



# Battery-Buffered DC-Ultra Rapid Charger

## Technology Overview

While the electric vehicle (EV) market is growing rapidly, the associated charging infrastructure still faces significant challenges. One issue is that EVs don't charge at a steady rate, and many fast chargers are limited to areas where the power supply can handle a sudden 50 kW load.<sup>1</sup>

To address this, the battery-buffered DC ultra-rapid charger incorporates a battery storage system. This system reduces the impact of EV chargers on the overall power demand of a site or building. With this technology, you can deploy multiple slow chargers or high-power rapid chargers using a 50/110 kW grid feed without causing the usual spikes in demand.

## Why is GSA Interested?

As more federal employees use personal and fleet EVs, charging accessibility will become essential. The battery-buffered DC ultra-rapid charger offers potential savings on demand charges and costly grid upgrades. Installing the charger is quick and flexible, with no utility upgrades. Minimal space is needed because of the charger's compact dimensions and small footprint (10' x 10' for the charge box and 2' x 2' for charging stations; 1 box can feed 2 stations).

This technology has the potential to deliver up to 60% energy savings compared to standard fast charging, faster battery recharge rates (i.e., multiple vehicles charging at 160 kW or one vehicle at 320 kW), and payback in 3 to 4 years.

## Deployment Potential

The battery-buffered DC ultra-rapid charger is suitable across the portfolio. For optimal performance, it requires a 480V/4-wire utility connection and a 200 amp breaker in the electrical room.

<sup>1</sup>Consortium for Battery Innovation, <https://batteryinnovation.org/battery-electric-vehicle-charging-buffers/>, accessed 05-2023.

*Green Proving Ground (GPG), in collaboration with the U.S. Department of Energy, is evaluating the real-world performance of a battery-buffered DC ultra-rapid charger in federally owned buildings within GSA's inventory. The technology will be provided by ADS-TEC Energy Inc. and coordinated with other ongoing evaluations of this technology.*