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Stoughton fuel supplier has ironic innovation: hybrid fuel delivery truck

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Dan Abrams, owner of Diesel Direct in Stoughton, sits on his hybrid fuel delivery truck.



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STOUGHTON — Sometimes innovation can be ironic. As diesel prices soared last year, the owner of a Stoughton-based fuel delivery company went to work to develop a new truck that would embrace hybrid technology and thereby reduce his transportation costs.

The result was the Freightliner Business Class M2 106, a vehicle that Diesel Direct bills as the nation's first hybrid diesel-electric fuel delivery truck.

"Fuel is one of our expenses, just like everyone else," said Dan Abrams, founder and CEO of Diesel Direct. "I spend about \$22,000 a week on fuel for my trucks, which typically burn at least a gallon an hour. Now we no longer burn that gallon an hour."

The new 16-ton, \$150,000 hybrid Freightliner was unveiled to the public last month. Since then, the delivery truck has lived up to its Prius-like promises of better mileage on suburban roads while performing in an eco-friendly manner.

Beneath the truck's hood sits a Cummins and Eaton hybrid drive train system, which enables it to run on diesel power alone or in tandem with its electric motor. This hybrid engine system, which is much smaller than those found in trucks powered only by diesel, burns far more efficiently and emits fewer pollutants into the atmosphere.

Abrams, whose company delivers diesel fuel to other companies for their truck fleets, estimated that his hybrid delivery truck is getting more than 30 percent better diesel mileage when compared to similar non-hybrid trucks that have been driven on the same routes. Because of this dramatic fuel savings, Abrams predicted he would see a quick return on his investment.

"If you pay \$150,000 for a truck and you put 25,000 miles on it a year, it will take you about 10 or 11 years for a payback, Abrams said. "We know, however, that we can put this truck on the road for 50,000 miles each year and we can put it on routes where we go 1,000 miles a week. Based on current diesel prices, our payback will be in about five years."

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The new hybrid Freightliner also saves Diesel Direct money during client visits. On a suburban route, the company will typically visit 10 customers at their facilities. Along the way, the hybrid's brakes and electric motor generate kinetic energy that is stored in the truck's battery. With this stored energy, Diesel Direct can pump fuel for their customers without running the hybrid's motor.

The truck looks similar to its non-hybrid counterparts, with its chrome grille, large side-view mirrors, and 2,800-gallon diesel tank. A glance along the truck's driver's side, however, and its hybrid heart is revealed in a large black battery pack with orange wires that is mounted to the truck's chassis.

As a safety precaution, the truck features a fusible link, which is a circuit breaker-like instrument to protect the vehicle's electric flow from power surges. The truck also contains a switch that kills the ignition if its hood is opened while the vehicle is in hybrid mode.


Abrams' quest to develop his new hybrid began in 2007 after a visit to Coca-Cola's corporate office in Atlanta, Ga. There, he learned how the soda giant developed and installed hybrid diesel-electric motors in their smaller delivery trucks.

In October 2009, Abrams secured a \$40,000 grant from the Massachusetts Department of Energy Resources to develop a hybrid diesel-electric fuel delivery truck in conjunction with Freightliner, a division of Daimler Trucks based in Portland, Ore.

Though Abrams' new Freightliner has proven to be a success so far, he admits the irony rooted in this new concept is not lost on him.

Abrams added: "People say to me, 'Dan, you're promoting less fuel consumption and you're a fuel distributor.' Well, what difference does it make? I'm still going to sell fuel, and if I sell less fuel to a customer because they own a hybrid, I'll just find more customers to sell fuel to. I'm still saving on my end. I'm a big customer to myself."

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