

SAE International releases new EV charging standards

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SAE J3400 provides comprehensive standards for EV charging, aiming for a unified North American charging system to simplify access and foster innovation

SAE International has announced the release of the SAE J3400: North American Charging System (NACS) Electric Vehicle Coupler Technical Recommended Practice (RP), marking a significant advancement in the development of electric vehicle charging infrastructure standards in North America. The J3400 RP sets forth comprehensive standards for physical, electrical, functional, safety and performance aspects of EV charging.



Source: Getty/deepblue4you

This initiative represents an update to the NACS, signifying its role as a comprehensive system of industry standards.

Rodney McGee, chairman, SAE J3400 NACS Task Force, and research engineer at the Transportation Electrification Center at the University of Delaware, emphasized the inclusion of 1,000-V DC fast-charge capabilities, SAE Universal AC charging, and the incorporation of vehicle-to-grid (V2G) and backup power requirements.

Rivian Automotive Inc. highlighted the forthcoming adoption of NACS and J3400, anticipating federal and state regulatory updates to enhance the charging infrastructure. Gabe Klein, executive director of the Joint Office of Energy and Transportation, acknowledged the collaborative effort required for such standardization, praising the work toward creating a compatible charging ecosystem.

Christian Thiele, director, global ground vehicle standards, SAE International, noted the J3400 RP as a precursor to a finalized standard expected by year-end, underscoring the ongoing need for revisions to keep pace with technological advancements. The initiative to standardize the Tesla-developed NACS connector, announced in June 2023, laid the groundwork for this development, supported by significant collaboration across the automotive industry, charging providers and government agencies.

The SAE J3400 standard aims to foster an interoperable charging network, reducing the reliance on multiple adapters and proprietary systems. This move is intended to benefit EV drivers by simplifying access to charging stations and supporting industry innovation within a unified framework.

The SAE Hybrid-EV J3400 NACS Electric Vehicle Coupler Task Force, comprising experts from various sectors including original equipment manufacturers, suppliers, charger companies, academia and government, is leading these efforts. The task force is dedicated to ensuring the market readiness of the charging infrastructure and continuing to innovate in EV power-transfer standards.

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