SENATE COMMITTEE ON ENERGY, UTILITIES AND COMMUNICATIONS
Senator Josh Becker, Chair
2025 - 2026 Regular

Bill No:	AB 740	**Hearing Date:**	7/15/2025
Author:	Harabedian		
Version:	4/28/2025 Amended		
Urgency:	No	**Fiscal:**	Yes
Consultant:	Nidia Bautista		

SUBJECT: Virtual power plants: load shifting: integrated energy policy report

DIGEST: This bill requires the California Energy Commission (CEC), on or before November 1, 2026, to adopt a virtual power plant (VPP) deployment plan.

ANALYSIS:

Existing law:

1) Establishes and vests the California Public Utilities Commission (CPUC) with regulatory jurisdiction over public utilities, including electrical corporations. (Article XII of the California Constitution)

2) Requires the CPUC to adopt a process for each load-serving entity (LSE) to develop an Integrated Resources Plans (IRP) that among its requirements considers the role of existing renewable generation, grid operational efficiencies, energy storage, and distributed energy resources (DERS), including energy efficiency, in helping to ensure each LSE entity meets energy needs and reliability needs in hours to encompass the hour of peak demand of electricity. (Public Utilities Code §454.52(a)(1)(3))

3) Requires the governing board of a local publicly owned electric utility (POU) to develop an IRP that considers the role of existing renewable generation, grid operational efficiencies, energy storage, and DERs, including energy efficiency, in helping to ensure each utility meets energy needs and reliability needs in hours to encompass the hour of peak demand of electricity. (Public Utilities Code §9621)

4) Mandates the California Air Resources Board (CARB), in consultation with the CEC and the CPUC, to require battery electric vehicles (BEVs) to be bidirectional-capable, allowing EVs to support the grid. (Health and Safety Code §44269)

5) Requires the CEC, in consultation with specified entities, to adopt a biennial integrated energy policy report (IEPR) containing certain information, including an overview of major energy trends and issues facing the state. (Public Resources Code §25302)

6) Requires the CEC, in consultation with the CPUC, and the California Independent System Operator (CAISO), to adopt a goal for load shifting to reduce net peak electrical demand and adjust this target in each biennial IEPR thereafter. (Public Resources Code §25302.7)

7) Allows funds from the safe drinking water, wildfire prevention, drought preparedness and clean air bond to be spent on zero-emissions distributed energy backup assets, VPP, and demand side grid support (DSGS). (Public Resources Code §94530)

8) Establishes the disadvantaged community group to consisting of representatives from disadvantaged communities identified pursuant to Section 39711 of the Health and Safety Code. Requires the disadvantaged community advisory group to review and provide advice on programs proposed to achieve clean energy and pollution reduction and determine whether those proposed programs will be effective and useful in disadvantaged communities. (Public Utilities Code §400)

This bill:

1) Defines “virtual power plant” to mean an actively coordinated aggregation of behind-the-meter DERs, including, but not limited to, EVs and chargers, electric water heaters, smart thermostats, smart plugs, smart buildings and their controls, battery storage systems like those installed with rooftop solar systems, and flexible commercial and industrial loads, that are dispatchable and can balance electricity demand and supply and reduce or shift demand.

2) Requires the CEC, on or before November 1, 2026, to adopt a VPP deployment plan.

3) Requires the CEC, in developing the plan, to take certain actions in developing the plan, including:

    a) Consult and collaborate with the CPUC, the CAISO, and the disadvantaged community advisory group.

b) Hold no less than two public workshops to solicit public input on the development of the strategy.
c) Convene stakeholder sessions to solicit input from organizations representing various sectors.

4) Require that the plan meet specified requirements, including:

a) Identifies the resources, policies, and timelines needed for VPP to help meet the statewide load-shift goals adopted pursuant to §25302.7.
b) Identifies barriers and opportunities for VPP resources to qualify for resource adequacy (RA) obligations.
c) Identifies the barriers and opportunities for VPP resources to act as load-modifying resources that reduce a LSE's RA obligations.

5) Requires the plan adopted pursuant to these provisions to be included in the CEC's IEPR.

6) Requires each electrical corporation to annually report to the CEC its contribution towards meeting the load-shift goal.

Background

About virtual power plants. VPPs, generally considered a connected aggregation of DER technologies, can offer deeper integration of renewables and demand flexibility, which in turn offers more customers cleaner and more affordable power. At its core, a VPP is comprised of hundreds or thousands of households and businesses that offer the latent potential of their thermostats, EVs, appliances, batteries, and solar arrays to support the grid. These devices can be flexibly charged, discharged, or managed to meet grid needs. When these devices are aggregated and coordinated, they can provide many of the same energy services (capacity, energy, ancillary services) as a traditional power plant.

Virtual power plants in California. In 2020, the Federal Energy Regulatory Commission released Order No. 2222, which enabled DERs to better participate in electricity markets run by regional grid operators, primarily mediated by a DER aggregator (a VPP or the utility itself). Despite this federal permission structure, how VPPs should integrate into CAISO is still unclear. In addition, there remains ambiguity as to how aggregators are classified relative to utilities, how they will be regulated by the CPUC, and how these programs can be deployed at scale.

- In 2021, the CPUC approved the creation of the Emergency Load Reduction Program (ELRP) as a pilot program for a demand response (DR) approach to

help avoid rotating outages during peak summer electricity use. ELRP incentivizes load reduction and is administered by the three large electric Investor-owned Utilities (IOUs). VPPs are permitted to participate in this program.

- Pursuant to the requirements from SB 846 (Dodd, Chapter 239, Statutes of 2022), the CEC established a Load-Shift goal of 7,000 megawatts (MW) by 2030 and has been seeking solutions to meet this goal. In 2022, AB 205 passed, establishing the DSGS program administered by the CEC. The goal of the DSGS program is to offer incentives to electric customers that provide load reduction and backup generation to support the state's electrical grid during extreme events, reducing the risk of blackouts. The current DSGS program guidelines includes two VPP pilot programs.

- Multiple grants have been made in the DSGS Program including to Tesla, Sunrun, and OhmConnect. All large electric IOUs in California offer limited membership to VPPs. For example, Southern California Edison offers membership to VPPs through agreements with AutoGrid, Generac, SunPower, Sunrun and Swell Energy.

- In 2023 the CEC established load management standards that require utilities to develop and standardize the communication of time varying rates, intending to allow third parties to participate in DR and VPPs. In 2024, the CEC released the *Virtual Power Plant Approaches for Demand Flexibility* solicitation, which provides $15,000,000 in grants to fund demonstrations of community-based VPP approaches that increase demand flexibility.

Comments

Need for this bill. VPPs have been identified as a way meet California's load-shift goals. It remains unclear how VPPs should be implemented on a statewide level that would be safe, effective and cost effective for the grid and for ratepayers. The goal of this bill is to assess the costs and benefits of VPPs to Californians and better outline an implementation plan. Importantly, the VPP Implementation Plan that the CEC develops per the direction of this bill will likely provide recommendations on how to deploy VPPs across all utility service territories and customer service areas, but would not inherently start any new programs or tariffs.

Impacts to ratepayers. There's been growing interest about the use of VPPs to support the electric grid and help address some of the current challenges, including affordability, RA, flexibility, and others. As with all resources, costs relative to benefits is of concern. An April 2024 report by the Brattle Group, *Virtual Power*

Plants Can Be a Solution for California's Growing Need for Affordable Capacity, projected that VPPs at scaled could avoid $750 million per year in traditional power system costs by 2035. The Brattle Group projected roughly $500 million of those savings being paid to VPP participants and overall system savings for customers of $50 million per year. The study also identified the potential of 7,500 MW of VPP in California by 2035 (about 15% of the state's current peak demand).

Potential, but more study needed. VPPs offer the potential for ratepayer savings, reliability services and other energy system needs, however, these outcomes are not a given. California is already piloting and exploring opportunities for further deployment of VPPs which could help reduce load at critical times that could reduce the need for electric grid investments. However, VPPs need further study and understanding of how they can better be deployed to help the state. This bill requires the CEC to develop such a plan and requires specified considerations, particularly related to VPPs and their ability to meet RA.

Prior/Related Legislation

AB 44 (Schultz) of 2025, requires the CEC to create and share methods for adjusting LSEs' energy demand forecasts. These methods will be based on the use of technologies and programs that reliably reduce or shift electricity use, as agreed upon by the CEC, the CPUC, and the CAISO. The bill is pending in this committee.

SB 541 (Becker) of 2025, requires the CEC to establish the incremental load shifting needed to meet the statewide load-shifting goal in the annual IEPR. The bill is pending in the Assembly Utilities and Energy Committee.

SB 59 (Skinner, Chapter 765, Statutes of 2024) authorized CARB, in consultation with the CEC and the CPUC, to require BEVs to be bidirectional-capable if it determines that there is a sufficiently compelling benefit to the BEV operator and the electrical grid.

AB 205 (Ting, Chapter 61, Statutes of 2022) authorized funding and changes in many energy focused programs, including the DSGS Program and appropriated $200 million to the CEC to run the Program.

SB 846 (Dodd, Chapter 239, Statutes of 2022) primarily extended the operations of the Diablo Canyon Powerplant. The bill also directed the CEC to establish a statewide goal for load shifting and to incorporate the goal in each IEPR.

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

SUPPORT:

Advanced Energy United (Co-Sponsor)
Environment California (Co-Sponsor)
The Climate Center (Co-Sponsor)
350 Bay Area Action
350 Humboldt
Building Owners and Managers Association
California Apartment Association
California Building Industry Association
California Business Properties Association
California Community Choice Association
California Energy Storage Alliance
California Solar & Storage Association, if amended
Center for Biological Diversity
Ceres, Inc.
Clean Coalition
Clean Power Campaign
Climate Action California
Coalition for Clean Air
Collective Resilience
Democrats of Rossmoor
Environmental Defense Fund
NAIOP California
PearlX
Renew Home
Rewiring America
San Diego Community Power
San Jose Clean Energy
Solar Energy Industries Association
Solar United Neighbors Action
Sustainable Rossmoor
TechNet
The Climate Reality Project - Silicon Valley Chapter
Union of Concerned Scientists
Vote Solar

OPPOSITION:

None received

ARGUMENTS IN SUPPORT: The sponsors of the bill, Environment California, The Climate Center, and Advanced Energy United, state:

> California needs more clean energy, quickly to meet rising electricity demand and cut pollution from backup fossil fuel plants that run when demand spikes. More utility-scale clean, renewable energy capacity including solar, wind and battery storage is coming online to meet those needs, but the time it takes to approve and build those projects along with new grid infrastructure raises costs for California ratepayers, when local clean energy solutions can dramatically reduce those costs. …AB 740 would kick-start the process to achieve the full benefits of VPPs at scale. Specifically, the bill would require the California Energy Commission to develop a VPP implementation plan for the state with goals and milestones, which would include finding strategies to tackle major barriers like resource adequacy qualification and data access needs.

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