

# Dominion Energy Electric School Bus Program

Dominion Energy is launching an initiative to provide support to school districts looking to transition their school bus fleet from diesel to electric. Under the program, Dominion Energy will offset the additional costs of an electric school bus, including charging infrastructure, above the standard cost for a diesel bus. This means that school districts will pay the same cost for an electric school bus, but will experience the additional benefits of creating a healthier environment for their students and being cheaper to run and operate, all while providing our customers with grid reliability and enhanced support for renewable resources enabled by Vehicle-to-Grid (V2G) technology.



The initial phase of this new program calls for the deployment of 50 electric buses fully operational within areas served by Dominion Energy by the end of 2020 – all without any additional cost to the customers. The next phase, with state approval, would deploy 200 school buses a year over the next five years, for a total of 1,050 buses, which could store enough energy to power more than 10,000 homes. Phase three would set the goal to have 50% of all diesel bus replacements be electric after 2025 and 100% by 2030.



## Healthier

Replacing a diesel bus with an electric bus eliminates 54,000 lbs. of greenhouse gas emissions per year, which is the equivalent of taking 5.2 cars off the road. That means lower carbon dioxide emissions and cleaner, healthier air, both inside and outside of the bus.



## New Technology

Vehicle-to-Grid (V2G) technology enables energy stored in electric vehicles to be fed back into the grid when energy demands are high. This cutting-edge dispatchable resource can provide grid reliability and enhance support for renewables resources. By launching this initiative, we can better understand the impacts and benefits V2G provides to all customers.



## Cheaper to Run

The average fuel economy of an aging diesel bus is approximately 6 MPG. An electric school bus provides the equivalent of 17 MPG and can reduce maintenance and fuel costs by over 60% a year. That can add up to savings of \$700/bus per month.



## Safer

Safety is a core value at Dominion Energy. All buses under this initiative will be equipped with three-point seat belts.

# Q&A

**Q** What is Vehicle-to-Grid technology and how does it work?

**A** With Vehicle-to-Grid (V2G) technology, electric school buses act as giant batteries, storing energy until it is needed. When energy demands are high or if energy resources are intermittent, the batteries in electric school buses can be tapped to stabilize the grid and meet customer demands. If there is a power outage or an emergency, electric school buses could be used as mobile power stations by local emergency management and others. However, getting V2G up and running is not as simple as plug-and-play. It requires a smarter grid, which we are working to build thanks to the Grid Transformation and Security Act of 2018.

**Q** What are the environmental benefits of this electric school bus program?

**A** The largest source of greenhouse gas emissions in the United States is transportation. By replacing one diesel bus with an electric bus, 54,000 pounds a year of greenhouse gas emissions are avoided. If 1,050 electric school buses are deployed over the next 15 years, over 810 million pounds of carbon dioxide emissions are avoided. According to the EPA, that is the equivalent of taking 78,000 passenger vehicles off the road per year.

**Q** What is the range of one of these electric buses?

**A** These buses have a range of 120 to 135 miles on a full charge. It takes 6-8 hours to fully charge these vehicles. The average daily round trip bus route is 80 miles.

**Q** Why did you decide to do this program?

**A** Dominion Energy is committed to long-term sustainability and harnessing new, innovative technologies, such as vehicle-to-grid technology. We think that electric school buses will provide a wide range of benefits for the customers and communities we serve, including enhanced grid reliability, cleaner air, and cost savings for school districts.

**Q** How much is the first phase of the program going to cost?

**A** Right now, an electric school bus costs approximately \$350,000, compared to \$100,000 for a diesel bus. The final cost will be based on estimates from the bus manufacturers as well as infrastructure required. Dominion Energy believes the total cost will be approximately \$13.5 million with no additional cost to customers.

**Q** How much energy can the bus battery provide?

**A** Full rollout of this initiative would bring online 1,050 electric buses, which could store enough energy to power more than 10,000 homes.

**Q** Is this the only type of battery storage Dominion Energy has deployed?

**A** Dominion Energy operates the Bath County Pumped Storage Station which is considered the largest battery in the world. In addition, Tazewell County was recently announced as a potential site for a new pumped storage facility. Dominion Energy also recently announced four utility-scale lithium-ion battery storage pilot projects totaling 16 megawatts.



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