



EV Charge Management

Technology Overview

The Biden-Harris Administration is committed to electrifying the 450,000 vehicles in the federal fleet. This vehicle-integrated electric vehicle (EV) charge-management technology supports that goal by integrating embedded vehicle telematics with utility signals to optimize charging based on vehicle use, utility rates, and the carbon content of delivered power. Existing solutions rely on networked smart chargers that have limited ability to determine which vehicle is charging, the state of the charge, future charging needs, or charging patterns. Vehicle-integrated EV charge management uses a vehicle's data, controls, and communication systems to transform EV charging from unpredictable, disaggregated loads into a cohesive network of controllable grid resources. The technology provides predictive analytics and dashboard insights by reading vehicle and charging data and translating it to normalized 15-minute-interval energy usage (kWh) data.

Why is GSA Interested?

Vehicle-integrated EV charge management will provide GSA with more insights on electric vehicle charging and usage. It can reduce EV charging volatility and spikes on a building or charging station's electrical infrastructure, reducing maintenance and emergency repair costs and deferring system upgrades. Moreover, this technology encourages a faster transition to an electrified GSA fleet by reducing fuel costs and emissions and allowing more vehicles to convert from internal combustion engines to electric, without charge-related distribution network upgrades.

How Will Success Be Measured?

The testbed will assess two manufacturer claims: 30% fuel cost savings and 10% greenhouse gas reduction.

The EV charge management technology will be piloted at GSA's newly established Applied Innovation Learning Laboratories. At these sites, GSA will work with federal partners, industry, and local utilities to test new technologies. Evaluation results will help refine GSA's understanding of the requirements needed to support an all-electric fleet.

Deployment Potential

Because the federal fleet has predictable usage patterns and parks at central depots, it is well-suited for electrification and managed charge at buildings and charging stations, making this EV charge-management technology applicable across the GSA portfolio. The technology is charger-agnostic and compatible with most EVs.

Green Proving Ground (GPG), in collaboration with the U.S. Department of Energy, is evaluating the real-world performance of vehicle-integrated EV charge-management technology in federally owned buildings within GSA's inventory. The technology will be provided by WeaveGrid, Inc. and coordinated with other ongoing evaluations of this technology.