



Modular EV Charging Station

Technology Overview

Given the Biden-Harris Administration's commitment to transitioning the federal fleet to 100% zero-emission vehicles, energy-efficient fleet management—including a reliable, sustainable solution for charging electric vehicles (EVs)—is all the more important. This modular EV charging station combines a 4.3 kW solar array with lithium-ion battery storage and emergency power panels to deliver a grid-independent and transportable energy source. Available 24/7, even during inclement weather and grid failure, this technology provides an opportunity for grid and energy resiliency. One unit can provide up to 265 e-miles in 24 hours and charge using any brand EV J1772 type charger with up to six plugs. The station fits comfortably in a standard 9' x 18' parking space, and the EV parks directly on the base of the station while charging. The modular EV charging station is wind-rated up to 125 mph, flood-proof up to 9.5 feet, and ADA-compliant.

Why is GSA Interested?

The EV charging station can be installed quickly, in as few as 4 minutes, according to the vendor. And, unlike most EV infrastructure, it doesn't require construction permitting, trenching, switch gear upgrades, or interconnection agreements. The modular design means the unit can be moved easily to match changing fleet needs.

In the case of an extreme weather event, the station can provide vehicle and emergency power. The unit is energy independent and will not increase building energy use or demand charges.

The EV mobile charging 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.

How Will Success Be Measured?

The testbed will assess three manufacturer claims: each charging station reducing CO₂ emissions of 10 tons per year, realizing a 10% energy cost savings, and delivering payback in less than 15 years.

Deployment Potential

This technology is best suited for any commercial building with a small EV fleet, ideally less than 12. It can be stand-alone or grid-tied.

Green Proving Ground (GPG), in collaboration with the U.S. Department of Energy, is evaluating the real-world performance of modular charging stations in federally owned buildings within GSA's inventory. The technology will be provided by BEAM Global and coordinated with other ongoing evaluations of this technology.