

CASE STUDY



Location: Pittsburgh, PA
Company: Giant Eagle
Study: Natural Gas

With locations in Pennsylvania, Ohio, West Virginia, and Maryland; Pittsburgh-based, multi-format food and fuel retailer Giant Eagle is committed to environmental sustainability. The company strives to reduce and remove nonrenewable resources and waste, recycle the waste it creates, and seek energy-saving alternatives.

This "green" approach carries across all areas of the corporation – from promoting reusable grocery bags to using non-ozone depleting refrigerants in refrigeration systems. One of Giant Eagle's latest sustainability efforts comes in the form of compressed natural gas (CNG) vehicles.

Decision Points

In 2010, Giant Eagle's distribution unit, Talon Logistics, received an Alternative Fuels Incentive Grant from the State of Pennsylvania. The \$900,000 grant, combined with an investment from the company, allowed for the purchase of 10 CNG-powered Volvo tractors and the installation of a public CNG fueling station as well as a private one for the company's fleet.



Photo courtesy of NAFTC.

Before the trucks ever arrived on Giant Eagle's property Vice President of Logistics Bill Parry began preparing his technicians for the transition to CNG. Through the company's active role as a Pittsburgh Region Clean Cities (PRCC) Coalition stakeholder, Parry became familiar with the National Alternative Fuels Training Consortium (NAFTC), a program of West Virginia University. Giant Eagle's automotive technicians attended two natural gas vehicle courses at the NAFTC headquarters in Morgantown, West Virginia, in preparation.

"The classes at the NAFTC were key," Parry noted while emphasizing the importance of education. "We prepared by doing a great deal of research. One of our biggest successes involved starting a focus group with a few key team members. We talked about everything that had to do with the project and addressed a lot of good questions."

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Parry also characterized Giant Eagle as a trailblazer in converting a heavy-duty fleet to CNG. "Being an industry leader, there were a lot of stones that we turned over," he noted. "There were a lot of challenges involved. We worked hard to bring together the proper parties - contractors, technicians, and team members."

Fleet Facts

Giant Eagle's total fleet consists of 10 CNG trucks and one CNG car.

According to information from Volvo Trucks, each CNG Volvo VNM daycab is powered by an 8.9-liter, 320-horsepower, 1,000-pound torque Cummins Westport ISL G engine.

CNG is sold in gasoline gallon equivalents (GGEs), with every GGE having the same energy content as a gallon of gasoline. Parry reported that each Volvo VNM daycab's tank holds 84 GGEs of CNG and achieves about the same four to six miles per gallon as a diesel truck.

Fuel Supply and Infrastructure

Pittsburgh-based Equitable Gas supplied the CNG, pumping it into Giant Eagle's infrastructure. Equitable Gas, a subsidiary of EQT Corporation made a great partner Parry said, because the company also had installed a CNG fueling station and is in the process of converting its service trucks to run on CNG.



Photos courtesy of Giant Eagle.



Giant Eagle's private CNG station at its Beechnut Drive retail support and distribution center in the Pittsburgh area is sufficient to meet all of the fleet's fueling needs.

Giant Eagle's fleet is regional with trucks going out in the morning and coming back at night and fueling can be done as needed.

Parry added Giant Eagle designed the CNG station to mirror the same experience a driver would have at a gasoline station. The fast-fill CNG dispensers at Giant Eagle's stations fuel the vehicle in about six to eight minutes.

Costs

Parry explained that CNG trucks operate at about one-third the cost of diesel fuel counterparts. Currently, CNG is about \$2-2.10 per GGE, while diesel is approximately \$4 per gallon.

Giant Eagle also sees the expansion as an opportunity to support Pennsylvania's in-state natural gas industry. The supply of natural gas is growing, which allows for more predictability than diesel.

Each CNG tractor does come with a higher price tag than its diesel counterpart - though Giant Eagle expects to recover the difference in less than two years.

Maintenance and Satisfaction

Because Giant Eagle took delivery of its Volvo CNG tractors during summer 2011, there is little to report when it comes to maintenance. Parry noted the CNG tractors came with warranties, just like any new vehicle would. No repairs have been necessary yet.

The maintenance technicians conduct preventive maintenance on the manufacturer's recommended schedule. Parry said he expects the time spent on CNG tractor maintenance to be about the same as on the diesel vehicles.

Overall, Parry reported he and his team have been satisfied with the CNG tractors when it comes to range, fuel economy, CNG prices, safety, and performance.

"All of our expectations have been met or exceeded," Parry commented. "It's only going to get better from here. Manufacturers will build more powerful motors and offer better onboard fuel storage options."



Photo courtesy of Giant Eagle.



Photos courtesy of Giant Eagle.

Summary

According to data from the International Association for Natural Gas Vehicles, CNG reduces particulate matter emissions by an estimated 94 percent, carbon monoxide emissions by 75 percent, oxides of nitrogen emissions by up to 49 percent, and carbon dioxide emissions by 24 percent versus diesel.

"This project delivers improved air quality for the region through emissions reductions, reduces dependence on traditional fuels, and serves as a regional catalyst for southwestern Pennsylvania in adopting and understanding alternative fuels and clean transportation technology," Parry said.

In addition to the environmental benefits, commercial CNG vehicles run 50 percent quieter than diesel trucks. Giant Eagle's 10 CNG tractors are on track to displace more than 100,000 gallons of diesel fuel during the fleet station's first year of operation alone.

"The CNG project is an extension of Giant Eagle's corporate culture," Parry added. "It's part of our statement of values to be a good corporate citizen, to be environmentally responsible. We do whatever we can to make our business less demanding of the environment. I think our customers look at that and realize there's value in buying from a 'green' company."