Case Study:

Washington Public Transit Agency Achieves Its Clean Emissions Goals with Propane Buses

Agencies: Kitsap Transit (Operating propane vehicles since 2015)
Industry: Transit
Location: Bremerton, Washington
Vehicles (75) Ford E-450 propane paratransit buses
Fueling: On-site propane autogas fueling stations

Challenge: To lower its emissions and total operating costs, a Washington transit agency sought an alternative fuel solution for its paratransit bus fleets.

Making the Switch to Propane
Kitsap Transit is the public transit agency serving Kitsap County outside of Seattle, Washington. The agency transports more than 3.5 million riders each year and operates routed buses, both regular full-day service countywide and custom rush-hour service for ferry commuters. It also offers ACCESS, a paratransit service for seniors and people with disabilities. Currently, Kitsap Transit has 75 ACCESS vehicles, with each averaging 28,000 miles per year.

The transit agency began looking for paratransit buses with cleaner emissions that would help lower its fuel cost and found a solution with ROUSH CleanTech's Ford E-450 propane paratransit buses.

"Kitsap Transit strives to be a sustainable, green travel option for our environmentally conscious commuter base," said Dennis Griffey, vehicle and facilities maintenance director for Kitsap Transit. "By choosing propane to fuel our paratransit buses, we're doubling down on our commitment to our community."

In 2015, Kitsap transit launched its first five propane buses. Over the last 10 years, 75 propane buses have been added to its ACCESS paratransit fleet, replacing aging diesel models. The Washington agency is among dozens of transit agencies operating propane vehicles. According to the Propane Education & Research Council, there are currently more than 7,000 propane paratransit buses across the U.S.

Driving Emissions Down

For Kitsap Transit, reducing its carbon footprint was an important factor in replacing its paratransit buses. “As part of our ISO 14001 framework, we wanted to have vehicles with cleaner emissions,” said Griffey.

When compared with gasoline or diesel models, fleet vehicles that run on propane autogas, including the ROUSH CleanTech Ford E-450 cutaway chassis, emit fewer greenhouse gases, smog-producing hydrocarbons, and virtually eliminate particulate emissions.

Griffey pointed out that the transportation sector is one of the largest contributors to greenhouse gas emissions. “Kitsap Transit is committed to environmentally sustainable practices in its own operations,” said Griffey. “Since 2015, Kitsap Transit has made operational changes, including using propane vehicles, that have reduced our carbon dioxide footprint.”

Increasing Savings

Griffey reports that Kitsap Transit’s propane vehicles have helped the agency reduce expenses in a few ways.

Propane vehicles are easy and affordable to maintain, which has positively influenced the agency’s ongoing cost savings. Compared with diesel vehicles, propane vehicles require fewer quarts of oil, fewer oil changes and less costly filter packages. Additionally, the transit agency saved on up-front costs on maintenance facility adjustments because requirements for a propane vehicle repair facility are generally the same as those for conventionally fueled vehicles, which is not the case with other alternative fuel facilities.

“Propane has reduced our maintenance costs and wear and tear on the engine and components,” said Griffey. “We don’t need to do as much servicing for fluids, coolants and filters.”

Pain-Free Fueling

Kitsap Transit experiences additional savings with its propane buses by locking in an annual per-gallon fuel cost for propane to ensure price and supply remain consistent.

Kitsap Transit has two 2,000-gallon dispensers at its North and Charleston facilities, as well as one 1,000-gallon leased dispenser at its South facility. The agency reports it saves almost 70% per gallon when purchasing fuel for its propane buses, compared to its diesel models.

Installing propane fueling infrastructure costs less than any other transportation energy source — conventional or alternative. Propane supplier Ferrellgas helped Kitsap Transit choose the right fueling option based on the fleet size, routes, budget and facility space.

With locked-in fuel pricing and easy-to-access on-site fueling infrastructure, the agency’s propane buses average 25 cents less per mile than its comparable diesel vehicles.

Compared with other fuels, propane also has the lowest total cost of ownership. In addition to reduced maintenance, the fuel is 40% less expensive than gasoline and about 50% less than diesel per gallon.

One of the reasons fueling with propane autogas is so cost-effective is that more than 90% of the United States propane autogas supply is produced domestically, with an additional 7% from Canada. Fueling with American-made propane autogas helps with energy security goals and reduces the nation's dependence on imported oil.

"Well-received by Everyone"
In addition to satisfied maintenance staff, Kitsap Transit's drivers also report a great experience with the propane buses. "Our operators really appreciate the power and pep the propane vehicles have. They are quieter and don't have that diesel smell," said Griffey.

Propane transit buses reduce noise levels by about 50% compared to a diesel engine, providing a calmer experience for both passengers and drivers. For the customers served by Kitsap Transit's ACCESS program, a calmer, quieter experience makes all the difference.

Funding and Future Opportunities
In order to transition its fleet to propane, Kitsap Transit used local, state and federal funding to purchase the new buses. The agency tapped into Federal Transportation Administration (FTA) grant programs for support.

ROUSH CleanTech's Ford E-450 cutaway has completed the Federal Transit Administration's New Model Bus Testing Program ("Altoona Testing"), which allows transit agencies to access federal funds that cover 85% of the entire alternative fuel vehicle cost with a 15% local match. Completion of "Altoona Testing" means all compatible paratransit body configurations are eligible for FTA funding.

The experience working with ROUSH CleanTech and its innovative propane technology has gone so well that Kitsap Transit plans to add more propane vehicles to its fleet. In fact, 30 new E-450 propane buses arrived recently, and, according to Griffey, Kitsap Transit plans to replace all of its remaining 6.6-liter diesels with propane vehicles. Griffey added that the ongoing customer support offered by ROUSH CleanTech is "second to no one."

"We were looking for cleaner emissions, reduced downtime and lower cost per mile," said Griffey. "ROUSH CleanTech's propane-fueled E-450s achieved all these goals."

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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 50,000 vehicles on the road, the Livonia, Michigan-

based company delivers economical, emissions-reducing options for fleets across North America. Learn more at ROUSHcleantech.com or by calling 800.59.ROUSH.

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