

# MGE Fleet Vehicles: Driving Change

With 225 vehicles in our fleet, MGE is very aware of our environmental footprint. We continually seek ways to cost-effectively reduce our environmental impact while maintaining vehicle performance and reliability.

## A greener fleet

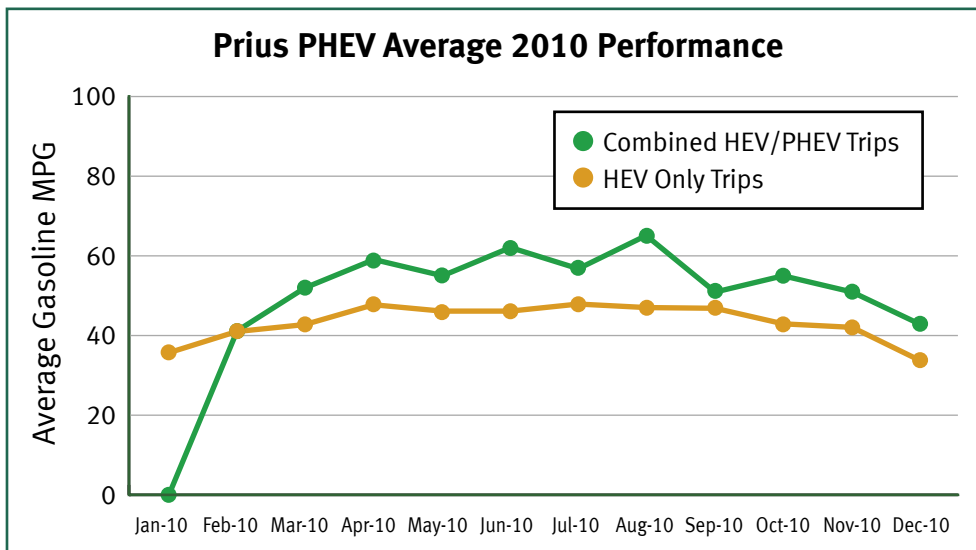
Over the past few years, MGE has begun to replace aging vehicles with hybrid electric vehicles (HEV). We currently operate 17 Ford Escape 4x4s, one Chevy Silverado pickup truck and one International Eaton Hybrid Line (bucket) truck. We also have two plug-in hybrid electric vehicles (PHEVs) and one all electric vehicle.



## PHEVs

MGE purchased a standard Toyota Prius HEV and hired A123 Hymotion to add another, larger battery that we recharge from the electric grid. This PHEV draws power from the grid battery first. We also installed a fully automated monitoring device that communicates with the Idaho National Laboratory which provides us with monthly performance data.

MGE purchased an International truck chassis with an Odyne plug-in Hybrid Line (bucket) truck. The plug-in system powers the aerial lift. When at a job site, the hybrid battery system powers all boom hydraulic functions and the cab's climate control system for a normal workday without the use of the diesel engine. It reduces noise and eliminates emissions while in battery mode.



## Vehicle performance

Our Escape hybrids have averaged 26 mpg, compared to similar gasoline-fueled small SUVs with 16.21 mpg and half-ton pickup trucks at 13.83 mpg. Our Prius PHEV has averaged close to 60 mpg. Visit [mge.com/hybrid](http://mge.com/hybrid) for more performance information.

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## CNG

MGE currently uses nine dual-fueled CNG vehicles in its fleet. According to the U.S. Department of Energy, use of CNG compared to gasoline reduces:

- Carbon monoxide emissions 90%-97%,
- Carbon dioxide emissions 25%,
- Nitrogen oxide emissions 35%-60%,
- Non-methane hydrocarbon emissions 50%-75%,
- Emits fewer toxic and carcinogenic pollutants, and
- Emits little or no particulate matter.

While fuel prices can change dramatically, CNG is typically considerably less expensive (45%-60%) than the fuel it replaces.

## Biodiesel

MGE uses B20 biodiesel fuel for 64 company fleet trucks and off-road equipment that refuel at its downtown Central Service Center, about 25% of the fleet. MGE purchases B100 (100%) biodiesel fuel to blend and use in its vehicles. Biodiesel replaces 20% of the fuel used by the fleet.

According to the Environmental Protection Agency (EPA) data, replacing petroleum-based diesel fuel reduces:

- Carbon monoxide (CO) emissions by 10%,
- Particulate matter (PM) by 15%,
- Sulfates by 20%, and
- Hydrocarbons by 20%.



International Eaton Hybrid Line Truck

## Historical hybrid use

MGE has a long history of testing alternative-fueled vehicles in its fleet. Most have been hybrids, that is, dual-fueled vehicles. We have used:

- Electric
  - Beginning in 1975
  - Battery fire in 1978 ended the project
- Liquid Propane
  - Beginning in 1978
  - 60 vehicles at peak use
  - Switched to all CNG in 1988
- Compressed Natural Gas
  - Beginning in 1986 through today
  - 50 vehicles at peak use
- Biodiesel
  - Beginning in 1999
  - Switched to ultra-low sulfur biodiesel in 2006