

**Level 2 - Smart EVSE Charging Stations**

**1.0 SCOPE**

This Bid Specification is for “commercial grade” Level 2 Smart Electric Vehicles Support Equipment (EVSE) charging stations suitable for installs at State parking facilities and/or garages.

The EVSE stations (single and dual outputs) include user interface(s), a display and status indicators. The stations will include all hardware, software and mounting hardware required to install a fully functional charging system. The stations will be network-ready for management by a service provider and/or by the State. The stations may include point-of-sale (POS) to accept payment by credit card, debit card and smartphone app. Options include radio-frequency-identification (RFID) card/tag reader and smart card reader.

**The EVSE stations can be one complete unit or may consist of components that, when combined, meet the functionalities required of the EVSE stations.**

**2.0 APPLICABLE LAWS and INDUSTRY STANDARDS**

UL Subject 2594	Electric Vehicle Supply Equipment
UL 2231	Standards for Personnel Protection Systems in EV Charging
UL 62	Flexible Cords and Cable (Including EV Cable)
UL 50E	Electrical Enclosures, Environmental Considerations
UL991	Safety Controls Employing Solid State Devices (If Used)
UL 1998	Software in Programmable Components (If Used)
NFPA 70	National Electrical Code Article 625, EV Charging Systems
SAE J1772	Recommended Practice Electrical Vehicle & Plug-In-Hybrid Electric Conductive Coupler
EMI Compliance	FCC Part 15 Class A or B
ISO Standards	14443, 18092

**3.0 REQUIREMENTS**

**3.1 EVSE Type/Configurations**

The EVSE stations shall be “commercial” grade, smart Level 2 type and available in the following configurations:

- a. Single Output, Gateway\*, wall mount
- b. Single Output, Gateway\*, floor mount (pedestal, bollard, etc.)
- c. Single Output, Non-gateway\*, wall mount
- d. Single Output, Non- Gateway\*, floor mount (pedestal, bollard, etc.)
- e. Dual Output, Gateway, wall mount
- f. Dual Output, Gateway, floor mount (pedestal, bollard, etc.)
- g. Dual Output, Non-Gateway, wall mount
- h. Dual Output, Non-Gateway, floor mount (pedestal, bollard, etc.)

\*Reference Section 3.6.c below

**3.2 General Requirements**

At a minimum, the EVSE stations shall include the following:

- a. EVSE unit and all mounting hardware
- b. Software/hardware to control, operate, communicate, diagnose, and **capture** data
- c. Cable – minimum 18 ft. in length measured coming out of the unit (UL 62 compliant)
- d. Cable management system - self-retracting cable or hanger to keep the cable off the ground when not in use
- e. Connector - SAE J1772-2009 compliant

**3.3 Functions and Features**

At a minimum, the EVSE stations shall meet the following:

- a. User interface - start/stop mechanism, status indicators, and a display readable in sunlight and low ambient lighting conditions
- b. Meter/display of energy consumption – 3% accuracy or better
- c. Diagnostic capability
- d. Americans with Disabilities Act (ADA) compliant

**3.4 Safety Features**

The EVSE stations shall meet the following:

- a. Auto short circuit and ground fault shutoff
- b. Auto restarts - in event of power outage and/or ground fault
- c. Protect against “live power” (de-energizes connector if uncoupled from vehicle)
- d. Power surge protection
- e. Outdoor-rated enclosure - NEMA 3R, 3S, 3X, 3RX, 3SX, 4, 4X, 6, or 6P (UL50E)
- f. UL listed and/or ETL (UL 2594, UL 2231, UL 1998, UL 991) and NEC Article 625

**3.5 Operating Environment**

The EVSE stations shall meet the following:

Input Voltage	208/240 Volt AC (VAC) single-phase
Voltage Frequency	60/50Hz
Power Output	7.2 kW
Temperature-Operating Condition	-22°F to +122°F (-30°C to +50°C) min.
Humidity	Up to 90% RH, non-condensing
Regulatory compliance	FCC part 15 Class A or Class B

**3.6 Network Connectivity**

The EVSE stations shall be:

- a. Network-ready – include hardware/software to communicate with a network management system (NMS)
- b. Uses Open Charge Point Protocol (OCPP 1.5 or later) to communicate with a NMS
- c. Available as a “gateway” (a.k.a hub) and as a “non-gateway” (node) type
  - 1. “Gateway” stations shall communicate directly with a NMS

2. “Non-gateway” stations shall communicate with the NMS via the “gateway” station.
3. “Gateway” stations shall communicate with one or more “non-gateway” stations via wireless radios
4. “Gateway” stations shall be capable of communicating with a minimum of 15 “non-gateway” stations

### 3.7 Payment Acceptance

The EVSE stations shall be equipped to accept payments as follows:

#### a. Mobile Payment (Smartphone App)

The mobile payment shall include:

1. downloadable smartphone app (available on iOS and Android)
2. QR Code (or similar) and toll free phone number on the front of the EVSE.
3. compatible and able to interface with the current State EPAY systems\*\*

## 4.0 Desirable Upgrade Options

### 4.1 Radio Frequency Identification (RFID) Reader

The RFID reader shall:

- a. Identify pre-authorized users (i.e employee issued card or prepaid monthly card)
- b. Complies with applicable industry standards (i.e. ISO/IEC 14443, 18092, etc.)

### 4.2 Automated Cable Management System

The automated cable management system shall:

- a. Store the cable/connector in a weatherproof enclosure
- b. Keep cable/connector coiled and locked in place while not in use
- c. Automatically retract cable/connector upon disconnect from the EV

### 4.3 Smart Card Reader

The smart card reader (a.k.a EMV – Europay, Mastercard, Visa) shall:

- a. be compatible with contactless credit cards
- b. be Payment Card Industry Data Security Standard (PCI DSS) compliant
- c. be compatible and able to interface with the current State EPAY systems\* \*
- d. be bi-lingual, allowing users to interact in English or Spanish

### 4.4 Magnetic Card Reader

The magnetic card reader shall:

- a. accept all the major credit cards (i.e, American Express, Discover, MasterCard, Visa, etc.), debit cards and major fuel cards (i.e. US Bank Voyager Fleet)
- b. be Payment Card Industry Data Security Standard (PCI DSS) compliant
- c. be compatible and able to interface with the current State EPAY systems\* \*
- d. be bi-lingual, allowing users to interact in English or Spanish

\*\*EPAY systems are provided on the following contracts:

- [First Data Merchant Services](#)
- [Elavon, Inc.](#)