Office of Senate Floor Analyses
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THIRD READING

Bill No: SB 868
Author: Wiener (D), et al.
Amended: 4/7/26
Vote: 21

SENATE ENERGY, U. & C. COMMITTEE: 14-0, 3/17/26
AYES: Allen, Ochoa Bogh, Arreguín, Becker, Dahle, Grove, Hurtado, McNerney, Reyes, Richardson, Rubio, Stern, Strickland, Wahab
NO VOTE RECORDED: Archuleta, Caballero, Gonzalez

SENATE APPROPRIATIONS COMMITTEE: 7-0, 5/14/26
AYES: Cervantes, Seyarto, Cabaldon, Dahle, Grayson, Richardson, Wahab

SUBJECT: Electricity: portable solar generation devices

SOURCE: Environmental Working Group

DIGEST: This bill exempts portable solar devices, as defined, from requirements in state law and electric utility rules regarding connecting to the electrical distribution system, known as interconnection.

ANALYSIS:

Existing law:

1) Defines "electrical corporation" to be every corporation or person owning, controlling, operating, or managing any electric plant for compensation within this state, except where electricity is generated on or distributed by the producer through private property solely for its own use or the use of its tenants and not for sale or transmission to others. (Public Utilities Code §218)

2) Defines "local publicly owned electric utility" to mean specified entities furnishing electric service. (Public Utilities Code §224.3)

3) Requires every public utility to keep accurate records of transactions with a private energy producer, and of the use of the public utility's facilities by the private energy producer, pursuant to an interconnection ordered or approved by the California Public Utilities Commission (CPUC). (Public Utilities Code §2816)

4) Requires each electrical utility, including each electrical corporation, local publicly owned electric utility (POU), electrical cooperative, or other entity that offers electrical service, except as specified, to develop a standard contract or tariff that provides for net energy metering (NEM), which compensates each eligible customer-generator for the electricity it generated during a preceding 12-month period that exceeds the electricity supplied by the electrical utility to the eligible customer-generator during that same period. This contract or tariff is commonly known as NEM 1.0. (Public Utilities Code §2827)

5) Requires the CPUC to develop an additional standard contract or tariff, which may include NEM, for eligible customer-generators that are customers of large electrical corporations, as defined. This contract or tariff is commonly known as NEM 2.0. Authorizes the CPUC to revise the standard contract or tariff as appropriate to achieve specified objectives. (Public Utilities Code §2827.1)

6) Requires the State Energy Resources Conservation and Development Commission (CEC), to set ratings standards for solar energy equipment, components, and systems to ensure reasonable performance and requires the CEC to develop standards that provide compliance for minimum ratings. (Public Resource Code §25782)

This bill:

1) Makes several findings about the rising cost of electricity and the costs of interconnection fees and processes for the installation of customer-sited solar and energy storage projects.

2) Declares it is the policy of the state to promote and encourage the use of solar energy systems and to limit the obstacles to their use, including minimizing the costs of those systems.

3) Defines a "portable solar generation device" to be a moveable photovoltaic (PV) energy generation device that:

a) Has a maximum aggregated alternating current (AC) output of 1,200 watts to a building's electrical system.
b) Is designed to be connected to a building's electrical system through a single standard electrical outlet.
c) Is intended to offset the customer's onsite electricity consumption.
d) Meets the standards of the most recent version of the National Electrical Code and the California Electrical Code (Part 3 of Title 24 of the California Code of Regulations).
e) Is certified as a plug-in photovoltaic (PIPV) system by Underwriters Laboratories (UL) or an equivalent nationally recognized testing laboratory.
f) Includes a feature, certified by UL or an equivalent nationally recognized testing laboratory, that isolates the portable solar generation device from the building's electrical system to prevent the portable solar generation device from back feeding electricity to the electrical grid during a power outage.

4) Exempts a portable solar generation device from all interconnection requirements imposed by state law, the CPUC, electrical corporation rules, or local POU rules, as specified.

5) Prohibits an electrical corporation or an electric POU from requiring a customer using a portable solar generation device to take specified actions, including, among other things, paying any fee or charge related to the device or the electricity the device feeds into a building's electrical system.

6) Authorizes an electrical corporation or an electric POU to require a customer using a portable solar generation device to notify the utility using a simple online registration form, of the address and size of the portable solar generation device.

Background

What is plug-in solar? Plug-in solar, also called "balcony solar" or "portable solar", refers to a solar power system that is generally not permanently mounted to a customer roof or the ground, and can be plugged into a power outlet rather than being permanently wired to the electrical system of the building. Plug-in solar systems consist of two or more PV solar panels equipped with a microinverter, a cord that can plug into a standard electrical outlet (110/120V), and a tripod or mounting hardware (such as to place on a balcony). Some systems may also come with an energy storage battery. The microinverter converts the direct current electricity generated by the solar panels into AC electricity and feeds those

electrons into the home's existing branch circuit. That electricity is then used by appliances on the same circuit or elsewhere in the home, reducing the amount of electricity drawn from the electric distribution grid. These systems can be daisy chained together to make a larger solar system. A single solar panel at peak output could generate enough electricity to power a standard refrigerator, computer, and some lights. With more panels, the systems can also operate a window-unit air conditioner. The unit's small size and portability make them ideal for smaller homes and apartments. These units are sometimes referred to as "balcony solar" given their use by residents living in high-rise multi-housing units in some countries in Europe, particularly popular in Germany.

Interconnection requirements. Distributed energy resources, including solar energy systems, require connections to the electrical distribution grid. Electric Tariff Rule 21 (Rule 21) is an electric IOU tariff that describes the interconnection, operating, metering, and telemetry requirements for generation facilities to be connected to an electric IOU's distribution system and transmission system over which the CPUC has jurisdiction. Rule 21 provides customers who wish to install generating or storage facilities on their premises with access to the electrical grid while protecting the safety and reliability of the distribution and transmission systems. Each electric IOU is responsible for administration of Rule 21 in its service territory and maintains its own version of the rule. A series of regulatory directives, issued through CPUC formalized proceedings, have taken shape since Rule 21 was established in 1982. Local POUs, generally, also require specific interconnection rules when customers wish to install generating and storage energy resources. This collection of decisions, guidelines, and requirements allows customers to access the electrical grid and receive benefits from renewable generation while utilities safely and reliably operate electrical assets. The CPUC is in the very early stages of considering changes to Rule 21 for plug-in solar systems. A recent scoping memo within the proceeding suggests a future phase of the proceeding to address these devices.

Efforts in other states. Utah was the first state to adopt legislation authorizing the use of plug-in solar without utility approval, House Bill 340 which was signed into law a year ago and took effect in May 2025. Proponents for plug-in solar have also been actively pushing efforts in other states. Roughly half of the states in the country had or have pending legislation modeled after Utah's law. In some states, the efforts for similar legislation have been stymied due to safety concerns, including Washington and Arizona.

Comments

Need for this bill. According to the author:

> SB 868, the Plug and Play Solar Act, will give renters and homeowners a simple, low-cost tool to reduce their energy bills and reduce pollution. Because plug-in systems are small and portable, they expand the solar market to renters, condo owners, and people with balconies, small backyards, or patios. California has roughly 14 million rental units – around 40% of households in the state – making this an especially powerful tool for expanding access to clean energy. As Californians struggle to pay their energy bills due to rising electricity rates and greenhouse gas emissions, SB 868 is the solution the state needs.

Potential savings for customers. Proponents for plug-in solar systems contend that these systems can be purchased by a resident and plugged into a standard electrical outlet without involvement from the utility, an electrician, or local building code officials. This is counter to the treatment of rooftop and ground-mounted solar energy systems which are installed with code compliance, hard-wired to the building's electrical system, and checked for safety. California homes average about 6,000-8,000 kilowatt-hours of electricity usage in a year, with many apartments averaging on the lower amount. Given the growing cost of electricity, proponents suggest plug-in solar can help residents reduce their electric utility bill, potentially meeting 14-20% of a home's electricity needs and result in electricity bill savings of $400-$500 annually for a small apartment. Although often referenced as balcony solar and mentioned for renters, plug-in solar systems are also targeted to customers with existing rooftop or ground-mounted solar systems subject to NEM tariffs that are attached to single-family homes. For these customers, the additional energy from the plug-in solar system can maximize the capacity of the NEM tariff, thereby increasing the compensation for energy sold back to the grid. Such a use may fall into a gray area, as the utility's interconnection agreement required for NEM systems may not allow such use.

Safety risks. The electric utilities and the National Electrical Contractors Association opposed to this bill raise many concerns about the safety risks associated with plug-in solar systems as proposed by this bill. Due to the design of the plug-in solar systems to feed electricity back into the building's circuits via a wall outlet, those opposed to this bill raise concerns about the potential risks for overcurrent, fire hazards, electric shock, and failure of existing safety devices, including jeopardizing ground-fault circuit interrupters (GFCIs). The IOUs add that unreported distributed energy resources can complicate and delay outage

restoration because clearance procedures become more complex and time consuming. Many of the safety concerns raised by the opposition are echoed in a White Paper, "Interactions of Plug-in Photovoltaic with Protection of Existing Power Systems"[1], published by UL Solutions in late 2025. The paper noted the risks for overload current that can pose a risk of fire or shock through damaged conductors, insulation, and/or equipment connected to the circuit. The white paper contemplated various solutions to address the overcurrent risk, including a dedicated circuit with unique PIPV receptacle (therefore, not a standard electrical wall outlet). The white paper also raises concerns about touch safety of grid-interactive inverters.

UL Solutions debuts testing and certification framework that requires a nonstandard electrical plug and professional installation. In December and January, UL Solutions debuted a "Testing and Certification Framework for Safer Plug-In Solar Across the United States." The framework provides a pathway for manufacturers to certify and test their plug-in solar systems using the UL 3700 "outline of investigation." The UL certification addresses safety concerns by requiring a qualified professional, generally an electrician, to do some additional work to protect buildings' wiring systems from potential shock, as well as, a unique circuit and outlet (not a standard electrical outlet). Some proponents of plug-in solar are not pleased with the UL safety certification framework. As noted in a February New York Times article, some of UL Solutions' certification criteria could slow growth of the nascent industry if they are echoed in the final standards. The article quotes UL Solutions Vice President Ken Boyce stating, "We want to keep people safe. That's the first and foremost in our minds at all times."
A separate company, UL Standards and Engagement may ultimately develop the final standards based on a consensus-based process with stakeholders, a process that can take 18 months or a few years. The policy committee is not aware of any manufacturer who has been certified.

This bill does not align with UL certification standard. Given the current UL safety certification framework requires a unique plug (not the standard electrical outlet) and dedicated circuit, any product certified through the current safety certification framework would require a professional (in California that is an electrician) to install the system. The requirement is intended to address many of the safety concerns raised in the UL White Paper, concerning touch safety, protection from over current, and breaker masking. Necessarily, these safety requirements would

[1] UL Solutions, White Paper: "Interactions of Plug-in PV with Protection of Existing Power Systems," 2025. https://www.ul.com/insights/safety-considerations-plug-photovoltaic-pipv-systems

likely limit the ability of renters to utilize these systems, given their limited ability to make changes to their apartment or other rental building's electrical systems. However, proponents of this bill desire that UL or another national testing facility will someday have a safety certification that authorizes a plug-and-play solar system to connect to a standard electrical outlet. They desire a similar customer experience to the purchase of an appliance – buy it and plug it in. It is difficult to know at this juncture whether such a certification will develop given these systems send electrons back to the electrical circuits, unlike a typical appliance. Germany which is often cited as a model for the use of plug-and-play solar has different electrical system and policies, including different electrical receptacle outlets than the U.S. Germany's receptacle outlets are recessed which can provide more protection to handling of the plug as prongs can remain energized while partially exposed, posing a shock hazard. Germany also initially authorized a 600W limit, which was subsequently raised to 800W to align with the lower limit of regulation under the European Network Code.[2]

Related/Prior Legislation

AB 2612 (Schultz) of 2026 requires the Building Standards Commission, commencing with the next triennial edition of the Building Standards Code, to adopt, approve, codify, and publish mandatory standards for building electrical circuit features to enable qualified PIPV systems to function as an energy source within a residential dwellings or nonresidential development's electrical circuit, as specified. The bill is pending in the Assembly.

AB 2861 (Ting, Chapter 672, Statutes of 2016) authorized the CPUC to establish an expedited distribution grid interconnection dispute resolution process to resolve disputes within 60 days, unless it determines more time is needed.

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

According to the Senate Appropriations Committee, ongoing costs of approximately $200,000 to $500,000 annually (ratepayer funds) for the California Public Utilities Commission (CPUC) to establish any necessary implementation guidance, administer the customer notification system, handle complaints, provide compliance oversight, and potentially promulgate rulemaking for the interconnection exemption framework.

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[2] Gerber, Daniel L., Achim Ginsberg-Klemmt, Lyn Stoler, Jordan Shackelford, and Alan Meier. 2025. "Barriers to Balcony Solar and Plug-In Distributed Energy Resources in the United States" *Energies* 18, no. 8: 2132. https://doi.org/10.3390/en18082132

SUPPORT: (Verified 5/14/26)

Environmental Working Group (Source)
Caroline Torosis, City of Santa Monica Mayor
350: Bay Area Action, Berkeley Hub, Conejo/San Fernando Valley, Humboldt, San Deigo, and Santa Barbara
Abundance Network
Acterra: Action for a Healthy Planet
Active San Gabriel Valley
Albany Climate Action Coalition
Ava Community Energy
Bay Area Clean Air Coalition
Berkeley Rent Stabilization Board
Bright Saver
California Alliance for Community Energy
California Climate Voters
California Environmental Voters
California Interfaith Power & Light
California Solar and Storage Association
CalPIRG
Center for Biological Diversity
Center for Community Energy
Ceres, Inc.
Citizens' Climate Lobby: Long Beach, Monterey County, and Santa Clarita
City of Berkeley
Clean Coalition
Climate Action: California, Campaign, and Mendocino
Climate Crisis Workgroup of Grassroots Institute
Climate Future California
Climate Health Now Action Fund
Coalition for Clean Air
Community Environmental Council
Community Renewable Solutions
Cool the Earth
Courageous Resistance of the Desert/Indivisible
Dayenu: A Jewish Call to Climate Action
Democratic Club of West Orange County
Ecology Center
Elders Climate Action: NoCal and SoCal Chapters
Endangered Habitats League

Environment California
Environmental Justice
Feather River Action!
Fossil Free California
Glendale Environmental Coalition
GrassRoots Institute Pro-Democracy Workgroup
Greenbank Associates
Greenpeace USA
GRID Alternatives
Healing and Justice Center
Humboldt Progressive Democrats
Indivisible Santa Cruz County
Interfaith Coalition for Earth Justice
Laudate Deum Prayer Network for Climate Healing
Local Clean Energy Alliance
Local Government Sustainable Energy Coalition
Long Beach Alliance for Clean Energy
Marin City Climate Resilience
Morongo Basin Conservation Association
Mothers Out Front Marin
Natural Resources Defense Council
Neighbors for Progressive Action
Orange County Environmental Justice
Our Green Challenge
Pacific Gas & Electric
Pacifica Climate Committee
Pacifica Housing 4 All
Pasadena-Foothills Chapter of Citizens Climate Lobby
Peace Action
Peninsula Interfaith Climate Action
Project Green Home
Quantum Energy Systems
QuitCarbon
Reclaim Our Power: Utility Justice Campaign
Recolte Energy
Saddles That Fit
Safe Alternatives for Our Forest Environment
Samuel Lawrence Foundation
San Diego Community Power
San Luis Obispo Mothers for Peace

San Ramon Valley Climate Coalition
Santa Cruz Climate Action Network
SCV Eco Alliance
Sierra Club California
SLO Climate Coalition
SocioEnergetics Foundation
Solano County Democratic Central Committee
Solar Rights Alliance
St. Joseph Justice Center
Sustainable: Mill Valley, Rossmoor, and San Mateo County
Sustainable Systems Research Foundation
The Climate Center
The Climate Reality Project: Orange County and Silicon Valley Chapters
The Energy Coalition
The Phoenix Group
Third ACT: San Francisco Bay Area, Sacramento, and SoCal
Tri Valley Air Quality Climate Alliance
U.S. Green Building Council
Union of Concerned Scientists
Social Action Committee of the Unitarian Universalist Fellowship of Redwood City
Vote Solar
West Berkeley Alliance for Clean Air and Safe Jobs
Western Center on Law & Poverty
Five Individuals

OPPOSITION: (Verified 5/14/26)

California Building Officials
California Municipal Utilities Association
National Electrical Contractors Association
San Diego Gas and Electric Company
Southern California Edison
Southern California Public Power Authority
Southern California Rental Housing Association

ARGUMENTS IN SUPPORT: According to the Environmental Working Group and a coalition of dozens of supporters:

> Californians need greater access to affordable and reliable electricity. …Fortunately, California is not without solutions to help our state move forward. One of the most effective solutions is also the most obvious and the

most politically popular: reduce red tape and expand access to the sun through "Balcony Solar". This new technology, aka "plug-in solar," involves small, portable solar panels that require nothing more than a patch of sunlight and a standard electrical outlet to immediately provide power for a home. Because the devices are small, affordable and portable they are especially promising for California renters, giving them increased access to the sun. Through SB 868, California can bring immediate utility bill relief to millions of households while contributing to the state's clean energy goals. …Yet, California utilities are already threatening to require, for even the smallest portable solar devices, interconnection agreements designed for larger, hard-wired systems. Utility interconnection will make Balcony Solar more expensive and time-consuming and put it out of reach for many California consumers before the technology reaches the market. …Growing consumer access to solar energy via modernizing and reducing red tape for Balcony Solar will lower energy bills, especially for renters, diversify energy resources, reduce strain on the electric grid, and help cut air pollution. For these and many other reasons, we enthusiastically support SB 868.

ARGUMENTS IN OPPOSITION: According to the California Municipal Utilities Association:

Interconnection standards exist for a reason: they ensure that generation devices are properly configured and installed so that they do not create safety risks for utility workers, customers, or the electric grid. Without appropriate oversight, devices that feed electricity into a building's electrical system may inadvertently back feed into the distribution grid. This creates potential hazards for line workers performing maintenance or responding to outages, who rely on established interconnection standards to ensure circuits are properly isolated and safe to work on. These standards also help ensure that electrical equipment operates safely and that voltage and power quality are maintained across the system. …SB 868 would remove the ability of utilities to verify that equipment meets basic safety and operational standards. …At a minimum, SB 868 should be amended to ensure that utilities retain the authority to implement reasonable

safety and interconnection standards for devices that connect to a building's electrical system. Without such protections, the bill could jeopardize the safe operation of local electric infrastructure.

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5/26/26 12:58:07

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