SENATE COMMITTEE ON ENVIRONMENTAL QUALITY
Senator Allen, Chair
2021 - 2022 Regular

Bill No:	AB 2700		
Author:	McCarty, et al.		
Version:	4/27/2022	**Hearing Date:**	6/29/2022
Urgency:	No	**Fiscal:**	Yes
Consultant:	Evan Goldberg		

SUBJECT: Transportation electrification: electrical distribution grid upgrades

DIGEST: Requires the California Air Resources Board (ARB) to gather fleet data for on-road and off-road vehicles in the medium- and heavy-duty sectors from entities subject to its regulations. ARB would then have to share that data with investor-owned electrical utilities (IOUs) and local publicly owned electric utilities (POUs) to help inform electrical grid planning efforts.

Due to the COVID-19 Pandemic and the unprecedented nature of the 2021-22 Legislative Session, all Senate Policy Committees are working under a compressed timeline. This timeline does not allow this bill to be referred and heard by more than two committees as a typical timeline would allow.

ANALYSIS:

Existing law:

1) Requires the Public Utilities Commission (PUC), in consultation with ARB and the California Energy Commission (CEC), to direct IOUs to file for programs and investments to accelerate widespread transportation electrification. (Public Utilities Code (PUC) § 740.12)

2) Requires the PUC fund all infrastructure needed to facilitate electric vehicle (EV) charging (except the charger) by rate-basing it in distribution rates of the state's IOUs. (PUC § 740.19)

3) Requires each local POU to establish a non-bypassable, usage-based charge on local distribution service to fund investments by the utility and other parties in a variety of energy efficiency and renewable energy programs. (PUC § 385(a))

4) Requires the PUC to establish electric vehicle (EV)-grid integration strategies for certain load-serving entities (LSEs). POUs must consider EV-

grid integration strategies in their integrated resource plans (IRPs) and community choice aggregators (CCA) must report specified information to the CPUC regarding EV-grid integration activities. (Public Utilities Code §740.16)

5) Provides ARB with primary responsibility for addressing mobile source air pollution, including adopting rules to reduce vehicle emissions and the specification of vehicular fuel composition.

6) Requires ARB to adopt a statewide greenhouse gas (GHG) emissions limit equivalent to 1990 levels by 2020 and to use market-based mechanisms (cap-and-trade) to achieve compliance with these regulations. (Health and Safety Code (HSC) § 38500)

7) Requires ARB to ensure statewide GHG emissions are reduced to at least 40% below 1990 levels by 2030. (HSC § 38566)

8) Establishes the Greenhouse Gas Reduction Fund (GGRF) in the State Treasury, requires all money, except for fines and penalties, collected pursuant to a market-based mechanism to be deposited in the fund and requires the Department of Finance, in consultation with ARB and any other relevant state agency, to develop, as specified, an investment plan for the money deposited in the GGRF. (Government Code § 16428.8)

9) Establishes the Charge Ahead California Initiative that, among other things, includes the goal of placing at least one million (ZEVs) and near-zero emission vehicles (NZEVs) into service by January 1, 2023, and increasing access to these vehicles for disadvantaged, low-income, and moderate-income communities and consumers. (HSC § 44258)

10) Establishes the Air Quality Improvement Program (AQIP), administered by the ARB, to fund programs that support the production, distribution, and sale of alternative fuels and vehicle technologies, as well as air emissions reduction efforts. The two primary programs adopted by ARB pursuant to AQIP are the Clean Vehicle Rebate Project and the Hybrid and Zero Emissions Truck and Bus Voucher Incentive Program. (HSC § 44274)

11) Requires 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 zero-emission vehicles (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)

12) Requires the CEC to adopt an Integrated Energy Policy Report (IEPR) every two years, with updates every other year, to report on specified major energy trends facing the state. Existing law specifies the contents the IEPR must contain, including but not limited to, supply, demand, pricing, reliability, efficiency, and impacts on public health and safety, the economy, resources, and the environment. (Public Resources Code §25300 et. seq.)

This bill:

1) Requires ARB to annually gather fleet data for on-road and off-road vehicles in the medium- and heavy-duty sectors from entities subject to its regulations and share that data with IOUs and POUs to help inform electrical grid planning efforts. The fleet data shall include but not be limited to:
   a) The vehicle fleet size and composition, including battery electric, hybrid, or fuel cell.
   b) The fleet location.
   c) The total anticipated charging capacity at each fleet location.

2) Requires each IOU, as part of its distribution planning process, to incorporate the fleet data produced by the ARB to facilitate the readiness of their distribution systems to support the level of electric vehicle charging anticipated by specified executive orders and state planning documents and regulations, including:

   a) Executive Order B-48-18, which established a goal of installing 200 hydrogen-fueling stations and 250,000 battery-electric vehicle chargers,
   including 10,000 direct-current fast chargers, by 2025.
   b) Executive Order N-79-20, which established a goal that 100 percent of in-state sales of new passenger cars and trucks will be zero-emission by 2035.The order also stated the goal that 100 percent of medium- and heavy-dutyvehicles in the state be zero-emission by 2045 for all operations where feasible.
   c) EV infrastructure deployment goals in the IEPR.
   d) The CEC's biennial assessment of the EV infrastructure needed to meet state EV deployment goals.
   e) ARB regulations.
   f) Air quality management plans.
   g) Regional seaport plans.

h) Regional transportation plans.
i) Sustainable community strategies.

3) Requires each POU, as part of its distribution planning process, to consider the fleet data produced by the online portal, and other available data, to facilitate the readiness of their distribution systems to support the level of electric vehicle charging anticipated by specified executive orders and state planning documents and regulations.

4) Requires the PUC to ensure each IOU's proposed investments in its distribution system are consistent with preparing the electrical grid to meet the transportation electrification goals of the state and ensure reasonable cost recovery for the IOU.

Background

1) Fleet Electrification & Electricity Distribution. Approximately 40% of California's emissions are generated by the transportation sector, which includes both the light-duty (passenger fleet) and medium- and heavy-duty fleets. As more and more electric vehicles are placed on the road, that will have an impact on the amount of electricity that will need to be generated in the state and on the charging infrastructure that has to be deployed.

Projects by IOUs to support increased demand on the state's electric infrastructure are evaluated through public regulatory processes overseen by the PUC and its activities in supporting ZEVs fall into four main categories: (1) electricity rates and costs of fueling, (2) charging infrastructure deployment and incentives, (3) vehicle-grid integration policy and (4) pilots, program evaluation, and interagency coordination. Within their charging infrastructure deployment activities, the PUC has authorized $1.53 billion of ratepayer funding to support charging infrastructure programs across the IOUs. Of this amount, nearly $1.23 billion is still available because most of these projects are in the implementation or design phase. The PUC is also engaged in reforming the IOUs' distribution planning processes to account for high levels of electrification and the impacts on the distribution grid. With regard to POUs, there are no statewide regulations governing their planning and spending on distribution infrastructure or transportation electrification.

2) What We Know Now About Fleet Electricity Demand. Recent assessments show accelerated EV deployment will require grid upgrades and better charging integration. The CEC is required to conduct a biennial assessment of the EV infrastructure needed to meet state EV deployment goals. In its 2021

assessment, the CEC noted the EV distribution infrastructure planning for accelerated EV deployment required special attention due to the unpredictable nature of the time and costs required for this infrastructure. The CEC's assessment noted the deployment of EV fleets under ARB's Advanced Clean Fleets rule may pose specific challenges for distribution infrastructure due to significant electrical load fluctuation from many large vehicles charging at certain times. The CEC's assessment states:

> Moreover, as medium- and heavy-duty electrification progresses (especially with ARB's new Advanced Clean Trucks and Innovative Clean Transit rules), existing make-ready infrastructure may need to serve higher-than-anticipated levels of charging load. Preliminary research suggests that most electric utilities in California have enough capacity in urban areas along the Interstate 5 corridor to support new medium-duty vehicle charging, but many rural areas and most heavy-duty charging stations will require local distribution grid upgrades, often including dedicated substations."

While the CEC may obtain limited data on future fleet EV adoption plans, it already receives data regarding operational EV deployment. The CEC incorporates this data along with other data sources to create projections of EV infrastructure needs in statewide assessments and databases showing geographic-specific needs. The CEC is currently using CTP funds to develop the HEVI-Pro tool with Lawrence Berkeley National Labs (LBNL). The HEVI-Pro tool is intended to help identify charging needs for medium and heavy-duty EV deployment. Both EVI-Pro and HEVI-Pro are data sources the CEC uses to target EV infrastructure based on vehicle deployment while minimizing impacts to the electrical grid and identifying distribution needs.

3) *Deciding When & Where To Upgrade.* Each of the three IOUs has a distribution planning process that are required to use the most recent Integrated Energy Policy Report (IEPR) published by the CEC which contains growth forecasts including EV growth. The forecasts use statewide data, so the IOUs have methods to disaggregate the system-level data to more useful circuit-level scales. These plans usually use a 5-year window for planning distribution project initiation but use 10-year forecasts for longer term context. However, the IOUs cannot initiate a distribution project without a service request from customers. When customers submit service requests and apply for interconnection, some needs for infrastructure may be immediately required to interconnect (such as conduit or panel upgrades) but larger upgrades, such as a new or bigger substation, would also be identified by IOU planning staff responding to the service request. These more significant distribution projects

take longer than 5 years to complete with transmission line and substation projects having the longest lead times.

4) *POU Upgrade Decisions.* POUs largely initiate upgrades only when a customer requests interconnection and do not engage in as much distribution planning. The POUs conduct interconnection studies to determine whether the increased load will require more distribution capacity. However, POUs are not all the same. For example, the Los Angeles Department of Water and Power (LADWP) is the largest municipal utility in the United States, and it uses IEPR forecasts among other resources to produce a Power Infrastructure Plan and other planning documents. In contrast, the City of Banning manages 6 distribution substations and building any upgrade absent a demonstrated need would likely lead to overcharging ratepayers.

5) *Transportation Electrification Permitting.* Permitting and licensing for the actual construction and building of transportation electrification projects and other distribution upgrades falls largely under the purview of the city, county, or other local government where the upgrade is taking place. The PUC and the utilities do have roles in ensuring projects meet required standards, such as through interconnection rules. IOUs are not permitted to proactively upgrade their distribution system without receiving a request from customers.

Comments

1) *Purpose of Bill.* According to the author, "California leads the nation in setting and maintaining air quality and emissions standards. However, the transportation sector remains the primary driver of pollution and greenhouse gas (GHG) emissions in the state. Transitioning to zero-emission vehicles (ZEVs) is critical to protect public health and stem the effects of climate change, but it will put new demands on California's electrical grid. AB 2700 is a common-sense step that aligns California's grid planning efforts with the state's ZEV, air quality, and climate goals."

2) *Amendments Agreed to In Senate Energy, Utilities & Communications (EU&C) Committee.* This bill was heard in the Senate EU&C Committee on June 21, 2022, where the author agreed to accept the following amendments that will be formally adopted in this committee should the bill be approved:

    1. On Page 3, Line 29, inserting the term "everywhere feasible" in after "2045".

2. On Page 3, Line 32, changing who is responsible for gathering the fleet data required by this bill from ARB to the CEC, though requiring the CEC to work with ARB, the PUC, and other relevant stakeholders.
3. On Page 4, Lines 3-6, recasting it to require the data to be collected by the CEC to include:
   (1) The *total* vehicle fleet *or equipment* size and composition, *including each vehicle's fuel type*, including battery electric, *plug-in* hybrid, or fuel cell.
   (2) ~~The fleet~~ *Physical address of the fleet's* location.
   (3) *Information that would allow the electrical corporation or local publicly owned utility to estimate* the total anticipated charging capacity at each fleet location.
4. Inserting language on Page 4, Line 7, requiring ARB to conduct outreach to the fleets it interacts with as part of its existing programs to help the CEC collect the data required by this bill.
5. Inserting language on Page 4, Line 7, stating the data collected pursuant to this bill shall be protected and not be disclosed by an IOU or a POU pursuant to Public Utilities Code (PUC) § 8380 and PUC § 8381. These sections of law prevent electric and gas utilities from providing access to or selling any customer's personal consumption data.
6. Inserting language on Page 4, Line 7, stating it is the Legislature's intent that this bill not lead to duplicate reporting requirements for clean fleets.
7. Inserting language on Page 4, Line 26, requiring IOUs to, in their general rate cases, identify how investments made in their infrastructure will support EV deployment in their service territories.
8. Removing language on Page 4, Lines 30-31, requiring the PUC to ensure reasonable cost recovery for the IOUs for complying with the requirements of this bill.
9. Removing the requirement in Page 5, Lines 1-11, that POUs incorporate the data they receive pursuant to this bill into their distribution planning processes and instead urging them to consider the data provided by the CEC as part of their distribution planning processes.
10. Inserting language on Page 5, Line 23, requiring a POU to identify any distribution investments made pursuant to this bill in its integrated resources plan.
11. Other minor, technical, and conforming changes.

Furthermore, the author has requested to add two additional amendments:

The first eliminates the requirement for IOUs to incorporate this data into their planning processes by changing the word "incorporate" to "consider" on Page 4, Line 13.

The second inserts language on Page 4, Line 7, to explicitly prohibit IOUs and POUs from sharing the data they receive from the CEC with any third party for any purpose.

3) *Past, Current & Future Electricity Demand*. The data ARB has is what it collects from businesses under regulations governing the Advanced Clean Fleets program and that is the data that presumably fleet operations would provide to the CEC to comply with this bill. However, that data is provided by fleet operators from the prior year, thus reflecting past and perhaps current electricity demand that the IOUs and POUs are supporting with their existing electricity infrastructure. This provides no information on potential future demand that could help IOUs and POUs forecast potential infrastructure upgrades they may need to make months or years down the road.

4) *Will The Data Collected Be Confidential?* The bill will require the CEC to share the data it receives from the fleet operators with the IOUs and the POUs.

   What is not clear in the bill is at what level of granularity the data would be shared. Will it be the raw data, including the name and address of each fleet? Or will it be aggregated data to try and protect the privacy of each individual fleet? If it is aggregated, would it be aggregated at a census tract, substation, or circuit level, which would likely be more useful to the IOUs and POUs, (though less confidential) or will it be at the county or zip code level, which is likely to be less useful to the IOUs and POUs (though more confidential)?

   Amendments proposed by the author and described at the end of Comment 2 explicitly prohibit IOUs and POUs from sharing any data they receive from the CEC with any third party for any purpose.

5) *Mandated Collection, Optional Usage.* The bill requires fleet operators to provide certain information to the CEC, requires ARB to conduct outreach to fleet operators, and requires the CEC to provide the fleet information to the IOUs and POUs. However, the bill only requires the POUs and IOUs to consider using this information in their distribution planning processes.

6) *Senate Transportation Committee Comment.* The following comment was provided by the staff of the Senate Transportation Committee. AB 2700 was referred to the Senate Transportation Committee but the referral was subsequently rescinded because of the limitations placed on committee hearings due to ongoing health and safety risks from the COVID-19 virus.

"As electric vehicle (EV) deployment grows so too does the demand on the electric grid. Governor Newsom's executive orders require not just more EVs but also an acceleration of their deployment. Exacerbating this will soon be the deployment of heavy-duty EVs and their much bigger electric demand. This is both an electric supply and an electric distribution system challenge. If California's 2025 EV deployment goals are met, the state's electric usage will grow between 5% and 10%, a very large increase. And it will strain the electric distribution system as local transformers and circuits have to be upgraded to provide the capacity to supply that electricity. The challenge to electric utilities and their regulators is acute and may well be unprecedented. California's GHG reduction efforts depends on their success."

Double Referral

This bill was approved by the Senate Energy, Utilities & Communications Committee on a 10-1 vote on June 21, 2022

Related/Prior Legislation

SOURCE: Natural Resources Defense Council

SUPPORT:

350 Sacramento
Bluegreen Alliance
Calstart INC.
Coalition for Clean Air
Coalition of California Utility Employees
Edison International and Affiliates, Including Southern California Edison
Laane (los Angeles Alliance for A New Economy)
Natural Resources Defense Council (NRDC)
Sierra Club
The Greenlining Institute

OPPOSITION:

California Cotton Ginners and Growers Association
California Distributors Association
California Farm Bureau Federation
California Fresh Fruit Association
California Fuels and Convenience Association
California Municipal Utilities Association

California Poultry Federation
California Retailers Associaiton
California Trucking Association
Harbor Trucking Association
Western Agricultural Processors Association
Western States Trucking Association

ARGUMENTS IN SUPPORT: The Coalition for Clean Air writes in support of the bill:

"Deploying and supporting zero-emissions vehicles is vital in reducing emissions from the transportation sector. Clean transportation, done at the scale necessary to meet clean air standards and the state's climate commitments, will have significant implications for the electrical grid. The current "just-in-time" approach for building grid upgrades was designed to serve customers with large, expected loads. As a result, installing vehicle charging and fueling infrastructure faces delays, barriers, and higher costs. These obstacles will make installing clean transportation infrastructure more difficult. Infrastructure reliability is going to be especially important for the success of the Advanced Clean Trucks and Advanced Clean Fleets rules.

"AB 2700 empowers utilities to conduct data-informed strategic grid planning and investment to support the state's transportation electrification goals. Specifically, this bill requires CARB to share electric fleet data with California utilities so they can better anticipate electricity demand and plan necessary upgrades. With more strategic planning and investment, the electrification of the transportation sector could be cost-effective, facilitate progress towards the state's commitments, and maximize benefits for all utility customers. AB 2700 is a common-sense step that aligns California's grid-planning processes with the state's ZEV, air quality, and climate goals.

"To prepare the grid to support widescale electric cars and truck deployment over the next decade, the state needs to move to a more-proactive approach to grid planning. Strategic planning and investment are needed to align with the state's policy efforts, avoid delays we cannot afford and prevent costly upgrades done on an emergency basis."

ARGUMENTS IN OPPOSITION: A letter signed by the California Trucking Association, the California Farm Bureau Federation, the California Retailers Association, and eight other organizations states:

"AB 2700 would create burdensome new regulatory provisions that would require costly engineering work and expose proprietary trade secrets of tens of thousands of California businesses. Furthermore, the voluminous information exchange and rate basing called for in the bill is done with little to no transparency to the legislature regarding ratepayer impacts.

"To accurately forecast vehicle fleet size/composition and total anticipated charging capacity at each fleet location, fleets would need to perform costly engineering and site analysis (e.g. Foothill Transit, "In Depot Charging and Planning Study"1 or Stanislaus COG's, "Electric Vehicle Infrastructure Study."2). Requiring a multi-hundred thousand dollar engineering analysis be performed for each fleet location annually is highly burdensome. Further, we believe it is inappropriate to require this work to be performed as a separate reporting regulation given that similar analysis will need to be completed to respond to regulatory requirements under CARB's proposed Advanced Clean Fleets Rule. Because battery-electric, hybrid and hydrogen fuel cell technology and charging infrastructure is evolving at a rapid pace, information prematurely provided to utilities may provide a false picture of the scale of distribution upgrades necessary to support commercial vehicle electrification.

"This bill would require a public agency to collect trade secrets from fleets and share them with privately held companies which act as energy providers to these fleets. This is highly inappropriate. Civil Code 3426.1 defines trade secrets as "information, including a formula, pattern, compilation, program, device, method, technique, or process, that: (1) Derives independent economic value, actual or potential, from not being generally known to the public or to other persons who can obtain economic value from its disclosure or use; and (2) Is the subject of efforts that are reasonable under the circumstances to maintain its secrecy." Fleet compositions by location and anticipated energy usage, which constitute methods for meeting future regulatory requirements and demand information from an energy customer to its provider clearly meet the definition of "trade secrets" under the law."

-- END --