

## Propane-Fueled Indoor Heating Appliances

### Significant opportunities for market growth

When energy costs rise, more homeowners turn to vent-free heating appliances, such as fireplace inserts, to supplement their central heating systems. The Alliance for Vent Free Heaters estimates that approximately 500,000 new vent-free propane heating appliances are sold every year in the United States.

Homeowners are also increasingly interested in portable vent-free heaters (cabinet heaters) and the clean burning features of propane. However, current building and fire codes limit the indoor use of propane cylinders to temporary commercial cooking or temporary space heating applications. Projected in the chart below, the approval of composite propane cylinders for indoor use would enable homeowners to purchase portable propane-fueled appliances and lead to a remarkable seven percent increase in the residential propane market—nearly 600 million gallons per year—after 25 years.

To realize this opportunity, the Propane Education & Research Council (PERC) is funding a research project (**Docket 11328** and **Docket 11643**) to assist the National Propane Gas Association (NPGA) in the development of a proposal to the National Fire Protection Association (NFPA) for the accepted indoor use of propane cylinders in the U.S.

#### Project Description

Led by the Battelle Memorial Institute, the project is divided into two phases:

##### Phase I (**Docket 11328**):

- Investigate the market viability for indoor composite propane cylinders.
- Review previous NPGA attempts to gain approval for indoor use of cylinders.
- Examine international history of indoor use of propane cylinders.
- Work with fire fighting professionals to identify potential concerns regarding indoor use of propane cylinders.

##### Phase II (**Docket 11643**):

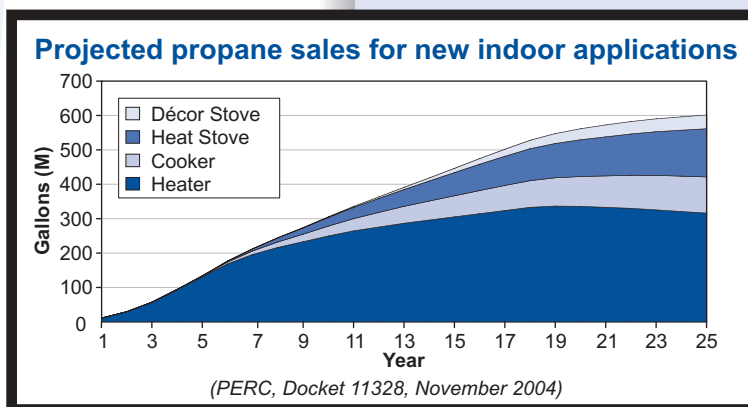
- Continue liaison work with fire protection community.
- Conduct preliminary composite cylinder fire testing.
- Provide administrative support to the Gas Appliance Manufacturers Association (GAMA) Task Force for American National Standards Institute (ANSI) standard development.
- Support the NPGA in development of NFPA code language.
- Conduct detailed composite cylinder fire performance testing.

### Propane-Fueled Cabinet Heaters

Compact and energy-efficient, propane-fueled cabinet heaters are portable, self-contained, and vent-free.

Approval and introduction could increase propane sales by:

- 10 to 30 million gallons in the first year
- 300 to 500 million gallons per year after 20 years



For more information, or to find a propane retailer near you, go to [www.usepropane.com](http://www.usepropane.com).

## Propane Cylinder Use

Composite cylinders offer a lighter, more attractive, and potentially safer alternative to the standard gas grill steel cylinder. Steel cylinders would continue to be used only for outdoor appliances and would not be compatible with indoor propane appliances, which would be configured to accept only composite cylinders.



## Project Status

### Phase I (Docket 11328): Complete

Good Company Associates conducted a study to evaluate potential markets for the indoor use of composite cylinders and associated appliances and estimate the potential increase in propane sales.

### Results

The indoor use of composite propane cylinders with portable heating appliances is expected to result in a significant market increase and thus warrants further development. In addition:

- Cabinet heaters will be the primary vehicle for introducing indoor propane cylinder use to the U.S. market. Potential markets include homes without secondary heating, emergency heat sources, and second homes.
- Secondary appliance markets include cooktops, free-standing heaters, and decorative stoves.
- Approximately 60 percent of multi-family homeowners using primarily electric heat would consider purchasing a gas cooktop, which could be incorporated into kitchen islands or portable cooking appliances for table-side or patio use.

Other notable findings include:

- Composite cylinders are widely used and accepted throughout Europe as well as Australia and New Zealand.
- The concerns documented from previous NPGA efforts are being addressed.
- The U.S. fire protection community is willing to provide valuable insight to the types of testing needed to demonstrate the safe use of composite propane cylinders.
- Phase I did not identify any major obstacles to continuing with the next phase of this project.

### Recommendations

Potential market hurdles are wide-ranging. The following approaches may overcome these hurdles:

- Educate consumers on safety and proper use.
- Engage gas cooktop manufacturers early in the regulatory and approval design process to increase the variety of propane-fueled appliances available.
- Assist marketers with future infrastructure investments needed for handling and distributing composite cylinders.
- Facilitate customer convenience by increasing the cylinder exchange market, encouraging multiple cylinder ownership, and offering home deliveries.

### Phase II (Docket 11643): Underway

Battelle has partnered with ThermDyne Technologies and Underwriters Laboratories to develop and conduct detailed fire performance testing of composite cylinders filled with propane. Testing will be completed by the fall of 2005. Battelle will continue to support project task efforts through the end of 2006.



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### For More Information:

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