

## Is everybody going electric?

By Rolf Lockwood Saturday, November 25, 2017 - 09:40 AM

So last week I spent an illuminating day at the annual Cetaris user group meeting here in Toronto, in the company of some very big names in the North American fleet world. Kindly invited by the company's founder and president, Ric Bedard, I undertook to attend not as a reporter but as an observer. Thus I'm honour-bound to maintain the privacy of attendees by not identifying them or divulging what they said.

For those of you who don't know, Cetaris developed many years ago an asset-management software system that focuses on maintenance, parts inventory, and especially warranty control. The company has quietly gone from success to success and of course continues to develop its very sophisticated offering. Its customers include some of the continent's biggest and best fleets, both private and for-hire, the majority based in the U.S.

Ric, a very sincere and earnest guy, is proud of what he's built yet he doesn't seek publicity. That said, he's happy to trumpet the fact that Cetaris recently won an award for the diversity of its staff. I think the total employee count is about 140 and almost half are women, with many races and nationalities in the mix. Good on ya, Cetaris.

But that's not what I'm writing about here.

The point is that these user-group people, all of them in charge of buying and managing trucks and trailers and other equipment, were talking about electric vehicles -- note, not autonomous vehicles -- in the informal moments of the day.

In fact, and I think I'm safe in identifying this man, Wayne Scott brought a plug-in electric BYD tractor along to show the other very intrigued attendees. Scott is senior director, transport maintenance, at Loblaw Companies Limited, and the company announced just a few days earlier the commitment to completely electrify its fleet of trucks as part of a goal to cut carbon emissions by 30% as of 2030.

**THE BYD T9 CLASS-8 TRACTOR** that the company showed off at the press conference launch in Vancouver was the same one we saw in Toronto. It has a maximum GCW of 120,000 lb and a range of 92 miles or about 150 km. A lithium-ion battery recharges in just 2.5 hours, which seems to be more or less the new norm. Overnight charging appears to be old hat now.

At 23,589 lb, or 10,700 kg, it's no lightweight, and it's good for a top speed of only 56 mph or 90 clicks. Not a problem, as this isn't meant to be a highway cruiser. It's an urban/suburban tractor. Gradeability is a commendable 20%. It sports leaf springs in stock trim.

China's BYD, which is predominantly a battery maker that turned its attention to building cars, buses, and trucks well, says its batteries will still have 80% strength of charge after 5000 cycles or 14 years if cycled every day.

The company also claims substantial fuel savings -- like about US\$10,000 a year assuming 75 miles per day and 7 days per week, though it doesn't specify fuel price in that calculation. Maintenance savings are a little more readily understood, namely a claimed US\$4500 annually because of fewer moving parts, less brake wear, and fewer fluids to change.

The truck is manufactured in a Lancaster, CA facility, but I understand an assembly plant using knock-down kits might possibly be built in Montreal.

And BYD, incidentally, stands for 'Build Your Dreams'.

**AT THE VANCOUVER LAUNCH** of Loblaw's electric future, federal Environment Minister Catherine McKenna was on hand to cheer the news. She said she was "really thrilled by the announcement."

Loblaw estimates removing diesel from their trucks and refrigerated trailers could remove more than 94,000 tonnes of carbon dioxide emissions a year, the equivalent of removing more than 20,000 cars from the road.

The grocer is also investing in hybrid refrigerated trailers, and I had a look at one example last week in a visit to Reefer Sales and Service in Brampton, ON.

Made by Quebec's Transforcool, it sports Carrier Transicold's very cool (please pardon the lousy pun) Eco Drive system. That consists of an engine-mounted PTO that runs a hydraulic pump in a box hanging off the frame like an APU. That in turn powers a generator that provides constant 460V electrical power to a Carrier Vector reefer unit regardless of the tractor's engine speed. The Vector thus delivers high-capacity refrigeration and heating without using its own diesel engine.

More on this trailer and reefer unit next time out.

**BACK IN VANCOUVER**, Loblaw's Rob Wiebe, executive vice president, supply chain, said the company wants to play a leadership role among Canadian retailers in making a positive environmental impact.

"As one of Canada's largest energy users, given the size and scope of our retail network and supply chain, we know we have a critical role to play in helping Canada reach its carbon reduction targets," he said.

The company said it's taking the new measure as part of its goal to cut its emissions 30% by 2030. By then, Loblaw says, it will have reduced emissions associated with electricity consumption by 35%, transportation by 25%, and cut emissions associated with refrigerants in half. It also aims to improve waste diversion by 80% in stores and 95% in distribution centers.

Loblaw is part of the Weston Group of Companies which also owns the Shoppers Drug Mart, Joe Fresh, and President's Choice labels in Canada.

**THE UPS ELECTRIC RETROFIT.** Always adventuresome, and having the wherewithal to be that way, UPS is working with the New York State Energy Research and Development Authority (NYSERDA) to convert UPS package delivery vehicles from diesel to electric. UPS and Unique Electric Solutions (UES) will design, build, test and make the conversions. The project supports Governor Andrew M. Cuomo's aggressive goal to reduce greenhouse gas emissions 40% by 2030 by replacing diesel vehicles with clean technology.

“Public-private partnerships help push innovation forward and transform industries,” said Carlton Rose, UPS president, global fleet maintenance and engineering. “This program will help UPS develop and deploy electric delivery trucks faster and more affordably. Because they are cleaner and quieter, electric vehicles are ideal for dense urban environments like New York City and are a critical part of our strategy for the future.”

NYSERDA is providing \$500,000 in funding to develop and test the conversion system. If successful, the Bronx-based project is expected to bring a production version of the converted truck to the streets of New York City by next spring. As well as producing a cost-effective all-electric conversion kit, the project will deliver a blueprint for converting up to three UPS vehicles a day. This could lead to the conversion of up to 1500 UPS delivery trucks by 2022, which is about 66% of the company's NYC.

The UES conversion's core system features a 225kW 'Switched Reluctance Motor' (SRM) with a high-voltage backbone optimized for the duty cycle of UPS delivery trucks. SRMs are simpler, cheaper and better suited for electric vehicles over conventional induction motors and do not rely on the use of magnets made from imported rare earth metals like permanent magnet motors do. Overall, the UES SRM propulsion system is claimed to provide more miles per battery charge, reducing charging times and increasing energy efficiency up to 20%.

UPS already operates more than 770 electric or hybrid electric vehicles in urban settings around the world. The company has invested more than \$750 million in alternative fuel and advanced technology vehicles and fueling stations globally since 2009.

**STILL WITH UPS RETROFITS,** the company has just announced that it's equipping more than 5700 of its existing class 8 tractors with advanced collision mitigation technology that can alert drivers to moving and stationary objects around the vehicle. It announced in 2015 that all new trucks acquired would come optioned this way.

This will cover more than 60% of UPS's tractor fleet, more than 11,000 of them, giving drivers blind-spot warnings, lane-departure alerts, electronic stability control, and forward collision warning with automatic brake application.

With the adaptive cruise control turned on, the UPS tractor will automatically slow to help the driver mitigate a collision. Secondary benefits can include reducing the "accordion effect" caused by traffic and improving fuel economy. The UPS tractors that will receive the new systems were

selected based on the collision mitigation system's compatibility with the vehicles' powertrain and existing safety systems.

**AND BACK TO ELECTRIC VEHICLES**, now we have one called Jouley. Thomas Built Buses, part of the Daimler Trucks North America family, has launched the new Saf-T-Liner C2 all-electric school bus. It's said to have the same performance, safety, and comfort as the Saf-T-Liner C2, but it offers quiet operation, zero emissions, and even exportable power. In this capacity, students will be able to charge their computers and other devices directly from the bus.

"Jouley is named after the joule unit of energy," said Caley Edgerly, president and CEO of Thomas Built Buses.

The first generation Saf-T-Liner C2 electric bus comes equipped with the PowerDrive 7000ev powertrain from Efficient Drivetrains, Inc. (EDI), which provides 100-160kWh of battery energy and an operating range up to 100 miles between charges, with an option for a higher range with additional battery packs. Among its features is the PowerSuite vehicle control software and the PowerTracker telematics and diagnostics system that tracks bus location and provides real-time monitoring of potential issues.

The Saf-T-Liner C2 Electric is slated to be in early production in 2019.

**ONE LAST ELECTRIC TALE** also comes out of New York City, where another Chinese vehicle manufacturer recently unveiled its electric medium-duty panel van in Brooklyn. Chanje is the somewhat odd company name (pronounced 'change') but things are starting well, with Ryder taking delivery of 125 units for its rental and leasing fleet. My colleague John G. Smith was on hand for the launch.

The initial rollout will be in key California markets including Los Angeles, San Francisco, and San Diego, as well as New York and Chicago. Ryder will provide parts distribution, service and support. Canada will come along eventually, the company says.

"All the trends in diesel are going in the wrong direction," said Chanje chief executive officer Bryan Hansel, noting that diesel equipment is increasingly expensive to build, purchase, and maintain.

China's demand for electric vehicles is expected to outpace North America's needs in coming years, writes John G., but the U.S. market sets the highest bar for vehicle reliability and safety, and it's home to some of the largest delivery companies and consumer brands expected to use the vehicles, Hansel says. This is being developed as a 'world' truck and the company says it has invested about US\$1 billion in its development.

The V8070 van will hold a 6000-lb payload in its 580-cubic-foot cargo bay. The turning radius is a tight 25 feet. The torque delivered through the pair of rear electric motors offers impressive 30% gradeability.

“When you’re driving this, it feels like you’re driving a minivan,” Hansel said. “These were designed for an urban environment. You need to be able to drive them, you need to be able to park them, you need to be able to maneuver them.”

Meanwhile, the van promises a 160-kilometer range, depending on the application, and its efficiency is said to be the equivalent of 4.7 liters per 100 kilometers. That’s based on an average payload of 50% through the day.

Hansel, not incidentally, founded Smith Electric in 2009 and launched a commercial electric truck in 2010, but that was a retrofit. Chanje offers a purpose-built platform, engineered as an electric vehicle. And that’s presented as an important distinction.

As for cost, he said that Chanje offers price parity when comparing lease costs, maintenance, and fuel. “The net number at the end of the month will be net-even cash flow.”

Chanje manufacturing is based in China, but final assembly in North America is coming, with a planned capacity of 10,000 to 20,000 vans. The search for a location to house that work is focusing around ports and is expected in coming weeks.

Ryder’s involvement has been a “cornerstone” of the company’s rollout strategy, Hansel stressed, referring to the distribution model. It gives users the confidence that, should something need to be repaired, the work can be completed nearby. “You need to be able to drive down the street and get it fixed.”

Ryder trainers have already been studying the equipment, and are now preparing technicians in the key markets. The first graduated just weeks ago. And about 200 unique replacement parts are also being stocked in distribution centers.

**AND ON TO AUTONOMY**, recent news being that the Government of Ontario has signaled it’s serious about ushering self-driving vehicles, including those in commercial fleets, into the province.

Premier Kathleen Wynne and Minister of Transportation Steven Del Duca have announced an \$80 million government investment in the development of autonomous vehicles through the launch of the Autonomous Vehicle Innovation Network (AVIN).

A [recent report](#) commissioned by the **Residential and Civil Construction Alliance of Ontario** says that self-driving vehicles will eventually replace entire fleets of taxis and buses, and will have an impact in other commercial fleets.

The report recommends setting up a governance system that would use analytics and digital tools to set a subsidy and pricing system, optimize distribution, and consider the social performance of fleets. It also advocates for infrastructure investments.

The autonomy saga continues, but I say again, don't hold your breath.