



Washington's school districts are enjoying a gamechanging opportunity to add electric school buses (ESBs) to their fleets. The Green Transportation Program (GTP) offers resources and guidance to help districts decide if this is the right time to pursue available funding.

- Why Electrify?
- Get the Funding You Need
- <u>Resources for School Districts</u>
- Original Equipment Manufacturer Case Studies
- Bus and Battery Information
- <u>Considerations for Successful ESB Deployment</u>

## Why Electrify?

Research abounds about the health and environmental benefits of replacing diesel-fueled school buses with ESBs. One example, <u>The State of</u> <u>Electric School Bus Adoption in the US</u> by the World Resources Institute (Sept. 21, 2023), sets forth compelling reasons why electrifying school bus fleets is crucial for protecting student and environmental health, including:

- Diesel exhaust, a known carcinogen, is linked to serious physical health issues and cognitive development impacts.
- Students from low-income families are particularly exposed to the dangers of diesel exhaust pollution.

Electrifying an entire fleet of school buses can help address these health concerns and inequalities. School districts across the U.S. and within Washington confirm that their ESBs are delivering health and environmental benefits, as well as costsaving and maintenance benefits:

- Why It Would Take \$200 Billion To Clean Up America's School Buses | Business Insider -YouTube
- <u>The Race To Electrify America's School Buses |</u>
  <u>CNBC YouTube</u>

# ESB funding questions? GTP can help.

We invite school districts to contact us at <u>greentransportation@energy.wsu.edu</u> to discuss a project you're planning, brainstorm ideas, or need technical assistance to address your district's specific needs, such as calculating charging needs.

The GTP can help if you:

- Are curious about the right bus routes to electrify.
- Need information about the choices for ESBs.
- Want to learn about installing EV charging stations at the bus base OR where they may park during the day, perhaps at a community center or other public location.
- Want to know about grant opportunities and utility incentives to support the transition.
- Need assistance working with your electric utility to assess electrical capacity and install charging infrastructure for your plans.







## Get the Funding You Need – updated December 2023

FEDERAL	STATE	STATE
EPA	ECOLOGY	COMMERCE
2023 Clean School Bus Rebate closes January 31, 2024 approx. \$500 million	<u>Clean Diesel Grants</u> for New ESBs closes January 25, 2024 <mark>\$10 million</mark>	<u>Community Charging Grants</u> for Charging Stations at Schools
	Zero Emission School Bus Grants closes January 25, 2024 \$14 million	closed December 1, 2023 \$60+ million

## **Resources for School Districts**

- Washington's Green Transportation Program
- Office of the Superintendent of Public Instruction
- Ecology's Diesel Reduction and VW Funding Grants
- <u>U.S. EPA</u>
- <u>World Resources Institute</u>
- Electrification Coalition
- Additional ESB Resources

## Washington's Green Transportation Program

The GTP provides unbiased, up-to-date education and technical assistance for any public fleet. We track and share information fleet operators use to understand the benefits and costs of the transition to EVs, including the complexities of vehicle charging and infrastructure.

See the <u>GTP website</u> for targeted information to help school districts evaluate and apply for ESB funding, including <u>EV Charging Resources</u> and <u>Funding Opportunities</u>.

#### **Office of the Superintendent of Public Instruction**

Washington's <u>OSPI student transportation website</u> includes resources of interest to school district bus fleet managers.

#### **Ecology's Diesel Reduction and VW Funding Grants**

Ecology provides grants though the <u>Clean Diesel Grants program</u> and <u>Volkswagen Enforcement</u> <u>Action Grants:</u>

- Air Quality Clean School Bus Grant Program: For school bus owners that transport students to Central and Eastern Washington K-12 schools overseen by OSPI for the 2021-2022 school year.
- Air Quality Clean Diesel Grant Program: For cities, counties, public utility districts/co-ops, ports, transit authorities, school districts, state government, tribes, nonprofit organizations, tribes, and local clean air agencies.
- Volkswagen Enforcement Action Grants: Aim to reduce air pollution from vehicles in Washington, including grants to help school districts purchase ESBs.



## U.S. EPA

See Applying for EPA 2023 Clean School Bus Grants, where we summarize key information and provide tips to apply for EPA's new <u>Clean School Bus Program rebates</u>.

## World Resources Institute

The World Resources Institute (WRI) looks at the big picture to support adoption of ESBs, working with strategic partners to:

- Aggregate demand for ESBs
- Scale manufacturing to reduce costs.
- Develop innovative financing models.
- Unlock public funding.
- Assure an equitable shift toward ESBs.

WRI's Electric School Bus Initiative presents a wealth of resources and tools, including:

- **<u>Resource Library</u>** search for resources such as:
  - Total Cost of Ownership Calculator for Electric School Buses
  - ESB U.S. Buyer's Guide
- <u>Tools</u>: Includes the "All About" series of deep-dive articles, videos, and publications about charging infrastructure, ESB models and more.

## Don't miss these:

- <u>Step-by-Step Guide to Electric School Bus Electrification</u>
- How to Apply for Clean School Bus Program Funding
- Successfully Operating in Cold Weather in Three Rivers, Michigan | Electric School Bus Initiative
- Charge Management Software Catalog
- <u>All About Types of Electric School Buses</u> includes links to <u>Electric School Bus U.S.</u> <u>Market Study</u> and <u>Electric School Bus U.S. Buyers Guide</u>
- <u>Engage</u>: Includes The Electric School Bus Series, which presents experiences of school districts that are using ESBs, and Talk to an Expert, which offers free 30-minute, one-on-one sessions with the WRI team to ask your school district-specific questions.
- <u>Evidence</u>: Provides articles on environmental and equity concerns from traditional school buses, and introduces the interactive ESB data dashboard.
- <u>Interactive ESB Data Dashboard</u>: Lets you see where ESBs are in use, how they are funded, and more. Dashboard data is updated monthly to provide timely insights, including:
  - State- and school district-level metrics ESB funding sources
  - ESB adoption by race, income level, and air pollution level
  - School bus fuel types and bus ages
  - Manufacturing information





## **Electrification Coalition**

The <u>Electrification Coalition</u> supports widespread adoption of EVs with a broad set of strategies including policy, advocacy, consumer education, and electrification planning. Their resources for ESBs include steps to include in planning an electric bus future.

The EC's <u>Dashboard for Rapid Vehicle Electrification (DRVE) Tool</u>, developed with Atlas Public Policy, is a quick and user-friendly resource to analyze the total cost of ownership (TCO) of EVs in light-, medium-, and heavy-duty fleets. Users can enter basic fleet data into an easy-to-use Excel-based tool and get insights within minutes. This versatile tool offers a streamlined solution for effective EV deployment decisions and is a valuable resource for organizations who need a fast and straightforward approach to fleet electrification.

To use the EC tool, fill out your information and download the tool <u>here</u>. The tool will ask you to input your fleet inventory so make sure to have that data ready. Follow the directions and make sure to select the miles your vehicle drives and the model you are interested in.

Note that the Excel tool may require you to unblock macros, as explained <u>here</u>.

## **Additional Resources**

<u>Alliance for Electric School Buses</u>

The Alliance collaborates with national and state partners to fight diesel pollution by using clean school buses that run on electricity. Through grassroots community organizing, we're calling on governors to put the health of our kids and communities first by using their state's Volkswagen Environmental Mitigation Trust for clean electric school buses.

Electric School Bus Coalition

This national coalition of leaders in student transportation advocate for increased funding and other policies that support the transition to electric school buses.

<u>Electric School Bus Newsletter</u>

Alison Wiley curates this newsletter that offers valuable information and case studies supporting the electrification of school buses and all buses, with a special focus on equity.



<u>Beneficial Electrification League</u> – <u>Why is an ESB a better option for</u> <u>schools?</u> (1:40)



Driving the Thomas Saf-T-Liner C2 Jouley ESB (1:21)

Webinar: Stack Incentives and Maximize Funding to Jumpstart Your School's Electric Bus Fleet

Although the focus of this webinar is on the California Bay Area, the principles for stacking incentives and funding still apply.





## **Original Equipment Manufacturer Case Studies**

- <u>Thomas Built: Why ESBs? Because tomorrow has never been more important</u>
- Thomas Built: Saf-T-Liner<sup>®</sup> C2 Jouley<sup>®</sup> ESB: The future is just around the corner
- <u>Electric LionC: School Buses in Michigan Three Rivers Community Schools Explains Their</u>
  <u>Experience!</u>
- Lion Electric: Cajon Valley's Electrification Journey So Far
- Blue Bird: Electric Bus Ride & Drive
- IC Bus: Electric Power in a School Bus Application
- IC Bus: Charge Electric Bus Tour Sacramento

## **Battery and Bus Information**

- Battery Technologies
- <u>Miles per Charge by ESB Type</u>
- Available ESB Models

## **Battery Technologies**

<u>Proterra Battery Technology</u>

Photo: Proterra

### Miles per Charge by ESB Type

Bus Type	Bus Name	Miles per Charge
А	LionA	150
А	GM4500 (DE516) Collins Bus	130
А	Micro Bird G5 Electric	100
А	BYD Type A	105
С	Blue Bird Vision Electric	130
С	IC Bus Electric CE Series	135-225
С	Thomas Jouley	138
С	LionC	155
D	BYD Type D	100-155
D	LionD	100-155
D	Bluebird All American	120
D	Greenpower Beast	140-300





## Available ESB Models

Distributor, phone number	ESB model available	A34E, A 34EL	Charging partner or specifications
Blue Bird 877-822-7976	All American RE electric Vision Electric	All American RE electric: Range: 120 miles GVWR: 36,000 Vision Electric: Range: 120 miles GVWR: 33,000 Propulsion system (both models): Cummins PowerDrive 7000 Motor: TM4 <sup>®</sup> SUMO	Blue Bird Energy Services provides ESB charging solutions in partnership with InCharge Energy. L2: 6 hours DCFC: 2-3 hours Blue Bird Electric
<b>NW Bus</b> 800-231-7099	Magellan distributor	Powertrain batteries and range options: • u 210 kWh (135 miles) • u 315 kWh (200+ miles)	L2: 13 kW AC CCS1: 80 kW DCFC
<b>RWC Group</b> 602-377-4401	International (IC) distributor & Collins distributor	<u>IC Bus</u>	IC Bus Electric CE Series provides ESB charging solutions in partnership with InCharge Energy. Collins Type A: charging plugs L2: 13 kW AC CCS1: 80 kW DCFC
Schetky NW 800-255-8341	Collins distributor Collins: Type A Thomas model Jouley (call Schetky)	Battery pack: Li-ion 125 kWh Control platform: allows fleet a seamless pathway to electrification	Collins Type A: charging plugs L2: 13 kWh AC CCS1: 80 kW DCFC
Lion 810-231-0651	Lion Electrics	Range: 120/ 155 GVWR: 31,000 Charging: 19.2 kW AC obc	Not available



Washington Green Transportation Program

# **Considerations for Successful Electric School Bus Deployment**

Green transportation describes mobility types that save energy, increase efficiency, and use renewable fuels. The transition away from petroleum fuels is well underway. To move people and goods, Washington consumers and fleets increasingly use alternative fuels, such as bio and renewable fuels and clean electricity.

The Washington Green Transportation Program (GTP) provides unbiased, up-to-date education and technical assistance for any public fleet. For example, we track and share information fleet operators use to understand the benefits and costs of transitioning to electric vehicles (EVs), including the complexities of vehicle charging and infrastructure.

## **Electrification of Student Transportation**

New federal and state investments in state-of-the-art electric school buses (ESBs) and charging infrastructure are bigger than anything seen before. Grants from the WA Dept. of Ecology and rebates from the U.S. Environmental Protection Agency (EPA) will pay a large part of the initial costs, allowing districts to reap the rewards of using low-cost electricity as fuel.

## **Direct Technical Assistance for School District Teams**

We invite school superintendents, transportation officials, grant teams, and school communities to work with us to bring the expertise of other ESB programs to your districts. We can help if you:

- Are curious about which bus routes to electrify.
- Need information about ESB choices.
- Want to learn about installing EV charging stations at the bus base OR where ESBs may be parked during the day, such as at a community center or other public location.
- Want to know about specific grant opportunities and utility incentives that could support your school district.
- Need assistance working with your electric utility to assess electrical capacity and install charging infrastructure.

We provide focused assistance on issues identified by school district transportation teams. The EPA has identified roughly 70 districts in Washington for prioritized status to receive greater financial assistance. We can work together to put these resources to their best use for Washington students.



#### **GTP Website**

The <u>GTP website</u> is a key portal to information and engagement. Public fleets can subscribe to stay up to date about important, timely topics. Key features include regularly updated funding opportunities, and upcoming and past (recorded) technical assistance and education events. Additional resources pages offer



guides and tools, apps, procurement links, and links to valuable organizations.

## The Alternate Fuels & Vehicles Technical Assistance Group (AFV-TAG)

Started by the WA State Department of Commerce, the AFV-TAG has evolved into a dynamic partnership with the GTP. AFV-TAG meetings are held every other month. At these meetings (held virtually), you will hear about new policies and programs, updates about grants and incentives, introductions of new battery electric and fuel-cell EVs, innovations in vehicle charging and fueling infrastructure, and topical issues.

#### **Milestones for Electrifying Public Fleets**

After researching the advice public fleets have shared about their early transitions to electric transportation, we took the best insights and recommendations to prepare <u>Milestones for Electrifying Public Fleets</u>, which shares the most common milestones that public entities cross as they plan and add EVs to their fleets. Whether your fleet is comprised of cars, SUVs, buses, trucks, or a combination of these vehicles, you will gain valuable insights from this guide.

#### Contact

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