



Photo by: Craig Beaver

Electric School Bus Deployment at Beaverton School District

This profile reflects the ESB deployment experience and perspective of Beaverton School District in Oregon.

Overview

Beaverton School District (BSD) was the first in Oregon to deploy electric school buses (ESBs) in 2021. Their leadership in fleet electrification earned them the “Leading Public Fleet” award at the 2024 Advanced Clean Transportation Expo. The district currently operates the largest fleet of ESBs in the Pacific Northwest. Starting from two buses in 2021, the district has quickly expanded to 45 buses, including Type C and D models from several manufacturers (IC Bus, Blue Bird, Greenpower and RIDE).

In the fall of 2025, it is due to receive an additional 26 electric school buses. By spring of 2026, 24 additional buses are expected for a total of **95 electric school buses**.

Contact	Craig Beaver, Administrator for Transportation
District Size	56 schools
Student Population Transported	25,000 per day
Bus Fleet	315 buses

Charging Infrastructure

By October 1st, 2025, BSD will have installed over 100 Level 2 chargers and multiple DC fast chargers to support both buses and staff or fleet vehicles. All buses, chargers and charge management software are owned by the district. The charge management software provider is **OpConnect**. **Portland General Electric (PGE)** is the electric utility. BSD charging infrastructure includes:

- 67 single port L2 Enphase 19.2 kW chargers
- One dual port, L3 Evocharge 50kW portable charger
- Three single port L3 Rhombus 60kW chargers
- Three single port L3 Evesco 60kW portable chargers

Clean Energy Infrastructure

BSD owns vehicle-to-grid (V2G) infrastructure. Three of the district's Rhombus DC chargers are V2G capable, and many of their buses are as well. They are also beginning a V2G pilot with PGE to run between July of 2025 and January of 2026.

Funding Sources

Since 2020, BSD has steadily secured funding to build out its electric school bus fleet, receiving over \$24 million in grants including \$500,000 from the **Diesel Emissions Reduction Act** (DERA), \$2.2 million from **Portland General Electric** (PGE), and \$21.6 million from the **EPA's Clean School Bus and Clean Heavy-Duty Vehicle Programs**. To support this growing fleet, the district has also invested in charging infrastructure through **PGE's Make Ready** program that covered 100% of infrastructure costs (in 2020) to 40% in 2024 and 2025.

Motivation

Improving air quality and reducing air pollution for the surrounding communities and students, especially those who have been historically underserved, is the key factor. BSD is also making a large commitment to electrification, with a vision to transform transportation and leverage their large fleet size to try different manufacturers, transparently share data and results, and disseminate knowledge across the state and nationwide.

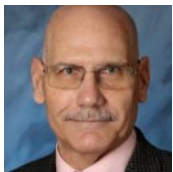
Implementation Challenges

1. **Supply-chain shortages and delays** led to pivoting their infrastructure plan to maximize L2 chargers, enabling a wider range of transformer and switchgear options.
2. **New technology issues** required replacing underperforming chargers. BSD worked closely with manufacturers to troubleshoot hardware and software issues.
3. **Initial deployments faced ESB downtime** but were resolved through manufacturer collaboration and intense on-the-job training for shop technicians to self-identify issues.

Community Benefits

1. **Fleet uptime has leveled in the mid-to-high 90% range** with the buses achieving an efficiency of 1.83 kW/mi as a fleet and 1.49 kW/mi for Type C buses.
2. **Fuel savings** of over \$70,000 in 2023/2024 and \$143,000 through March of 2025. Once fully deployed (95 buses), BSD expects annual savings of over \$1.2 million and total cost of ownership savings of \$14.6 million over the life of the buses.
3. **Student ride experience** has improved and student management issues have been reduced.

“School districts considering electric school buses should engage with the electric utility as soon as possible to discuss power needs. Take the time to do a route analysis to identify those that are best suited for ESBs. Once completed, thoroughly investigate different manufacturers to fit the route needs. Don't underestimate the need for after-purchase service and prioritize manufacturers that demonstrate strong performance in servicing their ESBs with another district... Work with the manufacturer to determine the best charger combination to ensure compatibility.”



— Craig Beaver, Administrator for Transportation, Beaverton School District