May 2020

pennsylvania
GREENGOV COUNCIL

Installing EV Charging Stations

Transportation	
Vehicle Efficiency (utilization of EV's and PHEV's)	**Points Value**
Installed electric vehicle charging stations as part of an electrified vehicle fleet plan?	**3**

WHAT?

Agencies should identify and deliver electric vehicle (EV) charging station projects to support future EVs in the commonwealth fleet.

WHY?

The commonwealth has a passenger car EV replacement goal of 990 vehicles (25%) by 2025.
EVs reduce fuel expenses and carbon emissions with fewer service intervals resulting in operational savings.

WHO?

Agency delivery teams should consist of staff in the following roles:

1. An executive level participant,
2. Facility managers,
3. Fleet managers,
4. GreenGov staff (optional)

RESOURCES:

GreenGov EV Charging Stations – Guidelines 03-03-2020 (attached)
GreenGov EV Charging Stations – Pathways 03-03-2020 (attached)
DEP Electric Charger Rebate Flyer (attached)
Agency Pool Vehicles – EV Charging Projects 02-13-2020 (contact for spreadsheet)

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3/3/2020

Electric Vehicle Charging Station Development Guidelines
Commonwealth Level 2 Workplace Charging

Purpose:

This document contains minimum guidelines and additional recommendations for use by commonwealth agencies when siting "Level 2 Workplace Charging."

Level 2 Workplace Charging - refers to a freestanding or wall mounted charging device that delivers a 208/240V charge, replenishing an electric vehicle battery at an approximate rate of 10 to 20 miles of range per hour of charging time. *Level 2 Workplace Charging* is solely for use of the commonwealth-owned vehicle fleet.

For the purposes of this document, *Level 2 Workplace Charging* will NOT include:

- Any installations intended for public use (including employee personal vehicles);
- Any installations intended for combined commonwealth fleet and public use;
- Any installations using 110/120V (Level 1 Charging) or 480V (Direct Current (DC) Fast Charging);
- Any installations proposed on public streets.

Commonwealth agencies may decide to install chargers for public or employee use, and/or on public streets, however there are many other factors to consider which are not covered in these guidelines.

Note: All criteria which include an * are required by the Department of Environmental Protection as a condition to securing a Level 2 Electric Vehicle Charging Rebate for your project. Agencies applying for rebates may be reimbursed up to $3,500 per plug or 50% of the total project cost (whichever is less). **Applications must be submitted prior to the start of project installation.**

Agencies who install charging stations in calendar year 2020 will be eligible for extra GreenGov Checklist points!

General Project Guidelines

- *Minimum of 2 plugs per location
- Installed by a licensed professional contractor
- Designed by a professional engineer
- Compliance with National Electric Code and 2015 Building Codes

- Additional Recommendations
    - Where applicable, consider locating charging stations within interior parking spaces before exterior spaces. Interior installations reduce project scope and continued maintenance costs.
    - For installations where trenching is necessary, install two spare 4-inch conduits for future installations or power upgrades.

General Technical Guidelines

- *Charging equipment must be new and capable of providing electric power to each plug at a minimum of 7.2KW (240V @ 30Amps) or greater
- *All chargers must use SAE J1772 standard plugs
- Utility grade submetering installed for each project
- *Underwriter's Laboratory (UL) listed charging equipment
- *Charging equipment must have a minimum one-year manufacturer's warranty
- *Projects must include at least one designated and clearly marked EV parking space per plug.
    - Contact GreenGov for standardized parking space layout, painting and signage criteria.
- Additional Recommendations
    - Where applicable, use bollards or curbing to protect charging station equipment from vehicle collision damage.

Note: Until charging station suppliers are on State Contract, agencies may purchase units that meet the General Technical Guidelines.
Examples: Clipper Creek, ChargePoint, Bosch, Siemens or equivalent

*Level 2 Electric Vehicle Charging Rebate Reporting

- All Rebate recipients will be required to submit charger usage information annually for three years following completion project completion, including:
    - Number of Charging events
    - Energy consumed (average per session and annual total)
    - Percent of time with an EV connected
    - Percent of downtime (time when station is unavailable due to routine maintenance or repair)
    - Types of fees charged to user and methods of collection, if applicable

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EV Charging Stations - Project Pathways

Commonwealth Owned Facility

Phase	Step	Description	Parameter	Considerations
Project Scoping	1	Plug Count	Identify how many plugs are needed at the site to support EV fleet, taking into account future needs	• Bureau of Vehicle Management vehicle reports • Headquarter locations of fleet • GreenGov Agency Pool Vehicles Spreadsheet
	2	Parking Space Location	Identify parking spaces that will support the EV chargers & vehicles	• Parking: Indoor (garage) or outdoor • Proximity to power source
	3	Project Scoping Site Visit	Solicit DGS Property Management team for a site visit to establish project scope	• Electric panel to charger distance • Obstructions: sidewalks, curbing, pavement • Parking signage & painting
	4	Project Cost Estimate	Determine project cost based upon scope of work - will help determine delivery method, consider DEP rebate program eligibility	• Count of chargers needed • Complexity of installation • DEP Rebate(s) & Rebate Guidelines
	5	Delivery Method Determination	Joint decision by agency & DGS based on project scope for the best method to deliver	• Delivery: In-house or JOC system • Capital Project process & GESA options (DGS to determine)

Phase	Method	Step		Description
Project Delivery	In-House Delivery	1	Develop Electrical Plan	Electrical plan developed by agency for engineer review and to determine material needs
		2	Engineer Review	Agency engineer review of the project, taking into consideration code compliance, standard specifications and other parameters
		3	DEP Rebate Incentive	Apply for DEP Level 2 Electric Vehicle Charging Rebate(s)
		4	L&I Permit Submittal	Project is submitted to L&I for review & permitting
		5	Material Purchase	Agency funds will be required for purchase of materials specified
		6	Construction	During the construction phase, project milestones will be inspected by L&I for compliance
		7	Final Inspection	After final inspection, the charging stations may be utilized for the EV fleet
	JOC System Delivery	1	Project Landing Page	Agency submits a JOC project within the system's landing page to begin project
		2	Site Scoping Meeting	Joint site meeting between agency staff & JOC contractors to agree upon project scope
		3	DEP Rebate Incentive	Apply for DEP Level 2 Electric Vehicle Charging Rebate(s)
		4	Project Design	Project is designed and submitted for L&I permitting through JOC contractor
		5	Construction	During the construction phase, project milestones will be inspected by L&I for compliance
		6	Final Inspection	After final inspection, the charging stations may be utilized for the EV fleet

Commonwealth Leased Facility

(Contact BRE for Master Lease Processes)

Phase	Step	Description	Parameter	Considerations
Project Scoping	1	Plug Count	Identify how many plugs are needed at the site to support EV fleet, taking into account future needs	• Bureau of Vehicle Management vehicle reports • Headquarter locations of fleet • GreenGov Agency Pool Vehicles Spreadsheet
	2	Parking Space Location	Identify parking spaces that will support the EV chargers & vehicles	• Parking: Indoor (garage) or outdoor • Leased building or parking garage/lot
	3	Project Scoping	Work with Lessor to establish full charging project scope of work	• Electric panel to charger distance • Obstructions: sidewalks, curbing, pavement • Parking signage & painting
	4	Project Cost Quotes	Project construction quote(s) to be obtained by the Lessor and approved by the agency, consider DEP rebate program eligibility (Lessor)	• Count of chargers needed • Complexity of installation • DEP Rebate(s) & Rebate Guidelines

Phase	Method	Step		Description
Project Delivery	Leasehold Improvement - DGS Bureau of Real Estate (BRE)	1	Develop Project	Develop leasehold improvement project request utilizing project scope and GreenGov EV Charging Guidelines
		2	DEP Rebate Incentive	Assist Lessor with DEP Level 2 Electric Vehicle Charging Rebate(s) (Lessor will apply for rebate(s) as the project owner)
		3	Lessor Negotiation	Work with Bureau of Real Estate & Lessor to finalize project scope, delivery & payment method (Lessor to deliver project with agency reimbursement)

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION

DRIVING PA FORWARD

Rebates For Level 2 Charging Stations

Funding Level 2 Electric Vehicle Charging Stations for Healthier Air Quality

Organizations and businesses around the state are increasingly installing Level 2 electric vehicle (EV) charging stations to support clean energy transportation choices and healthier air quality. If your organization or business plans to install a Level 2 charger, the Driving PA Forward program can help defray your costs with a rebate.

Driving PA Forward has approximately $7.7 million available for rebates for Level 2 chargers over a 5-year period that began in 2018.

Eligible Projects and Applicants

Projects: Installation of Level 2 EV chargers in a workplace, public space, or multi-unit residential building for employee, fleet, and/or public use. Projects must provide at least two SAE J1772 plugs with 240 volt, 30 amp output. The following entities may apply:

- Businesses
- Educational institutions
- Incorporated nonprofits
- Local, state, and federal government agencies
- Air quality and transportation organizations
- Transportation planning organizations
- Parking authorities

Rebate Awards

Up to $4,500 per plug is available. (Note: DEP may periodically adjust the rebate amount; check website for current amount.) All projects must be approved in advance by DEP. Applicants who submit complete applications that meet eligibility criteria receive a voucher to hold their rebate funding until project completion. Vouchers are awarded on a first come, first served basis.

Project Type	Government Owned Property	Non-Government Owned Property
Public Access, Networked	Lesser of $4,500 per plug or 90% of total project costs	Lesser of $4,500 per plug or 70% of total project costs
Public Access, Non-Networked	Lesser of $4,500 per plug or 80% of total project costs	Lesser of $4,500 per plug or 60% of total project costs
No Public Access	Lesser of $3,500 per plug or 50% of total project costs	Lesser of $3,500 per plug or 50% of total project costs

How to Apply

For application instructions and details on qualifying project costs and equipment, visit the Driving PA Forward website:

http://www.depgis.state.pa.us/DrivingPAForward/

Under "Grant and Rebate Programs," click on "Level 2 EV Charging Rebate Program."

Have a question? Email DEP at

ra-epvwmitigation@pa.gov.

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Driving PA Forward Funds a Range of Clean Energy Transportation Options

Driving PA Forward funds projects across Pennsylvania to replace or repower old diesel engines with clean energy transportation options.

Funding comes from Pennsylvania's $118.5 million share of the national Volkswagen lawsuit settlement, after VW cheated on nitrogen oxide (NOx) emissions tests. DEP held public meetings statewide and heard a range of suggestions on types of transportation projects to fund. Funding programs began opening in 2018.

Driving PA Forward supports:

- Installation of new charging infrastructure for light-duty electric vehicles;
- Replacement or repowering of older diesel engines in school/transit/shuttle buses and heavy- and medium-duty trucks with electric, compressed natural gas, new clean diesel, propane, or other clean fuels;
- Replacement or repowering of switcher locomotives, or repowering of tugboats and ferries with new cleaner technology;
- Conversion of cargo-handling equipment to electric and installation of charging infrastructure at airports, intermodal terminals, and other facilities;
- Installation of auxiliary electric power for ocean-going vessels while in port.

Learn more about how Driving PA Forward can help you meet your clean energy transportation goals: http://www.depgis.state.pa.us/DrivingPAForward/

Sign up to receive Driving PA Forward news:

https://www.dep.pa.gov/Business/Air/Volkswagen/Pages/Driving-PA-Forward-Newsletter.aspx