

April 20, 2023

The Honorable Lena Gonzalez  
California State Senate Transportation Committee  
State Capitol, Room 405  
Sacramento, CA 95814

RE: SB 233 (Skinner) Electric Vehicles and Bidirectional Capability—**Oppose Unless Amended**  
As to be Amended

Dear Senator Gonzalez:

The Alliance for Automotive Innovation must respectfully take a position of Oppose unless Amended on bill AB 233.

This bill would require that, beginning in model year 2027, all new electric vehicles sold in California be bidirectional capable and all new bidirectional-capable electric vehicles sold in California be interoperable with one or more other models of bidirectional electric vehicle service equipment that use the same standard protocols. The bill would require that all electric vehicle service equipment installed on or after January 1, 2027, be bidirectional capable with certain exceptions.

The Alliance for Automotive Innovation (Auto Innovators) is the leading advocacy group for the auto industry, representing the manufacturers producing most vehicles sold in the U.S. plus zero emission vehicle technology providers, autonomous vehicle innovators, semiconductor makers, equipment suppliers, and battery producers.

While your bill deals with a very important issue for auto owners and automakers alike, the many unknowns of how to implement such a complex and nascent technology are too challenging at this time to establish a mandate. Listed below are some of our numerous concerns and challenges in implementing your bill as currently written.

- For Vehicle to Grid (V2G) technology to be successful, a full systems approach, vehicle, and grid, must be in place. The regulatory landscape to support V2G does not currently exist. Coordination is necessary between the Legislature, Air Resources Board (ARB), Public Utilities Commission (CPUC), Energy Commission (CEC), utilities, and automakers.
- Yet, the new amendments inexplicably put only compliance mandates on autos.
- Mandating bidirectional hardware on the vehicle will NOT ensure that bidirectional charging will take place or will even be capable of taking place. There are a number of additional items that must be in place for bidirectional charging such as off-board devices not on the vehicle to allow bidirectional charging including electric grid capabilities, communication standards, and bidirectional ready converters on chargers.
- Bidirectional charging impacts the electric vehicle battery. The recent passage of ARB's Advanced Clean Cars 2 affects the battery warranty rules for all EVs sold in the state of California. For model years 2026-2030, batteries must meet 70% state-of-health at 8 years or 100,000 miles; and for model years 2031 and beyond, the batteries must meet 75% state-of-health. The regulations currently do

not take into account any bidirectional charging which can have significant impact on a battery.

- While bidirectional charging can be a benefit of owning an EV, mandating such capability eliminates consumer choice and increases EV ownership costs in three ways:
  - To meet the increased battery capacity and warranty requirements for bidirectional charging, the bill will add an average of **\$3000 per vehicle.**
  - The bidirectional hardware and software will add an average of \$300 per vehicle.
  - The DC to AC current converter add-on to the charger will add on an average of \$400.
- This bill would introduce an equity concern for the second, third, etc. vehicle owners who may not have as much expected capacity due to V2G battery aging. With used car buyers often purchasing older, high mileage vehicles no longer under warranty, the additional strain of bidirectional charging by previous owners may significantly reduce the battery's capabilities resulting in early and expensive battery replacement.
- This technology is a competitive matter between vehicle manufacturers and should remain that way. Not all customers will see an advantage of bidirectional charging, and therefore, should not have to pay more for a technology that they will not use.
- There are also many open questions as to what is necessary for the electric grid and its capabilities to provide what is necessary for the millions of bidirectional EVs that would be on the road in the very near future.
- We understand the benefits of bidirectional charging and are working to facilitate more of it. However, mandating the technology on the vehicle before the establishment of grid and charger standards may actually limit future capabilities of V2G. Under this bill, millions of EVs will be on California's roads with the standard in place at the time of the vehicle's production. As grid and charger standards are developed in the future, potentially groundbreaking technologies may have to be excluded for consideration because it is unsustainable to render the technology on millions of vehicles obsolete due to incompatibility with those new technology standards future standard. There needs to be a full systems approach, with standards and policies in place before mass production that will ensure that bidirectional charging is successful.

The Alliance for Automotive Innovation believes mandatory bidirectional EV charging is premature at this time and would recommend that SB 233 be amended to authorize a study of the open questions regarding this issue and for the study to make comprehensive recommendations to the Legislature. This type of study on electric vehicle battery recycling was enacted via AB 2832 (2018). The bill's required report was published in 2022 and those recommendations have been introduced in this year's SB 615.

For these reasons, the Alliance for Automotive Innovation has adopted a position of Oppose unless Amended on your SB 233. If you have any questions or comments regarding the Auto Innovators position, please contact me at [REDACTED] or John Moffatt, the Auto Innovators' legislative representative at (916) 446-6752. Thank you for your consideration.

Sincerely,



Curt Augustine  
Senior Director, State Affairs  
Alliance for Automotive Innovation