Electric School Buses

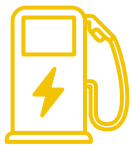
Fire Safety & Preparedness

NEW YORK STATE | NYSERDA Clean Transportation

Electric school buses (ESBs) are a better option for kids, communities, and public health — and are safe to operate.

School buses in general, regardless of fuel type, are the most regulated vehicle type and are specifically designed to be some of the safest vehicles on the road. ESBs have the highest quality UL-certified batteries, which are rigorously tested. Electric school buses are less likely to be involved in fires than diesel or gasoline vehicles.[1]

Gasoline vehicles:
1 in 65 chance of being involved in a fire



Electric vehicles (EVs):
1 in 4,000 chance of being involved in a fire

Built-in high quality monitoring systems installed in all ESBs help identify issues before they lead to overheating or cause a fire. ESB fire safety involves four main components: Prevention, Maintenance, Detection, and Suppression.

PREVENTION

- ESB batteries are centrally located under the chassis to prevent damage in collisions or rollovers.
- Emergency disconnect switches are designed to automatically cut power to the high-voltage system in the event of a crash.
- Chargers comply with strict national and international safety codes, helping to ensure safe operation and minimize electrical hazards.

MAINTENANCE

- Routine battery and vehicle maintenance in accordance with manufacturer guidelines will help prevent ESB fires and is often less costly than maintenance of traditional buses.
- Inspection and proper care of charging cables will help prevent wear-related risks. School buses are regularly inspected and heavily regulated.

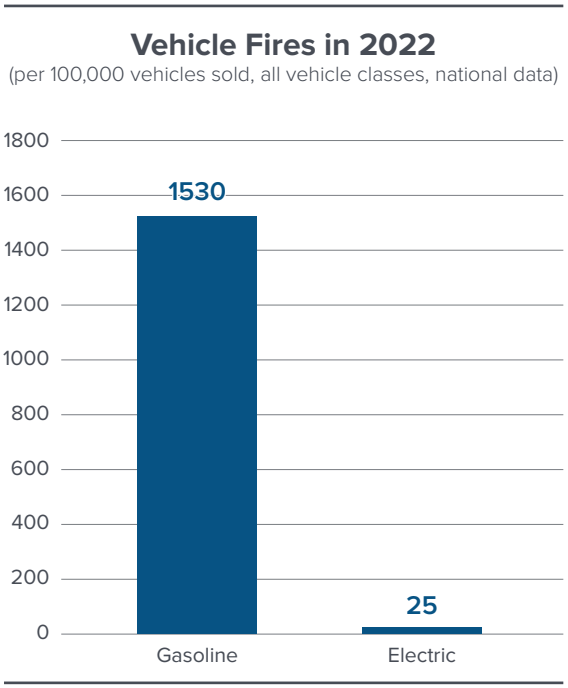
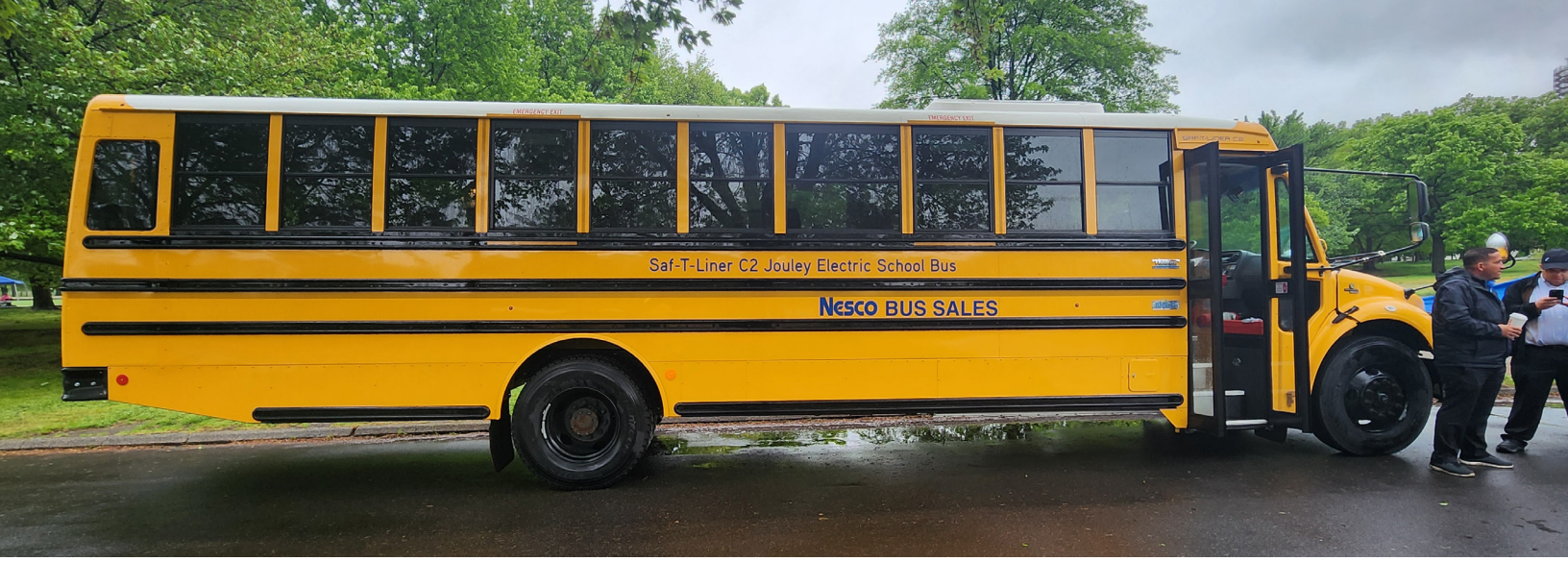


Figure 2: Vehicle Fires

[1] *Kelly Blue Book. "Electric Vehicles Involved in Fewest Car Fires"*



DETECTION

- Battery management systems continuously monitor battery health and help detect potential issues early.
- Built-in warning systems alert drivers and depot managers if a battery starts overheating so problems can be addressed before there is a fire risk. This gives staff time to pull over and evacuate passengers when on the road, or to disconnect and relocate charging buses when parked.
- Automated safety protocols shut down high-voltage systems if overheating or faults are detected.

SUPPRESSION

- Given the increasing number of EVs on the road, first responders are increasingly well-trained in handling EV fires.
- Manufacturers provide emergency response guides to assist firefighters and school staff in proper fire suppression techniques.
- ESB fires can be hard to extinguish once they get started, so the best protocol is to use as much water as possible on the fire and move the buses away from other buses or buildings.

CODE AND INSURANCE REQUIREMENTS

- Current building and fire codes do not require changes for the housing or charging of ESBs.
- Insurance providers continue to cover ESBs with no significant policy changes required.

Learn More

For more information on Electric School Buses visit nyserda.ny.gov/ride-clean.

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