

GE Energy

power and control

Introducing GE's Waukesha
APG1000,* a leader in power
generation, CHP and
biogas applications



imagination at work

In the 1MW class, APG delivers more, and uses less.

*The requirements for today's multi-application engine/gensets are numerous and demanding — from abundant, reliable power and heat to biofuel flexibility to strict emissions standards. **The state-of-the-art APG1000 delivers in every area, providing a durable, highly efficient solution that works, and works hard, in a variety of CHP and biogas applications.** Designed and manufactured in Waukesha, Wisconsin, U.S.A., every APG1000 is performance tested by factory technicians before shipment to ensure it lives up to the highest quality standards. And once it's in place, advanced technology reduces manual intervention requirements so you can "set it and forget it." When you choose a Waukesha APG1000, you're getting over a century of experience from a recognized industry leader, backed by the innovation that only GE can provide.*

For multi-application power generation, the APG1000 leads the field.

Natural Gas

Waukesha's APG1000 Natural Gas Engine*^{*}

First introduced in 2006, the APG Series delivers flexible solutions for today's stationary, gas engine-driven power generation systems. Engineered for a variety of applications, including CHP and Biogas, APG engines are designed for maximum efficiency, low emissions, and reduced operating costs. To further optimize engine performance and uptime, Waukesha's patented Engine System Manager* (ESM) control and diagnostics system is standard equipment on all APG engine models.

- Miller Cycle combustion technology increases efficiency
- Improved air cleaner design for easier packaging
- Optional generators deliver higher levels of efficiency
- Advanced cylinder head design featuring valve rotators
- Efficient intercooler design for small package footprint
- Single high-efficiency turbo reduces lifecycle cost
- Available in Engine, Genset and CHP configurations
- Waukesha quality assurance



Northwest Community Hospital
(Arlington Heights, IL)

CHP

The ideal solution for critical applications

In Combined Heat and Power (CHP) applications, the APG1000 becomes a reliable source of heat as well as a crucial provider of power. The skid-mounted cooling system features a two-stage intercooler design that maximizes heat recovery, which lowers overall energy costs. And a return temperature of up to 80°C (176°F) means the APG1000 can supply abundant heat for a variety of facilities including:

- Hospitals
- College campuses
- Greenhouses
- Chemical factories
- Textile mills
- Retail centers
- Data centers
- Amusement parks and water parks



CHP greenhouse application

Biogas

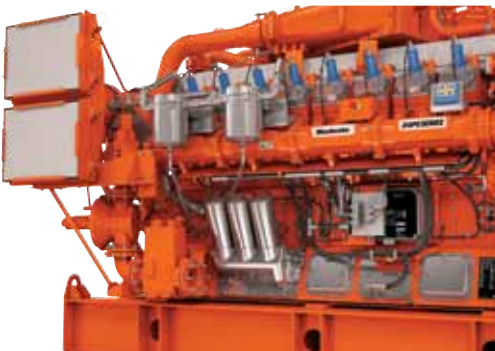
A new level of biogas adaptability

Because of its flexible design and the powerful ESM interface, the APG1000 is extremely tolerant of fuel changes, and is capable of operating on fuel from 400 to 650 BTU with little or no manual recalibration or adjustment during BTU variation. This means the Waukesha APG1000 brings power generation to a wide range of biogas applications including:

- Waste water treatment plants
- Farm waste digesters
- Animal waste farms
- Municipal and private landfills

Biogas fuel system

- Ease of use
- Simple fuel system – one electronic device. Eliminates complicated adjustment and set-up procedures. Simple HMI input and display screen.
- Increased availability by improving spark plug life, reducing and simplifying system components
- Minimized manual intervention during BTU variation from gas source
- Reliability upgrades enhancing customer operations
- Engine system packaging improvements to support containerization



Biogas fuel system with new Air Cleaner design

Biogas fuel system: Fuel Control Valve, Gas Regulator, Double Blocking Valve



Loma Los Colorados 1 Landfill
(Santiago, Chile)

**A legacy of
reliability and
innovation**

GE and Waukesha represent over 200 years of commitment to advanced technology that continues to drive the world forward. With a reputation for rugged durability and ongoing design advancements, Waukesha engines are the sound investment you can depend on in mission-critical applications. Now a part of GE's Gas Engines business, enhanced support in the form of parts, service and a network of distributors makes us an even stronger partner for today's global energy industry.

For more information, visit waukeshaengine.com.