

Case Study:

Rural Transit Agency Touts the Benefits of Propane Paratransit Buses

Company: Charlevoix County Transit (CCTS)
Industry: Transit
Location: Boyne City, Michigan
Vehicles: (13) Ford E-450 propane autogas cutaway buses
Fueling: Onsite propane autogas fuel station

Challenge:

With a goal to lower its emissions and total operating costs, the transit agency sought an alternative-fuel solution for its paratransit shuttles.

By the Numbers:

- Over 50% reduction in per-gallon fuel costs.
- 89% propane-fueled fleet.
- FY-2021: 47,625 gallons of propane used; 2,539 gallons of gas used.

Charlevoix County Transit began switching its fleet vehicles to propane autogas in 2016 to become a more environmentally friendly, cost-efficient fleet. Now, six years later, 89% of its fleet runs on this alternative fuel.

Research

Michigan's Charlevoix County is 1,390 square miles, of which 974 square miles is water. Locally known as CCT, Charlevoix Transit offers a curb-to-curb rural transit system transporting citizens to varying locations. CCT buses travel between 50 to 200 miles daily.

Jill Drury, CCT's director, took interest in alternative fuels. She began to research the possibility of moving away from gasoline- and diesel-fueled vehicles after listening to presentations from an urban transit system representative in Michigan and a business development director from ROUSH CleanTech.

Following a tour of ROUSH CleanTech, Drury began to get serious about transforming the CCT fleet from gas and diesel to propane autogas. "Living and operating in an area that is conscious about the health of our lakes and land, I wanted to transition our fleet to an

environmentally friendly fuel, as well as take advantage of the cost savings,” Drury said. “Propane autogas was the perfect solution for our agency.”

However, Drury knew that to truly be successful with the transit, the agency staff had to be onboard with the change. “It was important that our fleet maintenance staff be onboard with this switch, so I arranged for them to tour ROUSH CleanTech’s facility,” she said. “Their comfort level of working on propane autogas vehicles was key to a successful transition.”

Propane Infrastructure

CCT is located in Boyne City, Michigan, in the northern lower peninsula of Michigan where few fueling options are available due to its rural settings.

“Due to our rural nature, propane autogas is our best option for lowering fleet emissions,” said Drury. “While electric vehicles have a place in the transit industry, we don’t see them as a good fit for us due to the range limitations. Our propane vehicles provide the range we need for our daily runs, and there’s no reason for us to switch to EV.”

By partnering with its propane fuel vendor, CCT installed an on-site propane fueling station requiring little capital outlay. In exchange for a fueling contract that “locks in” fuel costs, propane suppliers can install an on-site fueling station for little or no cost to the transit fleet.

Cost Reductions

Lower propane autogas prices compared to other fuels offered an easy solution to the agency’s desire to spend less. The current price of gasoline in CCT’s location is about \$4.20 per gallon, compared to \$2.05 for propane. The agency also reduced its maintenance costs due to the fuel’s clean operation.

According to a 2021 Energy Department Clean Cities study, compared with all other alternatives, propane autogas is the most efficient mid-duty transit bus fuel option, based on cost and lifecycle.

Environmental Efforts

Propane autogas is a nontoxic, non-carcinogenic and non-corrosive fuel classified as a non-contaminant by the Environmental Protection Agency. Vehicles that run on propane emit fewer greenhouse gases, smog-producing hydrocarbons and particulate emissions than conventional fuels. Because of propane’s environmental advantages, it is classified as an alternative fuel by the Department of Energy.

Existing incentive programs encourage adoption of propane, including the 2021 infrastructure bill, government grants, VW settlement funding, market-based incentives (low-carbon fuel standards) and tax credits.

The ROUSH CleanTech Ford E-450 cutaway chassis is the only propane vehicle that has completed Federal Transit Administration’s New Model Bus Testing Program (known as “Altoona testing”). By purchasing an Altoona-test vehicle, transit fleet operators can access federal funding for the procurement of vehicles. In most cases, state and/or local match will be

roughly 15 to 20% of the total vehicle cost.

Domestic Benefits

More than 90% of the United States propane supply produced domestically. An additional 7% comes from Canada. Each CCT bus uses 35 to 40 gallons of fuel daily. By operating on propane, the agency displaced roughly 36,000 gallons of gasoline last year.

According to Drury, CCT is saving money for every mile its propane paratransit buses travel the streets of rural Michigan. Drury found the change to propane vehicles so successful that she has become an advocate for propane autogas in transit fleets. "I've seen the benefits of utilizing propane autogas in transit fleets firsthand and I want to help other systems learn about these benefits," Drury said. "We're reducing emissions and saving money along the way; it's a win-win."

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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 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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