

**BALLARD®**

# FUEL CELL ZERO-EMISSION FORKLIFT FLEET AT WALMART CANADA



**CASE STUDY**

# FUEL CELL ZERO-EMISSION FORKLIFT FLEET AT WALMART CANADA



## Walmart Canada deploys 95 Ballard powered electric lift trucks at its sustainable refrigerated distribution centre in Alberta, Canada.

### Situation

As the world's largest retailer, Walmart is leading the way in integrating innovative technologies into its business to reduce operating costs and promote environmental sustainability. In keeping with its long-term environmental goal to use 100 percent renewable energy and create zero waste, Walmart designed its 400,000-square-foot Balzac Fresh Food Distribution Centre to incorporate best practices in sustainable operations. At this first-of-a-kind facility, Walmart wanted an alternative to traditional lead acid batteries as a clean power source for the material handling fleet.

### Solution

Walmart chose to deploy Plug Power GenDrive® units to power its entire fleet of 95-electric lift trucks at this greenfield site. By utilizing GenDrive®-powered lift trucks from the design stage, costs associated with installing, maintaining and operating traditional lead-acid battery systems are avoided. In addition, fuel cells increase productivity compared to batteries by maintaining full speed and power at all times, with less down time while refueling. The fuel cell units are clean and efficient, producing zero emissions, while eliminating the need to handle, store and dispose of lead and acid.

### Result

Walmart Canada projects the hydrogen fuel cell lift truck fleet will reduce operating costs by \$1.1 million over seven years, compared to using battery-power forklifts. The hydrogen fuel consumed in Balzac is generated through electrolysis, predominantly using hydro-electricity from Québec. Even when factoring in transportation of the fuel to Alberta, the lift truck fleet avoids 530 tonnes of CO2 emissions per year.

As an indicator of the fleet's performance, the hydrogen fuel cell technology powering Balzac's entire fleet has also been installed at two other Walmart distribution centers in Cornwall, Ontario and Bartlesville, Oklahoma. The three sites have about 500 units in total.



Class 1, 2 and 3 forklifts at Walmart's distribution centre

Site	Balzac, Alberta
Application	Class 1, 2 & 3 fuel cell forklift fleet for perishable food distribution centre
System	Plug Power GenDrive® units powered by Ballard FCvelocity® 9SSL and FCgen®-1020ACS fuel cells
Fuel	Hydrogen
Objectives	Reduce operating costs, drive environmental sustainability

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**“One of the main differences... is that they (fuel cell forklifts) give you 100% power all the time.”**  
Collin Scott, forklift operator at Walmart DC in Balzac, Alberta