

# Courier goes the extra mile with electric experiment

**The first electric vehicle in Canada's courier industry operates 10 hours a day delivering 220 packages but no greenhouse-gas emissions**

April 22, 2008 - Globe and Mail, Diana McLaren - Battery-operated vehicles are a common sight these days in the form of scooters that ferry a growing numbers of senior citizens and disabled people around shopping malls and neighbourhoods. Now, with heightened awareness about greenhouse gases and rising fuel prices, fleet companies are experimenting with electric vehicles to deliver goods in urban centres.

The first such electric vehicle in Canada's courier industry, the Purolator Quicksider, operates 10 hours a day in downtown Toronto, delivering about 220 packages and parcels with zero greenhouse-gas emissions. It uses two electric motors and charges overnight for six hours.

"We knew we wanted to electrify the chassis based on our early success with hybrid vehicles. Then we realized we didn't have to stay with the old huge body of our delivery vehicle," says Serge Viola, Purolator's national fleet director.

"So we asked the couriers themselves what they needed. In addition to fuel savings, the Quicksider has features such as automatic doors and kneeling capabilities [meaning the interior floor lowers to street level]." These sorts of changes should result in faster deliveries and fewer strain injuries for couriers, thus more savings for Purolator.



Ray Minato rides the Quicksider, an electric delivery van that operates 10 hours a day in downtown Toronto, delivering hundreds of parcels and zero greenhouse-gas emissions.

Just how much electric vehicles themselves will save won't be known for some time, until Purolator is past the testing stage and actually buys some of the vehicles itself. Currently, the Quicksider is manufactured and owned by Toronto-based Unicell Ltd., in partnership with ArvinMeritor supplying the drivetrain systems and components. A second-generation Quicksider is already in the works and should be ready for road testing before year's end.

The Quicksider is the latest innovation in Purolator's Canadian fleet of more than 3,000 vehicles (not including its longer-distance trucks), which has 49 hybrid-electrics with an additional 105 on order.

Five years ago, Purolator began working on hybrid-electric vehicles with Azure Dynamics, a Canadian company supplying the electric drivetrains.

Mike Elwood, Azure Dynamics' vice-president of marketing, is a committed electrification advocate. He's also chairman of Electric Mobility Canada, a not-for-profit association dedicated to moving Canada into an electric-vehicle future.

"Fleet vehicles account for 25 per cent of emissions in urban areas, but only 12 per cent of the kilometres driven," Mr. Elwood notes, adding that "hybrid technology is a transition technology .... [It is] here now and gives savings in delivery of parcels, people and freight."

Mr. Viola says Purolator's experience with hybrids has been a success. "We were shooting for a savings of 50 per cent on fuel and 20 per cent on maintenance," he says. It has come close on the fuel side, seeing savings of 40 per cent.

However, with the higher upfront purchase cost for hybrids, the firm will need what Mr. Viola calls a "much bigger scale before we know if we've achieved what we set out in our business case." Hybrid technology adds an additional \$30,000 to 40,000 to the average \$45,000 purchase price of a delivery vehicle, he says.

Maintenance targets were met because hybrids take the load off brakes and transmissions in stop-and-go city conditions. Purolator estimates that in Toronto, since 2005, hybrid vehicles have "prevented the emission of over 150 tonnes of greenhouse gas emissions, in carbon dioxide equivalents, as well as associated smog-causing emissions."

Mr. Elwood says that if you put 10,000 hybrid-electric fleet vehicles such as Purolator's on the streets of Toronto, "it would be the equivalent of taking all the cars off the city streets for one month" in terms of environmental impact.

Purolator replaces about 10 per cent of its fleet every year, and Mr. Viola says the company is aiming to have 40 per cent of its vehicles be hybrid. "It's not 100 per cent because we have vehicles in areas where there's no service for them, but anywhere we have our own on-site maintenance — and that's in 45 locations — we will purchase hybrids."

Purolator isn't the only fleet company pursuing green technology. UPS boasts that "34 per cent of its Canadian package delivery fleet is now green." The company has electric and hybrid-electric vehicles in use elsewhere, but not in Canada, where propane vehicles form the bulk of its alternative energy fleet.

"We have approximately 700 propane vehicles representing one-third of our Canadian fleet," says Steve Clark, UPS Canada's director of automotive. Initially retrofits of existing vehicles, now the UPS propane fleet is new technology, Mr. Clark says. "The emissions are much cleaner than gas, and the fuel is 47 per cent cheaper than regular gasoline."

The U.S. company is testing a hydraulic hybrid delivery vehicle, which uses a small diesel combustion engine and hydraulic components that replace the mechanical transmission and driveline. In tests a significant improvement in fuel economy was shown (60 to 70 per cent) as well as a 40-per-cent reduction in CO2 emissions. Testing it in city conditions for package delivery will show its potential for UPS's vehicle fleet.

Al Cormier, executive director of Electric Mobility Canada, says all fuels from non-renewable sources, including propane and natural gas, are facing an "uncertain future. And bio-fuels like ethanol are proving to contribute to the corn and grain crisis."

Mr. Viola says that government incentives for the higher cost for fleet vehicles would hasten their adoption and create economies of scale down the line.

That's something that Electric Mobility Canada has been advocating. Mr. Cormier says the association, based in St-Jerome, Que., is working with the federal government's Technological Roadmap for Electric Vehicles initiative to identify technologies, benefits and strategies.

"A lot of development has been happening all over the globe," Mr. Cormier says. "Canada has been lagging behind up until now."

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