

Propane Powers Portland Public School Buses

The largest school district in Oregon, Portland Public Schools transports over 12,000 students during the school year. Powered by propane, the school buses travel more than 3.5 million miles each year.

High gasoline prices in the early 80's led the School District to explore alternative fuels. In 1983, as an experiment, the School District converted three conventional buses to propane. Pleased with propane motor fuel's benefits – cleaner, cost effective and maintenance-friendly– the School District, in less than a year, decided to convert the rest of its fleet vehicles to propane. Today, 94 percent of the District-owned school bus fleet and 88 percent of contractor-owned buses operate on propane.

Portland Public School Fleet Facts

Fleet Type: School Bus Fleet
Fuels: Propane, Gasoline
Fleet Size: 86
LPG-fueled: 94%



Bryan Winchester, Portland Public Schools Assistant Director of Transportation notes, “This program has been a tremendous success. Residents of our city have a keen interest in the environment. Propane is proven to be an exceptional fuel choice – both economically and environmentally.”

Fleet Composition

The School District's fleet comprises eighty-three G3500 GMC propane-fueled buses. In addition, two gasoline-powered G3500 GMC buses and one F700 Ford heavy-duty truck are used.

Working with Suburban Propane in Portland, Ore., the School District has successfully converted 94 percent of its fleet vehicles to propane. And currently, the School District is researching conversion kits in order to up-fit the two buses it purchased over the last two years.

Eagerly awaiting the introduction of school buses with dedicated propane engines, the School District, in the interim, is expected to purchase, and up-fit with propane conversions, seven more buses. Also, the School District is planning on replacing 17 existing fleet buses with the latest models, over the next three years.

Superior performance

Pleased with the performance of his fleet vehicles, Bryan counts public appreciation of the School District's efforts to reduce and eliminate diesel fueled bus exhaust emissions, less internal engine maintenance, and lower fuel costs as some of the direct benefits arising from the decision to use propane motor fuel.

Although the propane fleet buses provide slightly lower fuel economy, the average fuel cost is almost 50 percent less than gasoline. In addition, the overall performance of the propane fleet buses is superior when compared with that of conventional fuel fleet buses; an analysis of the average life span of engines and vehicles, both in terms of months and mileage, shows that engines and vehicles fueled by propane last almost twice as long as those powered by conventional fuel. And as Bryan said, "The life span and value provided by a propane fleet vehicle is higher than the costs incurred to convert a conventional fuel fleet vehicle to propane."

Refueling & Infrastructure

Each fleet vehicle consumes an average of 11.14 gallons of propane fuel per day. All propane fleet vehicles are refueled on-site from a 2,800-gallon truck mounted tank. A 1,000-gallon stationary tank serves as the back-up refueling source. And since propane is readily available in Portland, the School District did not have to incur any additional infrastructure costs to procure or store propane for refueling purposes.

While the School District incurred a one-time cost for a bobtail fuel truck, the refueling tank is provided, free of cost, by Suburban Propane. Other infrastructure expenses include the salary of a full-time employee, and other annual certification and license fees.

Advantages of Using Propane As a Fleet Fuel

Range: Superior to Ethanol, LNG and CNG. A 25-gallon propane tank, as motor fuel, will last longer than any other alternative motor fuel.

Miles Per Gallon: Delivers up to 90 percent of gasoline's MPG, 54 percent of Methanol's and 70 percent for Ethanol's.

Cost: Propane costs less than gasoline and may be the lowest priced alternative fuel for fleet use.

Availability: In addition to several private fleet-refueling stations, there are hundreds of public refueling stations for propane in Portland. Many major truck stops sell propane motor fuel. Modern, 24-hour stations are also being installed.

Safety: Propane is considered to be a safe motor fuel by the Federal government. Propane tanks are 20 times as puncture-resistant as gasoline tanks. Of all the alternative motor fuels, propane has the lowest flammability range—making it a safe motor fuel.

Emissions: Propane is inherently cleaner than gasoline and can meet or exceed those emission levels from other alternative fuels. Propane can easily meet or exceed current and future emission standards.

Infrastructure: Propane is already produced commercially in natural gas and oil refineries in the country and across the globe. No new technology or capital investment for such technology is required.

Training & Maintenance

The School District, working with Suburban Propane, provided initial training to the fleet vehicle operators, ever since the fleet was converted in the 80's. Today, senior staff members train new personnel on the job. In addition, all staff members receive frequent training from the local community college, vendors and suppliers.

Maintenance of fleet vehicles is mostly undertaken on-site by the School District's trained staff members. Suburban Propane's staff members undertake all other repair and maintenance, including internal fuel tank maintenance.

Propane: Safe, clean and cost-effective fuel

Pleased with the performance of propane fuel, the School District has not only decided that propane is the fuel of choice but also is eagerly awaiting the day when dedicated propane Type A and C school buses with sequential port fuel injection systems will be available in the market. In the interim, the School District hopes that availability of DOE/EPA certified conversion kits for 2000 model year and later, in the medium duty truck category, will increase considerably.

For more information about propane fleet vehicles, visit www.propanevehicle.org or contact:

Brian Feehan
Executive Director
Propane Vehicle Council
Phone: 202-530-0479
Email: bfeehan@propanevehicle.org