



# ELECTRIC BUSES AND PUBLIC TRANSPORTATION



*As your Touchstone Energy® cooperative, we want to be your source for energy and information. Since electric vehicles (EVs) are becoming more mainstream, we put together a variety of fact sheets and information to help answer questions you might have.*

*Contact us for more information about EVs.*

Electric transportation is not limited to light-duty vehicles, and medium- and heavy-duty models have recently been generating a lot of interest in the market. Cities, schools, airports and other organizations are specifically recognizing the benefits of electric school and transit buses, allowing more people to experience and benefit from electric vehicles.

## **BENEFITS**

### **FUEL AND MAINTENANCE SAVINGS**

Electric buses are highly efficient, have fewer moving parts than their non-electric counterparts and cost less to run because the price of electricity is lower and more stable than diesel fuel. Between their fuel and maintenance savings, electric buses can save hundreds of thousands of dollars over their lifetimes, and these savings can be invested back into the community or organization.

### **ENVIRONMENTAL IMPROVEMENTS**

Transit and school buses are often used in areas with high concentrations of people, and children are particularly susceptible to the negative effects of pollution. Without vehicle emissions and particulates, electric buses provide cleaner air for our communities, and they are even superior when considering the emissions associated with the electricity needed for charging.

## ECONOMIC DEVELOPMENT

As demand for electric buses increases, there will continue to be opportunities for research and development, manufacturing, electrical contracting and more.

## GRID OPTIMIZATION AND RESILIENCY

With their large batteries and energy storage capabilities, electric buses can support grid reliability and sustainability. They can help manage peak demand, promote renewable energy integration and offer strong potential for bidirectional charging applications.






## SAFETY AND RELIABILITY

Electric buses are safe, highly reliable and have similar rates of downtime as diesel buses. They are also much quieter than other technologies and help reduce noise pollution. On electric school buses, for example, this benefit allows drivers to better hear children and be more aware of their surroundings.

## CHARGING FLEXIBILITY

Multiple charging setups exist to meet specific bus needs and duty cycles. You can charge slowly or quickly, off-route or while in transit.

### Charging Options for Electric Buses

Location	Off Route	Off Route	Off Route	Off Route/On Route	On Route
Method	Level 2 Charging Plug-in	DC Fast Charging Plug-in	DC Fast Charging Plug-in	Pantograph (overhead)	Inductive (wireless)
Bus Compatibility	School	School and transit	School and transit	Transit	Transit
Approximate Power	Up to 19 kW	65 kW	150 kW	150-500 kW	50-300 kW
Time to Charge	6-8 hours	<5 hours	<5 hours	5-30 minutes	Varies
Port					

*This article was provided by Advanced Energy, a nonprofit energy consulting firm. For more information, visit [www.advancedenergy.org](http://www.advancedenergy.org).*

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