

# ALTERNATIVE FUEL INFORMATION SHEET: PROPANE

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## Overview

Propane, otherwise known as Autogas or liquid petroleum gas (LPG), is a fuel source derived from natural gas processing and crude oil refining. Its most common uses are for space and water heating, cooking and powering industrial equipment, but its application is growing as an alternative vehicle fuel. Officially considered an alternative fuel source under the Energy Policy Act of 1992, propane can be used to power a wide range of vehicles. Exciting advances in chemistry and technology have also created renewable propane chemically identical to traditional propane, but derived from biomass feedstocks.

## Economic Benefits

With a lower cost per gallon than conventional fuels, propane can save money in the long-run. Propane has a higher octane rating than gasoline, potentially prolonging the lifespan of engines and saving on maintenance costs. Additionally, the majority of propane use in the US is produced domestically so switching to propane can boost America's economy and reduce dependence of foreign energy supplies.

## Safety Benefits

Autogas tanks are up to 30x more puncture resistant than the typical gasoline tank. Domestic production also means it has to travel shorter distances to reach the consumer, decreasing the chances of a spill. In the case of a spill autogas does not stay in its liquid form, instead it evaporates avoiding soil and water pollution. Oil spills on the other hand have much more disastrous consequences, including the difficult task of putting out a petroleum fuel fire. Should Autogas catch fire, cutting off the source will be enough to stop the fire.



## Environmental Benefits

Choosing to run on Autogas can have benefits for the environment. Because propane becomes a gas when depressurized, a propane leak poses no threat to groundwater or soil contamination and would not contribute to the greenhouse gas effect. Propane has a lower carbon content than gasoline so it releases less emissions. It also burns cleaner than gasoline, not emitting sulfur dioxide, methane, and nitrogen oxides. Another opportunity for the environmental benefits of propane is the opportunity for renewable propane use. Renewable propane, derived from biomass based feed stocks, is chemically identical to conventional propane but with a carbon intensity 4x lower.



## Converting Your Vehicles

An increasing number of light- and medium-duty vehicles can be converted to propane using a certified conversion kit. The infrastructure needed for propane is very similar to that of gas or diesel and should the diversification of fuels continue to expand, filling up with propane could look essentially the same as filling up with conventional fuel. Currently the best way to fuel individual vehicles is using online databases to locate the nearest pump. Uhaul stores have recently expanded to fueling lighter weight vehicles with Autogas. One of the best current uses for propane is for fleets that return to a central hub to allow for refueling infrastructure to be put in place. Once they have a refueling point a fleet can reap the environmental and cost benefits of running on propane.



**Cost savings between \$400 and \$3,000 per propane bus per year**

## School Bus Conversion

Four school districts in Texas and one in Virginia switched their school bus fleets to run on autogas. Across the five districts 110 buses were converted to autogas. In some cases they saw savings of nearly 50% per mile. Total greenhouse gas emission reductions were approximately 770 tons per year.