



Case Study

Knox County
School District
Bus Electrification

Knox County School District partners with utility company to become first school district in Missouri with electric bus.

Overview

In February 2021, the Knox County R-1 School District became the first school in the State of Missouri to acquire an electric school bus. Located in northeast Missouri, Knox County was looking for ways to save money on operating costs while ensuring they could continue to meet the needs of their students. By working with their local utility provider and other partners to go electric, Knox County has been able to not only reduce costs, but to provide safer transportation and inspire their student body at the same time.

“It’s important for our students who live in a rural area like this to understand that things that may seem impossible are very possible. And we can do anything we want to. All we have to do is put our minds to it.”

Andy Turgeon

Superintendent, Knox County R1

Challenge

Knox County could see several benefits to replacing diesel school buses with electric, but needed partners to help build a plan to show how they could make these benefits a reality. As a rural school district, they also needed to ensure an electric bus could meet the demands of the region and community they operate within. Through solving these challenges, Knox County was hoping to show that they could reduce their operating costs, improve their local environment and provide a safer service to their students and bus drivers.

Results

Knox County engaged their local utility provider to partner on the planning needed to ensure that bus electrification would meet their needs. Together they built a plan outlining the research to be conducted, the infrastructure needed to support electrification, and ways to reduce the upfront costs involved in going electric. Over the course of a couple of years, Knox County was able to build and execute their roadmap for securing their first electric bus.

By the Numbers

Reduced operational costs:

\$5,000 annual savings per bus per year

Cleaner air:

It takes about 750 trees to absorb the emissions from 1 diesel bus operating over a year

Safer operation:

Generates sound <20 mph to alert pedestrians

Reduced maintenance:

60% reduction in maintenance costs
No oil, no transmission, no exhaust system

Electric bus specifications:

LionC Electric School Bus

100-155 mile range, 4-6 hour charging time
220 kWh total battery capacity
15 year estimated battery life

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Results (continued)

Knox County School District received their first electric school bus on February 10, 2021. The bus was put to immediate use and is already delivering operational savings and benefits to the district:

- Reduced operating cost per mile from \$0.31 with diesel buses to \$0.14 with electric bus (55% reduction)
- Bus has easily handled demands of rural bus route length and terrain, and has proven to be more reliable in extreme weather than diesel buses
- Drastically reduced upfront costs through different grant opportunities
- Quieter bus environment has reduced on-bus discipline issues

The introduction of the electric bus has also been enthusiastically received by students, parents, drivers and the community. The new bus offers a quieter, safer and smoother ride for the kids.

Knox County has plans to continue transitioning their buses to electric and hopes to go 100% electric in the future.

“What I would say to anyone interested in purchasing an electric bus is to do your research. Because you’re going to realize all of the ways you can improve your efficiency as a school district.”

Andy Turgeon

Superintendent, Knox County R1

GET STARTED SAVING

You can join Knox County and other organizations saving money and energy by partnering with Evergy to make school bus electrification a reality. Our electric vehicle advisory team can help evaluate options to transition your buses to electric. Together, we can help you understand electric charging costs and equipment, total cost of vehicle ownership, available incentives and ways to achieve your sustainability goals, reduce operating cost and boost your bottom line.

\$75,000

estimated savings over 15 years

Energy Support Available



Subject matter expertise consultation



Assistance in reducing upfront costs



Rate options support