Deploying Hybrid Electric School Buses in Iowa

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ABSTRACT

There are 450,000 school buses in the United States that transport 25 million children on approximately 10 billion student trips each year. These buses consume 1.1 billion gallons of diesel fuel and emit thousands of tons of pollutants per year. School buses represent a major segment of our country’s transportation sector in terms of trips delivered, fuel consumed, and pollutants emitted.

In addition to policy changes, there are technological options for reducing bus emissions. These options include using different fuels, such as biodiesel or natural gas, and add-on emission control devices, such as particulate filters and oxidation catalysts. Hybrid electric technology is another option. Hybrids are available in the passenger vehicle market as well as the transit bus market. Currently, there are no commercially available hybrid school buses.

Hybrid electric school buses have the potential to reduce emissions and reduce the overall life-cycle cost when compared to conventional diesel buses. The technology has been demonstrated in passenger vehicles and transit buses. This project is to demonstrate that hybrid school buses can provide an economically viable alternative for school districts seeking to reduce emissions from their fleets. However, to penetrate the school bus market, there must be a demonstration of the technology. As part of a national coordinated effort, two school districts in Iowa have stepped forward to join a national consortium to encourage the demand for hybrid electric school buses. The buses will be deployed in the school districts by the spring of 2007. The Center for Transportation Research and Education will monitor and evaluate the buses’ performance for this important project.

Key words: biodiesel—buses—hybrid