



ALLIANCE WHITE PAPER

Propane Autogas - Diesel Replacement

It is time for fleet operators to examine their fuel choice decisions.

Class 3 – 6 Vehicles

Fleets that have selected Diesel as their primary fuel may have done so for proper reasons 10+ years ago. Gasoline engines could not perform anywhere near their diesel alternatives. Diesel fuel was more inexpensive than the only other alternative, gasoline. The upfront premium for the diesel option was offset by better resale value. Maintenance costs were lower due to longer service intervals, and vehicle engine life was significantly longer. But times and conditions have changed.

- Today's gasoline engines have the same torque and horsepower ratings of their diesel counterparts from years ago. Many marketers still run DT466's from the early part of this century. That base engine offered 195HP and 520# of torque. A bi fuel Autogas 6.8 V10 from Alliance Autogas will deliver 362HP and 457# of Torque.
- Diesel is no longer cheaper than gasoline and nowhere close to the price of propane Autogas. Over the past two years Autogas has averaged over \$2.00 a gallon less than diesel. Even with today's lower diesel prices it offers a \$1.39 per gallon advantage.
- A Bi Fuel Autogas system from Alliance on a stock gasoline engine will cost less than the diesel engine option.
- Service intervals on diesel or gas/autogas vehicles are nearly identical. Advanced fuel filtration needs and specialized oil requirements make diesel maintenance more expensive than autogas.
- Engine life of a diesel may be more than its gas/autogas equivalent. However, when you factor replacement cost the gas/autogas choice is much more economical. For example let's say a diesel engine has a life of 250,000 miles and its gas/autogas comparative will last 175,000. The gas/autogas engine replacement price is \$9459 vs \$13,772. The diesel cost is 45% more only realizing a 43% increase in mileage/life. When you add to this the needed upgrades of turbo(s), injectors, and other fuel and emission components; the gas/autogas is a wiser choice.
- Higher resale value is not a given with today's choices. As a residual %, diesels are not holding up to a premium over the other options. In fact, some diesels are worth significantly less than gasoline due to poor reputation and acceptance in the marketplace.

Class 8 Road Tractors

Diesel will remain the dominant Class 8 on-road transportation fuel for some time to come. The energy density, storage characteristics, and fueling infrastructure of diesel still make it a good fit for over the road highway use in high (1200#+) torque requirements.

Technologies today allow for fleet operators to adapt proven alternatives in tandem with the diesel engine. These technologies offer fleets the ability to lower operating costs, reduce emissions, extend range, and support clean, domestic fuel sources.

There are a handful of “fuel blending” solutions available. There are three distinct hardware options to facilitate the introduction of a gaseous fuel. A single point, or “fogger” system, a sequential injection system with secondary injectors, or emerging technologies with advanced injectors that can dispense two fuels.

Fogger systems can seldom pass any EPA or CARB Certifications due to their limited technology. Some try to sell these systems without certifications and market them as “additives”. Both EPA and CARB have regulations and rulings that support the opposite. Enforcement has been limited in the past, but the governments increasing needs for funding sources, will soon draw attention to this opportunity. Beyond not having certifications the actual performance and safety of these systems is greatly doubted. When allowing an un-metered hydrocarbon into an engine, protection of the engine cannot be ensured and a large majority of the fuel has bypassed the combustion cycle and vented into the environment. Some may tout that this will add power to the engine and help it “pull a hill”, but the risks to the equipment and the environment are not worth the few seconds gained on a hill.

The Alliance Diesel Reduction system uses specifically timed injection of autogas to offset as much as 30% of the diesel needed for an engine. This offers customers over a 15% reduction in overall fuel costs and will significantly reduce particulate matter and other negative vehicle emissions.

Propane transport vehicles are ideal candidates for this technology. They typically have great accessibility to propane autogas and have duty cycles that are a perfect match for this solution.

Sustainability Initiatives

Most large companies today have some sort of sustainability initiative or green principles in their business. These goals are usually initiated as ways to become better corporate citizens or to act as change agents in their industries.

When examining the carbon footprint or overall environmental impact of an operation, the fleet typically floats to the top as the greatest contributor and up to now the most difficult area to control.

Responsible fleets have reduced idling, right sized vehicles, optimized routes, and utilized telematics to better their footprint. However, most haven’t looked at what propane autogas can do to supercharge their efforts.

Propane autogas, for now is still a fossil fuel; but offers significant environmental advantages of diesel or gasoline. It is a cleaner domestic fuel that can bring a 20% reduction in overall emissions. If one were to

look at the entire fuel cycle (wheel to well), you will find that Propane has one of the lowest CO2 profiles of any energy source.

The final piece to bringing propane autogas as a sustainability supercharger is that it is not a cost to the business. Each mile traveled with autogas will reduce operating costs and have a positive impact on the bottom line. Companies have found operational savings with using LEED principles in building. An even greater and quicker return can be found with autogas.



Ed Hoffman, serves as President of Blossman Services, Inc., a subsidiary of The Blossman Companies. Ed has over 23 years' experience in the automotive and fleet operations, sales and management arena. His experience includes management roles in service, parts, fleet leasing, sales and marketing. He has relevant experience in light, medium, and heavy duty truck classes. For the past five years Ed was the Fleet and Asset Manager for Keystone Automotive Operations, the largest aftermarket auto parts distributor in North America