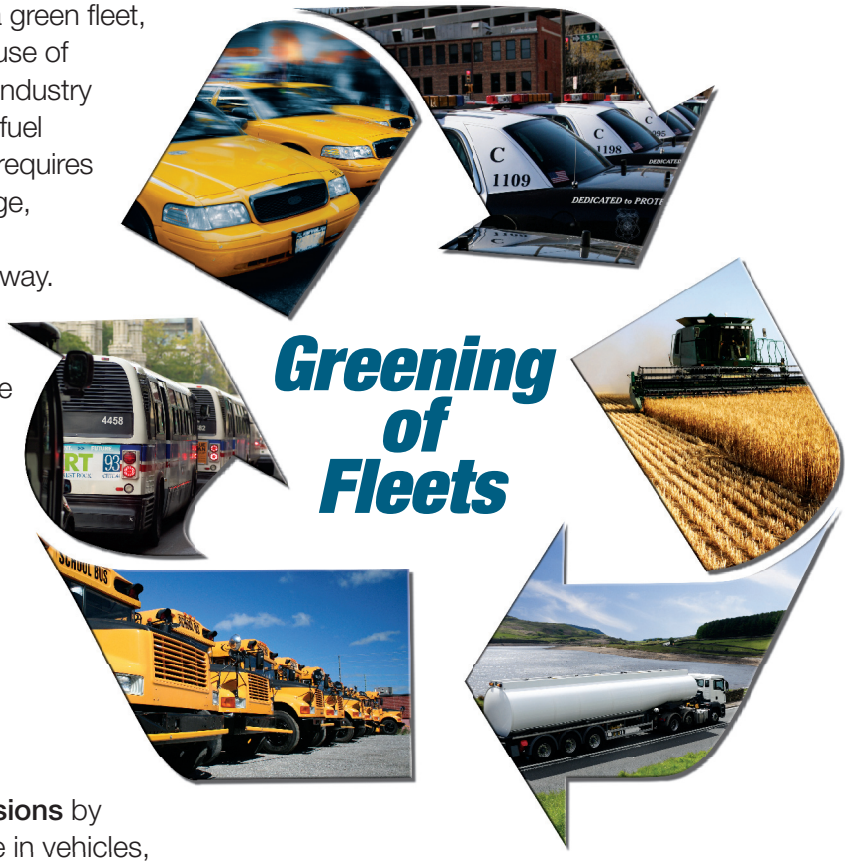
Clean Cities Learning Program

UNDERSTANDING FLEETS AND ALTERNATIVE FUELS

There can be challenges to starting a green fleet, or converting an existing fleet to the use of alternative fuels. According to some industry experts, a successful plan to reduce fuel consumption and carbon emissions requires a long-term vision, incremental change, support from top management, and flexibility to make changes along the way.



There are compelling reasons *why* fleets should be green and deliberate steps on *how* to implement alternative fuels.

Why Use Green Fleets?

- **Reduce operating costs** by improving efficiency, reducing life cycle costs, and reducing vulnerability to volatile fuel prices.
- **Reduce greenhouse gas emissions** by implementing the use of propane in vehicles, which are the primary source of greenhouse gases and urban air pollution.
- **Improve corporate image** by branding business strategies and appealing to public concerns about energy conservation and ecological sensibilities.

How to Implement Green Fleets

- **Get buy-in** from all management and staff levels, and be sure to communicate information about the benefits, goals, and targets frequently.
- **Create long-term objectives** and tangible goals based on best practices in the industry (such as baselines, benchmarks, and progress reports).
- **Avoid setting reduction goals in absolute numbers** for growing fleets or fleets just starting because absolute goals can impede growth.
- **Anticipate obstacles**, such as driver resistance, lag time between original equipment manufacturers' technology and market availability, and slower return on investment.
- **Move slowly** and implement change over time.
- **Improve vehicle use** with selection analysis and education of drivers.
- **Track and report progress** and share successes with employees, shareholders, and the public.

Clean Cities
U.S. Department of Energy

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Propane Basics

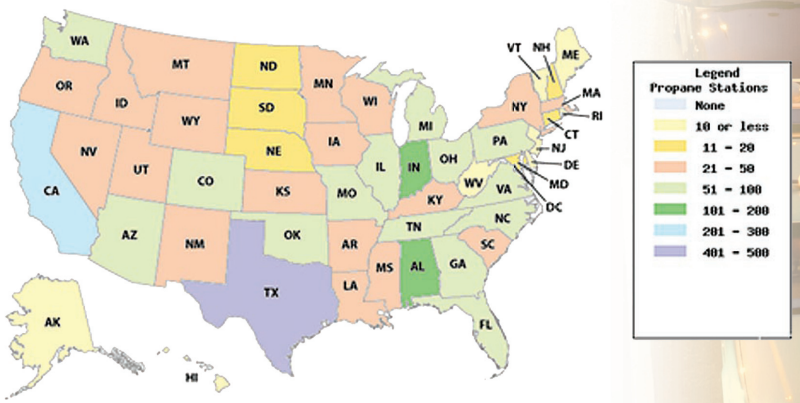
Propane is an odorless, colorless gas that is a byproduct of the process of refining oil (petroleum) or natural gas (methane). Similar to natural gas, an odorant, ethyl mercaptan is added to propane to help detect leaks. Propane can produce fewer harmful emissions when compared to conventional gasoline and diesel. Propane naturally occurs as a gas, but is pressurized for storage in liquid form. It has less energy per pound when compared to natural gas, but more than gasoline.

Did You Know?

Check out the following link to see what incentives are available for propane.

http://www.afdc.energy.gov/afdc/laws/matrix/tech

- **90% of propane is domestically produced**
  - Cleaner burning fossil fuel that can extend engine oil life
  - Byproduct of natural gas processing and crude oil refining
- **Has evolved just as conventional fueled engines to improve fuel economy and lower emissions – three main types**
  - Older mechanical vapor systems
  - Electronic vapor injection systems
  - New efficient, electronic liquid propane injection systems
- **Over 2600 fueling stations nationwide**
  - Over 270,000 on-road propane vehicles in the U.S.



Propane fueling stations. Source: AFDC.

Incentives

Despite the fluctuating economy and budget woes, there are a record number of grants and incentives for funding alternative fuel vehicles that have been made available. For example, in 2009 the U.S. Department of Energy (DOE) made nearly $300 million of American Reinvestment and Recovery Act (ARRA) funding available through the Clean Cities program. This single grant funding opportunity is responsible for putting more than 9,000 alternative fuel and energy efficient vehicles on the road and establishing an additional 542 fueling stations across the country.

Propane Availability

Propane is produced from the refinement of natural gas and oil. Propane is then shipped from its point of production to bulk distribution terminals via pipeline, railroad, barge, truck, or tanker ships. The above map shows propane fueling stations by count.

Fuel	Area	2012 Cost	2009 Cost
Diesel ($ per gallon)	National Average	$3.37	$1.86
Gasoline ($ per gallon)	National Average	$3.46	$2.19
Propane ($ per GGE)	National Average	$4.26	$3.77

Fuel type cost comparison, 2009-2012. Source: AFDC.

Propane Cost

The cost of propane depends on the availability and cost of natural gas, and costs associated with refining petroleum, both of which are used to produce liquefied petroleum gas (LPG). As natural gas and petroleum prices increase, propane prices also will increase; however, the increase appears to be at a slower rate. During winter seasons, prices may increase as the demand for LPG used in homes increases.

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