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**SENATE COMMITTEE ON ENERGY, UTILITIES AND  
COMMUNICATIONS**

**Senator Steven Bradford, Chair  
2023 - 2024 Regular**

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<b>Bill No:</b>	SB 493	<b>Hearing Date:</b>	3/21/2023
<b>Author:</b>	Min		
<b>Version:</b>	2/14/2023	Introduced	
<b>Urgency:</b>	No	<b>Fiscal:</b>	Yes
<b>Consultant:</b>	Sarah Smith		

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

**DIGEST:** This bill requires the California Energy Commission (CEC) to assess the energy resources needed to meet state goals to transition medium and heavy-duty vehicles to zero-emission vehicles (ZEVs), and it requires the California Air Resources Board (CARB) to use the CEC's assessment to create a strategic plan to achieve this transition.

**ANALYSIS:**

Existing law:

- 1) Requires the CEC to conduct a statewide assessment every two years of electric vehicle (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 emissions of greenhouse gases (GHG) to 40 percent below 1990 levels by 2030. (Public Resources Code §25229)
- 2) Requires the CEC to gather specified information about the deployment of ZEV fleets subject to CARB regulations to enable electric utilities to estimate increased electrical loads resulting from fleet transitions to ZEVs. (Public Resources Code §25328)
- 3) Requires the California Public Utilities Commission (CPUC) to direct investor-owned utilities (IOUs) to file applications for investments to accelerate transportation electrification, reduce reliance on petroleum, and meet certain climate goals. The CPUC may approve or amend applications for transportation electrification investments. IOUs are authorized to recover reasonable costs for approved investments from ratepayers if they are consistent with certain requirements. (Public Utilities Code §740.12(b))

- 4) Requires the CPUC to review data related to current and future transportation electrification adoption and charging infrastructure prior to allowing an IOU to collect new program costs from ratepayers. (Public Utilities Code §740.12(c))
- 5) Requires each publicly owned utility (POU) with an annual electrical demand exceeding 700 gigawatt hours to adopt an integrated resources plans (IRP) that helps ensure that the POU will meet climate goals for the electricity sector. An IRP must be updated at least once every five years and must address procurement plans for the following:
  - a) Energy efficiency and demand response resources,
  - b) Energy storage requirements,
  - c) Transportation electrification,
  - d) A diversified energy resource procurement portfolio, and
  - e) Resource adequacy requirements. (Public Utilities Code §9621)
- 6) Requires the CPUC to establish EV-grid integration strategies for certain load-serving entities (LSEs). POUs must consider EV-grid integration strategies in their IRPs, and community choice aggregators (CCA) must report specified information to the CPUC regarding EV-grid integration activities. (Public Utilities Code §740.16)

This bill:

- 1) Requires the CEC to consult with CARB and the CPUC to assess the electric and hydrogen infrastructure needed to meet specified state goals for transitioning medium- and heavy-duty vehicles to ZEVs. This bill requires this assessment to include analyses of at least the following:
  - a) Hydrogen production, storage, and transport facilities needed to support the transition of medium- and heavy-duty fleets to ZEVs.
  - b) Electric vehicle, electric system, and electric generation needed to support the transition of medium- and heavy-duty vehicles to ZEVs.
  - c) Barriers to the deployment of electric and hydrogen infrastructure for medium- and heavy-duty fleets and recommendations for addressing these barriers.
- 2) Requires the CEC, by December 31, 2024, to post the assessment required by this bill on its website and submit a copy of the assessment to the Legislature.

- 3) Requires CARB to incorporate the CEC's finding from the assessment required by this bill into a strategic plan to meet specified deadlines for the transition of medium- and heavy-duty fleets to ZEVs.
- 4) Requires CARB, by December 31, 2025, to post the strategic plan required by this bill on its website and submit a copy of the plan to the Legislature.
- 5) Sunsets this bill on January 1, 2026.

## Background

*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 decisions have expanded the scope and timeline of the state's ZEV transition. Executive Order N-79-20 established a goal that 100 percent 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 percent of medium- and heavy-duty vehicles in the state will be zero-emission by 2045. In response to this Executive Order, CARB has adopted regulations aimed at phasing out the sale of petroleum-fueled vehicles. CARB has adopted the Advanced Clean Cars regulations to address light-duty vehicle transition requirements and is in the process of developing an Advanced Clean Fleets 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 to support these vehicles. 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, particularly in the electric service territories for Pacific Gas and Electric and Southern California Edison.

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. Electrolyzers require a substantial amount of electricity to produce this hydrogen at market scale.

*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, 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.* Prior legislation (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.

*Double Referral.* This bill is also referred to the Senate Committee on Environmental Quality.

**Prior/Related Legislation**

SB 507 (Gonzalez, 2023) would expand information the CEC must include in existing EV infrastructure assessments. The bill also codifies certain ZEV deployment goals contained in Executive Order No. N-79-20. The bill is currently pending in this committee.

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. The bill also requires utilities to report how distribution investments made, pursuant to the bill, support climate goals as part of specified filings with the CEC and CPUC.

SB 676 (Bradford, Chapter 484, Statutes of 2019) required the CPUC to establish EV-grid integration strategies for certain LSEs. The bill also required POUs to consider EV-grid integration strategies in their IRPs and required CCAs to report specified information to the CPUC regarding EV-grid integration activities.

AB 2127 (Ting, Chapter 365, Statutes of 2018) required the CEC to conduct a statewide assessment every two years of 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 percent below 1990 levels by 2030.

**FISCAL EFFECT:** Appropriation: No Fiscal Com.: Yes Local: No

**SUPPORT:**

California Trucking Association, if amended

**OPPOSITION:**

None received

**ARGUMENTS IN SUPPORT:** According to the author:

Medium- and heavy-duty vehicles contribute a disproportionately high share of the transportation sector's greenhouse gas emissions. The transition of medium- and heavy-duty vehicles to zero-emission vehicles is critical to reach California's climate targets. While the state is making great progress toward its 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.

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