# EcoGen Propane Generator Set

## Technology Fact Sheet

Residential
Agriculture
Industrial/ Commercial
Engine Fuel
R&D

A growing number of off-grid power generation systems combine an efficient, low-emission propane generator set (genset) with solar, wind, or other renewable energy resources to improve the overall reliability and affordability of renewable hybrid systems.

A low-cost, long-life premium propane-fueled genset has been developed to better support renewable energy and energy efficiency solutions. The EcoGen 6-kilowatt genset provides quieter, cleaner, more fuel-efficient power generation than traditional alternatives with enhanced ease of use and reduced maintenance costs.


A survey of generator dealers showed that hybrid systems are a significant potential growth market. More than half of the dealers surveyed expect renewable energy to represent 11 percent to 50 percent of their sales by 2020.

*– 2009 Generac survey of more than 1,500 Guardian dealers*

## Current Status: Commercialization Phase

Research → Development and Testing → Demonstration → **Commercialization**

- The Generac 6-kilowatt EcoGen is commercially available.
- The EcoGen will compete for a share of the rapidly growing market for hybrid power generation systems.

## Technology Features

- Continuous generator power capacity of 6 kilowatts and continuous load current of 240 volts.
- Propane-fueled V-twin OHVI (overhead valve industrial) engine that operates at 2,600 rotations per minute.
- Weatherproof enclosure and sealed controller design.
- Three-year/2,000-hour limited warranty for off-grid renewable hybrid applications.

## EcoGen: Key Benefits

- Decreased oil degradation, extending maintenance intervals to 500 hours — five times the industry standard.
- Easy integration into the existing inverter and battery storage system.
- Reduced engine noise of 52 decibels under normal operating conditions.
- Increased reliability and efficiency of hybrid systems that integrate propane gensets with wind and solar sources.
- Extended engine life that is three to four times as long as many competitive engines.
- Greater awareness and application of propane as a high-tech, viable fuel for off-grid and green building markets.

**For more information on this and other research projects, go to www.propanetechnology.com.**

PROPANE EXCEPTIONAL ENERGY®

# A Closer Look

## EcoGen Propane Generator Set: How It Works

When the amount of power generated by wind or solar energy in a hybrid system falls below a preset level or when site demand exceeds available power, an inverter automatically signals the generator's Generac OHVI engine fueled by propane to drive its alternator and produce electricity.

The Generac OHVI engine is the foundation of the premium propane genset.

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| **Projects:** | Premium Genset Development and Commercialization **(Docket 15490)**<br>Demonstration Units and Installations of 6-Kilowatt Off-Grid Generator **(Docket 16412)** |
| **Partner:** | Generac Power Systems Inc. |

## Research Process ( ✔ = completed; ➤ = in progress; ★ = upcoming)

**Prototype Development** ✔

- Develop two prototype units and a control system. The second prototype unit has a revised design that features hardened ceramic coatings on the valves and seats.

**Testing and Demonstration** ✔

- Conduct 5,000-hour endurance and validation testing of the prototype units to confirm their noise levels and performance and validate the expected 500-hour performance interval for each unit.
- Identify potential sites for the 6-kilowatt genset demonstration.
- Prepare samples and parts for the pilot production.
- Discuss development and distribution issues with inverter manufacturers and wholesale distributors.

**Commercialization** ✔

- Continue discussions with inverter manufacturers and wholesale distributors.
- Optimize a manufacturing process for the genset to support high-volume production.
- Perform a pilot-scale production run of seven units.
- Install the pilot units, closely monitor their performance, and analyze data collected during the demonstration.
- Proceed with a full-scale, 50-unit production run.

## What's Next?

The propane-fueled Generac 6-kilowatt EcoGen genset is commercially available.


**FOR MORE INFORMATION:**

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