

**DOCKETED**

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The California Energy Commission (CEC) recognizes that recent announcements suggest potentially widespread adoption of the North American Charging Standard (NACS) for electric vehicle (EV) charging in North America. As a key regulatory authority on EV charging and a steward of public funds, the CEC observes market trends to inform its regulations and funding opportunities. The CEC announces no updated connector requirements for funding opportunities at this time. A one-connector future would likely benefit drivers and the broader market, and the CEC will monitor the following as part of its continuous evaluation of the most appropriate technical requirements.

- SAE J3400 standardization progress.** NACS is undergoing standardization as SAE J3400. This process must clarify the specification (for example, details to ensure safe AC-DC pin sharing) and establish an open connector standard with associated industry engagement and revision processes. The CEC expects publication of the J3400 Technical Information Report (pre-standard) in 2023, followed by the Recommended Practice and Industry Standard.
- Alignment with Combined Charging System (CCS) communication and conformance tools.** The pending J3400 connector standard is written to accommodate a variety of communication protocols. To maximize interoperability and avoid stranded assets, implementations of J3400 should align with J1772/CCS communication. Specifically, J3400 products should support ISO 15118, as well as DIN 70121 for DC charging, over powerline communication to serve existing and future vehicles. Additionally, ISO 15118 conformance tools and certifications should support J3400 products.
- Continued industry implementation of ISO 15118-20, including for bidirectional charging.** ISO 15118-20 is the globally aligned EV-EVSE communication protocol and supports advanced cybersecurity, bidirectional charging, Plug and Charge, and other use cases. To enable customer- and grid-friendly charging, as well as global economies of scale, industry should continue ISO 15118-20 implementation for both AC and DC charging with J3400, including for bidirectional charging.
- Industry clarification of adapter and charger retrofit options.** Recent announcements suggest that adapters will enable Tesla Supercharger access for some vehicle models with CCS inlets. Industry should clarify the design, scope, and required safety certifications for such adapters. UL recently launched an effort to develop an adapter safety standard under UL 2252; the National Charging Experience Consortium (ChargeX) will also evaluate adapter safety. Industry should also clarify retrofit options to enable existing CCS chargers to serve both CCS and J3400 vehicles. These specifications may impact future CEC requirements.
- J3400 commitment, adoption, and product availability.** Many automakers, charger manufacturers, and charging-related companies have announced plans to offer products with J3400. Availability of J3400 products remains limited today and automakers have indicated that most new vehicle models through 2025 are likely to continue to use CCS. The CEC will monitor the availability of J3400 products as it assesses appropriate connector requirements.

The CEC may consider updating technical requirements as the above issues are clarified by industry, policymakers, and other relevant parties. The CEC proposes the transition framework below. Exact dates will be specified according to progress on the above items.

Timeframe	Potential Updated Connector Requirement
Now-202X	EVSE must include at minimum a J1772/CCS connector. <i>Additional connector types are allowed.</i>
202X-202Y	EVSE must include at minimum a J1772/CCS or J3400 connector. <i>During this period, adapter use may be common.</i>
After 202Y	All EVSE must include at minimum a J3400 connector. <i>Adapter use may remain common for legacy EVs and EVSE.</i>