

CASE STUDY: United Natural Foods, Inc.

UNFI distributes more than 60,000 products to more than 17,000 customer locations nationwide. It provides natural and organic products to a wide variety of retail establishments including supermarket chains, natural food superstores, and independent retail operators. UNFI Sarasota operates its 325,000 square foot distribution center almost non-stop, 24-hours a day, 360-plus days a year.



With GenDrive fuel cells, lift truck operators at UNFI are boosting productivity in a sustainable way that fits with their core values.

THE POWER PLAYERS

Lisa Madsen

Director of Sustainability and Philanthropy
Organizes and executes sustainability and philanthropic initiatives across the UNFI organization.

Mike Garstka

Operations Manager for UNFI's Sarasota distribution center
Oversees all shipping, receiving, and site operations.

THE VITAL STATISTICS

UNFI's Sarasota facility employs approximately 160 associates and serves as a regional distribution hub for customers in the Southeastern United States.

In 2009, 65 Plug Power GenDrive fuel cells were deployed at UNFI Sarasota. As of 2019, the location operates a fleet of 77 pieces of material handling equipment powered by GenDrive fuel cells.

Indoor hydrogen fueling dispensers are strategically located throughout the facility.

Improved operator productivity due to the elimination of battery degradation and charging time; projected estimates of manpower savings are \$146,000 annually.

Projected carbon emissions reduction of 132 metric tons annually.

THE SITUATION

UNFI was looking for the next level in environmentally conscious projects for the organization. They reviewed renewable energy sources including methanol fuel cells, before learning about the benefits of hydrogen fuel cells. They knew they would need to retrofit an existing facility and its equipment and were careful in their consideration of a test site. The Sarasota distribution center was the optimal location. The facility was three years old and had newer infrastructure that could be easily adapted.

Additionally, the State of Florida made the process much easier because of its tax incentives to companies implementing alternative energy sources. In December 2009, UNFI purchased 65 GenDrive fuel cells from Plug Power.

“The prospect of going to a fuel cell versus the traditional lead-acid battery was appealing because it is sustainable and fits well with UNFI’s core values as a company delivering natural products to our customers,” said Mike Garstka. “Additionally, it allowed us to eliminate the typical two to three battery changes per shift that would take equipment operators between 12 and 30 minutes to complete before they could get back on the floor.”



POWERING POSSIBILITIES

UNFI Sarasota has been using the Plug Power GenDrive fuel cells since 2010. In the time since deployment, they have seen significant productivity gains as a result of switching from lead-acid batteries.

In order to retrofit the lift equipment for fuel cell placement, the lead-acid battery support casters needed to be removed. By doing this, the GenDrive fuel cell units fit securely into the compartment, eliminating any jostling. The process took 20 minutes per unit and then the truck was ready for immediate use. "Naturally, someone would be concerned with the changeover - equipment downtime, training, and interruption to the daily functions. There was nothing in our process that was a detriment to the facility, said Mike Garstka.

"This initiative supports our corporate strategy and our promise to customers. It makes sense for us," said Lisa Madsen. "Our associates rallied around the environmental cause. This roll out is further evidence that we are committed to sustainability. It gives us a sense of pride and satisfaction."



WHY PLUG POWER & HYDROGEN FUEL CELLS

Consistent Power Boosts Productivity.

"The experience is very similar to that of a car. You have the same amount of power in your vehicle regardless of the amount of fuel in the tank. With lead-acid batteries, performance degrades as it loses charge. The GenDrive fuel cells, on the other hand, provide consistent power throughout the shift," said Madsen.

"Our analysis of productivity gains for our 160 associates over the six-week period indicate that lead-acid batteries would cost an average of \$1,900 to \$3,000 in lost time per week," said Garstka. "We estimate that the hydrogen fuel cells only result in an average of \$176 per week in lost time. Based on these estimates we project a savings of \$146,000 annually in manpower."

Fast, Safe Refueling.

Equipment operators can quickly refuel the GenDrive fuel cells in less than 3 minutes, completely eliminating the need to change, store, charge, and maintain multiple lead-acid batteries per piece of equipment. Trainers and instructors from Plug Power and Air Products, hydrogen provider for the UNFI site, provided hands-on instruction and information about hydrogen refueling. "The GenDrive fuel cells are easier and cleaner and we expected this to be the case," said Garstka. "However, we had no idea how easy it would really be. It does not even compare to the old process."

Sustainability.

Projections for the UNFI Sarasota facility indicated that adopting hydrogen and fuel cells would reduce its carbon emissions by 132 metric tons annually, an amount equivalent to the annual emissions of 35 automobiles.

Garstka said, "Hydrogen should be used in every food distribution center because it is the most natural and cleanest fuel available. We recapture the water that the GenDrive fuel cells generate and use it in our scrubbers and mop buckets to clean and sanitize our facility. It is the purest cleaning water you can get your hands on; it wants to get dirty."

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