

Airport Engine Fuel Market

Improving air quality; expanding propane fuel use

The United States relies on its airport system, the most extensive in the world, to move passengers and cargo and facilitate commerce and national defense. Passenger trips are expected to continue to grow in the coming decade, with forecasts predicting a 46 percent increase between 2001 and 2013¹. When airports undergo expansion, they must prove they conform to allowable levels of air pollution. However, the complexity of infrastructure required for an airport to function makes environmental compliance a daunting task.

For example, the size, use, and number of airport-specific vehicles vary according to fleet ownership, geographic location, airport size and layout, and seasonal operational needs. The major airport vehicle fleets are the Airport Authority Fleet (AAF), such as fire/rescue trucks, snow plows, and utility vehicles; the 'landside' or Ground Access Vehicles (GAV), such as parking and hotel shuttles and taxis; and the 'airside' or Ground Service Equipment (GSE), such as baggage tugs, light duty vehicles, and aircraft service trucks.

While airports are increasingly looking to alternative-fueled vehicles to comply with new emissions standards, reduce operating costs, and gain positive public recognition, propane has seen limited penetration of the airport market due to a lack of effective marketing and low awareness among airport authorities of available propane options. To significantly increase the use of propane-fueled vehicles, the Propane Education & Research Council (PERC) sponsored two research efforts: **Docket 11204** and **Docket 11463**.

Airport Marketing Study

The first project, *Propane Marketing Study for Airports (Docket 11204)*, pursued the following objectives:

1. Identify airports with highest market potential to prioritize airport opportunities.
2. Survey airport fuel suppliers for "lessons learned" to share previous alternative fuel experiences with future project managers.
3. Determine airport-specific engine and vehicle technology needs to fulfill most promising airport opportunities.
4. Summarize findings and develop a nation-wide, systematic engine fuel marketing plan for the propane industry to achieve market penetration.



Propane-Fueled Sweeper

Success Story

Through the Voluntary Airport Low Emission Program (VALE), one of the leading airports using propane is the Austin-Bergstrom International Airport (ABIA). ABIA uses service trucks, forklifts, catering vehicles, and shuttle buses powered by propane. In 2004, ABIA opened a new propane fueling station created in part through funding from the propane industry. The fueling station:

- Dispenses more than 1.3 million gallons of propane per year
- Potentially reduces refueling expenses by \$27,000 annually



Texas' first 24-hour, self-service propane vehicle fueling station opened at the ABIA.

—Butane-Propane News

¹ Airports Council International, *The Economic Impact of U.S. Airports 2002*

Project Results

The airport marketplace represents a nation-wide series of opportunities, such as on- and off-road vehicles and stationary applications. A list of 30 'best' airport opportunities was identified. Other notable results include:

- The majority of the GSE market can be met with current engines or certified aftermarket technologies
- Based on discussions with engine manufacturers and airport customers, a formal process to order and manufacture equipment is needed to meet airport propane market applications

Project Recommendations

The propane industry should focus on the following:

- Develop an Airport Engine Fuel Marketing Plan (AEF Market Plan) targeting airport environmental coordinators, clean cities coordinators, Federal Aviation Administration (FAA), and U.S. Environmental Protection Agency (EPA) officials to show that propane is the clear energy choice on a cost-effective emissions reduction and an enhanced positive public perception basis
- Develop a propane engine fuel technologies and products program that results in a steady stream of EPA-certified products entering the on- and off-road engine market place



Voluntary Airport Low Emissions Program (VALE): opportunities for propane growth

In late 2003, Congress established VALE, which provides airports in air quality non-attainment and attainment/maintenance areas incentives to invest in low-emission technology. The program—a joint effort among the FAA and EPA—provides airports with financial assistance programs to fund air quality improvement projects.

Although the government-supported VALE program is designed to increase alternative fuel use in the airport vehicle market segment, VALE

does not provide specific details on the use of propane. To facilitate and quantify the amount of government funding directly spent on propane infrastructure and vehicles, PERC initiated the FAA VALE Propane Airport Development project (**Docket 11463**) with the following objectives:

- Create a menu of airport specific EPA-certified vehicles and engines to increase awareness among airport authorities of available propane options for mitigating emissions
- Assess current baseline use of propane at airports to identify potential partners
- Identify lessons learned from past efforts to use propane at airports to develop long-term airport projects
- Initiate a VALE educational campaign targeted at propane marketers to increase the number of propane VALE projects
- Create long-term propane partnership opportunities among propane users and providers, vehicle and engine OEMs, and EPA-certified vehicles
- Quantify airport opportunities under VALE to obtain FAA project funds
- Identify airport opportunities to gain or bank EPA emissions mitigation credits; banking credits can be used toward future expansion
- Develop long-term, nation-wide propane airport implementation plan to greatly increase propane used in airports; and leverage PERC investments in propane engine, vehicle, and infrastructure technologies

Project Status—In Progress

To date, VALE projects have clearly demonstrated that airport growth and air quality improvements can happen together. On a cost/benefit basis, the emissions reductions available from propane-fueled equipment, combined with significantly lower installed/operating costs for propane infrastructure, create a sound business plan for a successful VALE project, such as the one implemented at ABIA (see Success Story). VALE projects can be efficiently and cost-effectively expanded to include local and regional 'airfront' partners, such as overnight delivery, distribution, and service.

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For More Information:

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