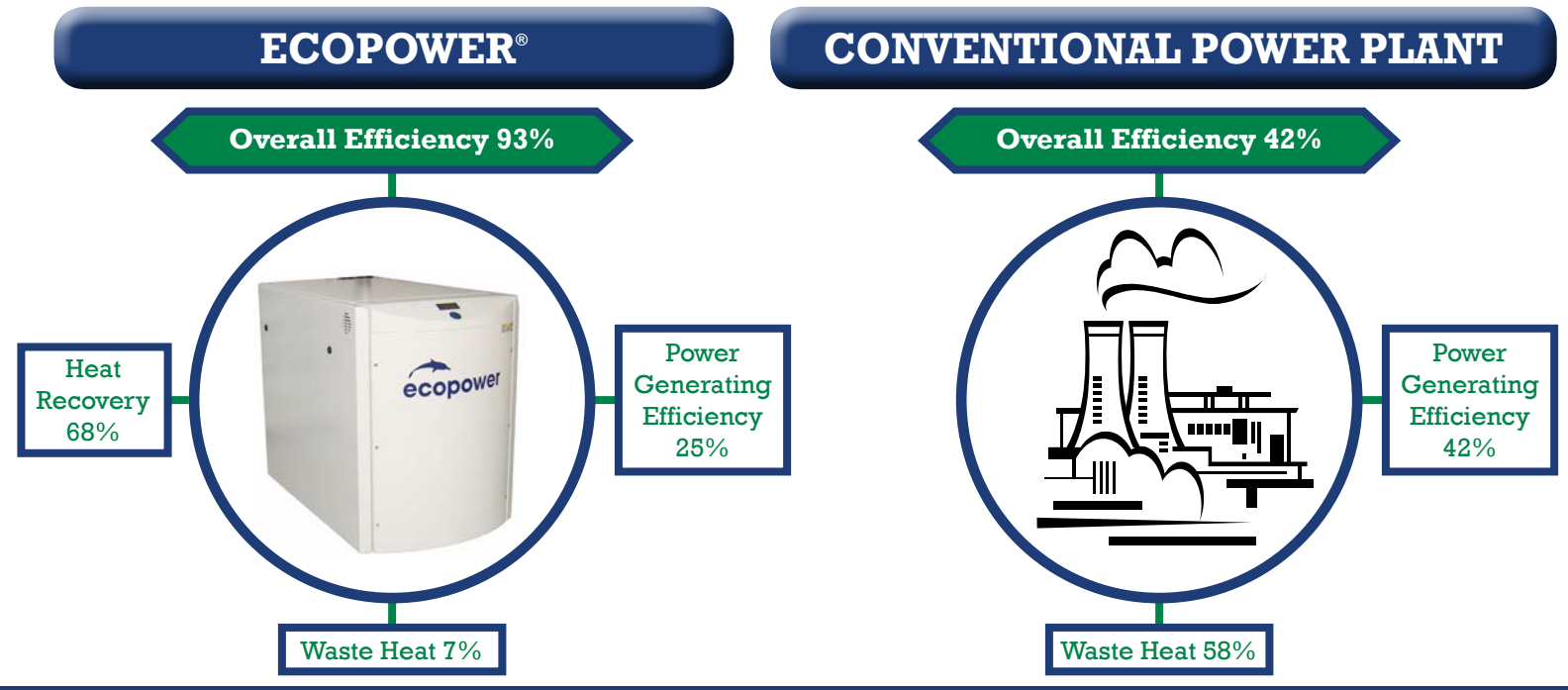
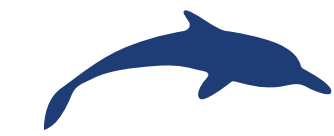


| <b>ecopower® microCHP Specifications</b> |                                       |
|--|---------------------------------------|
| Operating Voltage (single phase)         | 240 VAC / 208 VAC (207 - 253V)        |
| Frequency                                | 60 Hz                                 |
| Dimensions (L x W x H)                   | 54" x 30" x 43"                       |
| Power Factor                             | 0.98 - 1                              |
| Exhaust Gas Temperature                  | < 180° F                              |
| <b>Certified Test Data</b>               |                                       |
| Electrical Output Range                  | 1.2 - 4.4 kW                          |
| Thermal Output Range                     | NG 13,000 - 42,000 BTU/hr             |
|  | LPG 15,000 - 47,000 BTU/hr            |
| Gas Consumption Range                    | NG 0.21 - 0.65 therms/hr              |
|  | LPG 0.26 - 0.78 gal/hr                |
| Overall Efficiency                       | 93%                                   |
| Average Sound Level @ 1m                 | 55 dB (A)                             |
| Average NOx Emissions                    | 0.005 lb/MWh                          |
| <b>Approvals</b>                         |                                       |
| UL Standards                             | UL 1741, UL 2200                      |
| CSA Standards                            | CSA C22.2 No. 14-10, 100-04, 107.1-01 |
| Emissions Compliance                     | EPA Certified                         |

 Certified third party results tested in accordance with established EPA, ISO, and ASERTTI laboratory testing protocols. System performance can be affected by atmospheric conditions and energy content of fuel.



**An Energy Efficient Heat and Power Solution**



# ecopower®

• Apartment Complexes • Residential • Hotels • Swimming Pools • Condominium Units • Small Businesses • Commercial • Sports Centers



### WHAT'S INSIDE?

- Marathon Engine
- Heat Exchanger
- Power Inverter
- System Controller
- Engine Controller

### KEY FEATURES & BENEFITS

- Provides Heat & Electrical Power
- Reduces Energy Bill
- Powered by a Marathon Engine
- Natural Gas or Propane Fueled
- Long Maintenance Interval
- Advanced Monitoring System
- Parallel Operation for Larger Installations
- Reduces CO<sub>2</sub> Emissions
- Ultra Quiet

### OFFSET ELECTRICAL COSTS.

With the technology of ecopower®, the unit can supplement the thermal load of the building all while creating electricity. Installation of ecopower® will likely not change your natural gas or propane consumption, but provide you the benefit of lowering your electric bill.

### LONG MAINTENANCE INTERVAL.

The engine's superior design allows the engine to run for 40,000 hours with 4,000 hours between service intervals. The maintenance includes changing the oil, oil filter, air filter, spark plug and spark plug cable.

### POWERED BY A MARATHON ENGINE.

Proudly made in the USA, the Marathon Engine is the prime energy source for ecopower®. Clean burning natural gas or propane contributes to the long life and thermal efficiency. The Marathon Engine is like no other.

### TYPICAL INSTALLATION.

A typical installation consists of an ecopower® microCHP system, buffer tank, boiler and hot water tank. The software inside the system integrates the ecopower® with the buffer tank, modulating the system output to match the buildings thermal needs. An indirect hot water tank can be hooked up to satisfy water heating needs. A potable water heating system may be configured with an optional double-walled heat exchanger.

### PARALLEL OPERATION.

Up to four units can run in parallel to provide more thermal and electrical output. Parallel operation is ideal for larger applications like multi-family buildings, hotels or any buildings with a larger thermal need than one unit can supply.

### INTERNAL COMBUSTION MARATHON ENGINE



### WHAT IS ECOPOWER®?

The ecopower® micro-cogeneration system provides heat and electrical power in a cost effective and environmentally friendly manner. Using a natural gas or propane fueled Marathon engine, the ecopower® captures thermal energy for space heating, domestic hot water, pools and other applications. Electricity produced by the generator is either consumed in the building or excess can be sold back to the utility if net metering is available in your state.

### HOW ECOPOWER® WORKS.

The ecopower® uses heat generated by an internal combustion engine to produce between 13,000 - 47,000 BTU per hour of heat while simultaneously co-generating 1.2 - 4.4kW of electricity. Ecopower® is a thermally driven system and the greatest savings coincide with higher heating loads.

The ecopower® system runs completely counter to a standard boiler or forced air furnace concept. In those applications, a thermostat typically turns on and tells the heat source (boiler, furnace) to energize and run at full speed to supply heat to get to the fixed set point. When that point is achieved, the unit turns off and awaits the next command. With the ecopower®, it anticipates the heat demand from sensors located in the house, the buffer tank, and outside, and varies it's output to satisfy that demand. During this modulation, the ecopower® runs at a level that will maintain a constant heat value to support the heat requirement and keep the engine running and generating electricity.



Example of a typical home installation.



Example of parallel operation.