

Linde hydrogen fueling system surpasses one million fills at BMW South Carolina plant

Trade News

Murray Hill and New Providence, December 17, 2015 – Hydrogen fueling stations using Linde technology have reached a major milestone – more than 1,000,000 fills for the fuel-cell driven material handling equipment at the BMW Manufacturing Co. LLC plant in Spartanburg, South Carolina.

“This is the most hydrogen fills at a single location anywhere in the world,” said Mike Beckman, vice president of Hydrogen Fueling-Linde North America. “We are truly proud to reach this impressive milestone at the BMW plant. Equally important is that our technology can help advance sustainability and lower emissions while also helping to improve the bottom line. Hydrogen is one of the most promising alternative fuels because it is safe, economic and efficient.” Since 2010, the six million square foot BMW production facility has powered its entire hydrogen-fuel cell fleet with Linde technology.

BMW now operates more than 350 forklifts to service the plant’s production and logistics functions, making it one of the largest fuel cell forklift sites in the world. “While Linde hydrogen fueling systems involve very sophisticated technology, the filling operation is designed to be relatively simple and is much like putting gasoline into your car,” Beckman said. “This simplicity is a critical aspect to the success of hydrogen as a fuel.”

“BMW’s relationship with Linde North America has greatly supported our company’s total commitment to sustainability. It has helped BMW to maintain its clear vision to reach our goal of using renewable energy as much as possible throughout the plant site,” said Duncan Seaman, BMW Group’s Vice President of Operations for the Americas Region. “The annual energy avoidance of 4.1 million kW/hours and dramatic reductions in fueling time has positioned our hydrogen fuel cell material handling program to be an industry benchmark.”

The lead acid batteries that formerly powered BMW’s lifts and trucks were replaced with GenDrive hydrogen fuel cell power solutions from Latham, N.Y.-based Plug Power Inc., Linde’s associate in the BMW installation and the leading provider of hydrogen based fuel cells in the material handling market.

BMW is able to boost productivity in two ways: reducing fueling time and increasing equipment performance. Gen-Drive-powered trucks with hydrogen using Linde’s equipment takes an operator less than three minutes, compared with 15-20 minutes to change out a battery. Also, power levels and performance from fuel cells do not degrade over time, as they do with lead-acid batteries. BMW also is able to reduce its total electricity demand, since no battery recharging is required, and eliminate the environmental disposal costs for lead-acid batteries.

“At its core, Plug Power’s fuel cell solutions are designed to save customers, like BMW, time and money, bringing tremendous fleet improvements to automotive manufacturing customers that are not realized when lead-acid batteries are powering the electric lift truck fleet,” said Andy Marsh, CEO for Plug Power Inc. “Not only do GenDrive fuel cells outperform lead-acid batteries, they also improve lift truck uptime.”



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“Because of the way it is produced, the hydrogen supplied to BMW is sustainable with only a small carbon footprint incurred during shipping,” said Dave Read (Business Development Manager – Hydrogen Fuel Markets). “The hydrogen is a by-product of a sodium chlorate plant which Linde purifies, compresses and liquefies using electricity produced from renewable hydropower.”

Linde North America is a member of The Linde Group. In the 2014 financial year, The Linde Group generated revenue of USD 17.9 bn (EUR 17.047 bn), making it the largest gases and engineering company in the world with approximately 65,500 employees working in more than 100 countries worldwide. The strategy of The Linde Group is geared towards long-term profitable growth and focuses on the expansion of its international business with forward-looking products and services. Linde acts responsibly towards its shareholders, business partners, employees, society and the environment – in every one of its business areas, regions and locations across the globe. The company is committed to technologies and products that unite the goals of customer value and sustainable development. [\(/internet.global.thelindegroupp.com/en/images/bmw14_225857.jpg\)](http://internet.global.thelindegroupp.com/en/images/bmw14_225857.jpg)

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For more information, see The Linde Group online at www.linde.com (<http://www.linde.com/en/index.html>). (susan.brownlow@)

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