



Technical FAQs on Metro's transition to zero-emissions fleet

Q. Why is King County Metro transitioning to a zero-emissions bus fleet?

Metro is committed to a 100% zero-emissions fleet by 2040. Over the next 20 years, we expect to have approximately 2,200 battery-electric and electric trolley buses.

A zero-emissions fleet benefits the community, riders, and employees by eliminating greenhouse gas emissions and improving air quality. Additionally, the program aligns with broader King County equity and social justice goals and the Strategic Climate Action Plan.

Q. How will the transition to a zero-emissions fleet be rolled out?

Metro will phase 120 zero-emissions buses into operations, starting in 2021 at the interim base at South Campus, followed by 250 buses at the South Annex base in 2025. Metro's newest base, which will be built in south King County and is scheduled to open in 2030, will house, operate, and maintain 250 zero-emissions buses.

Q. What about the charging locations and power levels?

Like many other North American transit agencies, including Los Angeles, Vancouver B.C., Portland, and New York, Metro will be deploying a pantograph down solution, SAE J3105-1, seen at the right. At launch, chargers will be located at bus bases but future en-route chargers are also expected to be deployed. All chargers will be a mix of high power and low power, but the exact ratio is still being determined. Most chargers will be low power and used for overnight charging to manage the electrical load as well as lower costs.

Q. What is the current range for battery-electric buses?

Current testing supports routes up to 140 miles.

Q. What is the current battery size and technology?

Metro is testing various battery sizes and cooling technologies. Currently, the 40-foot bus has a battery size of 350 kWh and the 60-foot articulated bus has a battery size of 500 kWh. The test buses have either a liquid or air-cooled battery system.



A battery-electric bus in Portland is charging at a transit center bus stop. The pantograph is lowered and in contact with rails on the roof of the bus.

Q. How is Metro building the necessary infrastructure for battery-electric buses?

Metro is working closely with local utilities, and will most likely retain ownership of the electrical infrastructure.

The electrical infrastructure required to support battery-electric buses, including switchgears and transformers, is already deployed in other high electric-usage industries, including hospitals, large buildings and server farms. Metro has worked with Seattle City Light on a resiliency study of the feeders to the interim base to ensure power needs can be met.