Electric School Bus Fast Facts

Key terms

Electric school buses run on a battery and a high-voltage electrical system instead of an internal combustion engine, which powers gas, diesel and other vehicles. Between trips, electric school buses stop and plug into a charger, just like your phone! (Learn More: Market Study and Buyer's Guide)

GHG, or Greenhouse Gases, include carbon dioxide, methane, nitrous oxide and fluorinated gases. All these gases trap heat in the atmosphere, leading to global warming and climate change. (Watch: What is the Greenhouse Effect?)

Low-income households can be defined differently depending on your dataset. These fast facts use the National Household Travel Survey (NHTS) data where a low-income household made $25,000 or less in 2017. Income is important to track as it can impact a student's access to transportation and education.

Fine particulate matter is a group of small pieces of solids or liquids that float in the air. Dust and smoke are both examples of fine particulate matter. Higher concentrations of fine particulate matter can be linked to diseases ranging from asthma to cancer. (Learn More: EPA Particulate Matter Basics)

A **lifecycle basis** accounts for a product's GHG emissions at every stage of its life from manufacturing to transporting to using the product (see page 36 of this Product Life Cycle Accounting and Reporting Standards report). Lifecycle analyses help to more accurately and completely compare the GHG impacts of different products.

Total cost of ownership (TCO) is the sum of everything that you pay for a good upfront and all the money you will pay to use the good in the future. In the case of electric school buses, it looks at things like the cost of purchasing the bus, charging it with electricity and making repairs. (Learn More: All About Total Cost of Ownership (TCO) for Electric School Buses)

Decibel is a unit used to measure the intensity of a sound. A whisper registers at about 20 decibels, while thunder registers at 120 decibels.

Why are school buses so important?

- Students live farther from school. According to the National Household Travel Survey (NHTS), in 1969 52% of students lived less than one mile from their school. By 2022, only about 18% of students lived less than one mile from school and the median distance to school for students rose to 2.9 miles. This increase in distance between students and schools means more students need vehicles to get to school.
- More students are taking cars than buses, and that's bad for the planet. In 1969, almost half of students were walking or biking to school and only 16% of students traveled to school in cars. By 2022, 57% of students traveled in cars to school. That's a problem because cars produce 58% of the greenhouse gas emissions from the transport sector. (Learn more: Crash Course on Clean Transportation)
- Many students still rely on school buses. More than 21 million students of the roughly 48 million K-12 students nationwide ride the bus to school every day. However, Black students, students with disabilities and low-income students rely on diesel-burning school buses more than others. (Learn more: How Electric School Buses can Improve Outcomes for Students that Need Them Most)

Why should students be riding on electric school buses?

- Today's school buses are not clean enough for students. More than 90% of the school buses on the road today are diesel-burning! Exhaust from diesel-burning school buses can lead to asthma, cancer and other respiratory illnesses.
- Electric school buses have no tailpipes, which means they produce no harmful tailpipe emissions.
- Electric school buses can be better for academic performance. Research has shown that keeping students away from diesel exhaust is linked to better English and math scores. Diesel exhaust pollution is also linked to asthma, which is one of the main reasons students miss classes.
- They can reduce exposure to air pollution for students that are already overexposed. Many of the students who rely on school buses also face excess air pollution outside of school. Due to the long-term impact of discriminatory policies (like redlining), communities of color face disproportionately higher exposure to fine particulate matter pollution in the U.S.
- They can save your district money. Electric School Bus Initiative research shows that a new electric school bus can save an average of $6,000 every year on fuel and maintenance. A district in Three Rivers, Michigan used their savings to purchase new instructional materials for students.
- The on-board environment is calmer and quieter. Electric buses can be up to 20 decibels quieter than diesel-burning buses. Every 10 decibels of additional noise pollution causes a significant decrease in attention, so it's no surprise that a district in West Virginia found that their electric school bus reduced the number of behavioral disruptions on the bus.
- They're better for the climate. Electric school buses produce the lowest levels of greenhouse gas emissions of any school bus type, even when you count the emissions created by the production of the electricity used to charge the buses. On a lifecycle basis, electric school buses produce less than half the greenhouse gas emissions of both propane-burning and diesel-burning school buses.
- There are tools to make electric school buses even better. While electric school buses are better for the climate overall, there are social and environmental risks when mining for battery materials. Indigenous communities are particularly at risk: in the U.S., 79% of lithium reserves, a key component of batteries, are located within 35 miles of Native American reservations. Tools like the Battery Passport can help to address some of these concerns.

What is the electric school bus market like today?

- With the right funding, electric school buses can be cheaper than other options. Right now, electric school buses cost more than other types of school buses. These prices are expected to go down, but even today funding from grants like the Clean School Bus Program can reduce the total cost of ownership (TCO) of electric school buses and make them roughly $200,000 dollars less than diesel-burning school buses.
- There are thousands of electric school buses on their road or on their way to districts. As of February 2024, school districts have committed to 8,675 electric school buses, and 3,867 electric school buses are already on the road. When ordering new buses, school districts have about 24 models that they can choose from! Explore the data dashboard, and see if there are any coming to your district.
- About 1/3 of all school buses in the U.S. fall under new state policies that promote clean vehicles. New state policies like the Advanced Clean Transport (ACT) rule and zero-emissions school bus transition requirements mean that nearly one-third of school buses will need to be electric in the years to come.

Where can I learn more?

- See how electric school buses relate to other green school initiatives. They're part of campaigns like the Green New Deal for Schools and the Great School Electrification Challenge. If you know of other campaigns that include electric school buses, send them our way!
- Explore all the reasons why school districts need electric school buses.
- Learn about how different types of equity relate to school buses with this equity and school bus electrification video series.
- Think about what to do with your old diesel-burning buses through this hands-on lesson: Think Outside the Bus Lego Mini-Lesson.
- Check out the options available to help your district pay for ESBs: How to Help Your Community Fund Electric School Buses in the US.
- See where electric school buses are on the road. Explore the Electric School Bus Initiative's data dashboard to dive into the data behind the electric school bus transition and answer questions like where electric school bus funding in my state comes from and whether electric school buses are coming to districts with the highest air pollution.