



Case Study:

Florida's 1st School District to Adopt Propane Buses Now Operates 100% of Fleet with Propane Autogas

Company: Indian River County School District
Industry: Education
Location: Indian River County, Florida
Vehicles: (83) Blue Bird Vision propane buses
Fueling: Onsite delivery

Challenge

In 2009, Indian River County School District faced a dilemma: make adjustments to its school bus fleet to meet new emission standards while navigating government-mandated budget cutbacks. In an effort to accomplish a seemingly impossible task, the district explored alternative fuels that would offer the lowest total cost of ownership and run cleaner than diesel. Impressed with advancements in propane autogas technology, the district decided to purchase three propane autogas school buses as an experiment. Fourteen years later, the district now runs 100% of its routes using propane-powered school buses.

By the Numbers

- 6,000 students travel to 26 schools.
- 100% of routes run on propane.
- 83 Blue Bird Vision propane buses travel 20,000 miles per year per bus.
- 53% savings on fuel.
- 71% savings on preventative maintenance costs.
- 1st district in Florida to adopt propane school buses.

District and Fleet Background

Located between Miami and Orlando on the Atlantic coast, Indian River County School District currently serves 6,000 students across 68 schools and runs 100% of its 77 daily routes on propane.

As part of Florida's Treasure Coast, Indian River County encompasses 543 square miles of beautiful beaches and citrus groves. In an effort to honor the community's natural surroundings while at the same time reduce increasingly overwhelming costs associated with diesel, the district began researching clean alternative fuels to replace its diesel buses.

In 2009, Indian River County School District became one of the first school districts in the country — and the first in the state of Florida — to integrate propane school buses into its fleet. While the district still owns and maintains about 20 diesel buses, it fully relies on its propane buses to meet the community's needs.

Propane Passes the Test

After looking at many alternative fuel options, the district decided to purchase three propane autogas buses and test them on long distance, mid-range, and intercity routes to see how they perform. Nearly half of the roads in the district's routes are unpaved, using only gravel or dirt. This was an important factor when testing out performance.

"We took it seriously, but we also took it very cautiously," said George Millar, former director of transportation for the district.

After a successful test run, the district ordered another 11 buses. The district has continued to replace aging diesel buses with new propane buses equipped with advanced ROUSH CleanTech fuel systems, for a total of 83.

Hassle-Free Longevity

The district's initial goal was for the propane engines to last the life of the bus, which is about 10 years. More than a decade later, two of the buses have clocked 200,000 miles with virtually no major maintenance issues. In fact, the school district had its very first core engine-related failure — a valve spring — in 2022.

"There's a lot less labor needed to complete repairs or get buses back in service," said Gary Crumbacker, warehouse foreman for Indian River County School District. "The maintenance has been easier on the propane units compared with the diesel units in our fleet. And the repair costs are much lower than diesel."

Propane has made life easier on the maintenance staff because it doesn't require the costly after-treatment measures needed for diesel vehicles. The district is saving time and money by avoiding additional fluids and filters; exhaust after-treatment and diesel emissions fluids; particulate trap systems; turbochargers and intercoolers. Engines powered by propane require less oil by volume, too. For example, an oil change for a Blue Bird Vision Propane bus uses 7 to 8 quarts compared with 25 to 30 quarts for a typical diesel engine.

Nationwide, propane technicians report a cleaner work environment and less maintenance. Propane fueling is a closed-loop system and, with propane, technicians avoid the frequent spills and diesel odor on their clothes and hands. No modifications were needed to the school district's maintenance facility, either.

Breathing Easy

One of the biggest benefits of propane buses is that students do not have to be around diesel fumes. "Our buses pull into loading zones, and idle while students board. With propane, there's not the pollutants that you have with the diesel bus," said Jennifer Idlette, the district's director of transportation.

Propane autogas is a nontoxic, non-carcinogenic and non-corrosive fuel that emits fewer greenhouse gases, smog-producing hydrocarbons, nitrogen oxides and particulate emissions compared with gasoline or diesel. And, propane poses no harm to groundwater or soil, so the surrounding landscape and waterways are protected, too. Diesel exhaust, on the other hand, is identified by the [World Health Organization](#) as a carcinogen, which is why regulations are becoming tighter for districts choosing to keep diesel in their fleets.

Indian River School District's propane school buses, which were purchased from Florida Transportation Systems, Inc., exceed emission standards set by the Environmental Protection Agency and the California Air Resources Board. And, they virtually eliminate particulate matter — the soot from vehicle exhaust — which is known to cause serious lung and bronchial problems.

"The propane buses have been a great addition to Indian River County School District. The district was at the forefront of operating alternatively fueled buses in 2009," said Chris Rustman, president of Florida Transportation Systems, Inc, the state's Blue Bird dealer. "Propane buses are much better for the students and drivers, and are having a positive impact on the environment."

More aggressive emissions regulations are on the horizon under the EPA's new goals, but Indian River School District's decision to make healthy, cost-saving changes nearly 15 years ago has put the district in a strong position.

By operating ROUSH CleanTech propane fuel systems in its Blue Bird Vision buses — particularly the new models, which are ultra-low NOx and 90% cleaner than current emission standards — the district is emerging as a leader in clean fleet operations for schools around the country. As a result of its leadership, Indian River County School District received honorable mention for School Bus Fleet's '100 Best Fleets in America.'

“Propane Outperforms Diesel”

With 100% of the district’s school bus routes operating on propane power, nearly all transportation employees come in close contact with the propane buses on a daily basis. When the transition first took place, some employees were skeptical.

“Drivers were reluctant at first, but after driving them for a few days, they prefer propane buses over diesel buses,” said Idlette.

Buses fueled by propane reduce noise levels by about half compared to a diesel engine. Drivers report a comfortable, quiet and smooth ride, contributing to a calm and well-managed experience for everyone. And, drivers do not need to sacrifice performance, reliability or range. Propane buses have the same power, towing capacity and torque as diesel buses, and they can travel as far as 400 miles on a single fueling.

“Propane outperforms diesel in every area except miles per gallon. But the fuel and maintenance savings more than make up for that,” said Crumbacker.

Financial Stability

Indian River County School District’s first round of propane school buses was supported by a rebate program. The district reported a return on investment within eight months of adoption. The district was able to quickly meet tighter budget expectations and make long-term planning decisions knowing that the propane buses would help them put money back in the classroom.

Propane buses offer the lowest total cost of ownership compared with other fuels. And since propane is classified as an alternative fuel by the Energy Department, there are a number of incentive programs to encourage adoption among school districts, including the 2021 infrastructure bill, government grants, Volkswagen settlement funding, market-based incentives (low-carbon fuel standards) and alternative fuel tax credits.

“We’re paying \$3.56 per gallon for diesel, and only \$1.68 for propane,” said Idlette. “When I look at how long these buses are lasting, with basically zero maintenance issues, it’s hard not to see the upside.” Propane autogas typically costs about 50% less than diesel and about 40% less than gasoline, mainly because more than 90% of the United States propane autogas supply is produced domestically.

Most fleets can also save up to 50% in maintenance costs with propane vehicles. “The basic preventative maintenance cost of a propane bus is \$18.84. The same cost on our diesel buses runs \$65.98 for air and fuel filters,” said Crumbacker. “The savings here are more than triple.”

Fueling the Buses

There are multiple options for propane infrastructure, including onsite fueling, mobile fueling and public access fueling. Indian River County School District uses mobile fueling.

“We currently do not have our own fueling site. Buses are being fueled by a bobtail truck daily, however, a proposed fueling station has been designed for implementation,” said Idlette.

Many school districts choose to install a propane station on property, which can be very low-cost with financial support from a local propane supplier. There are also thousands of public propane stations available across the nation.

Transformational Sustainability

Indian River County School District is not only transforming the lives of its students, it's a leader of transformational sustainability for the nation. In 2009, the district was one of the first to make the decision to incorporate propane as a clean alternative fuel; today, more than 1,000 school districts operate propane buses to transport 1.3 million students to and from school each day.

The district has been able to help its community reach its full potential thanks to its commitment to using a clean, affordable and sustainable fuel. “With low fuel and maintenance costs, and the longevity of the propane buses, we’ve maintained our budget level without an increase due to inflation since 2006,” said Idlette. “Not only are we operating clean buses, we’re able to weather funding ebbs and flows. We’re in a much better place than we were before adopting our propane buses in 2009.”

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About Florida Transportation Systems, Inc.: Florida Transportation Systems, Inc., has provided transportation solutions for more than 30 years. The company’s mission is to provide exceptional sales, service and support for customer transportation needs. It is the only authorized Blue Bird bus dealer serving the state of Florida. Learn more at fts4buses.com.

About Indian River County School District: Indian River County School District transforms education to inspire and empower ALL students to maximize their full potential. The district is located halfway down the east coast of Florida and operates 13 elementary schools, four middle schools, two high schools, one alternative education center, one technical college, one exceptional student education school, and five charter schools. Visit <https://www.indianriverschools.org>.

About ROUSH CleanTech: ROUSH CleanTech, an industry leader of advanced clean transportation solutions, is a division of the global engineering company Roush Enterprises. ROUSH CleanTech develops propane autogas technology for medium-duty Ford commercial vehicles and school buses. With more than 37,000 vehicles on the road, the Livonia, Michigan-based company delivers economical, emissions-reducing options for fleets across North America. Learn more at [ROUSHcleantech.com](https://www.ROUSHcleantech.com) or by calling 800.59.ROUSH.

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