

SCAT diesel-electric hybrid bus

What

Sarasota County Area Transit (SCAT) introduced its first diesel-electric hybrid bus to the fleet on Aug. 7, 2006. There are now 10 hybrid buses in the SCAT fleet.

The new hybrid buses are part of Sarasota County's commitment to reducing fossil fuel use through an initiative called the 2030 Challenge, which was adopted by the Board of County Commissioners on July 11.

Features

How it works

When the bus accelerates from a stop, the battery-powered electric motors assist the diesel engine for powerful acceleration. Once under way, the engine-driven generator charges the batteries. The vehicle's regenerative braking captures energy normally lost as brake heat, and returns it to the vehicle's energy storage.

Fuel economy and cost savings

- 25-30 percent reduction in diesel fuel consumption.
- Average annual reduction of 7,000 gallons of diesel fuel each year.
- Savings of about \$21,000 in diesel fuel costs per year, with an average cost of \$3 per gallon.

Emissions

Emissions will be reduced by more than 90 percent on some items as compared to conventional diesel-fuel engines.

- 97 percent lower carbon monoxide emissions
- 95 percent lower particulate matter emissions
- 50 percent lower environmental noise pollution
- 50 percent lower nitrogen oxide emissions
- 33 percent lower greenhouse gas emissions

Noise

The noise level for the new hybrid is roughly half of what someone can expect from a standard diesel bus, or equivalent to that of a passenger car, about 79 decibels.

Body style

Bus Rapid Transit (BRT) body style is modern with a curved front and rear with distinctive headlights.

Look

The first hybrid's bright green-blue-gold-white design contrasts to the standard white buses. The new colors were chosen to illustrate Sarasota County's commitment to an environmentally sustainable community.

More details

Energy storage

The energy storage units supply electrical energy to the motors. Energy storage lessens the demands of the clean diesel engine, reducing emission, fuel consumption and noise.

Regenerative braking

Up to 40 percent of the energy to accelerate the bus is energy saved during regenerative braking. When stopping or decelerating, vehicle energy is converted to electrical energy and stored.

Battery

Advanced nickel metal hydride (NiMH) 600-volt battery pack has a six-year life with no requirement for maintenance.

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More details
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Engine features

- Two-mode hybrid system
- 8.9-liter diesel (replaces 11.0-liter diesel)
- Two 100-kilowatt motors
- 50 percent faster acceleration

Manufacturers

- Allison-General Motors of Detroit, Mich., developed the transmission.
- Gillig Corp. of Hayward, Calif., designed and built the bus.

Cost

The BRT hybrid bus costs approximately \$500,000. A standard diesel bus costs about \$300,000. The hybrids are purchased through Federal Transit Administration grants.

Other hybrid vehicles in county fleet

- Ford Escape Hybrid SUVs: 5
- Toyota Prius sedans: 3

Other
information



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