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Electric Vehicle Infrastructure: Getting Ready for the Perfect Electrical Storm

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Topics

- Policy
- Outlook
- What should we be doing now?
- Electricity reporting guidance
- Employee use of agency charging stations

Policy

- President's national electric vehicle (EV) plan
 - One million electric vehicles on the road in U.S. by 2015 (out of 250 million vehicles total)
- Presidential Memorandum on Federal Fleet Performance – May 24, 2011
 - By 2015, all new light-duty vehicles purchased and leased by agencies must be alternative fuel vehicles
- GSA electric vehicle pilot



Policy

- EO 13423 requires agencies to purchase EVs when cost-competitive
 - Not cost-competitive yet, but will be in next several years
- Requirements to focus on for now
 - Reduce petroleum consumption (EISA 142)
 - Purchase low GHG-emitting vehicles and AFVs (EISA 141 and EPA Act)
- EVs can help agencies meet these requirements

Outlook

- EVs are here, but significant EV adoption is still several years away
- Primary issue: EVs are not yet cost-competitive with conventional vehicles (but they will be in the next several years)
 - Batteries are primary driver of cost
- Federal buying power in medium- and heavy-duty vehicle sector could achieve cost parity
 - DOD initiative
- With sedans and light-duty trucks, Federal sector waiting for public as a whole to adopt EVs and bring prices down
- Agency Leadership will want to demonstrate their support of EVs
 - That's where initial demand will come from

Benefits of Electric Vehicles

- Petroleum independence
- Lower greenhouse gas emissions
- Cost of electricity is less than gasoline
- Lower maintenance costs

Electric Vehicles

Currently available through GSA:

Chevy Volt



Nissan Leaf



Think City



Trucks and Low-Speed Electric Vehicles



Electric Vehicle Supply Equipment (EVSE)



What Should We Be Doing Now?

1. Ask fleet manager about quantity and type of EVs to expect at your facility
 - FEMP initiatives
 - Vehicle monitoring
 - Fleet electrification micro-climate studies at DOD installations
2. Determine charging station quantity and charging speed
3. Determine location of charging stations and parking spaces
4. Upgrade facility electrical infrastructure as necessary
 - FEMP EVSE Guidance coming soon

Electricity Reporting Guidance

- Should I report electricity used to charge EVs as vehicle fuel, facility energy, or both?
- Report electricity used to charge EVs:
 - In FAST as vehicle fuel
 - In the annual energy report as vehicle fuel and facility energy
- Electricity reported in FAST used for calculation of increase in alternative fuel consumption
- Facility electricity in annual energy report used for calculation of:
 - Greenhouse gas emissions
 - Facility energy intensity
 - $(\text{facility electricity} - \text{vehicle electricity}) / \text{square footage}$

Employee Use of Agency Charging Stations

- Can employees use agency charging stations to charge their personal vehicles?
- GAO issued a decision specifically for the Architect of the Capitol that it cannot use appropriated funds to install charging stations solely for use by employees for their personal vehicles
- DOE's General Counsel decided that charging stations installed for DOE fleet vehicles can be used to charge employees' personal vehicles if:
 - DOE fleet vehicles are given first priority
 - Employees reimburse DOE (\$2 per charge)
- The bottom line
 - It rests on each agency's General Counsel to determine what is appropriate and legal use of the agency's charging stations

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