Office of Senate Floor Analyses
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UNFINISHED BUSINESS

Bill No: SB 541
Author: Becker (D), et al.
Amended: 9/5/25
Vote: 21

SENATE ENERGY, U. & C. COMMITTEE: 13-4, 4/21/25
AYES: Becker, Allen, Archuleta, Arreguín, Ashby, Caballero, Gonzalez, Grayson, Limón, McNerney, Rubio, Stern, Wahab
NOES: Ochoa Bogh, Dahle, Grove, Strickland

SENATE APPROPRIATIONS COMMITTEE: 5-1, 5/23/25
AYES: Caballero, Cabaldon, Grayson, Richardson, Wahab
NOES: Seyarto
NO VOTE RECORDED: Dahle

SENATE FLOOR: 27-10, 6/3/25
AYES: Allen, Archuleta, Arreguín, Ashby, Becker, Blakespear, Cabaldon, Caballero, Cervantes, Cortese, Durazo, Gonzalez, Grayson, Laird, Limón, McGuire, McNerney, Menjivar, Padilla, Pérez, Rubio, Smallwood-Cuevas, Stern, Umberg, Wahab, Weber Pierson, Wiener
NOES: Alvarado-Gil, Choi, Dahle, Grove, Jones, Niello, Ochoa Bogh, Seyarto, Strickland, Valladares
NO VOTE RECORDED: Hurtado, Reyes, Richardson

ASSEMBLY FLOOR: 46-14, 9/12/25 – Roll call vote not available.

SUBJECT: Electricity: load shifting

SOURCE: Author

DIGEST: This bill requires the California Energy Commission (CEC), as part of an existing biennially report, to estimate each retail supplier's load-shifting potential, giving consideration to certain factors, including cost-effectiveness; and

to publish, on or before July 1, 2028, and biennially thereafter, the amount of load shifting that each retail supplier achieved in the prior calendar year.

Assembly Amendments of 9/5/25 make numerous substantive and clarifying amendments, including requiring the CEC to analyze the cost-effectiveness of specific load flexibility programs and other load-shifting interventions; recasts the requirements on the CEC to allocate a load-shifting estimate to each retail supplier; adds findings and declarations; and makes other clarifying changes.

ANALYSIS:

Existing law:

1) Existing law 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 State Energy Resources Conservation and Development Commission (California Energy Commission (CEC)) to adopt a biennial integrated energy policy report (IEPR) containing certain information in a specified format. (Public Resources Code §25302)

3) 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)

4) Requires the CPUC to adopt a process for each load-serving entity (LSE) to file an integrated resource plan (IRP) and a schedule for periodic updates to the plan and to ensure that LSEs, among other things, enhance distribution systems and demand-side energy management. (Public Utilities Code §454.52)

5) Requires that all rates for any service or product charged by an electrical corporation must be just and reasonable. (Public Utilities Code §451)

6) Authorizes the CPUC to authorize electrical corporations to offer residential customers the option of receiving service on time-variant pricing (time-of-use rates, critical peak-pricing, and real-time pricing). Prohibits the CPUC from establishing a mandatory default time-variant pricing tariff for residential

customers, except for default time-of-use rates. Requires the CPUC to ensure that any time-of-use rate schedule does not cause unreasonable hardship for senior citizens or economically vulnerable customers in hot climate zones. (Public Utilities Code §745)

This bill:

1) Makes several findings and declarations concerning the potential for load flexibility to help reduce peak load and provide cost-saving opportunities.

2) Requires the CEC, in consultation with the CPUC, CAISO, California balancing authorities, to analyze the cost-effectiveness of specific load flexibility programs and other types of load-shifting interventions and identify both the approximate amount of load shifting and the cost-effectiveness of each type of load-shifting intervention in the next update to the biennial IEPR after January 1, 2027.

3) Requires the CEC, as part of each biennially IEPR, to estimate each retail supplier's load-shifting potential, giving consideration to certain factors.

4) Requires the CEC, on or before July 1, 2028, and biennially thereafter, to analyze and publish the amount of load shifting that each retail supplier achieved in the prior calendar year.

5) Defines "retail seller" to mean an electrical corporation, community choice aggregator (CCA), electric service provider (ESP), or local electric publicly owned utility (POU) and excludes an electrical corporation with 60,000 or fewer customer accounts or a retail supplier with an annual electrical demand of less than 1,000 gigawatt-hours (GWh).

Background

A changing electric grid. The electric grid is undergoing tremendous shifts, including transitioning to cleaner (often intermittent) resources (e.g. solar and wind) at a tremendous pace and scale, changing weather conditions/patterns (including more extreme temperature and storms), and switching or substituting energy uses (e.g. transportation and heating from fossil fuels to electricity). After the unexpected rotating outages called by the CAISO in late summer 2020 during west-wide extreme heat event, the Governor and Legislature took several actions to address supply shortages during and in the aftermath of these events. These actions

include near term procurement orders and increasing planning reserve margins, billions of dollars from the state general fund to establish the Electricity Strategic Supply Reliability Reserve, and authorizing the extended operations of the state's sole remaining nuclear power plant. Within the authorizing legislation for the extension of Diablo Canyon nuclear power plant, SB 846 (Dodd, Chapter 239, Statutes of 2022) also required the CEC, in consultation with the CPUC, and CAISO, to adopt a goal for load shifting to reduce net peak electrical demand and to adjust this target in each biennial IEPR.

About load shifting. Load shifting reflects the understanding that *when* electricity is used can be just as important as *how* much is used. Load shifting entails beneficially shifting electric load (or demand) away from times when electricity is scarce, expensive, and highly polluting to times when electricity is inexpensive, clean, and plentiful. Load shifting can play an important role in helping to address the challenges on the electric grid by aligning customer demand with the supply of clean energy. Load shifting has the potential to help integrate renewable generation, reduce the strain on the electric grid, and help maintain reliability during extreme events. As electrified load increases, especially from electric vehicles, heat pumps, as well as, further adoption of distributed energy resources (especially from solar and energy storage), the need for investments in grid infrastructure may also rise and the opportunities for load shifting also increase.

CEC SB 846 Load-Shift Goal Report. In May 2023, the CEC issued the report required in SB 846 on establishing a load-shifting goal and informed by the 2020 Lawrence Berkeley National Laboratory report on the Shift Resource through 2030, and other relevant research, as required by the statute. The CEC developed a statewide load-shift goal for 2030 of 7,000 megawatts (MW), including 3,400-3,900 MW of incremental resources. The goal encompasses three categories of load flexibility resources:

- Load-modifying demand flexibility resources (3,000 MW) directly impact the load forecast and resource procurement requirements of LSEs. The most common category is time-varying rates, such as time-of-use or hourly dynamic rates that reflect actual grid conditions.
- Resource planning and procurement load flexibility resources (1,620-1,775 MW) either contributes to meeting Resource Adequacy (RA) requirements or reduces RA requirements as a credit. This category includes supply-side demand response that participates in the CAISO as economic or reliability demand response.

- Incremental and emergency load-flexibility resource programs (1,175 MW) intended to increase resource availability during extreme events and do not contribute to meeting RA requirements. These include the Emergency Load Reduction Program and the Demand Side Grid Support program which can be activated during emergency grid events.

The CEC report cautions the statewide goal is based on economic potential.

> Further analysis is needed to determine the cost-effectiveness of specific load flexibility resources and programs. …The proposed goal is not intended to suggest that the state should pursue these targets without the evaluation of the cost-effectiveness of specific resources or programs that would contribute to the goal.

The report also includes 18 policy recommendations to support deployment of the three category of resources.

CEC and CPUC efforts to employ time-varying rates. In addition to the SB 846 report, both the CEC and CPUC are pursuing load flexibility from time-varying rates. The CEC's Load Management Standard proceeding has directed LSEs to create at least one hourly rate offering, or an equivalent program, by 2027. The MIDAS provides a centralized rate database that customers, developers, and devices can use to access rate information. The Flexible Demand Appliance Standards (FDAS) will provide direction to device manufacturers to enable beneficial load flexibility in response to these rates. In June 2022, the CPUC staff issued a report with a proposed roadmap for hourly dynamic pricing to enable widespread load flexibility, including load shifting, called the California Flexible Unified Signal for Energy (CalFUSE). Subsequently, the CPUC opened a rulemaking, *Order Instituting Rulemaking to Advance Demand Flexibility Through Electric Rates* (R. 22-07-005), to enable widespread demand flexibility, instead of the historical piecemeal approach. As part of the proceeding the CPUC has directed electric investor-owned utilities (IOUs) to deploy pilot programs to gain learnings and understandings about the effects of dynamic rates.

Integrated Energy Policy Report (IEPR). The IEPR provides a cohesive approach to identifying and solving the state's pressing energy needs and issues. The report, which is crafted in collaboration with a range of stakeholders, develops and implements energy plans and policies. SB 1389 (Bowen and Sher, Chapter 568, Statutes of 2002) required the CEC to conduct assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and

distribution, demand, and prices. The CEC is then required to use these assessments and forecasts to develop energy policies that conserve resources, protect the environment, ensure energy reliability, enhance the state's economy, and protect public health and safety." The CEC adopts an IEPR every two years and an update every other year.

Comments

Need for this bill. The author states:

> Electrical bills have grown unsustainably, and the state is looking for ways to constrain future cost increases. Electricity system costs (at least for transmission and distribution) are mostly driven by the need to provide reliable power during the periods of highest demand. If utilities can lower their system peak energy demand – by getting customers to adjust thermostats or shift some of their demand to other times of day, for example – then the utilities can serve more demand during off-peak hours (which helps to lower rates) while avoiding new investments to add to peak capacity. The CEC's "Load-Shift Goal Report" set a goal of achieving 7000 MW of cost-effective load shifting by 2030 (with 3400-3900 MW of that not yet being captured). While the CEC's goal has shed light on this large cost-saving opportunity, more is needed to push our electricity suppliers to capture those savings and make load-flexibility a routine part of their system planning and energy procurement efforts.

Impacts to ratepayers. As the supporters of this bill note, the increasing costs of utility bills, along with anticipated expansion of new resources and the electric grid, necessitate ensuring that electric grid investments are judicious and prudent. Load shifting provides a tool with the potential to better optimize electric grid resources while shifting load during times when cleaner, and less expensive, electricity is available. Successful deployment of load shifting can be a win-win for participating customers and all customers. However, as the opposition to this bill contends there are potential risks that must also be mitigated, especially in relation to dynamic rates and ensuring the resources are cost-effective. Moreover, to the extent load-shifting resources are required as part of LSEs' procurement, ensuring these resources compete with others can help support the least-cost, best-fit principles. The CEC, in its report, acknowledged the load-shift goal is "aspirational, but achievable with robust policy support" and merits further evaluation for cost-effectiveness. The CEC also expressed reluctance to recommend subgoals for specific program types, sectors, or jurisdictions. This bill does not mandate procurement, but would require the CEC to report on the

estimated procurement to meet the load-shifting goal by each retail supplier (except those electric POUs who are excluded from the requirement of the CEC's Power Content Label requirements). The bill requires the CEC to analyze the cost-effectiveness of each load-shifting measure. Electric POUs oppose the requirements to have the CEC establish standards on them to report on the estimated load-shifting they have undertaken and to annually report on their efforts. They believe this reporting is burdensome and not beneficial, as their local governing boards make decisions about solutions that work best in their service territory.

Related/Prior Legislation

AB 1117 (Schultz) of 2025, requires the CPUC, by July 1, 2028, to develop optional, dynamic electricity rates for large electrical investor-owned utility customers. The bill was held in the Senate Appropriations Committee.

SB 846 (Dodd, Chapter 239, Statutes of 2022) among its many provisions, required the CEC, in consultation with the CPUC, and CAISO, to adopt a goal for load-shifting to reduce net peak electrical demand and to adjust this target in each biennial IEPR.

AB 327 (Perea, Chapter 611, Statutes of 2013) among its many provisions, restructured the rate design for residential electric customers.

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

According to the Assembly Appropriations Committee:

This bill creates significant new analytical, administrative and regulatory workload for both CEC and CPUC, with ongoing annual costs likely in the high hundreds of thousands of dollars, at least.

1) CEC anticipates the need for $656,000 ongoing for three permanent positions to:

    a) Lead development of rules and guidelines for load shift credit accounting, manage data reporting process for retail suppliers and track the state's progress toward increased load flexibility.
    b) Facilitate interagency coordination and lead strategy development efforts.
    c) Evaluate the ability of load flexibility resources to qualify for or reduce a load-serving entity's resource adequacy obligations.

CEC notes its main funding source, ERPA, faces an ongoing structural deficit and warns it, therefore, may not be an appropriate fund source to support the implementation of this bill.

2) The CPUC describes the work this bill creates for it as developing a strategy to reduce distribution infrastructure investments through cost-effective deployment of distributed resources and load shifting; directing IOUs to implement new programs and rate designs and overseeing their implementation; integrating new data into planning processes; and coordinating closely with CEC and CAISO.

   The CPUC estimates costs of approximately $1.4 million (Public Utilities Commission Utilities Reimbursement Account), as follows: $911,000 for three permanent senior regulatory analysts and $257,000 for one three-year limited-term administrative law judge, and $480,000 for outside consultants, hardware and staff training, including modeling capacity and updated avoided cost studies.

SUPPORT: (Verified 9/9/25)

350 Humboldt
350 Sacramento
Advanced Energy United
California Efficiency + Demand Management Council
California Energy Storage Alliance
California Solar & Storage Association
Carbon Free Palo Alto
Carbon Free Silicon Valley
Clean Coalition
Climate Action California
Coalition for Community Solar Access
Deploy Action
Menlo Spark
Microgrid Resources Coalition
Natural Resources Defense Council
Nexamp
San Jose Community Energy Advocates
School Energy Coalition
The Climate Center
The Climate Reality Project - Silicon Valley Chapter

OPPOSITION: (Verified 9/9/25)

California Community Choice Association
California Municipal Utilities Association
California Special Districts Association
Marin Clean Energy
Northern California Power Agency
Sacramento Municipal Utility District
Southern California Public Power Authority

ARGUMENTS IN SUPPORT: The Natural Resources Defense Council states:

> …[SB 541] would reinforce and smooth the implementation of the state's load flexibility goal, while requiring cost-effectiveness and strategic integration. Increasing cost-effective load flexibility on the grid can be beneficial because it allows for more effective use of electrified buildings and vehicles, reduces the electricity infrastructure costs needed to support economic development, and increases the reliability and resiliency of the grid. …SB 541 applies a reasonable next step toward cost-effectively and strategically increasing and investing in load-shifting resources to support a more resilient, zero-emission electricity grid.

ARGUMENTS IN OPPOSITION: According to the Southern California Public Power Association (SCPPA):

> SCPPA Members believe load shifting is an important strategy for maximizing the efficiency of their customers' infrastructure investments. Elements of SB 541, such as the direction for the Energy Commission to develop metrics to evaluate the effectiveness of load-shifting and to evaluate barriers implementation, could be useful starting points for POUs to refine their own analyses as POUs evaluate and pursue solutions that work best for their service territories. …SB 541's marginal increase in specificity of the CEC's ongoing load-shifting analyses would create a significant increase in the reporting burden for POUs. SCPPA is appreciative of the changes made to the bill thus far, however the bill could be further improved by removing the estimation of load-shifting capacity for each retail supplier.

Prepared by: Nidia Bautista / E., U. & C. / (916) 651-4107
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