With improved fuel economy, lower emissions, extended brake wear, and reduced idle time, Freightliner’s Business Class M2e Hybrid offers fleets a “clean” way to get the job done.

By Grace Lauron

With the Freightliner Business Class M2e Hybrid, Freightliner Trucks, a division of Daimler Trucks North America, has taken a step toward Daimler’s goal of producing a zero-emissions vehicle. With fuel savings up to 1,500 gallons per vehicle, longer brake life, quiet electric power takeoff (ePTO), and idle time reduced as much as 87 percent, the M2e Hybrid skips the nonsense so fleets can get down to business.

STOP-AND-GO WON’T SLOW DOWN PRODUCTIVITY

Built for stop-and-go operations, the Freightliner Business Class M2e Hybrid features the Eaton Parallel Electric Hybrid drivetrain system, tested over four years and 2 million miles. The parallel electric hybrid system allows fleets to operate with just the diesel engine or in combination with the hybrid electric motor. The diesel powertrain remains fully functional in the unlikely event the hybrid drive unit goes offline.

The hybrid motor provides additional power to launch the vehicle and improves fuel economy in high stop-and-go operations, ideal for utility, towing, pickup and delivery, and beverage applications.

Regenerative braking captures about 70 percent of the kinetic energy produced, recharging the hybrid’s battery. Energy normally lost during braking is stored in the batteries. Regenerative braking saves fuel, extends brake use, and allows for continual battery re-charge in stop-and-go driving.

The truck’s hybrid drive power not only enhances fuel efficiency, but also provides an added boost for hills or rapid acceleration, helpful for vehicles that make frequent stops. Stored energy also powers electric-only operation for ePTO and auxiliary power generation. Particularly suitable to utility applications, the M2e’s engine shuts off and the electric motor powers tools and hydraulic lifts.

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**M2e Specs**
- GVW – 40,000 lbs. max.
- GCW – 55,000 lbs. (diminishing loads for 4x2 tractor).
- Cummins ISB – 200 to 300 hp / 520 to 660 ft.-lb. torque.
- Eaton Parallel Electric Hybrid Drive – 60 hp/310 ft.-lb. torque peak.
- 6-speed ultrashift transmission.
- Air brakes.

**Key Applications**
- Hybrid with ePTO (342-IR4)
  - Bucket Lift.
  - Utility/Service.
  - Tank.
  - Wrecker – Hook.
- Hybrid for City Delivery (342-IRX)
  - Beverage.
  - Dry Van.
  - Refrigerated Van.
  - Newspaper Truck.
  - Attic Van.
  - Expedited Freight.
Fleets can save fuel, while quietly reducing emissions and idling. Electric-only ePTO operation provides significant reduction in emissions and idle time, and also offers operating flexibility.

**ATTRACTIVE FEATURES ALL AROUND**
The M2e is equipped with a number of money-saving qualities.

- **Extended wear.** The Freightliner Business Class M2e Hybrid’s engine and brakes now last longer. Brake life is more than doubled in urban delivery service, according to the company.
- **Reduced idling.** In ePTO mode, idle time can be reduced by as much as 87 percent. Less idling means less fuel, exhaust, heat, noise, and vibration. In utility applications, 4-5 hours of idle time per day can be eliminated.
- **Fuel economy.** With the city delivery vehicle, fuel economy is improved from 25 to 40 percent. Fuel economy in utility applications has seen a 40- to 60-percent improvement.
- **Overall annual savings.** Considering fuel economy, extended brake life, and federal tax credits, city delivery and utility fleets can achieve an annual savings of $3,500-$6,000. Both state and local governments offer a number of incentives to offset the cost of the new technology. To learn more, visit www.environmentaldefense.org.

Other standard features on the M2e include:

- Increased visibility with a broad windshield and sloped hood.
- Enhanced maneuverability with up to a 55-degree wheel cut.
- A roomy interior, featuring an automotive style dash.
- Large doors, easy ingress and egress, with low step-in height.
- Adaptable cab configurations with standard multiplex wiring, clear frame rails back of cab, and a variety of horizontally and vertically mounted exhausts.
- Lightweight aluminum cab and easy maintenance.

**THE M2e GOES TO WORK**

2005: Project feasibility review for broader truck applications began in January. The Eaton parallel electric system with addition of ePTO utilized.

2006: In August, the M2 debuted at the Great American Truck Show. Many customer demonstrations also took place through 2006 into 2007. Tests revealed 50- to 60-percent fuel economy improvement and a 4-5 hour per-day reduction in engine on-time.