

## CASE STUDY: Sysco Houston

Sysco Houston's 585,000 square foot state-of-the-art facility is one of Sysco's 80+ distribution centers throughout North America. Sysco provides food products to restaurants, healthcare and educational facilities, lodging establishments, and other customers who prepare food away from home. Sysco Houston is a subsidiary company of Sysco, handling more than \$30 million in inventory. The facility operates almost non-stop 24 hours a day, 300 plus days a year.



An equipment operator refills the GenDrive-powered class 3 pallet jack with hydrogen

### THE POWER PLAYERS

#### Scott Kliever

Vice President of Finance and Plant Chief Financial Officer  
Responsible for more than \$40 million in receivables. Ensures \$30 million+ in inventory is accurate. Manages IT department.

#### Chad Harrison

Plant Operations Manager  
Oversees all equipment and fuel usage. 22 years at Sysco.

### THE VITAL STATISTICS

98 Plug Power GenDrive fuel cells deployed at Sysco Houston in 2010.

More than 100 employees are trained on the operation and safe use of hydrogen.

Operator productivity has improved due to elimination of battery degradation and charging time.

Close monitoring and return on investment calculations have increased Sysco's involvement in fuel cell-powered lift truck operations.

### THE SITUATION

In 2008, Sysco purchased property to build a new distribution center in North Houston. One of the primary goals for this new facility was to make it as environmentally-friendly as possible and help reduce the company's carbon footprint. Construction provided a great opportunity to assess sustainable energy solutions for all areas of the facility. Sysco Houston was already in the process of evaluating power solutions to help gain new efficiencies on its 26 forklifts and 72 pallet jacks. If there was ever a time to convert from lead-acid batteries to hydrogen fuel cells, it was now.

**“With the GenDrive fuel cells, we are saving time and money. For the 98 units of equipment, we estimate that about 1,200 hours or approximately \$24,000 is saved per fiscal quarter,” noted Scott Kliever.**



## POWERING POSSIBILITIES

Discussions with Plug Power began in the fall of 2008. “We are in the business of getting a case of goods to customers as quickly and efficiently as possible and we do not make a habit of veering from the norm,” said Scott Kliever. “However, when we can make a solid business case to do things better and faster, it is to our advantage and in our best interests to seriously pursue adopting a new solution.”

Plug Power advised and assisted Sysco in securing a \$1.2 million grant from the Department of Energy (DOE). Funding was available as part of the American Recovery and Reinvestment Act to accelerate the commercialization and deployment of fuel cells and create jobs in associated manufacturing, installation, maintenance, and support services. The 100 percent hydrogen infrastructure was designed into the new facility.

**“The GenDrive fuel cells work extremely well. The results are great and we are very happy with the program,” said Chad Harrison.**



## WHY PLUG POWER & HYDROGEN FUEL CELLS

### Sustainability.

The Houston facility has a sustainable design at its core. It installed motion-sensitive lighting, dual-stage compressor generators, and recycling of waste water. Using GenDrive fuel cells to power its electric lift trucks, Sysco only sees water and heat as by-products and has eliminated toxic lead-acid batteries, which lowered the facility’s carbon footprint and makes for a safer work environment.

### Efficiency.

The time savings realized as a result of the hydrogen system has been impressive. A typical lead-acid battery change is required during each shift, involving two employees and taking approximately 10-15 minutes. Meanwhile, refueling of the GenDrive takes only three minutes of the driver’s time each shift. “Hydrogen fueling took it to the next level in terms of operator self-sufficiency. If you can fuel a car, you can use hydrogen,” said Chad Harrison.

### Employee Satisfaction.

According to Harrison, “We also saw a shift in how our maintenance team operates. Instead of being a reactive group, they now have the opportunity to be proactive.” Preventive maintenance, like changing air filters, is performed on the fuel cells based on hourly usage. Operators also like the system because fuel cells provide full power throughout the shift, while lead-acid batteries degrade, affecting operator efficiency and potentially impacting their job and incentives.

**“There is never going to be a time when there is not enough fuel to run a shift,” said Harrison “With lead-acid batteries, you always have a concern. If the previous shift does not charge the batteries properly, the next shift suffers. With hydrogen, if an operator forgets, then the unit can be refueled within three minutes and be up and running.”**

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