



## **Maryland Green Purchasing Committee Approved Specification – Electric Vehicle Supply Equipment**

### **HOW TO USE THIS DOCUMENT:**

This document sets prohibitions and minimum requirements for electric vehicle (EV) charging equipment procured by the State of Maryland with which Contractors are required to comply. Contractors are required to follow and, when possible, exceed these standards in their product offerings to the maximum extent practicable where such products are cost competitive over the total lifecycle, and meet form, function, and utility requirements.

The specification also includes construction and installation requirements that the Procuring Agency may choose to include in their procurement of EVSE and related services.

### **PRODUCTS & SERVICES COVERED UNDER THIS SPECIFICATION:**

Electric Vehicle Supply Equipment (EVSE)

Construction and Installation Services



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### 1. ENVIRONMENTALLY PREFERABLE PURCHASING: LEGISLATION, STATUTES, AND REGULATIONS

#### *For Procurement Officers and Agencies*

##### **Environmentally Preferable Purchasing** (COMAR: [21.11.07.09](#))

“All procurement agencies shall purchase environmentally preferable products and services unless purchasing environmentally preferable products and services would limit or supersede any requirements under any provision of law or result in the purchase of products and services that:

- (1) Do not perform adequately for the intended use;
- (2) Exclude adequate competition; or
- (3) Are not available at a reasonable price in a reasonable period of time.”

##### **Mercury and Products that Contain Mercury** (COMAR: [21.11.07.07](#))

“All procurement agencies shall give a preference under this regulation to procuring products and equipment that are mercury-free. If mercury-free products and equipment that meet the agency's product performance requirements are not commercially available, the procurement agency shall give preference under this regulation to products containing the least amount of mercury necessary to meet performance requirements.”

##### **ENERGY STAR® Purchase Requirement** ([Executive Order 01.01.2001.02](#), *Effective date:* March 13, 2001)

Efficient Product Purchase Goal: “The State shall purchase Energy Star products when purchasing energy– using products...or shall purchase products in the top 25% in energy efficiency for products where labels are not available.”

#### *For Contractors, Bidders, and Offerors*

**Verifying Environmental Claims** (State Finance and Procurement Article [§14–410](#)) “A bidder or offeror for a procurement contract shall certify in writing that any claims of environmental attributes made relating to a product or service are consistent with the Federal Trade Commission’s Guidelines for the Use of Environmental Marketing Terms.”

### 2. MINIMUM REQUIREMENTS FOR ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE)

#### A. Charging Station Requirements by Type

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1. Charging stations must be Level-2 OR Level-3.
2. Charging stations must meet the relevant criteria based on charging station type:
  - a. Level-2 Charging Port shall provide a minimum of 7.2KW Power.
  - b. Level-3 (DC Fast Charging) Single Unit shall provide a minimum of 50KW Power.
3. Level-2 chargers must be ENERGY STAR certified, using the most recent version of the ENERGY STAR certification system in effect at the time of purchase. Approved products list can be accessed at:  
<https://www.energystar.gov/productfinder/product/certified-evse/>.
4. Level-3 chargers are strongly encouraged to be ENERGY STAR certified, using the most recent version of the ENERGY STAR certification system in effect at the time of purchase.

### B. Charging Stations System Submittals

1. EVSE submittals must comply with State of Maryland’s requirements for Shop Drawings Submittals. In addition, the Contractor must:
  - a. Submit manufacturer’s product data, including installation instructions/requirements.
  - b. Submit project shop drawings including plans, elevations, sections, and details for all charging subsystems as required by the Procuring Agency.
  - c. Submit manufacturer’s list of successfully completed projects for EV Charging Station Systems during the last 2 years.
  - d. Provide operation and maintenance data / detailed information required for the Procuring Agency to properly operate/maintain the EVSE.
  - e. Submit warranty documents from the manufacturer for the proposed EVSE.

### C. Other Requirements

1. EVSE shall be certified by a nationally recognized testing laboratory (NRTL) and UL listed and labeled as required by codes.  
*Visit the Occupational Safety & Health Administration website (<https://www.osha.gov/nationally-recognized-testing-laboratory-program>) for a list of NRTLs.*
2. EVSE shall be factory assembled; no field assembly required.
3. EVSE enclosures shall be made of non-corrosive materials, Nema-3R/IP-54 rated protection.
4. EVSE mounting type may be Wall, Pedestal, or Pole mount and may be indoor or outdoor. For both indoor and outdoor locations, Nema-3R protection shall be a minimum requirement.

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5. LED Lights: High visibility multi color, for indication of EVSE status.
6. LCD Messaging Screen, backlit, with 4 lines-16 characters per line to communicate charging instructions to EV drivers.
7. Charging ports shall comply with SAE J1772 regulation for EV and plug-in hybrid vehicles and CHAdeMo and CCS Type 1 in DC fast charging; it will also be able to charge any new EV.
8. Standard Cable Management: Standard cable management is a looped 18'-25' cable on a stainless-steel rack. When the charging session is complete, the EV driver returns the plug to the head unit and manually loops the cable on the rack.
  - a. Optional Cable Management System: When Charging Session is complete, the EV driver returns the plug to the head unit and the cable automatically retracts to an organized loop.
9. RFID compatible – Smart Card Authentication: For open or restricted access control, for billing and payment for EV drivers.
10. Credit card payment options shall be provided on a charger's payment kiosk with EVSE listed on a network for public charging access as required by the Procuring Agency.
11. Charging Access through software app via smart phone / tablet. Payment and access options shall be selected as per Project requirements by the Procuring Agency.
12. Energy measurement metering system-revenue grade included, with at least a 1% accuracy at 15-minute interval.
13. Safety Features: overcurrent, overvoltage, undervoltage, ground fault including DC residual current protection, integrated surge protection (6KV at 3000A).
14. Operating Temperature: ambient range from (- 22-degrees F to +122-degrees F).
15. Operating relative Humidity: Maximum 95 % Non-condensing.
16. Must be EMC Compliant: FCC Part 1 Class A.
17. Networking: Wide Area Network – 5G / 4G LTE. Network Communication Protocol – TCP/IP. Network Security: HTTPS, 128-bit AES Encryption. Smart Card Reader – ISO 15693.
18. The Contractor must provide the Procuring Agency with web-based station management software, capable of configuring EVSEs for access policies and pricing, generating operational reports, including transaction, usage, cost, revenue, and sustainability reports.
19. Non-Account Based Access Methods for First Time Users (Charging Stations listed on Network for Public Charging): There must be a method for first time EV users to start and pay for charging using one or more of the following methods: credit cards, smartphone app, website, etc. as applicable and as directed by the Procuring Agency's policy.

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### 3. WARRANTY REQUIREMENTS FOR EQUIPMENT

1. The Contractor shall provide a warranty, of at least 2 years following the completion of installation, regarding its offered products and labor.
2. Manufacturer's Standard Warranty: Manufacturer's warranty shall be additional to the above warranty provided by the Contractor.

### 4. QUALIFICATION REQUIREMENTS

1. Manufacturer's Qualifications: Manufacturer as OEM, regularly engaged in the manufacturing of EV Charging Systems for a minimum of 3 years.
2. Contractor's/Installer's Qualifications: Qualified as per [DGS requirements](#) and/or Procuring Agency requirements, and regularly engaged for a minimum 5 years, in installation of low voltage power distribution systems and low voltage special control systems.
3. Complete EVSE system/components shall be from a single source manufacturer with that manufacturer holding responsibility for quality assurance.

### 5. CONSTRUCTION & INSTALLATION REQUIREMENTS

1. The Contractor shall visit the site with the Procuring Agency's representative (PM - Project Manager) & examine existing conditions for EVSE installation as well as electric power work requirements.
2. The Contractor shall install the EVSE per the manufacturer's manual for installation work and follow all instructions/requirements to complete work per manufacturer's guideline(s).
3. Pedestal mounted / Pole mounted EVSE shall be mounted on concrete pads, with wiring entering through the concrete pad underground.
4. The Contractor shall ensure the installation meets ADA requirements.
5. Installation of EVSE shall be weatherproof and watertight, as required per site conditions.
6. Contractor shall provide all electrical work necessary to power EVSE, along with wiring from source power panel up to EVSE, using all required materials like

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conduits, cable/wires, junction box/pull box, transformer, accessories etc. as required by the project, safely and in accordance with all applicable local and state/federal codes, standards, and industry accepted best practices.

7. If the power to the EVSE is to be provided by new electric service, the Contractor shall be responsible for all procedures to get new utility service up to the final power connection. The Contractor shall coordinate with the utility company and Procuring Agency to get new service. All service connection charges to be paid to the utility company shall be paid by the Procuring Agency. All other expenses including supply of labor and materials shall be paid by the Contractor.
8. All EVSEs shall have dedicated power circuits from the power source. No other load shall be connected on these circuits. If the power source panelboard is not on site, away from the EVSE, provide a fuse disconnect switch/enclosed circuit breaker per dedicated circuit as required.
9. Wiring in conduits shall be underground for all outdoor EVSE locations per the National Electrical Code (NEC). Wall mount wiring shall be for wall mounted EVSEs as per applicable codes, and the NEC. Provide weather treated wooden board (3/4" thick) as base for wall mounting, size as required.
10. Contractor shall make all trench/digging work for all underground wiring as required. After completion, the Contractor shall refill all trenches safely, and in accordance with all applicable codes, standards, and industry accepted best practices.
11. It shall be the Contractor's responsibility to verify the location of all existing utilities.
12. Any damage done by the Contractor to work already in place shall be repaired to the EVSE owner's satisfaction at the expense of the Contractor.
13. The Contractor shall refer to the DGS Design Procedure Manual, NEC, and other applicable codes requirements prior to the installation and as-needed during the installation.
14. Protection bollards (concrete filled) shall be provided in front of EVSE for protection from vehicles.
15. The Contractor shall provide all signage systems for EVSEs as required by the Procuring Agency and as per applicable codes.
16. The Contractor shall coordinate, as needed, with the manufacturer regarding electrical / controls / data interface / preparation work and installation of EVSEs during the installation.
17. The Contractor shall configure the EVSEs per Procuring Agency/using agency requirements.

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18. The Contractor shall perform testing and monitoring of EVSEs for full operational performance with the manufacturer's trained engineer/technician as part of commissioning.
19. Procuring Agency may request testing procedures to be conducted in the presence of the Procuring Agency's designated personnel, Project Manager, and the Contractor's trained engineer/technician.
20. The Contractor shall clean EVSEs promptly after installation in accordance with manufacturer's instructions.
21. The Contractor shall restore all surface conditions to their original condition such as, but not limited to, grass, gardening, sidewalk, pavement, flooring, walls, etc.
22. Contractor shall stencil each EVSE-designated parking space for a total of (1) space per charging port as per the following, unless otherwise specified:
  - a. Stencil a green colored 42-inch square box at the center of the entrance of the parking space.
  - b. Stencil "EV" in 14-inch tall white letters at the top of the box.
  - c. Below "EV", stencil "CHARGING" in 6-inch tall white letters.
  - d. Below "CHARGING", stencil "ONLY" in 8-inch tall white letters.
23. The Contractor shall provide signage for each EVSE-designated parking space for a total of (1) space per charging port.
24. A sign designating an EV Charging space shall:
  - a. Be at least 18" inches high and 12" inches wide.
  - b. Be clearly visible to the vehicle driver entering the Plug-in EV charging space.
  - c. Indicate fines for violations (the Procuring Agency will provide fine information to the Contractor).
  - d. Meet all applicable State and federal requirements for parking signs and/or EV charging signs as applicable.
25. The Contractor shall provide instruction and training to the Procuring Agency's designated personnel in the operation and maintenance of EVSE. The Contractor shall provide up to two, four (4) hour sessions for indoor/classroom or virtual and (1) hour on-site training (outside, at the EVSE).



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### 6. ENVIRONMENTALLY PREFERABLE PURCHASING LANGUAGE

**Instruction to Procurement Officers: Please include the following language to your solicitation if it does not already exist.**

#### A. On Environmentally Preferable Purchasing:

**The State of Maryland is committed to purchasing environmentally preferable products and services (EPPs).** Maryland’s State Finance & Procurement Article §14-410 defines environmentally preferable purchasing as “the procurement or acquisition of goods and services that have a lesser or reduced effect on human health and the environment when compared with competing goods or services that serve the same purpose.”

Accordingly, Bidders/Offerors are strongly encouraged to offer EPPs to fulfill this contract, to the greatest extent practicable.

#### B. On Maryland’s Green Purchasing Reporting Requirements:

**The State of Maryland requires, at a minimum, from the Contractor annual sales data over the life of this contract; the State also reserves the right to request quarterly sales data over the life of this contract.**

The report shall include, at a minimum, detail about the third-party sustainability certifications and other environmental attributes of products and services sold on this price agreement per the contract specifications.

To facilitate consistent reporting on this contract, the Contractor will be provided with a VENDOR GREEN SALES REPORT template from the Green Purchasing Committee (GPC), the Office of State Procurement (OSP) or the Department of General Services (DGS).

#### C. On Environmental Claims

**All environmental benefit claims made by the Contractor concerning products or services offered on this contract must be consistent with the [Federal Trade Commission’s Guidelines for the Use of Environmental Marketing Claims](#).**

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### APPENDIX – REFERENCE STANDARDS

1. IEC 60529 – Degrees of Protection Provided by Enclosures. / Nema Standards for Equipment Enclosures.
2. ISO/IEC 15693 – Identification Cards-Contactless integrated circuit cards-Vicinity Cards
3. ISO/IEC 1443A – RFID (Radio-frequency identification) Cards.
4. National Electrical Code (NEC) Article 625 – Electric Vehicle Charging System.
5. NFPA 70 (NEC) – National Electrical Code – For Electrical work.
6. SAE J1772 – Electric Vehicle and Plug-In Hybrid Electric Vehicle Conductive Charge Coupler.
7. UL 2231-1/2 – Personal Protection Systems for EV Supply Circuits.
8. UL 2594 – Electric Vehicle Supply Equipment.