

## Case Study

### Texas School District Saves \$.20 per Mile Fueling with Propane Autogas

**Company:** Alvin Independent School District (ISD)  
**Industry:** Education  
**Location:** Alvin, Texas  
**Vehicles:** 2010 – 2013 Blue Bird Propane-Powered Type C school buses (68)  
Buses on order (15)  
**Fueling:** 18,000-gallon onsite propane autogas refueling station

#### Challenge:

To overcome energy supply shortages and price spikes by fueling more than half of their school bus fleet with abundant, domestic propane autogas.

#### By the Numbers:

- Approximately \$5,000 per bus per year in operational savings.
- \$79,000 per bus, equaling more than \$5 million in fuel and maintenance savings over the lifetime of the fleet.
- More than 60 percent fuel savings per gallon when compared to diesel fuel.
- About 152,700 fewer pounds of carbon dioxide emitted per bus, per year.

Following the 1970s energy crisis, Alvin Independent School District (ISD), Texas, began researching alternative fuel options. A decade later, as fuel access and pricing began hindering the district's transportation department, the district turned to propane autogas to power its school bus fleet. Today, Alvin ISD operates more than 100 propane autogas school buses that travel nearly 1 million miles each year combined.

#### Advanced Technology Increases Efficiency

Currently, more than half of Alvin ISD's school bus fleet operates on propane autogas. This includes 68 dedicated Blue Bird Propane-Powered Vision Type C buses and 36 converted buses. The remaining fleet is made up of 80 diesel buses.

According to Juan Mejias, fleet manager for Alvin ISD, drivers have developed a preference for the propane autogas buses. And, the district relies on the buses' power and ease of maintenance.

"Our bus drivers love the acceleration with propane autogas," Mejias said. "The drivers don't have the same hesitation accelerating and merging in traffic with the propane autogas fueled buses like they do with the diesel buses. The performance is that good."

After three decades of using propane autogas, the district has witnessed noticeable improvements in engine technology. Each new Blue Bird Propane-Powered Vision bus is equipped with a ROUSH CleanTech liquid propane autogas fuel system and a powerful Ford 6.8-liter, V10 engine. Mejias reports they deliver top-of-the-line serviceability in addition to cost savings.

“The overall savings on cost and maintenance is the best,” Mejias said. “It’s very easy for mechanics to service propane autogas fueled buses in a short period of time. With our diesel buses, there are additional filters to change and more components to look at.”

### **High Performance, Low Maintenance**

On average, Alvin ISD retires its buses every 13 to 14 years, with each propane autogas bus running approximately 270,000 to 280,000 miles during its lifetime. When maintenance costs, such as routine oil changes, are calculated over the lifetime of the bus, savings with propane autogas versus conventional fuels compound quickly.

“We’ve experienced extended oil changes to every 10,000 miles with propane autogas compared to 6,000 or 7,000 miles with diesel,” Mejias said. “This stacks up to more than \$200,000 in savings on maintenance alone across the lifetime of our propane autogas school bus fleet.”

Savings in maintenance and oil changes can add up quickly with a large bus fleet like Alvin ISD’s. When the district adds its lower fuel cost into the calculation, Alvin ISD easily doubles its total savings with propane autogas.

“We’ve been using this alternative fuel for decades, and we have always seen substantial cost savings, with or without federal tax credits,” Mejias said. Alvin ISD currently pays \$1.31 per gallon for propane autogas versus \$2.98 for diesel.

In a head-to-head comparison between 56 of the district’s propane autogas buses and 56 diesel buses, propane autogas saves the district more than 20 cents for every mile driven. The fleet of propane autogas buses travels nearly 500,000 more miles than the diesel buses.

### **High-Power Pumps Reduce Refueling Time**

An onsite refueling station saves the district even more in both time and money. The district recently used an \$80,000 grant to upgrade to a higher volume pump and dispenser to service its growing propane autogas fleet. Alvin ISD currently operates an 18,000-gallon propane tank with three dual dispensers, allowing them to fuel six buses at the same time.

“The new pumps have practically cut refueling time in half,” Mejias said. “When refueling our alternative fuel buses, we have no mess, no hassle and no spillage. With our diesel buses, spills are commonplace.”

Mejias credits the service of their propane retailers with providing reliable around-the-clock service for the district, eliminating supply issues of previous decades.

“The propane retailers go out of their way to make sure they deliver our fuel on time,” Mejias said. “Even if it’s at midnight or four in the morning — they’ll make sure we have the fuel we need to get the job done.”

## **A Cleaner, Safer Ride to School**

Alvin ISD has experienced many long-term financial benefits by fueling with propane autogas. The district's alternative fuel buses help them achieve state environmental standards, too. Propane autogas buses burn cleaner than conventional fuels and are exempt from state idling restrictions and emissions testing. Alvin ISD's fleet also meets all *Texas Clean School Bus Program* requirements set by the Texas Commission on Environmental Quality.

"With propane, the buses run clean so there's really no emissions component when it comes to meeting state standards," Mejias said. "We haven't had to worry about any issues."

Propane autogas fueled buses emit 40 percent fewer smog-forming hydrocarbon emissions than gasoline, and 80 percent fewer than older diesel engines. On board, the buses boast a safer ride to school as noise levels are decreased when compared to diesel counterparts, giving drivers fewer distractions.

"To me, it's a no-brainer to use propane autogas. It runs cleaner, it's low maintenance and it's safer for our students — it's the perfect fuel for a school bus," Mejias said. "And Blue Bird propane autogas buses have the perfect engine and performance."

Alvin ISD plans to take delivery of 15 more Blue Bird Propane-Powered Vision buses in March 2014.

*About ROUSH CleanTech:* ROUSH CleanTech, an industry leader of alternative fuel vehicle technology, is a division of ROUSH Enterprises based in Livonia, Mich. ROUSH CleanTech designs, engineers, manufactures and installs propane autogas fuel system technology for light- and medium-duty Ford commercial vehicles, and Type A and Type C Blue Bird school buses. As a Ford QVM-certified alternative fuel vehicle manufacturer, ROUSH CleanTech delivers economical, clean and domestically produced fueling options for fleets across the country. Learn more at [ROUSHcleantech.com](http://ROUSHcleantech.com) or by calling 800.59.ROUSH.

*About PERC:* The Propane Education & Research Council (PERC) was authorized by the U.S. Congress with the passage of Public Law 104-284, the Propane Education and Research Act (PERA), signed into law on October 11, 1996. The mission of PERC is to promote the safe, efficient use of odorized propane gas as a preferred energy source.

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