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# Hydrogen fuel pack propels forklift

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WELLFORD - The future of renewable energy was on display Monday afternoon at Leigh Fibers: a flow of crystal-clear water pouring out of a hose, the "exhaust" from a hydrogen fuel cell-powered forklift.

"It's so clear you could drink it," said Tom Dever, a product specialist for LiftOne, which installed the fuel-cell power pack in a Linde forklift. "I'd like to see someone try to use it for their coffee."

At a demonstration Monday at Leigh Fibers' plant next to I-85, Rep. Bob Inglis, R-S.C., and others watched as an otherwise ordinary forklift reconfigured for a hydrogen fuel cell lifted about 3,600 pounds of textile material into a truck.

The hydrogen-powered forklift is completing two weeks at Leigh Fibers, the sixth stop in a statewide tour sponsored by the Greater Columbia Fuel Cell Challenge. Supporters of fuel cells say that using hydrogen is a clean alternative to traditional energy sources, and Inglis believes the technology can help reduce U.S. dependence on foreign oil supplies.

## **\$50 million contest**

Inglis has co-sponsored the H-Prize Act with Rep. Dan Lipinski, D-Ill., which would offer \$50 million per year to people and companies who have made advancements in hydrogen-based energy. The bill is expected to be passed this week by the House as part of the energy bill and signed into law by President Bush.

On a chilly Monday afternoon, Inglis got to take a ride on the hydrogen-powered forklift made by

Linde Materials Handling of Summerville. The forklift's electric engine was replaced by a HyPX Fuel Cell Power Pack, manufactured by Hydrogenics of Mississauga, Ont., and installed by LiftOne, a division of Carolina Trucking.

Bill Ryan, vice president and general manager of LiftOne, said his company's goal is to show to prospective companies that hydrogen can be both economical and environmentally friendly, as electric-forklift owners don't have to buy batteries and then discard them.

"What we're gaining in this (Fuel Cell Challenge) is we're establishing a baseline with the customers," to show how much hydrogen can save in the long run, Ryan said. He added, "Replacing a battery with a fuel cell... eliminates the needs for batteries and takes away all the environmental concerns relative to lead acid."

### **Fill 'er up and save the water**

The power pack is fueled by compressed hydrogen, which for the two-week trial is being housed in a trailer outside of Leigh's warehouse. An employee of Leigh demonstrated a hydrogen fill-up, which involved typing into a keypad, attaching a pump and a hose to the forklift to let the hydrogen in, then letting the water - the forklift's only by-product as hydrogen interacts with oxygen - out into a bucket.

The forklift was ready to go after the fill-up. As displayed by the employee, who lifted huge bundles of fibers into the trailer, the forklift is strong enough for the toughest jobs. One refueling lasts for 6 to 10 hours of average work, but that has generally been lower for Leigh's heavy-duty work. Frank Hailah of Hydrogenics said the goal right now is to have the engine work without refueling through one shift.

"They've had to make some adjustments, but it's done great, considering the tough conditions we have here," Leigh Fibers president Keith Taylor said.

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