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## SB-233 Electric vehicles and electric vehicle supply equipment: bidirectional capability. (2023-2024)

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CALIFORNIA LEGISLATURE— 2023–2024 REGULAR SESSION

### SENATE BILL

### NO. 233

Introduced by Senator Skinner

January 24, 2023

An act to add Chapter 8.8 (commencing with Section 44269) to Part 5 of Division 26 of, and to repeal Section 44269.1 of, the Health and Safety Code, relating to transportation electrification.

### LEGISLATIVE COUNSEL'S DIGEST

SB 233, as amended, Skinner. Electric vehicles and electric vehicle supply equipment: bidirectional capability.

Existing law requires the State Energy Resources Conservation and Development Commission (Energy Commission) to undertake various actions in furtherance of meeting the state's clean energy and pollution reduction objectives, including actions related to electric vehicles. Existing law requires the Energy Commission, working with the State Air Resources Board (state board) and the Public Utilities Commission (PUC), to prepare a statewide assessment of the electric vehicle charging infrastructure needed to support the levels of electric vehicle adoption required for the state to meet its goals of putting at least 5,000,000 zero-emission vehicles on California roads by 2030, and of reducing the emissions of greenhouse gases to 40% below 1990 levels by 2030. Existing law requires the state board, in conjunction with the Energy Commission, to develop and administer a program to provide grants to individuals, local governments, public agencies, nonprofit organizations, and private businesses to encourage the purchase or lease of a new zero-emission vehicle.

This bill would require the Energy Commission, in consultation with the state board, on or before June 30, 2024, to convene a stakeholder workgroup to examine challenges and opportunities associated with using an electric vehicle as a mobile battery to power a home or building or providing electricity to the electrical grid, and require the Energy Commission, in consultation with the stakeholder workgroup, on or before January 1, ~~2025~~, 2026, to submit a report to the Governor and Legislature that includes specified information related to the bidirectional capability of electric vehicles and electric vehicle service equipment, as specified.

This bill would require that, beginning in model year ~~2027~~, 2030, all new electric vehicles sold in California be bidirectional capable, including light-duty motor vehicles and schoolbuses, except as exempted by the state board.

Vote: majority Appropriation: no Fiscal Committee: yes Local Program: no

## THE PEOPLE OF THE STATE OF CALIFORNIA DO ENACT AS FOLLOWS:

### **SECTION 1.** The Legislature finds and declares all of the following:

- (a) California was the first state to adopt an energy storage procurement mandate to assist renewable energy integration and electrical grid reliability.
- (b) Batteries in electric vehicles are storage resources and have the potential to be deployed to assist in renewable energy integration and electrical grid reliability and during emergencies, including power outages.
- (c) Wildfires, heatwaves, and other climate change-fueled extreme weather events pose an increasing threat to the reliability of California's electrical grid.
- (d) One response to power outages in California has been to rely on fossil-fueled backup generators, which contribute to the emissions of greenhouse gases and local air pollution.
- (e) Development of bidirectional electric vehicle infrastructure will provide access to a significant reserve of dispatchable electricity that will help ensure continuous electrical service for California. In 2022, the State Air Resources Board adopted the Advanced Clean Cars II rule that requires 100 percent of electric vehicle sales by 2035 and, in 2020, the State Air Resources Board adopted the Advanced Clean Truck rule that requires increasing percentages of electric vehicle sales starting in 2024. These electric vehicles could provide critical electricity to the electrical grid if enabled to do so.
- (f) As California builds out electric vehicle service equipment in order to meet the charging needs of an anticipated 8,000,000 electric vehicles by 2030, there is a unique opportunity to leverage significant federal, state, and private sector investments in electric vehicles and electric vehicle service equipment to ensure they are bidirectionally capable.
- (g) Peak electricity demand is the primary driver behind the use of fossil fuel peaker ~~power plants~~, *powerplants*, the emissions of which disproportionately impact disadvantaged communities.
- (h) The charging cycle of bidirectional-capable electric vehicles can be scheduled away from peak demand times to periods with excess and lower cost renewable electricity generation, allowing the dispatchable energy capacity of bidirectional-capable electric vehicles to serve as an alternative to fossil fuel peaker ~~power plants~~, *powerplants*, mitigating the air pollution and public health impacts on disadvantaged communities.
- (i) Supporting market scalability of bidirectional charging has the potential to lower electricity costs in California and maximize reliability and resilience benefits to consumers and the electrical grid, especially when bidirectional-capable electric vehicles are colocated with distributed onsite energy resources.

**SEC. 2.** Chapter 8.8 (commencing with Section 44269) is added to Part 5 of Division 26 of the Health and Safety Code, to read:

#### **CHAPTER 8.8. Electric Vehicles**

**44269.** (a) For purposes of this chapter, the following definitions apply:

- (1) "Beneficial bidirectional-capable use case" means the usage of bidirectional-capable electric vehicles and bidirectional electric vehicle service equipment in a manner that results in electrical reliability and resiliency benefits.
- (2) "Bidirectional capable" means the ability of an electric vehicle to both charge and discharge electricity through electric vehicle service equipment, as modified pursuant to Section 44269.3.
- (3) "Bidirectional charging" means charging capability that enables an electric vehicle to either be charged by the electrical grid or an onsite energy resource, or discharge stored energy capacity to the electrical grid or to serve an adjacent home or building.
- (4) "Bidirectional electric vehicle service equipment" means electric vehicle service equipment capable of both charging and discharging electricity from an electric vehicle.
- (5) "Board" means the State Air Resources Board.
- (6) "Commission" means the State Energy Resources Conservation and Development Commission.
- (7) "Electric vehicle" means a battery electric or hybrid vehicle that uses an electric battery and electric motor for mobility.
- (8) "Electric vehicle service equipment" has the same meaning as defined in Section 44268.

(9) "Interoperability" has the same meaning as described in Section 680.108 of Title 23 of the Code of Federal Regulations.

(10) "Light-duty motor vehicle" has the same meaning as defined in Section 2211 of Title 13 of the California Code of Regulations.

(b) The definitions provided in this section may be modified or updated pursuant to Section 44269.3.

**44269.1.** (a) The commission, in consultation with the board, shall, on or before June 30, 2024, convene a stakeholder workgroup to examine challenges and opportunities associated with using an electric vehicle as a mobile battery to power a home (vehicle-to-home) or building (vehicle-to-building) or providing electricity to the electrical grid (vehicle-to-grid).

(b) The commission, in consultation with the stakeholder workgroup, on or before January 1, ~~2025~~, 2026, shall submit a report to the Governor and Legislature that includes all of the following:

(1) Potential costs and benefits associated with requiring bidirectional capability for electric vehicle service equipment.

(2) Mechanisms to ensure interoperability between bidirectional capable electric vehicles and bidirectional electric vehicle service equipment.

(3) The resources needed from the electricity sector to facilitate vehicle-to-building and vehicle-to-grid practices.

*(4) The estimated impacts of requiring bidirectional capability for various vehicle weight classes on the state's existing zero-emission vehicle programs and goals.*

(c) (1) The report to be submitted pursuant to subdivision (b) shall be submitted in compliance with Section 9795 of the Government Code.

(2) Pursuant to Section 10231.5 of the Government Code, this section is repealed on January 1, ~~2028~~, 2029.

**44269.3.** (a) On or before December 31, ~~2024~~, 2026, the board, in consultation with the commission and the Public Utilities Commission, shall, by regulation, modify the definition of "bidirectional capable" for electric vehicles in order to specify nonproprietary technical interoperability requirements to support electrical grid reliability and resilience by providing emergency backup electricity or electrical grid services to comply with this chapter. As part of that modified definition, at the time of sale, all necessary electric vehicle components, and their operational parameters, shall be required to support and enable bidirectional capability for purposes of compliance with this chapter.

(b) The board may periodically update the definition of "bidirectional capable" and other definitions, including those provided in Section 44269, to ensure the definitions align with current technologies in bidirectional charging and account for ongoing innovation.

(c) On or before December 31, ~~2024~~, 2026, the board, in consultation with the commission and the Public Utilities Commission, shall, by regulation, modify and further clarify the definition of "beneficial bidirectional-capable use case" for electric vehicles in order to provide additional guidance for determining which electric vehicles are required to comply with Section 44269.4.

**44269.4.** (a) Beginning in model year ~~2027~~, 2030, all new electric vehicles sold in California shall be bidirectional capable, including light-duty motor vehicles and schoolbuses, except as specified in subdivision (b).

(b) The board may exempt from this section vehicles for which it determines there is not a likely beneficial bidirectional-capable use case.