Propane Distributed Generation Market Assessment

Research Fact Sheet

Residential | Agriculture | Industrial/ Commercial | Engine Fuel | R&D

Propane-fueled distributed generation, or DG, has historically been limited to standby or emergency applications and small engines at remote locations. Recent technical advances have improved the reliability, efficiency, and long-term performance of propane DG, making it a smart choice for large- and small-scale applications in a variety of existing and new markets.

A new study identifies advanced DG applications with the greatest potential to increase U.S. propane sales and estimates the size of the market for each. The study will help PERC and the propane industry focus research, development, and commercialization efforts on DG technologies that can have the largest impact on industry growth.

A hospital or other facility can use an integrated DG unit to reduce their electricity bills on a daily basis, and provide emergency power, heating, and cooling during a disruption.

— U.S. Department of Energy, "The Potential Benefits of Distributed Generation and Rate-Related Issues That May Impede Their Expansion"

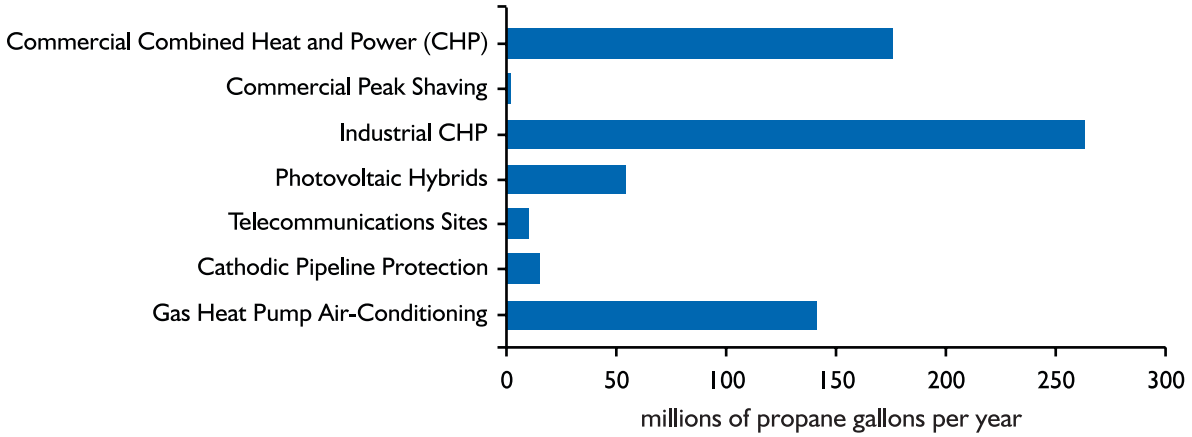
Research Status: Results Available

- The study was completed in February 2010.
- The Propane Distributed Generation Market Assessment report is available on the distributed power generation research and development page at www.propaneresearch.com.

Supporting Facts

- Recent advances have enabled propane systems to reliably generate electric power and recover usable heat at higher efficiencies than what was previously possible.
- New applications, such as renewable hybrid systems, are creating new markets for propane DG.
- Ideal sites for propane DG depend on unique heating, cooling, and power loads, as well as favorable energy pricing.
- Propane DG can help balance the industry's seasonal demand by providing year-round load.

Result Highlights: Estimated Potential for Leading Propane DG Applications



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

PROPANE EXCEPTIONAL ENERGY®

A Closer Look

States with Important Propane DG Markets

State	Important Markets
Arizona	Off-grid residential
California	All grid-tied and off-grid applications, plus gas heat pumps
Colorado	Off-grid residential
Connecticut	All grid-tied applications
Hawaii	Grid-tied commercial and industrial
Massachusetts	All grid-tied applications
New Jersey	All grid-tied applications
New Mexico	Off-grid residential
New York	All grid-tied applications
Texas	Grid-tied commercial and off-grid residential

States with the largest market potential for various propane DG applications share some or all of the following characteristics: a number of residential, commercial, or industrial sites that do not have access to a natural gas pipeline; a significant and growing population of off-grid homes; high electricity prices; relatively low propane pricing; and ideal heating and cooling loads.

Project:	Propane Distributed Generation Market Assessment **(Docket 15487)**
Partner:	Resource Dynamics Corp.

Research Process

- Analyzed each potential market for DG technologies to identify price and performance issues associated with the potential applications.
- Identified five propane-fueled DG applications for investigation.
- Incorporated fuel and electricity pricing, by state, to calculate spark spreads (i.e., the relative difference between the cost of fuel and the cost of power) and determine which locations and markets (grid-tied and off-grid residential, commercial, and industrial) are most promising for propane DG.
- Completed a thorough market and economic analysis of leading applications for grid-tied propane DG, off-grid propane remote power applications, and propane gas heat pumps. This included reviewing the potential customer base, modeling lifetime system costs vs. utility costs, reviewing state and federal incentives, and identifying key market drivers.

Results

- **Grid-tied applications:** Combined heat and power in the commercial and industrial sectors represents the largest potential market for grid-tied propane DG. The northeast states are most favorable for combined heat and power.
- **Off-grid applications:** Off-grid homes represent a large potential market for propane DG applications. California, Arizona, Colorado, and New Mexico are the most favorable states for off-grid DG.
- **Gas heat pump air-conditioning:** The residential market represents the largest potential for propane gas heat pump applications. The best residential gas heat pump sites are in areas, like parts of California, that have moderate climates, high electricity prices, and limited natural gas access.

What's Next?

To download the complete Propane Distributed Generation Market Assessment report, visit www.propaneresearch.com.

FOR MORE INFORMATION:

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