

PROPANE AUTOGAS SCHOOL BUSES

Deliver on Emission Reductions, Cost Savings & Safety

By Ryan Zic, Vice president, sales for school bus, ROUSH CleanTech

TODAY, more than 1.3 million children in North America ride to and from school in buses fueled by propane autogas. Known as auto propane in Canada, propane autogas is the internationally recognized term for propane when used in on-road engines. In Canada, dozens of school districts and school bus contractors operate more than 1,000 Blue Bird propane autogas buses.

“Our fleet of school buses fueled by propane means cleaner air around our students and

drivers, and within our community,” said Domenic Scuglia, director of education for Regina Catholic School Division. “At Regina Catholic Schools, we always consider our students’ needs first when we make any decision inside and outside of the classroom.”

In addition to Saskatchewan, districts in Alberta and Manitoba have adopted this alternative-fuel school bus technology. Learn more about how this alternative fuel is an effective transportation fuel choice for school districts.

Reduced Emissions

School buses equipped with propane autogas fuel systems reduce tailpipe emissions across the board and not only in comparison to the older diesel buses they are replacing but against the latest and most stringent standards. They drive toxic NOx levels down to ultra-low levels and beat the federal requirements by an average of 50 per cent across the greenhouse gas family.

With three parts carbon and eight parts hydrogen, propane is a clean-burning, low-carbon fuel that will lower a school district’s carbon footprint compared to traditional fuels like gasoline. Propane autogas is a nontoxic fuel that poses no harm to groundwater or soil.

According to a recent study by an American university, nitrogen oxide emissions are 34 times higher in a diesel bus than a propane bus over a stop-and-go route, and 15 to 19 times higher over a city route. West Virginia University’s Center of Alternative Fuels, Engines, and Emissions (CAFEE) completed the study — the same group that exposed the Volkswagen emissions violations in 2015.

Positive Economics

The average Canadian price of propane autogas is about 40 percent less than gasoline



Propane autogas is an economical alternative fuel that will allow the school districts to save money in maintenance and fuel costs, and to reduce its carbon footprint (photo courtesy of ROUSH).

and diesel and reduces maintenance costs due to its clean-operating properties.

Dealing with tightening standards on diesel emissions leads districts into challenges related to diesel emissions reduction equipment — diesel particulate filters, manual regeneration, diesel emission fluid, and more. Operating on propane autogas instead of diesel removes the complexity and cost of after-treatment measures, which can accelerate return on investment and cut operating costs.

According to the Canadian Propane Association (CPA), due to the low cost of propane autogas and more simple maintenance requirements, fleet operators can expect an average of a one-year payback on incremental vehicle costs. And, every Blue Bird propane autogas school bus can save up to \$4,000/per year in fuel and service costs compared with diesel.

Safe School Buses

A school bus fueled by propane autogas comes equipped with a dedicated liquid propane autogas fuel system that consists of the fuel rail assembly, fuel line assembly, fuel tank assembly, and the powertrain control system.

With modern propane autogas systems, the propane remains in a liquid state all the way to the multi-port fuel injectors. This has alleviated cold start issues associated with vapor technology propane systems of the past. A propane autogas fuel system provides unaided cold weather starts to -40 degrees Celsius. Dozens of school districts have reported that in sub-zero temperatures, their propane autogas school buses start up immediately.

Propane autogas engines are noticeably quieter. Buses fueled by propane autogas reduce noise levels by about half compared to a diesel engine. While diesel engines are commonly associated with producing noticeable engine noise, propane autogas engines allow drivers to better hear and communicate with students onboard and, more importantly, at the loading zones.

By fueling with propane autogas, school district employees can avoid the spills that

result from diesel fueling as well as the resulting diesel odor on their clothes and hands. Unlike gasoline or diesel, propane autogas is part of a closed-loop system, meaning the fuel is never exposed to air and won't spill. Plus, fueling is quick; a propane autogas school bus fuels at 40 – 45 liters per minute, a similar rate to diesel.

Whether your school district needs to replace one aging diesel bus or hundreds, propane autogas school bus technology is a wise investment for the future of districts in Canada.

Ryan Zic is the vice president of sales, school bus for ROUSH CleanTech, an industry leader of advanced clean technology. He oversees a team of business development managers who focus on growing the alternative fuel school bus market. He serves as the account manager for Blue Bird, ROUSH CleanTech's largest customer. Reach him at propane@roush.com or 800.59.ROUSH. To learn more, visit ROUSHcleantech.com.



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