In with the new
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A comparison of the new hybrid-electric bus and traditional diesel-powered buses:

How it works

From 0 to 20 mph, the buses run on electricity only, powered by batteries, while the diesel engine idles. Between 20 to 42 mph, they run on electricity and diesel. Beyond 42 mph, they run on diesel only. The batteries are recharged through "regenerative braking." When the brakes are activated, they convert the kinetic energy into electricity, which is stored in the batteries.

The differences

The typical city bus gets about 4.5 mpg, depending on the number of stops on a route. Rapid officials expect the new buses will get 8 to 10 miles per gallon on routes with frequent stops. They also expect to reduce hydrocarbon, carbon monoxide and particulate emissions by 90 percent and nitrogen oxide emissions by 50 percent. The windows reflect more light and will make it cheaper to cool the buses.

The cost

The hybrids cost $510,000 each -- about $200,000 more than the typical bus -- and were paid for with state and federal funds. The Rapid expects three more hybrids this summer and hopes to eventually replace all of its 100 or so diesel buses. "I look forward to the day we can look out... at a sea of green tops," Heartwell said.

A study

GVSU's engineering department will evaluate the buses to determine how they are performing. In Evansville, Ind., a similar study found that four hybrid buses there each saved $4,000 in fuel costs last year -- a 22 percent cut in fuel use per bus.