

CHARGE READY TRANSPORT

Technical Requirements for Non-Standard Charging Equipment

The requirements can be classified as either “pass/fail” (indicated by **SHALL** in the description) or “recommended” (indicated by **SHOULD** in the description). Charging equipment suppliers who state non-compliance with (or are found to be non-compliant with) the “pass/fail” requirements will not qualify for the program. Suppliers may offer additional functions and services beyond those shown in this list.

- Electric Service Vehicle Equipment (EVSE) includes off-board DC charger equipment and AC supply equipment for electric vehicles and equipment included in SCE's Charge Ready Transport program.
- “Charger” refers to AC/DC conversion equipment, which can be onboard a vehicle, off-board directly connected, or off-board remote and modular.
- Non-standard systems include certain non-road applications in non-public operation, such as lift trucks, cargo equipment, and certain extreme high-power applications not governed by existing standards.
- SCE reserves the right to determine when and where standards apply, based on published governing documents and the market availability of products meeting the standards.
- SCE supports using EVSE that already has accepted standards, wherever possible; standards help provide consistent safety and function features, and help ensure customers have access to products that have long operational lives and that are interchangeable with common equipment.

If you have questions about any of these requirements, please contact your SCE Account Representative.

ID	Requirement	Meets Requirement (Y/N)	Comments
General EVSE Requirements			
1	<p>Outdoor-installed EVSE SHALL be rated for outdoor use in SCE territory; NEMA, IP, etc.</p> <p>Indoor EVSE SHALL be rated for indoor use – capable of receiving and responding to ventilation signals, or installed with appropriate ventilation.</p>		
2	<p>EVSE, as installed, SHALL be California Code of Regulations (CCR) Title 20 and Title 24 compliant (California Electric Code); non-road chargers SHALL be California Battery Charger Efficiency Standard certified.</p>		
3	<p>Form and function: EVSE SHALL provide safety features consistent with California Electric code and on-road standard (e.g. SAE J1772 type) requirements (i.e. protection from electrical shock, injury, and structure risk).</p>		
4	<p>EVSE SHALL be fixed in place, per governing code (i.e. attached to the floor/ground, ceiling, or wall) and hard wired.</p>		
5	<p>EVSE SHALL be listed and approved for the application by a qualified Nationally Recognized Testing Laboratory (NRTL) – a list of OSHA-approved NRTLs can be found at https://www.osha.gov/dts/otpc/nrtl/.</p> <p>Charging connectors SHALL be listed and approved for the application, and any field listing SHALL comply with all current EVSE component and assembly requirements for public use.</p>		
6	<p>Chargers/EVSE SHALL be capable of being installed on terminated electrical service, on either a new concrete pad or a wall-mounted box for garage structures or locations with the chargers placed adjacent to an existing wall.</p>		

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General EVSE Requirements			
7	Electrical AC branch circuits will be provided to supply selected chargers/EVSE which meet SCE's technical requirements per California Electric Code at 125% of nominal peak charge current. Respondents SHALL not exceed 80% of branch circuit rating and SHALL provide nameplate input and output figures and a representative power curve. Proposed energy management systems SHALL be listed and approved for the application, and will be subject to evaluation by SCE.		
7a	Each charger/EVSE will be provided the following circuit characteristics: <ul style="list-style-type: none"> • 480 V, 3 phases, ground, neutral • Conductors and CB sized for the load Peak allowable load to be assessed by SCE per site, according to local system capacity		
8	EVSE SHALL operate at a frequency of 60 Hertz.		
9	While not communicating, EVSE SHALL have a “no-battery” (no load, not connected to vehicle, or standby) power draw of no more than the lesser of 0.15% of nominal load or 75W per simultaneously-active capable charging port.		
10	EVSE SHALL meet the power quality and reliability parameters as defined in SAE J2894/1. These parameters are tested following procedures defined in SAE J2894/2. Complete charging system efficiency (with vehicle), maintenance mode, and voltage surge tests will not be evaluated for this qualification.		
11	EVSE SHALL conform to all applicable regulations and standards at the time of installation, including (but not limited to):		
11a	<ul style="list-style-type: none"> • California Department of Measurement Standards for sale of electric fuel or connected time: California Code of Regulations (CCR), Title 4, Electric Vehicle Fueling Systems. 		
11b	<ul style="list-style-type: none"> • UL standards – applicable standards for safety and function – required for permitting by Authority Having Jurisdiction (AHJ). 		

ID	Requirement	Meets Requirement (Y/N)	Comments
Information Security Requirements (for all network-connected devices)			
11c	<ul style="list-style-type: none"> Federal and state efficiency regulations. 		
11d	<ul style="list-style-type: none"> Accessibility and disability regulations. 		
12	EVSE SHOULD have metering capability through an internal device, and SHOULD be able to measure power and usage parameters.		
13	Extreme high-power charging systems (greater than 400 kW through SAE J1772 standard) SHALL be SCE qualified, or evaluated and approved by SCE.		
14	Final installed non-standard systems SHALL be inspected and commissioned by SCE. List any prior experience or successful non-standard SCE or utility-approved installations.		
Information Security Requirements (for all network-connected devices)			
36	Any data stored or transmitted by EVSEs, gateways, and BMSs SHALL be afforded an appropriate level of controls to protect its confidentiality and integrity. Supplier SHALL ensure the same level of controls wherever the data is subsequently stored and whenever it is transmitted. In particular, any personally-identifiable information SHALL be encrypted using secure industry standard techniques to protect confidentiality (please identify standards in comments section).		
37	Supplier SHALL have a secure product/software development lifecycle, incorporating secure development best practices.		
38	The EVSE SHALL provide the level of protection and controls commensurate with its security profile, as governed by standards from the following standards bodies/organizations:		
38a	<ul style="list-style-type: none"> NIST, DOE 		
38b	<ul style="list-style-type: none"> SAE 		
38c	<ul style="list-style-type: none"> Relevant Communication Standards Organization, if applicable (e.g. OpenADR Alliance, Zigbee Alliance, NEMA, ANSI). 		
38d	<ul style="list-style-type: none"> UL Communications 		

ID	Requirement	Meets Requirement (Y/N)	Comments
Supplier Requirements			
46	Supplier SHALL have demonstrated successful experience providing EVSEs to electric utilities or business customers, without major safety incident or history of faulty equipment and lack of prompt service and repair.		
47	Supplier SHOULD be capable of providing SCE the following metrics in reports by aggregate, EVSE, and individual session on a monthly or as-specified basis:		
47a	<ul style="list-style-type: none"> EVSE, port unique identifier. 		
47b	<ul style="list-style-type: none"> Charge session date, start, and end times. Charge session is defined by the time connected with power available to the vehicle. If the connected time exceeds the charging period by 15 minutes or more, or the connected time is assessed separately from charging energy or time, also report connected time. 		
47c	<ul style="list-style-type: none"> Energy (kWh) delivered, including amount per session, 15-minute energy interval per session (not cumulative), and daily unit/site aggregate. 		
47d	<ul style="list-style-type: none"> Peak and average demand (kW) per session. 		
47e	<ul style="list-style-type: none"> Rate and total fee, if any, charged to end users. 		
48	<p>Supplier SHALL provide product support to customers to address function and operations. EVSE SHALL be labeled with supplier contact information and EVSE identification. Supplier SHALL provide customer support service (telephone, web interface, or email) during the normal business hours of 8:00 a.m. – 5:00 p.m. site-local time.</p> <p>This information SHALL also be provided to SCE in the response.</p>		
49	Supplier SHALL provide to SCE technical specification cut sheets, instruction manuals, one line electrical diagrams for installation, commissioning procedures, and operator’s manual in electronic format (included with this response).		
50	EVSE SHALL be new and provided in appropriate and protective shipping materials, for delivery in good working order.		

OTHER CHARGER/EVSE INFORMATION

Give a brief description of any additional functionalities that exceed the technical requirements for the proposed EVSE. Include URLs where further information can be found.

Optional – What capabilities, if any, does the proposed system currently include to respond to SCE Demand Response (DR) events? Examples:

- User interaction, such as notifications and allowing customers to opt-in/opt-out or make other decisions related to complying with DR events.
- Real-time or future (scheduling) actions based on event times and customer decisions.
- User pricing changes/penalty pricing based on DR actions (opt-in, opt-out, etc.).
- Advance pricing information broadcasts to users or drivers.

Optional – please respond to the following as completely as possible:

1. Describe the proposed communications architecture, including details about proposed hardware and software (e.g. physical communications, application protocols, etc.).
2. Describe the steps for installing and commissioning communications in the following scenarios:
 - a. In a parking lot with a strong cellular signal.
 - b. In an underground parking structure without a cellular signal.
 - c. In lab for testing, if different than above.

Please provide the following with your response:

1. Model number(s) as displayed on the unit, with NRTL listing.
2. Connector manufacturer and model number(s), with NRTL listing.
3. Breakdown of similar models (model number[s] and features).
4. All associated NRTL listing information (for example, UL 2202, others).

The EVSE Supplier (_____) hereby confirms that the non-standard charging equipment procured for installation under this program meets all of the "TECHNICAL REQUIREMENTS FOR NON-STANDARD CHARGING EQUIPMENT" set forth above. If the non-standard charging equipment does not meet one or more of the required or recommended items, Supplier has disclosed such non-compliance to SCE.

EVSE Supplier Name: _____

EVSE Supplier Signature: _____

EVSE Supplier Title: _____

Date: _____