Propane School Buses

Fact Sheet

Blue Bird / ROUSH CleanTech Partnership

- Since 2012, Blue Bird and ROUSH CleanTech have partnered to offer two types of school buses fueled by propane autogas[1]: Type A Micro Bird and Type C Vision.

- The **Blue Bird Vision** Type C school bus offers seating up to 77 passengers and three propane tank sizes: 47-usable gallon tank, 67-usable gallon tank and a 93-usable gallon tank — the industry's largest.

- The **Micro Bird G5** is a Type A school and commercial bus with a 41-usable gallon tank, seating capacity for up to 30 passengers and the most horsepower of any Type A bus in the industry.

- There are more than 22,000 propane school buses equipped with ROUSH CleanTech fuel systems in over 1,100 school districts across North America.

- More than 37% of the nation's largest school districts operate propane school buses, including Boston Public Schools, East Chicago Public Schools, Florida's Broward County Public Schools and Detroit Public Schools.

Health and Environment

- Propane buses offer a safe, clean and healthy ride to school without an expensive investment.

- Blue Bird propane buses use 7.3L V8 Ford engines with ROUSH CleanTech propane fuel systems. The engine is certified to the optional ultra-low nitrogen oxide (NOx) level of 20 mg/bhp-hr (milligrams of pollutants per brake horsepower hour) making them ready to meet EPA and California Air Resources Board's 2031 standard.

- Blue Bird propane buses are 90% cleaner than EPA's most stringent heavy-duty engine standard and 99% cleaner than diesel buses built before 2007.

- School buses that run on propane emit fewer greenhouse gases, smog-producing hydrocarbons, nitrogen oxides and virtually eliminate particulate emissions compared with conventional fuels.

- According to a West Virginia University study released in 2019, propane school buses reduce NOx by at least 95%. In real-world applications of stop-and-go bus driving, diesel emissions are **34 times** higher than with propane.

- A 2019 Georgia State study shows diesel school bus fumes drive down test scores. The study correlated increased academic performance in math and English when children were exposed to lower levels of school bus emissions.

- Blue Bird buses powered by ROUSH CleanTech can operate on renewable propane, which is propane from non-fossil fuel sources like cooking oil. Renewable propane is carbon neutral, meaning no new carbon is added to the atmosphere.

- Propane buses reduce noise levels by about 50% when compared to diesel, reducing noise in communities and allowing drivers to focus more on students and the road ahead.

[1] Propane autogas (or LPG) is the internationally recognized term for propane when used in on-road engines.

- Both the Environmental Protection Agency and the California Air Resources Board have certified the ROUSH CleanTech fuel system in propane school buses.

Economics

- According to the Department of Energy's Alternative Fuels Data Center, a 2023 Pennsylvania study shows the total cost of ownership for propane buses is about $143,000 less than diesel school buses.

- On average, propane autogas costs about 50% less than diesel and about 40% less than gasoline.

- Hundreds of school districts have reported annual savings of up to $3,700 per bus due to lower fuel and maintenance costs compared with diesel.

- Since propane is classified as an alternative fuel by the Environmental Protection Agency, there are incentive programs to encourage adoption.

- Standard diagnostic equipment can be used to service propane buses.

- Propane removes the complexity and cost of after-treatment measures since it doesn't require additional fluids or filters; exhaust after-treatment or diesel emissions fluids; particulate trap systems; turbochargers or intercoolers.

- An oil change for a Blue Bird Vision Propane bus uses about seven quarts compared with 25 to 30 quarts for a typical diesel engine.

- Propane school buses have no cold-start issues and warm up quickly, saving school districts time and money on equipment and staff.

- According to a World Liquid Gas Association report, if all the nation's diesel school buses were converted to propane, U.S. school districts could hire more than 23,000 teachers with the fuel and maintenance savings.

- Four propane buses can be purchased for every one electric bus, allowing school districts to replace old diesel buses faster and reduce carbon emissions immediately.

- A typical propane school bus with a ROUSH CleanTech fuel system can drive more than two and a half times farther on a full tank than a comparable electric school bus can drive on a full charge.

- ROUSH CleanTech's innovative propane technology helps combat the biggest issues facing school transportation staff — funding constraints, regulatory changes and operational challenges — through dramatic fuel and maintenance cost savings, greater access to grant funds and other clean fuel incentive programs and reduced operational and maintenance burdens associated with diesel school buses.

- The cost for propane infrastructure and buses is approximately 86% less expensive than electric, allowing districts across the country, and in diverse socioeconomic backgrounds, to be able to afford it.

Safety and Performance

- Propane fuel tanks are constructed from carbon steel in compliance with the American Society of Mechanical Engineers. They are 20 times more puncture-resistant than gasoline or diesel

tanks and can withstand four times the pressure.

- All Blue Bird propane school buses meet and exceed Federal Motor Vehicle Safety Standards and Canadian Motor Vehicle Safety Standards.

- The tank mounting systems are designed at twice the National Fire Protection Association requirement to ensure tanks remain securely attached even in a severe collision or rollover.

- Buses equipped with ROUSH CleanTech's propane fuel systems retain equivalent horsepower, torque and towing capacity as gas and diesel counterparts.

- Propane school buses can achieve a range of up to 400 miles on a single fueling, which is two and a half times farther than an electric bus can travel on a single recharge.

- Propane vehicles offer unaided cold-weather starts to negative 40°F. Propane vehicles have no cold-start issues and warm up quickly, providing a comfortable ride for drivers and passengers. Operators report saving time and money on equipment and staff.

- At approximately 8 to 10 gallons per minute, fueling with propane is comparable to gasoline and diesel fueling. Propane school buses use a quick-connect nozzle that reduces fugitive emissions and resembles gasoline and diesel in ease of fueling.

- ROUSH CleanTech is a partner in the national effort to provide consistent, reliable transportation to students so they can attend school regularly and reach their full potential.

Readily Available and Abundant

- More than 28 million vehicles travel worldwide with propane in their fuel tank, including school buses, taxis, paratransit shuttles, delivery and construction trucks and more.

- More than 1.9 million students across the nation ride to school in propane school buses each day. About 85% of them ride in Blue Bird propane buses.

- Propane fueling infrastructure costs less than any other transportation energy source — conventional or alternative. Many school districts elect to install onsite propane stations, which are low- or no-cost with a fueling contract.

Domestic Resource

- Propane autogas is a leading alternative fuel in the United States. It has a high energy density and lower emissions than many other energy sources.

- More than 90% of the United States propane supply is produced domestically, with an additional 7% from Canada.

- Almost 75% of propane used in the U.S. comes from natural gas refining, and the remaining comes from petroleum during the refining process. This is material that would otherwise be wasted if not used as a clean alternative fuel.

Learn More

- ROUSH CleanTech: ROUSHcleantech.com
- Propane Education & Research Council: BetterOurBuses.com
- Department of Energy's (DOE) Clean Cities: cleancities.energy.gov
- Department of Energy's Office of Energy Efficient and Renewable Energy: afdc.energy.gov
- World Liquid Gas Association: worldliquidgas.org

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