

Automakers, Transit

From diesel to ZEVs: how electric bus conversions could bring new life to transit fleets

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A new service from bus repair specialist MTB Transit Solutions promises transit agencies a

speedy, affordable path to electrification for midlife diesel buses

Despite the increasing number of zero-emission vehicles purchased by Canadian municipalities, the vast majority of buses on Canadian roads are powered by diesel – and transportation still represents one-quarter of Canada’s greenhouse gas emissions.

New electric buses are a solution. But for many transit agencies, the cost of a quick changeover is prohibitive. What if there’s an alternative?

Enter MTB Transit Solutions, a large bus repair company, based in Milton, Ont. Through its new service, [ZEV Clean Power](#), the company will replace diesel bus drive trains with fully battery electric systems.

Planned refurbishing

But that’s just part of the solution. The sweet spot is how the service complements existing municipal service schedules and budgets – MTB proposes that agencies do the changeover when their diesel buses come up for planned engine refurbishing, typically after eight or nine years of service.

At that point, instead of a standard refurbishment, which adds four years to a diesel’s lifespan, MTB will replace the diesel engine with a battery-powered system – effectively extending the life of the vehicle from 12 to 18 years while completely eliminating harmful emissions.



Work underway on MTB's demonstration bus conversion. Source: MTB Transit Solution

“We saw the transit industry start to shift globally from diesel propulsion to clean energy,” says Gara Hay, president of MTB. “The program’s goal is to help them get to their GHG reduction goals sooner.”

Lower overhead, quicker return

Aside from putting off the significant cost and effort of replacing a bus while reducing the rate at which out-of-service buses must be disposed of, the “repowering” process comes with a number of additional benefits, one of which is speed.

“The repower is going to take less than six months to complete,” says Hay. “Right now, to buy a new battery-electric bus, the wait time is minimum a year to upwards of two years. The demand is much higher than the supply.”

In terms of price, the \$500,000 cost of repowering is also only about half that of a new electric bus. And according to MTB, transit agencies will save \$40,000 to \$50,000 per year in maintenance and fuel costs by going electric, which means the repowering would likely pay for itself by the end of the bus' life.

Canadian supply chain

Canadian transit authorities considering the repowering process are also likely to find attractive the fact that MTB's entire product, from propulsion chain to battery, is Canadian-made. MTB, which has been in the bus repair and refurbishment business for 35 years, purchases its batteries from a Mississauga company, and the motors and engineering work are sourced from Quebec.



Source: MTB Transit Solution

“We found that the best motor, the best engineering, the best supplies were mostly Canadian. It shows you how the Canadian landscape has really embraced the

technology, especially in Quebec,” says Hay.

Pilot in progress

The first repowering, on a Winnipeg-made New Flyer diesel formerly used in Hamilton, Ont., is now underway. When finished, the converted electric bus will have a 300kW battery with a range of between 200 and 240 kilometres per charge.

The pilot conversion, which was funded in part by the federal government through the National Research Council, will be completed before year-end. MTB plans to use the vehicle to demonstrate to transit agencies across Canada that bus pollution can efficiently and cheaply be cut short.

“There’s about 16,000 transit buses in Canada right now, and less than 100 are battery electric,” says Hay.

“That’s a lot of diesel buses out there that can be cleaned up before the end of their life.”