

The world's most advanced

# Green Power Machine



Generate the power you need with biofuels, waste products, or excess heat



## Why it Works

The PowerUnit outperforms traditional technologies in most categories:

### Fuel Versatility

Burns biogas from many sources: methane, flare gas, synthetic gas, hydrogen, volatile organic compounds, plus conventional gaseous fuels. Also able to use biomass, liquid fuel, and hot air streams.

### Very Low Emissions

The constant combustion process destroys almost 100% of hydrocarbons and generates very low NOx and CO2 emissions without exhaust after treatment.

### Distributed Generation

Specifically designed for easy connection to the electrical grid, without costly synchronization equipment and use of locally generated fuel.

### Flexible and Scalable

The PowerUnit's compact size and no need for a building makes it perfect for site-specific installation, and several PowerUnits can be easily linked and interconnected as requirements and fuel supplies expand.

### Combined Heat and Power

Generates both electrical power and hot water for maximum efficiency and optimal ROI.

### Easy Installation

The PowerUnit can be placed unsecured on a gravel pad. For gaseous fuels, it requires only 2 psi of fuel pressure. And it is completely weatherproof, so it does not require an enclosure.

### Smooth and Quiet

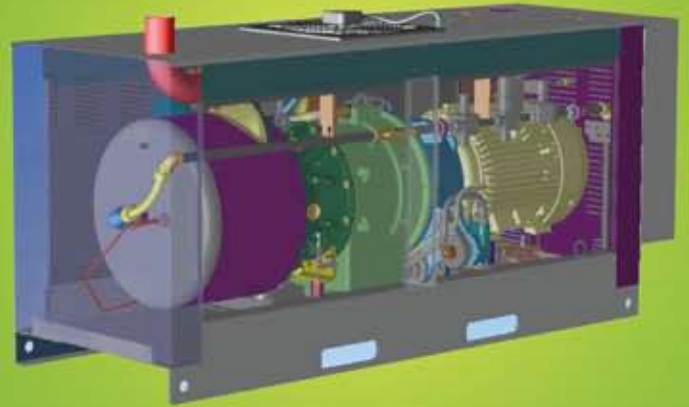
Unlike traditional generators, the PowerUnit does not require vibration and sound attenuation.

### The Green Factor

The PowerUnit consumes greenhouse gases or renewable fuels and produces minimal emissions. No other generator can match its green performance.

### Low Maintenance

Because combustion occurs outside the cylinders, fuel contaminants do not accumulate in the engine oil, and the PowerUnit has 50% fewer moving parts than an internal combustion engine, so it has fewer wear parts. The result: reduced routine maintenance and no oil changes for the life of the unit.

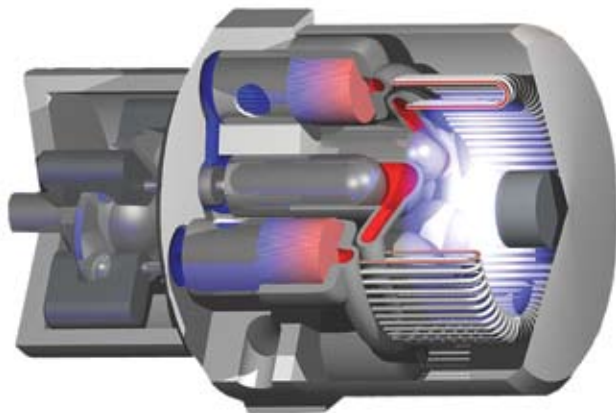


## THE POWERUNIT

At the core of the PowerUnit is the Stirling cycle engine. Its ability to use a wide variety of fuels and heat sources to generate electricity makes traditional technologies obsolete. Minimize emissions and reduce electricity generating costs with Stirling Biopower's unique combination of proven and breakthrough technology. The PowerUnit is exceptionally green, flexible and very versatile. And its compact size and each of installation and maintenance support distributed power generation needs.

**How it Works**

The PowerUnit's breakthrough technology is centered on a high-efficiency, four-cylinder Stirling engine of Stirling Biopower design and manufacture. A Stirling engine is a heat engine. The heat can be provided from an external heat source or be produced by the combustion of a wide variety of fuels within the integral combustor. This heat is maintained at a constant temperature in one section of the engine, where heat is transferred to pressurized hydrogen. As the hydrogen expands, it pushes the pistons. In the low-temperature section of the engine, the hydrogen is cooled by heat-storage devices and liquid coolers. As it expands and contracts, the hydrogen drives the reciprocating motion of the pistons, which is converted to rotary motion via a swash plate that powers a standard, induction electrical generator. The hydrogen-cooling process also generates heat that can be used as combined heat and power in ancillary processes.



**STIRLING BIOWPOWER INC.**

The world's most advanced green power machine was developed over the past 25 years by a dedicated group in Ann Arbor, Michigan. The result of this effort is hundreds of thousands of run-time hours and 32 patents for its achievements in Stirling-cycle engines and related technologies. Stirling Biopower is now the leading manufacturer of renewable-fuel Stirling engine power generating systems, and we are constantly creating innovations for efficient generation of clean, distributed power.

For complete details on Stirling Biopower and how the PowerUnit can meet your requirements for green power:

[www.stirlingbiopower.com](http://www.stirlingbiopower.com)

**PERFECT FOR**



**Wastewater Treatment**

Burn methane from anaerobic digesters to reduce power costs and generate heat for the digestion process.



**Agricultural Digesters**

Convert methane from animal-waste digesters to power and heat.



**Biomass Fuels**

Gasify crop waste and generate power and heat from resources that are usually discarded.



**Heat Streams**

Convert high-quality waste heat to high-efficiency electricity.



**Landfills**

Tap methane flares to generate electricity that can be used for local requirements or sold to the power grid.



**Stranded Flare Gas**

Coal bed or well head gases can be used to generate valuable electricity.



**Volatile Organic Compounds**

Extract the energy available in hard-to-manage industrial by-products and convert it to valuable electricity.



**Conventional Fuels**

Burn natural gas or propane to efficiently produce both heat and power as well as hot water.



**David Miklosi**  
Vice President of Sales and Service

**For More Information**

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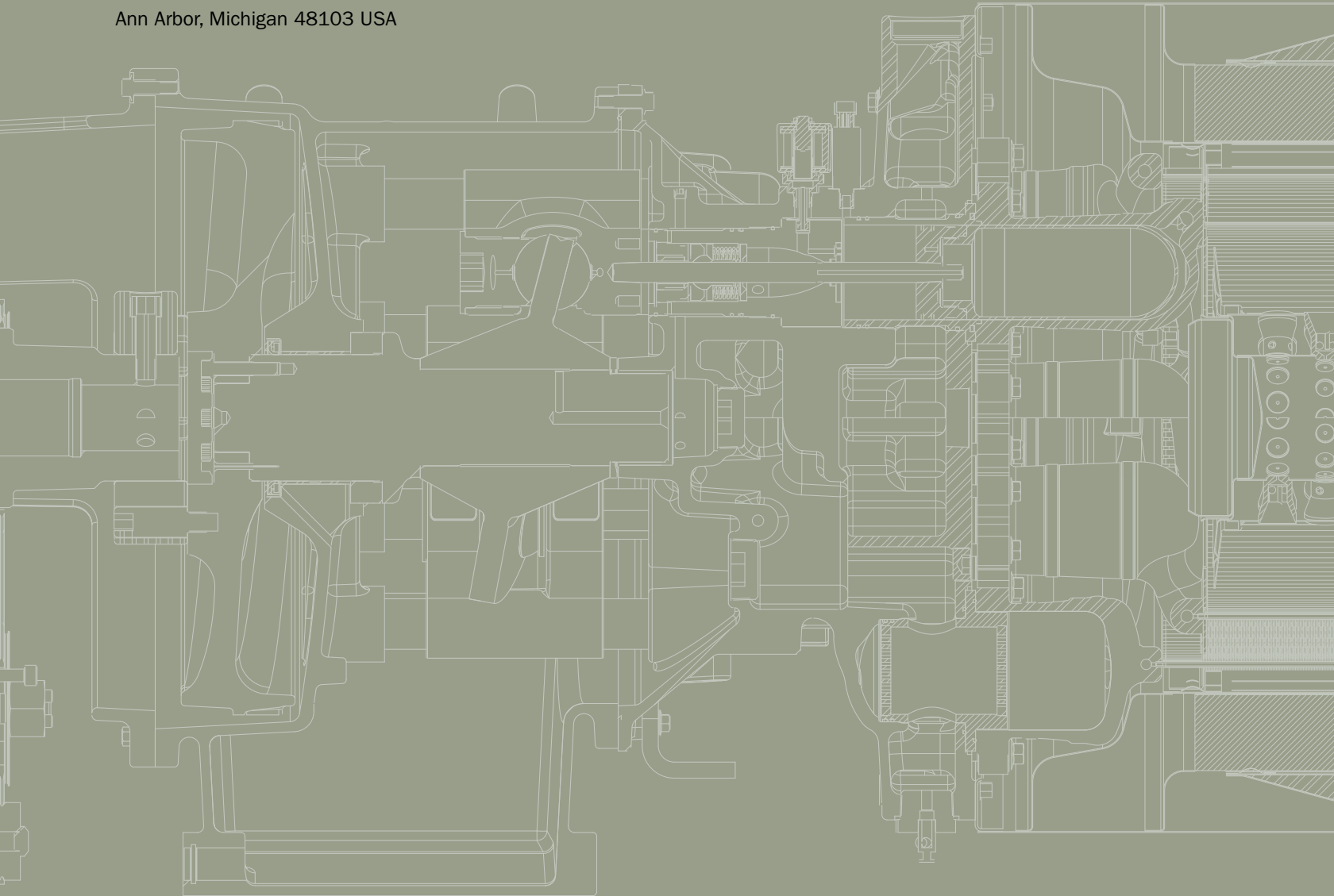
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