Case Study:

The Total Cost of Ownership for Propane School Buses

Challenge

School transportation departments across the nation must work within tight budgets and evaluate bus choices based on total ownership costs.

Propane Autogas by the Numbers

- More than 14,000 Blue Bird Vision Propane buses
- About 850 school districts operating propane school buses
- 50 percent lower fuel cost
- 50 percent lower maintenance expenses

Testimonials from school district transportation managers demonstrate that the fuel and maintenance savings from propane autogas-fueled buses result in low total ownership costs.

Clear Creek Independent School District, League City, Texas

Clear Creek ISD in League City, Texas, operates a fleet of 315 diesel, gasoline, compressed natural gas and propane-fueled school buses transporting 17,000 students throughout the Houston area. Thirty-seven are Blue Bird Vision Propane school buses from model years 2014 to 2018, purchased using grants from the Texas Commission on Environmental Quality.

According to Fleet Manager Ken Winters, the school district's propane buses average 15 cents per mile savings compared with its diesel buses. "Our propane buses don't get quite as good miles per gallon as diesel, but it's close," he said.

Part of the school district's savings comes from lower fuel costs. On average, propane costs 40 to 50 percent less than diesel. Clear Creek ISD currently pays $2.24 for diesel and $1.13 for propane, which has gone as low as $1. This makes a savings above average at up to 55 percent per gallon.

Most of the metrics kept by Clear Creek ISD have been on maintenance savings. Winters says that diesel emissions are now the highest expense in his shop (even higher than air conditioning) due to emissions standards getting stricter and as the district's diesel buses age (above 70,000 miles).

"School buses, in general, don't average or maintain a high enough speed to burn up the diesel particulate matter, which causes carbon build up. Houston is so densely populated that our buses rarely go above 40 miles per hour," said Winters.

In addition to lower fuel costs, oil changes have been cheaper with propane buses. The school district spends about $150 for diesel compared to $50 for propane per oil change. And, Winters has noted that there has been less downtime with propane buses, saving the district time and money.

Winters believes the school bus industry will continue to get away from diesel and toward propane autogas because of the complications of diesel emissions and propane's lower costs of ownership.

Cook-Illinois Corporation, Chicago, Illinois

School bus contractor Cook-Illinois Corporation owns a fleet of 2,200 school buses. About 250 are Blue Bird Vision Propane or Micro Bird Propane buses model years 2010 to 2018. These buses are used for daily routes, charters and field trips for multiple school districts in high-traffic area around Chicago.

Complications with diesel buses led Cook-Illinois to adopt propane buses. "Between 1980 to 2007, diesel was the best application for school buses," said John Benish, Jr., CEO. "But government regulations have gotten stricter, and new clean-diesel buses aren't as reliable as they used to be."

Cook-Illinois paid $10,000 more per propane bus compared with diesel. The company received $7,000 back on each bus purchase from a diesel emission reduction grant. Benish said they make up the remaining incremental cost within three years with fuel and maintenance savings.

Over the years, Cook-Illinois had to rebuild a lot of diesel bus engines. Plus, because of Chicago's harsh winters and of salt due to all the snow, the diesel equipment under the bus gets frequently damaged. The company has replaced 40 engines due to premature engine failure in the past five years alone. Before the latest emissions standards, replacing diesel engines was uncommon. "All of today's diesel buses require complicated emissions maintenance," Benish said. "All that equipment is not required on a propane bus."

The company is experiencing about 50 percent savings per propane bus in parts and labor compared to diesel.

When it comes to fuel, the company has experienced some huge savings. Currently, Cook-Illinois is paying $2.85 to $3 for a gallon of diesel. In comparison, the company has an annual contract for

propane and pays between $1.10 to $1.30 — 80 percent less than diesel. In addition, Cook-Illinois saves more by taking advantage of alternative fuel tax credits.

“School bus contracting is a very competitive market,” Benish said. “School districts like that we’re green, but at the end of the day, they need to stay within their budget. If I can achieve a cleaner footprint, do it for less money and still provide the same service? School districts value that.”

Because of the quick return on investment realized with propane buses, Benish expects his fleet to be 50 percent propane.

Upper Moreland School District, Willow Grove, Pennsylvania

The 59-vehicle fleet of Upper Moreland School District includes 35 MY2017 Blue Bird Propane Vision school buses and two Micro Bird Propane school buses. Each bus travels between 10,000 to 12,000 miles per year in the hilly region in stop-and-go traffic.

The school district explored propane buses when its aging diesel buses became too costly to manage. “Our fleet was getting older and had been refurbished. It was becoming very expensive to maintain,” said Kelly Rhodunda, transportation manager. “Rising fuel prices and vehicle replacement costs were also a factor, combined with budget constraints. We had not purchased a new 72-passenger vehicle in more than six years prior to buying our propane buses.”

Although the incremental cost for the propane buses was $10,000, the district received grant funding of about $630,000 for its buses and propane infrastructure. Propane autogas fueling infrastructure costs less than any other transportation energy source — conventional or alternative. The district also applied for alternative fuel tax credits.

In their first year of operation, the propane school buses saved the district approximately $173,000 in maintenance costs and $77,000 in fuel costs compared with diesel. Currently, the Upper Moreland School District pays $2.32 per gallon of diesel compared with their five-year contracted price of $.76 for propane — making it 65 percent cheaper.

“The affordable cost of the infrastructure and fuel, and a lower incremental cost for the equipment were the most cost-effective decisions our district could make for this long-term investment,” said Rhodunda.

About 850 school districts across the U.S. and Canada operate Blue Bird propane school buses. These districts show that whether it’s for a few dozen or a couple hundred, propane school buses make financial sense.

About Blue Bird Corporation: Blue Bird (Nasdaq: BLBD) is the leading independent designer and manufacturer of school buses, with more than 550,000 buses sold since its formation in 1927 and approximately 180,000 buses in operation today. Blue Bird’s longevity and reputation in the school bus industry have made it an iconic American brand. Blue Bird distinguishes itself from its principal competitors by its singular focus on the design, engineering, manufacture and sale

of school buses and related parts. As the only manufacturer of chassis and body production specifically designed for school bus applications, Blue Bird is recognized as an industry leader for school bus innovation, safety, product quality/reliability/durability, operating costs and drivability. In addition, Blue Bird is the market leader in alternative fuel applications with its propane-powered, electric-powered and compressed natural gas-powered school buses. Blue Bird manufactures school buses at two facilities in Fort Valley, Georgia. Its Micro Bird joint venture operates a manufacturing facility in Drummondville, Quebec, Canada. Service and after-market parts are distributed from Blue Bird's parts distribution center located in Delaware, Ohio. For more information on Blue Bird's complete line of buses, visit www.blue-bird.com.

About ROUSH CleanTech: ROUSH CleanTech, an industry leader of alternative fuel vehicle technology, is a division of Roush Enterprises based in Livonia, Michigan. ROUSH CleanTech designs, engineers, manufactures and installs propane autogas and electric fuel system technology for medium-duty Ford commercial vehicles and school buses, and compressed natural gas fuel systems for school buses. As a Ford QVM-certified alternative fuel vehicle manufacturer, ROUSH CleanTech delivers economical, clean and domestically produced fueling options for fleets across North America. Learn more at ROUSHcleantech.com or by calling 800.59.ROUSH.

(Case study completed in 2018)

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