SENATE COMMITTEE ON ENERGY, UTILITIES AND COMMUNICATIONS
Senator Ben Hueso, Chair
2019 - 2020 Regular

Bill No:	SB 288	**Hearing Date:**	4/10/2019
Author:	Wiener		
Version:	3/28/2019 As Amended		
Urgency:	No	**Fiscal:**	Yes
Consultant:	Nidia Bautista		

SUBJECT: Electricity: renewable resource self-generation and storage

DIGEST: This bill would require a number of provisions to support the deployment of customer-sited distributed energy resources, specifically energy storage systems, including requiring electric utilities to establish standardized processes to interconnect to the electric grid, requiring new tariffs and compensation to sell stored energy to the grid and into the wholesale electricity market.

ANALYSIS:

Existing law:

1) Requires electrical corporations and publicly owned utilities (POUs), among others, to develop, and make available to eligible customer-generators, standard contracts or tariffs for net-energy metering (NEM) if the total generation capacity used by eligible customer-generators exceeds five percent of those utilities' aggregate customer peak demand. Requires the California Public Utilities Commission (CPUC) to develop a standard contract or tariff which may include NEM, for eligible customer-generators with a renewable electrical generation facility that are customers of a large electrical corporation, as defined, to be offered to eligible customer-generators beginning January 1, 2017, or prior to that date if ordered to do so by the CPUC because the customer-generator has reached the five percent limit. (Public Utilities Code §2827.1)

2) Authorizes the CPUC, in consultation with the California Energy Commission (CEC), to annually collect not more than double the amount authorized for the self-generation incentive program (SGIP) in the 2008 calendar year, through December 31, 2024. Requires the CPUC to require the administration of the program for distributed energy resources (DERs) originally established by AB 970 (Ducheny, Chapter 329, Statutes of 2000) until January 1, 2026. Limits the incentives of the SGIP to DERs that the CPUC, in consultation with the

California Air Resources Board (ARB), determine will achieve reductions in emissions of greenhouse gases (GHG). (Public Utilities Code §379.6)

3) Authorizes the CPUC to establish an expedited distribution grid interconnection dispute resolution process with the goal of resolving disputes over interconnection applications that are within the jurisdiction of the CPUC in no more than 60 days from the time the dispute is formally brought to the CPUC. If the CPUC establishes an expedited distribution grid interconnection dispute resolution process, the CPUC may provide exceptions to the 60-day time period when more than 60 days are needed, to fairly and safely address a dispute. (Public Utilities Code §769.5)

This bill:

1) Makes several findings and declarations stating that California residents, businesses, nonprofits, and government entities have the fundamental right to generate and store renewable energy and to reduce and shape their use of electricity obtained from the electrical grid, whether their facilities are off-grid or interconnected to the grid.

2) Requires the CPUC, on or before June 1, 2020, and on or before June 1 of each year thereafter, to submit an annual report evaluating electrical corporations' performance of interconnection review to the Legislature, including specified data.

3) Requires the CEC, on or before June 1, 2020, and on or before June 1 of each year thereafter, to submit an annual report evaluating POUs' performance of interconnection review to the Legislature containing specified data.

4) Requires the CPUC and CEC to establish for the electrical corporations and POUs, respectively, a streamlined and standardized process for reviewing by those utilities of interconnection requests for customers seeking to install renewable energy and energy storage systems on the customer side of the meter to minimize uncertainty, the time and cost of the review, as specified.

5) Requires the CPUC and the governing board of each POU, by January 1, 2021, to, among other things, create one or more tariffs that offer fair compensation for customer-sited energy storage systems that export electricity to the electrical grid and to consider one or more tariffs for customer-sited energy storage and renewable energy renewable energy and energy storage systems to support grid reliability and community resiliency in the event of emergencies or grid outages.

6) Requires the CPUC to collaborate with the California Independent System Operator (CAISO) to modify existing tariffs to remove barriers to the participation of customer-sited renewable energy and energy storage systems in programs intended to provide energy, capacity, and ancillary services for the bulk power system.

7) Requires the CPUC and the governing board of each POU to ensure that customers with onsite customer-sited renewable energy or energy storage systems can take certain related actions and are not subject to discriminatory fees or charges. By imposing addition additional duties on POUs, this bill would impose a state-mandated local program.

Background

Connecting to the distribution grid. Investor-owned utilities (IOUs) and POUs own the utility lines that serve local areas, also known as the distribution grid. The interconnection is the physical connection between a distributed energy resource (DER) and the grid. Disputes can arise when the utility who owns, manages, and maintains the grid won't connect DERs projects. A typical dispute occurs when the utility requires system improvements for safety purposes and the DERs may object to some or all of the costs of the improvements.

Rule 21 Interconnection. CPUC Electric Tariff Rule 21 is a tariff that describes the interconnection, operating and metering requirements for generation facilities to be connected to a utility's distribution system. The tariff provides customers wishing to install generating or storage facilities (types of DERs) on their premises with access to the electric grid while protecting the safety and reliability of the distribution and transmission systems at the local and system levels. As with most tariffs, each IOU is responsible for administration of Rule 21 in its service territory and maintains its own version of the rule. Applicants wishing to interconnect to the grid can select two evaluation processes, depending on eligibility requirements: Fast Track or Detailed Study. The Fast Track process is for projects under three megawatts (MW), non-exporting generation facilities, and NEM facilities. For all other projects, a detailed study is required that requires more evaluation and assessment. The intent of the evaluations for both processes are to:

- Ensure the electric distribution system is capable of managing export generation from DERs.
- Ensure the DERs will not have adverse impacts on the existing electric distribution system that would jeopardize safe and reliable electric service

- Determine whether upgrades are needed to accommodate the DERs on the electric distribution system at a specific location.

Solar-paired storage projects follow the same general interconnection processes. As part of the application, the applicant selects an operational mode for their storage system. The specific review process is dependent on the project size and operational mode of the project. Rule 21 also establishes a dispute resolution process that first provides a structure for bilateral negotiations between representatives of a generation facility and the IOU, and then directs unresolved disputes to the CPUC's Alternative Dispute Resolution (ADR) process, which is administered by the CPUC's Administrative Law Judge Division. AB 2861 (Ting, Chapter 672, Statutes of 2016) established an expedited distribution grid interconnection dispute resolution process with the goal of resolving disputes over interconnection applications that are within the jurisdiction of the CPUC in no more than 60 days from the time the dispute is formally brought to the CPUC. Additionally the CPUC has addressed interconnection issues through Order Instituting Rulemaking to Consider Streamlining Interconnection of Distributed Energy Resources and Improvements to Rule 21 (R. 17-07-007). The CPUC is currently in an active proceeding in the new successor to the NEM Tariff, which is also expected to address potential improvements to streamline the interconnection process, as necessary.

NEM. Customers who install small solar, wind, biogas, and fuel cell generation facilities to serve all or a portion of onsite electricity needs are eligible for the state's net metering program. NEM allows customers who generate their own energy ("customer-generators") to serve their energy needs directly onsite and to receive a financial credit on their electric bills for any surplus energy fed back to their utility. Participation in the NEM does not limit a customer-generator's eligibility for any other rebate, incentive, or credit provided by an electric utility. NEM provides customer-generators full retail rate credits for energy exported to the grid and requires them to pay a few charges that align NEM customer costs more closely with non-NEM customer costs.

SGIP. The CPUC established SGIP pursuant to AB 970 (Ducheny), which directed the CPUC to establish incentives for distributed generation resources. The program provides incentives for installation of DERs that are located at a customer's side of the meter and sized no larger than what is needed to meet on-site energy needs. SGIP provides rebates for qualifying distributed energy systems installed on the customer's side of the utility meter. While SGIP has provided incentives for a variety of DERs, the program largely focuses on energy storage systems. The CPUC was authorized to direct IOUs to collect $166 million annually from ratepayers through 2019 to fund SGIP and to administer the

program until January 1, 2021. SB 700 (Weiner, Chapter 839, Statutes of 2018) extended each of these sunset dates by five years to 2024 and 2026, respectively.

Energy storage systems can increase GHG emissions. Energy storage stores energy generated at one time of the day and discharges that energy at a later point in time. Energy storage can be used as a tool to conduct energy arbitrage, a process by which lower cost energy is stored at one point in time and that energy is discharged at a point in time when electricity generation is more costly. Distributed energy storage can facilitate greater integration of intermittent renewable energy resources and shave peak demand by storing excess renewable energy at one point in time and discharging that energy at a time of day when the grid relies more heavily on fossil fuel generation to meet demand. However, while energy storage systems can reduce GHG emissions by lowering the need for fossil fuel electricity generation, this benefit is not always realized. Recent studies have shown that energy systems may increase demand for electricity and result in a net increase of GHG emissions. These demand and GHG increases are largely associated with the use of less efficient energy storage systems and ineffective energy arbitrage price signals that lead storage owners to store electricity when the grid contains a higher mix of fossil fuel generation and discharge that energy at a point in time when the mix contains greater renewable generation. As a result, SB 700 (Weiner) also included language to ensure the SGIP incentives addressed the potential for increased GHG emissions.

Is a bill necessary? According to the sponsor, there have been some challenges with the ability of DERs owners to connect to the distribution grid. The sponsor provided some examples including two industrial/commercial class projects that experienced repeated delays in their efforts to connect within Pacific Gas & Electric's (PG&E's) distribution grid. These projects required upgrades to the distribution grid that the sponsor of this bill believe were unnecessarily delayed for weeks and months. The sponsors also noted an agricultural customer's experience to connect a project that the utility said would require a $1.3 million upgrade to the substation to interconnect a 230 kilowatts (kW) solar system. While the utility estimated the upgrades would take 14 to 20 months, the sponsor alleges that the utility then redesigned the upgrade after 20 months, adding another year the timeline. After repeated calls and meetings, according to the sponsor of this bill, the utility has allowed a partial use of the solar system at 45 kW of generation. Aside from these two examples, the sponsor of this bill notes other concerns with interconnection efforts across the state. Generally, the concerns noted are about the time it takes for temporary disconnection for a contractor to do electrical work (citing a San Diego Gas & Electric (SDG&E) case where a customer waited three and a half months) and a general lack of communication from the IOUs. In terms of complaints with POUs, the sponsor also noted delayed and inconvenient

interconnection. Specifically, the sponsors noted challenges with some POUs who require wet-signatures and multiple copies, requiring hard copies of documents, requiring fees are paid by check, and differences in load justification policies among the POUs. The sponsor of this bill also provided the following examples and claims of issues interconnecting DERs to POUs:

- the City of Colton lacks an effective online portal
- Imperial Irrigation District has "excessive rigidity with design requirements and is at times unresponsive"
- Banning Electric Utility lacks a process for interconnection of battery storage and are slow to review plans
- Glendale requires an energy storage meter not required by other utilities
- City of Redding requires three wet-signed original interconnection agreements mailed to their office
- Silicon Valley Power requires wet-signed or faxed documents, but not email.

This bill. SB 288 proposes a number of new requirements with the goal to streamline, standardize, and provide compensation to DERs, specifically energy storage. Some of this bill's requirements may be duplicative of current efforts at the CPUC to address related issues. The specific reporting requirements in this bill are likely duplicative or overlap with the quarterly reporting requirements on IOUs related to interconnections. Additionally, as drafted, this bill requires the CEC to evaluate the POUs interconnection efforts. The POUs are staunchly opposed to such an approach as they believe these are decisions that should be determined by their local governing boards. *In order to be consistent with other reporting requirements on POUs, the author and committee may wish to amend this bill to instead have the local governing boards of the POUs file their reports with the CEC.* The author has also noted their willingness to exempt the smaller POUs from participation in the requirements of this bill. *The author and committee may wish to amend this bill to exempt smaller POUs from all requirements in recognition that these POUs may have very limited capacity to address these issues.*

Stand-alone energy storage. As currently drafted, this bill proposes to authorize customers who have stand-alone energy storage to receive some compensation for selling energy back to the grid. While energy storage has the potential to help shape load, as noted above, in some studies the use of energy storage has also shown to have the potential to increase GHGs. With that said, it may be premature to require compensation from this energy from stand-alone energy storage until the state, including the CPUC, ARB, CEC, CAISO, have a better understanding of how energy storage can be effectively deployed. The SGIP program, in particular, will provide more information as to the GHG performance of energy storage and information. Moreover, additional information to ensure all ratepayers are benefitting from energy storage deployments could help ensure that any

compensation is reflective of the ability of energy storage to provide overall benefits to the electric grid. *The author and committee may wish to amend this bill to remove the language authorizing compensation for stand-alone energy storage.*

Potential for cost-shifts to non-participating customers. As drafted, this bill does not require specific compensation for DERs. While acknowledging the potential benefits of DERs to the electric grid, this bill may be premature in assuming these benefits and may not fully acknowledge the potential costs DERs can pose to the grid. As noted above, the state has been supportive of deploying DERs through various policies, including the California Solar Initiative (CSI), Single-Family Affordable Homes Program (SASH), the Multi-Family Solar Homes Program (MASH), Solar on Affordable Multi-Housing Program (SOMAH), and new programs adopted by the CPUC to further deploy renewable energy in disadvantaged communities. Additionally, as noted above, the state has supported incentives for energy storage through SGIP, and compensation to sell energy back to the grid through NEM Tariffs. Several of the utilities raise concerns that the current compensation rates are resulting in significant cost-shifts to non-participating customers. Some utilities allege that the costs shifts from NEM alone are double and triple any costs shifts associated with serving low-income (enrolled CARE) customers in their service territory. While the sponsor is correct to note that this bill is not requiring a specific compensation rate, some of the language does have the potential to result in cost shifts to nonparticipating customers. *As such, the author and committee may wish to amend this bill to incorporate language to ensure there are no cost-shifts to non-participating customers.*

Discriminatory fees. Additionally, this bill would prohibit utilities from adopting discriminatory fees or charges on DERs. As DERs become increasingly ubiquitous, the sponsor of this bill is concerned that some utilities may seek to charge specific fees to DER customers not charged to other customers. Their concerns that utilities may seek to impose DER specific fees might be justified. The Sacramento Municipal Utility District (SMUD) has proposed (but not, yet, adopted) a grid charge fee on solar customers. SMUD notes that these customers use the grid more frequently but do not pay their fair share of the costs to operate and maintain the grid. The sponsor would like to prohibit the types of fees and any other utilities from future specific fee proposals for DERs. While not making a determination about SMUD's specific proposal, it is understandable that the sponsor may be wary of discriminatory fees. However, there is also cause for caution in having the state outright prohibit any fee that may very well be justified to support the maintenance and operation of the electric grid which the DERs still connects to and is generally always available to a DERs customer as it is to other customers. Of note, some Community Choice Aggregators (CCAs) have selected to delay enrollment of legacy NEM customers in their territory noting that "solar

customers cost somewhat more to serve than the revenues they return, (they generate much of their own electricity and purchase energy during peak periods when it's more expensive to provide)." This is further example that the need to manage load for all customers will need to be balanced against ensuring fees are fairly attributed but still collected to safely maintain and operate the electric grid. As such, this committee may wish to be cautious in approaching these issues. *To that end, the author and committee may wish to amend this bill to add language that clarifies the utility's ability to charge fees that are justified.*

Implications with federally-regulated wholesale electricity markets. As currently drafted, this bill proposes to require the CAISO to provide modify rules to allow for compensation of DERs in the bulk power system. Such compensation would likely invite Federal Energy Regulatory Commission (FERC) involvement who has jurisdiction over the wholesale electricity markets. As noted by the author and sponsor, there are current efforts underway to address these issues at the CAISO and CPUC. Until there are more details concerning the specific issues, *the author and committee may wish to amend this bill to remove this language.*

Need for additional amendments. *The author and committee may wish to further amend this bill to ensure:*

- *The language suggesting DERs interconnection is a fundamental right may be better stated as ensuring access to DERs*. As noted by The Utility Reform Network (TURN), this language does not address the rights of non-participating customers.
- *The language in the findings and declarations can be clarified to speak to the potential of DERs to provide benefits to the grid*, instead of specific claims suggesting DERs automatically provide these benefits.
- *The language requiring tariffs are modified, should instead assess whether to modify existing tariffs.*
- *Add language to recognize that utilities may institute a prioritization mechanism to respond to interconnection requests.*
- *Add language concerning the recognition of DERs to perform as certified stating "when installed to applicable codes."*

Prior/Related Legislation

SB 700 (Weiner, Chapter 839, Statutes of 2018) extended the sunset date for the SGIP by five years, requires the CPUC to adopt requirements for storage systems to ensure that they reduce GHG emissions, and prohibits generation technologies using non-renewable fuels from obtaining SGIP incentives as of January 1, 2020.

AB 2861 (Ting, Chapter 672, Statutes of 2016) authorizes 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. Specifies the elements to be included in the dispute resolution process and requires the CPUC to establish a technical panel, a review panel, and a public process for each dispute.

AB 327 (Perea, Chapter 611, Statutes of 2013) among its many provisions, requires the CPUC to develop a new standard contract or tariff for new NEM customers of the large IOUs by July 1, 2015, that must be used beginning January 1, 2017, or earlier if the NEM cap has been reached. The CPUC will be required to ensure that the new standard contract or tariff for rates, terms of service, and billing rules is based on the electrical system costs and benefits received by nonparticipating customers and prevents a cost shift to non-NEM customers.

AB 1637 (Low, Chapter 658, Statutes of 2016) doubled the annual funding authorization for SGIP and revised and extended the NEM program for fuel cells by five years.

AB 1478 (Committee on Budget, Chapter 664, Statutes of 2014) extended the sunset to collect SGIP funds through 2019 and extended the program's sunset to 2021.

SB 861 (Committee on Budget and Fiscal Review, Chapter 35, Statutes of 2014) established SGIP eligibility restrictions for distributed generation resources and required the CPUC to establish a capacity factor for distributed energy resource technologies.

AB 970 (Ducheny, Chapter 329, Statutes of 2000) enacted the California Energy Security and Reliability Act of 2000 to expedite siting of certain power plants and implement new energy conservation and demand management programs. The bill required the CPUC to establish incentives for distributed generation resources.

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

SUPPORT:

350 Bay Area Action
350 Chico
350 Inyo
350 Sacramento
350 Silicon Valley
350 South Bay Los Angeles

350 SoCal
350 Ventura County Climate Hub
Almond Alliance of California
Almont Orchards Inc.
Aztec Solar
Bar ALE, Inc.
Borrego Solar Systems
Brightline Defense Project
Building Owners and Managers of California
California Alliance for Community Energy
California Building Industry Association
California Business Properties Association
California Democratic Party's Environmental Caucus
California Energy Storage Alliance
California Environmental Justice Alliance
California Housing Partnership Corp.
California League of Conservation Voters
California Solar & Storage Association
Crain Orchards, Inc.
Carriere Family Farms
Center for Climate Protection
Center for Sustainable Energy
Ceres
Coalition for Adequate School Housing
Coalition to Protect San Luis Obispo County
Designing Accessible Communities
El Dorado County Farm Trails
Empire Farming Company
ENGIE Energy Services
Environment California
Fossil Free California
Green Technical Education and Employment
GRID Alternatives
Gyppo Ale Mill
Indivisible CA-43
Indivisible California Green Team
Indivisible Marin
Indivisible Napa
Indivisible Peninsula CA-14
Indivisible/Resistance, Elk Grove CA-07 Committee
Indivisible San Francisco
Indivisible Sausalito

Indivisible South Bay – LA
Indivisible West Marin
Jim Faulbaum Construction
Keyawa Orchards, Inc.
Lagorio Brothers, Inc.
Loch & Union Distilling
Martin Orchards, Inc.
Merced City School District
Micro Paradox
Mothers Out Front
Napa Climate Now
NBN Properties LLC
Orlando Family, LLC
Paiva Farm Management, Inc.
Peninsula Clean Energy
Peoples' Environmental Network, Tuolumne County
POLIT Farms
Premier Mushrooms Inc.
Prima Frutta Packing Inc.
Progressive Democrats of the Santa Monica Mountains
Rising Sun Center for Opportunity
Rooted in Resistance
Silicon Valley Leadership Group
Solar and Fire Education S.A.F.E.
Solar Energy Industries Association
Solar Richmond
Solar Rights Alliance
Solar United Neighbors
SunPower
Sunrun Inc.
Sustaenable
Taylor Brothers Farms, Inc.
TechNet
Tesla
The Greenlining Institute
The Hignell Companies
The Resistance – Northridge, Indivisible
Violich Farms
Vivint Solar
Vote Solar
White Rock Vineyards

OPPOSITION:

California Municipal Utilities Association, unless amended
Imperial Irrigation District
Independent Energy Producers
Northern California Power Agency
Pacific Gas and Electric Company
Sacramento Municipal Utility District, unless amended
San Diego Gas & Electric
Southern California Edison
Southern California Public Power Authority, unless amended
The Utility Reform Network

ARGUMENTS IN SUPPORT: According to the author:

> "SB 288 will ensure that all California residents and businesses can easily procure clean, cheap electricity from onsite distributed energy resources or "DERs," including solar power and energy storage. This measure also addresses two of the main barriers to greater deployment of DERs: delayed interconnection to the grid that can take months or even years, and outdated tariffs that often do not adequately (if at all) compensate DERs for the value of the grid services they can provide. By ensuring timely interconnection and fair compensation for these resources, SB 288 will guarantee that all California consumers can exercise their right to purchase the cleanest, cheapest power available."

ARGUMENTS IN OPPOSITION: The entities opposed to this bill raise several issues including:

- Many of those opposed do not understand where and what problems exist that this bill seeks to address.
- The POUs opposed to this bill raise concerns about the proposal subordinating their regulatory authority (and local control) over their solar programs.
- Several utilities cite the improvements and investments made over the years to address interconnection issues.
- All who oppose raise concerns about the potential of this bill to result in significant cost shifts to non-participating customers that would not be justified.
- Many of those opposed state this bill is not necessary and cite the existing incentive programs that are available to support customer-sited storage and renewable energy.

- All who oppose take issue with this bill establishing a fundamental right to customer-sited renewable energy and storage which could have unintended consequences.
- Some who oppose this bill express concerns with the language related to selling energy into the wholesale electricity market and the implications for federal jurisdiction.

-- END --