

Date of Hearing: July 5, 2023

ASSEMBLY COMMITTEE ON TRANSPORTATION

Laura Friedman, Chair

SB 493 (Min) – As Amended June 19, 2023

**SENATE VOTE:** 36-0

**SUBJECT:** Air pollution: alternative vehicles and electric and hydrogen infrastructure

**SUMMARY:** Requires the State Air Resources Board (CARB) to develop a strategic plan for meeting deadlines for the transition of medium- and heavy-duty fleets to zero-emission and makes updates to two related statewide zero-emission vehicle (ZEV) infrastructure assessments. Specifically, **this bill:**

- 1) Incorporates the strategic plan into an existing medium- and heavy-duty comprehensive strategy that is a part of the mobile source strategy prepared every five years by CARB.
- 2) Requires CARB to incorporate the findings of the electric vehicle (EV) charging infrastructure and fuel cell electric vehicle (FCEV) fueling infrastructure statewide assessments into the existing medium- and heavy-duty comprehensive strategy.
- 3) Requires the State Energy Resources Conservation and Development Commission (CEC) to do the following in the existing bi-annual statewide assessment of EV charging infrastructure:
  - a) Update the planning goals to include Executive Order (EO) N-79-20 and any CARB regulatory action that requires or allows ZEV in the heavy-duty vehicle and off-road sectors;
  - b) Assess electric system infrastructure and electric generation needed for the state to meet its greenhouse gas (GHG) emission reduction goals and ZEV goals;
  - c) Identify any barriers to the deployment of electric infrastructure for medium- and heavy-duty fleets; and,
  - d) Make recommendations for addressing those barriers.
- 4) Requires CEC to do the following in the existing tri-annual statewide assessment of FCEV fueling infrastructure and fuel production:
  - a) Assess storage and transport facilities needed to meet the medium- and heavy-duty vehicle goals and requirements of EO N-79-20;
  - b) Identify any barriers to the deployment of hydrogen infrastructure for medium- and heavy-duty fleets; and,
  - c) Make recommendations for addressing those barriers.
- 5) Requires CEC to publish a determination regarding the adequacy of completed or planned charging or fueling sites in the FCEV fueling infrastructure and EV charging infrastructure assessments.
- 6) Requires CEC to identify any charging or fueling site deficiencies and categorize those deficiencies by refueling speed and by type of facility (public or private).

**EXISTING LAW:**

- 1) Requires CARB, in consultation with the Department of Transportation (Caltrans), CEC, and the Governor's Office of Business and Economic Development (GO-Biz) and in collaboration with relevant stakeholders, to update the mobile source strategy every five years with a comprehensive strategy for the deployment of medium- and heavy-duty vehicles in the state for the purpose of bringing the state into compliance with federal ambient air quality standards and reducing motor vehicle GHG emissions from the sector. (HSC 43024.4)
- 2) Requires CEC, working with CARB and the Public Utilities Commission (CPUC), to prepare a statewide assessment of the EV charging infrastructure needed to support the levels of EV adoption required for the state to meet its goals of putting at least five million ZEVs on California roads by 2030, and of reducing GHG emissions to 40% below 1990 levels by 2030. Requires CEC to update the report every two years. (Public Resources Code (PRC) 25229)
- 3) Requires CARB, in consultation with CEC and CPUC, to prepare a statewide assessment of the FCEV fueling infrastructure and fuel production needed to support the adoption of zero-emission trucks, buses, and off-road vehicles at levels necessary for the state to meet the goals and requirements of EO N-79-20 and any state board regulatory action that requires or allows ZEVs in the heavy-duty vehicle and off-road sectors. Requires CEC to update the report every three years. (Health and Safety Code (HSC) 43871)

*Referenced Executive Orders:*

- 4) EO N-79-20 orders that the following shall be goals of the state, and directs CARB to develop regulations meeting these goals:
  - a) 100% of in-state sales of new passenger cars and trucks will be zero-emission by 2035;
  - b) 100% of medium- and heavy-duty vehicles in the state be zero-emission by 2045 for all operations where feasible and by 2035 for drayage trucks; and,
  - c) Transition to 100% zero-emission off-road vehicles and equipment by 2035 where feasible.

**FISCAL EFFECT:** According to the Senate Appropriations Committee:

- 1) The CEC estimates ongoing costs of about \$170,000 per year (Alternative and Renewable Fuel and Technology Fund [ARFVTF]) and one position in order to expand upon the AB 8 report, the AB 2127 assessment, and the SB 643 assessment, and to update the assessments as needed. Staff note the fees that support the ARFVTF are set to sunset at the end of 2023 without legislative reauthorization.
- 2) Unknown, potentially significant costs (General Fund or special fund) for the CARB to use the CEC's assessment to create a strategic plan to achieve this transition.
- 3) Unknown, potentially significant cost pressure (various funds) to implement the strategic plan developed as a result of this bill.

**COMMENTS:**

*Recent decisions have accelerated the timeline for transitioning to ZEVs.* While prior legislation codified the goal of putting at least five million ZEVs on California roads by 2030, recent administrative actions have expanded the scope and timeline of the state's ZEV transition. EO N-79-20 established a goal that 100% of in-state sales of new passenger cars and trucks will be zero-emission by 2035. This executive order also established a goal that 100% of medium- and heavy-duty vehicles in the state will be zero-emission by 2045. In response to this EO, CARB adopted regulations aimed at phasing out the sale of petroleum-fueled vehicles. CARB has adopted the Advanced Clean Cars 2 (ACC 2) regulations to address light-duty vehicle transition requirements and the Advanced Clean Fleets (ACF) rule for medium- and heavy-duty fleet transition.

*Both electric and hydrogen vehicles rely on energy sector resources.* While battery electric vehicles dominate the light-duty ZEV market, a significant number of medium- and heavy-duty manufacturers plan to transition fleets to hydrogen fuel cell vehicles. To support the accelerated deployment of both battery electric vehicles and hydrogen fuel cell vehicles, the state must substantially accelerate the deployment of charging and refueling infrastructure. The CEC has estimated that the state will need at least 1.2 million EV chargers by 2030 to transition light-duty passenger vehicles to EVs, and the CEC estimated that the state will need at least 157,000 fast chargers to meet the 2030 benchmarks for transitioning medium- and heavy-duty vehicles. The CEC's assessments of the infrastructure needed to support the ZEV transition acknowledges that ZEV deployment will increase electric load.

Medium- and heavy-duty EVs and hydrogen vehicles require a significant amount of electricity resources. Medium- and heavy-duty EVs have large batteries that require a substantial amount of electricity to charge. Charging these large batteries can take extended periods of time. Large fleets can require several megawatts to operate a single truck charging depot. Hydrogen fuel cell trucks can refuel more quickly than EVs; however, they require hydrogen to be transported and stored for refueling. Producing clean hydrogen at market scale also requires a substantial amount of electricity to run electrolyzers.

*Transitioning medium- and heavy-duty fleets poses particular challenges for the energy sector.* A substantial amount of the potential emissions reductions from the transition to ZEVs rely on the energy sector's achievement of its own emissions reduction goals. Medium- and heavy-duty vehicles are a significant source of California's emissions, and transitioning these vehicles to ZEVs could produce substantial GHG emissions reductions. Despite this potential, some stakeholders have expressed concerns that the underlying assumptions used in existing plans for the medium- and heavy-duty ZEV transition do not fully address the barriers to planning energy sector resources for the transition. Specifically, these stakeholders argue that existing state plans are not sufficiently detailed to address the specific challenges associated with electrifying or deploying hydrogen infrastructure to actually make medium- and heavy-duty fleet transitions achievable within CARB's timelines.

Deployment of higher voltage chargers and increased production of hydrogen would rely in part on upgrades to the local utility distribution system and creating additional electric capacity. Some of these utility resources may require substantial advance planning, local engagement, CPUC approval, and permitting. In the event that these utility resources are not planned sufficiently far in advance of CARB's ZEV transition deadline, there is worry that fleets may not be able to comply with CARB rules in a timely manner.

*Bill emphasizes the need for better coordination between ZEV goals and energy sector planning.* AB 2700 (McCarty), Chapter 354, Statutes of 2022 required the CEC to gather and report fleet data needed to support utilities' plans for grid reliability and enhanced vehicle electrification. While AB 2700 ensures that utilities gain information about electric fleet deployment, it is unclear if state agencies planning the ZEV transition are using assumptions that account for the electric generation, distribution, and transmission resources needed to ensure that ZEV fleets have sufficient infrastructure and capacity for refueling and re-charging. Vehicle-grid integration strategies may be able to mitigate certain grid strains; however, these strategies cannot completely address the demands placed on the energy sector from the charging and refueling needs of all fleets.

*The transition to medium- and heavy-duty requires multi-agency coordination.* On April 20, 2023, eight state agencies released a ZEV Infrastructure Joint Statement of Intent. CARB, the California State Transportation Agency, CEC, California Transportation Commission (CTC), CPUC, California Department of Transportation, Department of General Services, and the Governor's Office of Business and Economic Development outlined how the agencies are working together to ensure that charging/fueling station build out and electric grid planning aligns with the vehicle rollout schedules associated with CARB's enacted regulatory programs, including ACC 2 and ACF. The signing agencies are engaged in a broad portfolio of actions to support the implementation of ZEV infrastructure. The statement says, "Our shared goals of achieving California's transition to ZEVs is progressing and will be successful because agencies are committed to working closely together to the extent feasible under the mandates given to each agency for adopting and implementing policies and programs."

*Staff comments:* This bill incorporates upstream considerations into ZEV infrastructure planning, such as electrical generation and hydrogen storage and transport. These factors have been seen as limiting and a barrier to reaching the state's ZEV and ultimately climate goals. Therefore, steps taken to identify barriers will be helpful in planning to address those barriers.

According to the author, "Medium and heavy duty vehicles contribute a disproportionately high share of the transportation sector's GHG emissions. The transition of medium and heavy duty vehicles to ZEVs is critical to reach our climate targets. While the state is making great progress toward our climate goals, a big piece of the puzzle is missing...the necessary infrastructure to support these vehicles. This bill will ensure that agencies work together to facilitate the build out of critical infrastructure before ZEV fleets get on the road."

In support the Association of California Water Agencies writes, "To meet the requirements in the ACF regulation, public water and wastewater agencies need the adequate infrastructure to charge fleet vehicles, as needed, to prepare for planned operations, and respond to extended emergency events. The potential that public water and wastewater agencies may be unable to charge fleet vehicles puts at risk the ability to fulfill essential public health and safety responsibilities. Currently there is no assurance that the necessary charging infrastructure and energy supply to maintain or improve existing operations will be available at the time water agencies would be required to purchase ZEVs. [This bill] would partially address these concerns by requiring collaboration between CEC, CARB, and CPUC to assess the infrastructure needed to decarbonize the medium- and heavy-duty vehicle sector."

*Double referral:* This bill is double referred to the Assembly Utilities and Energy Committee and will be heard by that Committee as it relates to issues under its jurisdiction.

*Related and previous legislation:* AB 1504 (McCarty of 2023) would have updated the requirements of the statewide assessment of necessary EV charging infrastructure that CEC prepares every other year. *AB 1504 was held on suspense in the Assembly Appropriations Committee.*

AB 2700 (McCarty), Chapter 354, Statutes of 2022 requires CEC to gather and report fleet data needed to support utilities' plans for grid reliability and enhanced vehicle electrification. This bill also requires utilities to report how distribution investments made pursuant to this bill support climate goals as part of specified filings with the CEC and CPUC.

SB 643 (Archuleta), Chapter 646, Statutes of 2021 requires CEC to prepare a statewide assessment of the fuel cell electric vehicle fueling infrastructure and fuel production needed to support the adoption of zero-emission trucks, buses, and off-road vehicles and requires the assessment to be updated at least every three years.

SB 671 (Gonzalez), Chapter 769, Statutes of 2021 requires CTC, in coordination with other state agencies, to develop a Clean Freight Corridor Efficiency Assessment and incorporate the recommendations into their respective programs for freight infrastructure; and codifies existing CTC guidelines for eligible projects for the Trade Corridor Enhancement Program (TCEP).

SB 44 (Skinner), Chapter 297, Statutes of 2019 requires CARB to update the 2016 mobile source strategy to include a comprehensive strategy for the deployment of medium- and heavy-duty vehicles in the state for the purpose of bringing the state into compliance with federal ambient air quality standards and reducing motor vehicle GHG emissions from the medium- and heavy-duty vehicle sector, as specified.

AB 2127 (Ting), Chapter 365, Statutes of 2018 requires CEC, working with CARB and CPUC, to prepare a statewide assessment of the EV charging infrastructure needed to meet the Governor's goal of 5 million ZEVs on the road by 2030 and requires the assessment to be updated every two years.

## **REGISTERED SUPPORT / OPPOSITION:**

### **Support**

Association of California Water Agencies  
California Special Districts Association  
California Trucking Association  
Palmdale Water District  
Port of Oakland

### **Opposition**

None on file

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