



# United States Department of the Interior


NATIONAL PARK SERVICE  
1849 C Street, N.W.  
Washington, DC 20240

4. A.1 (WASO-PFMD)

MAR 04 2014

Memorandum

To: Regional Directors

From: Associate Director, Park Planning, Facilities, and Lands 

Subject: Visitor and Employee Use of Electric Vehicle Charging Equipment

National Park Service (NPS) employees and visitors, generate large amounts of Green House Gas (GHG) emissions. *The NPS Green Parks Plan* (GPP) encourages efforts to reduce GHG emissions generated by vehicles and equipment with the following two goals:

- **Green Our Rides** by increasing the use of high-efficiency and low-greenhouse gas (GHG)-emitting vehicles in our fleet, and supporting alternative commuting practices; and
- **Foster Sustainability Beyond Our Boundaries** by asking communities and visitors to participate, and identify ways visitors can reduce the impact of GHG emissions from personal vehicles.

Plug-in electric vehicles (PEVs) on public roads and in national parks are increasing in number. Because these vehicles help to reduce GHG emissions and help us meet Federally mandated GHG goals, the NPS should, wherever feasible, strive to encourage their use by visitors and employees. Several parks have added electric vehicle supply equipment (EVSE) to recharge fleet vehicles, and the NPS is receiving requests to expand EVSE charging opportunities.

The attached guidance outlines important considerations for EVSE and provides additional resources for NPS locations interested in installing and operating EVSE. Park managers are encouraged to pursue EVSE installation opportunities—where appropriate and feasible—after considering the demand, investment requirements and technical and financial impacts. However, **all EVSE users, including NPS staff and visitors, must pay to charge their vehicles.**

For questions or clarification on this guidance, please contact Shawn Norton, Park Facility Management Division, at [shawn\\_norton@nps.gov](mailto:shawn_norton@nps.gov).

Attachment

cc: Deputy Regional Directors  
Regional Fleet Managers  
Regional Chiefs of Maintenance  
Sustainable Operations and Climate Change Branch Chief, Washington Office

**Attachment:**

**Electric Vehicle Supply Equipment for Visitor and Employee Use  
Considerations and Additional Resources**

**Key Resources**

- Alternative Fuels Data Center – Electricity, <http://www.afdc.energy.gov/fuels/electricity.html>
- Alternative Fuels Data Center – Hybrid and Plug-In Electric Vehicles, <http://www.afdc.energy.gov/vehicles/electric.html>
- *Clean Cities Plug-In Electric Vehicle Handbook for Public Charging Station Hosts*, <http://www.afdc.energy.gov/pdfs/51227.pdf>
- *Clean Cities Plug-In Electric Vehicle Handbook for Workplace Charging Hosts*, <http://www.nrel.gov/docs/fy13osti/58494.pdf>

**Key Terms**

**Electric vehicle supply equipment (EVSE)** delivers electricity to a PEV for the purpose of charging the vehicle’s battery. EVSE units are commonly referred to as “charging stations.”

**Plug-in electric vehicles (PEVs)** are powered solely or in part by electricity drawn from off-board sources. They include all-electric vehicles (EVs) and plug-in hybrid electric vehicles (PHEVs).

**Key Questions to Consider Before Planning to Install EVSE**

- Is there enough public or park fleet demand to support EVSE installation?
- Is there adequate visitation and reasonable expectation of use to warrant investment (i.e., are there enough vehicles and users in the area to make it worthwhile)?
- Are there existing EVSE installations within 60 miles that allow PEV travelers to continue on their journey?
- Are there appropriate sites available for locating EVSE and can those locations be expanded if demand grows (especially considering natural and cultural resource management issues, parking needs and electricity requirements)?
- Is the total cost of ownership feasible, including installation, as well as operations and maintenance (O&M)?
- How will the cost of electricity be covered or what payment model will be employed for EVSE use?

**General National Park Service (NPS) Guidance for EVSE Installation Efforts**

- Parks must plan for EVSE installation and O&M costs as well as equipment repair and replacement. Some costs may be the responsibility of a third party.
- Consistent with the decisions of other federal entities, parks are prohibited from spending federal dollars to install employee-only EVSE, but may allow employees to use existing fleet EVSE or charging locations. It will be up to park fleet managers to issue permits or signed agreements for such use, but NPS fleet vehicles must be given priority.
- All EVSE users, including NPS staff and visitors, must pay to charge their vehicles. Exceptions apply only where pre-existing agreements allow third parties to supply electricity at no cost on a demonstration or trial basis.

- The following are permissible options to provide EVSE for park visitors:
  - Work with existing or new concessioners through established contractual mechanisms, which may include park installation and concessioner operation or concession installation and operation;
  - Work with a third party to install EVSE and then establish a commercial use authorization for commercial operation; and
  - Work with a third party to install and operate the EVSE under a procurement contract.
- Two additional options may be considered to support public/visitor charging:
  - Partner with local organizations to locate and promote EVSE outside of the park; and
  - Seek sponsorships to fund EVSE installation, operation and maintenance.
- In the interest of energy management, parks must separately meter all EVSE installations to allow the NPS to understand energy usage, to track electricity consumption and costs, to monitor demand and trends, and to better understand the NPS PEV charging profile.
- Parks must charge employees for their personal use of NPS Fleet EVSE and may do so in the following ways:
  - Standard/flat daily fee deducted from employee wages;
  - Fee assessed on a per kilowatt-hour basis deducted from employee wages (if state utility regulations allow);
  - Fee based on employee usage (per hour or kilowatt-hour, if state utility regulations allow) over a specified period of time tracked through an electronic identifier and paid by the employee; and
  - Employee established personal account with the third party operator, where NPS is reimbursed for electricity used.

#### **Equipment Management and Service Costs**

- Expected costs include the electric vehicle supply equipment (EVSE) unit, installation (including labor and materials required for parking lot changes and electrical work), ongoing operation and maintenance of the EVSE (including electricity), signage, and necessary equipment repair and replacement. These costs will vary depending on the ownership and payment model selected, but must be figured into the decision-making process.
- Fee structures for visitor and employee use of EVSE should be discussed with EVSE providers, particularly those handling the transactions via networked equipment. Costs under a concession contract or CUA must be handled in accordance with Commercial Services rate administration policies.

#### **Technology**

- EVSE comes in a variety of shapes and sizes, and some are better suited for certain applications. Become familiar with the basic terms, such as Level 1, Level 2, and DC fast charge EVSE.<sup>1</sup>
- EVSE is a rapidly changing technology. The time it takes a Level 2 EVSE to charge a vehicle today may be cut in half in the near future. Choose technology based on current needs while considering expected increases in plug-in electric vehicles (PEVs) on the road.
- Some EVSE may be equipped with customizable electronic displays. Consider adding a standard disclaimer or liability clause that all users must accept before initiating a charging session.

---

<sup>1</sup> See the Alternative Fuels Data Center's Developing Infrastructure to Charge Plug-In Electric Vehicles page, [http://www.afdc.energy.gov/fuels/electricity\\_infrastructure.html](http://www.afdc.energy.gov/fuels/electricity_infrastructure.html)

### **Siting, Installation, and Signage**

- The “ideal” location for and number of EVSE depend on operator goals.<sup>2</sup> When selecting an installation site, consider demand, visibility, public accessibility, distance from other EVSE in the area, proximity to PEVs in the NPS fleet, and room for expansion.
- Site work, such as installing underground conduit, can be costly. Electricity upgrades, such as increased capacity, may also be necessary. Plan ahead and reduce costs by prepping the site for additional EVSE that may be installed as demand increases.
- Follow best practices related to the signage at the charging location and signs that help visitors navigate to publicly accessible EVSE.<sup>3</sup>

### **Employee Charging Considerations for Personal Vehicles**

- Develop a standard form stating rules and regulations for employee use of charging stations for personal vehicles. Require NPS employees to sign the form before their first use of the EVSE. This form should include language addressing payment, liability (e.g., “The NPS is not responsible for costs related to vehicle purchase or repairs or for any damage to the vehicle that may occur while it is using or parked at the EVSE”) and also establish a timeframe within which the NPS is obligated to address maintenance issues with EVSE upon notice of a problem.
- Where feasible, allow NPS employees to use EVSE during business hours and reserve charger use for NPS fleet vehicles after hours or during high-need times. Fleet vehicles will likely charge overnight or be plugged in at the end of a workday; ensure NPS fleet vehicles have access to the equipment when they need it most. Develop signage and instructions for employee reference and incorporate these details into forms.
- Consult NPS legal counsel as needed concerning liability, contract/agreement language, and other issues.

### **Regulations**

- Some states allow the resale of electricity while others do not. Be aware of state regulations<sup>4</sup> and consult with the state utility commission for additional guidance if considering a public EVSE installation for visitor use.
- Americans with Disabilities Act (ADA) requirements apply to charging locations.<sup>5</sup> Work with vendors and site engineers to ensure compliance. Some states, such as California, have developed guidelines and best practices related to accessibility.<sup>6</sup>

---

<sup>2</sup> See the EV Project paper entitled “What are the best venues for publicly accessible EVSE units?”

<http://www.theevproject.com/cms-assets/documents/108740-132108.vu.pdf>

<sup>3</sup> See the Alternative Fuels Data Center’s Signage for Plug-In Electric Vehicle Charging Stations page,

[http://www.afdc.energy.gov/fuels/electricity\\_charging\\_station\\_signage.html](http://www.afdc.energy.gov/fuels/electricity_charging_station_signage.html)

<sup>4</sup> Search the Alternative Fuels Data Center’s Laws & Incentives database, <http://www.afdc.energy.gov/laws/>.

<sup>5</sup> See the Sustainable Transportation Strategies’ report entitled, “EV Charging for Persons with Disabilities,”

<http://www.sustainabletransportationstrategies.com/wp-content/uploads/2012/01/EV-Charging-ADA-Version-1.0.pdf>

<sup>6</sup> See the State of California’s Plug-In Electric Vehicles: Universal Charging Access Guidelines and Best Practices, [http://opr.ca.gov/docs/PEV\\_Access\\_Guidelines.pdf](http://opr.ca.gov/docs/PEV_Access_Guidelines.pdf)

## Energy-Related Considerations

- The source of the electricity used to charge PEVs can impact the resulting GHG emissions reductions. Take time to understand the sources of energy in your area.<sup>7</sup> Review how efforts to use cleaner and renewable sources of electricity will improve the grid and charging opportunities.<sup>8</sup>
- Metering and accounting systems allow the NPS to separately track charging by NPS official use vehicles. Thus, the NPS is able to distinguish between visitor and employee electricity consumption and costs for reporting purposes.
- Where optimal environmental conditions exist, and where economically viable, solar photovoltaic (PV) canopies or ground array connections can provide energy to a charging station. The renewable electricity supply would be generated from the NPS-owned panels and would not be subject to utility laws.

---

<sup>7</sup> See the EPA power profiler: <http://www.epa.gov/cleanenergy/energy-and-you/how-clean.html>

<sup>8</sup> From the Union of Concerned Scientists' "State of the Charge," [http://www.ucsusa.org/assets/documents/clean\\_vehicles/electric-car-global-warming-emissions-report.pdf](http://www.ucsusa.org/assets/documents/clean_vehicles/electric-car-global-warming-emissions-report.pdf)