Battery Electric Vehicles and Energy Management

CSA Group standards-based solutions help facilitate a reliable, sustainable deployment of Battery Electric Vehicles (BEV) infrastructure across North America. Recognizing the role BEVs can play in energy management solutions, CSA Group adopted a systems-based approach to help facilitate seamless integration of BEVs with the electrical grid.

Standards and research publications

**Power Transmission and Electrical Installation**

1. CSA C22.3 NO. 1, Overhead systems
2. CSA C22.3 NO. 7, Underground systems
3. CSA C22.2 NO. 121, Canadian Electrical Code, Part I, Safety Standard for Electrical Installations

**Energy Management Systems**

4. CSA SPE-343, Electric vehicle energy management systems
5. CSA C22.2 NO. 343, Electric vehicle energy management systems (in progress)
6. CSA C22.2 NO. 348, Electric vehicle power export equipment (in progress)

**Energy Storage**

7. CSA C22.2 NO. 340, Battery management systems (in progress)

**AC/DC Charging**

8. CSA C22 NO. 280, Electric vehicle supply equipment
9. CAN/CSA-C22.2 NO. 281.1, Standard for safety for personnel protection systems for electric vehicle (EV) supply circuits: General requirement
10. CAN/CSA-C22.2 NO. 281.2, Standard for safety for personnel protection systems for electric vehicle (EV) supply circuits: Particular requirements for protection devices for use in charging systems
11. CSA C22.2 NO. 346, DC charging systems for electric vehicles (in progress)
12. CSA C810, Performance of EV DC fast battery chargers (in progress)

**Cables**

13. CSA C22.2 NO. 332, Electric vehicle cable 1000 V (in progress)
14. CAN/CSA-C22.2 NO. 282, Plugs, receptacles, and couplers for electric vehicles
15. CAN/CSA-C22.2 NO. 61980-1, Electric vehicle wireless power transfer (WPT) systems – Part 1: General requirements

**Wireless Charger**

16. CSA E62660-1, Secondary lithium-ion cells for the propulsion of electric road vehicles – Part 1: Performance testing
17. CSA E62660-2, Secondary lithium-ion cells for the propulsion of electric road vehicles – Part 2: Reliability and abuse testing
18. Circular and Recycling of Lithium-Ion Batteries for Electric Vehicles – Standardization and Safety Requirements (CSA Group research, in progress)

CSA Group ongoing BEV activities

- Engaging with stakeholders in the BEV ecosystem, including governments, utilities, charger manufacturers, vehicle manufacturers, and others to identify standardization gaps and priorities
- Updating existing standards and developing new standards for charging equipment, charging infrastructure, load and energy management systems, energy efficiency, battery safety and lifecycle, and electrified transportation modes.

Visit CSA Group website or join CSA Electric Vehicles Community