Date of Hearing: June 20, 2018

ASSEMBLY COMMITTEE ON UTILITIES AND ENERGY
Chris Holden, Chair
SB 700 (Wiener) – As Amended July 5, 2017

SENATE VOTE: 23-13

SUBJECT: Energy Storage Initiative

SUMMARY: Extends the authorization for the Self Generation Incentive Program (SGIP) for five additional years. Specifically, **this bill, as proposed to be amended:**

1) Authorizes the California Public Utilities Commission (CPUC) to collect and spend $166 million per year from the customers of electric and gas corporations (IOUs) to fund incentive payments for distributed energy resources (DERs) for five additional years.

2) Authorizes a nonbypassable charge on IOU customers through 2024 and the use of those collected funds through 2026.

3) Requires the CPUC to update the factor for avoided greenhouse gas emissions (GHG) on or before July 1, 2020, which determines eligibility to participate in the SGIP. The updated factor explicitly reflects the displaced emissions from existing capacity and the avoided need for new capacity.

EXISTING LAW:

1) States the intent of the Legislature that SGIP deployment of distributed generation and energy storage systems facilitate the integration of those resources into the electrical grid, improve efficiency and reliability of the distribution and transmission system, and reduce emissions of GHGs, peak demand, and ratepayer costs.

2) Authorizes the CPUC to require the IOUs to establish a distribution charge, up to $166 million annually, for ratepayers, through December 31, 2019, to be used to provide incentives, under SGIP, for DERs which the CPUC, in consultation with California Air Resources Board (CARB) determines will achieve reductions in emissions of GHGs.

3) Requires the CPUC, on or before July 1, 2015, to update the factor for avoided GHGs for DERs based on the most recent data available to CARB for GHGs from electricity sales in the SGIP administrators' service areas as well as current estimates of GHGs over the useful life of the distributed energy resource, including consideration of the effects of the California Renewables Portfolio Standard.

FISCAL EFFECT: Unknown.

BACKGROUND:

California's Self-Generation Incentive Program (SGIP) was established in 2001 by the CPUC in response to AB 970 (Ducheny, Stats. 2000, Ch. 329). AB 970 was adopted in response to the

energy crisis and intended to provide incentives for distributed generation resources to reduce peak energy demand. Since 2001, the Legislature has refined and extended SGIP several times. During 2014 and 2015, the CPUC acted to extend SGIP funding through 2019 and updated program eligibility criteria related to GHG emissions, pursuant to SB 861 (Committee on Budget and Fiscal Review, 2014). In 2016, the CPUC made significant programmatic changes for how SGIP incentive dollars are awarded and other program refinements. In 2016 AB 1637 (Low, 2016) gave the CPUC the authority to double collections for SGIP from $83 million annually to $166 million.

The SGIP provides incentives to support existing, new, and emerging distributed energy resources. SGIP provides rebates for qualifying distributed energy systems installed on the customer's side of the utility meter that the CPUC, in consultation with CARB, determines will achieve reductions in GHG emissions. Qualifying technologies include wind turbines, waste heat to power technologies, pressure reduction turbines, internal combustion engines, microturbines, gas turbines, fuel cells, and advanced energy storage systems.

The program has several goals:

- Environment – reduce GHGs, integrate renewables and reduce criteria air pollutants;
- Grid support– reduce or shift peak demand, reduce grid costs, provide ancillary services;
- Market transformation – support technologies that have the potential to thrive in future years without rebates; and
- Maximize ratepayer value and ensure equitable distribution of costs and benefits

SGIP is funded through annual collections from customers in the amount of $166 million per year through 2019. SGIP allocates 85% of the funds to energy storage technologies.

Earlier this year the CPUC established an "Equity Budget" for SGIP to ensure that a portion of the SGIP budget will be reserved for projects that are located in disadvantaged and low-income communities and for customers that meet specific eligibility requirements. The objective of the investments is to: 1) bring positive economic and workforce development opportunities to the state's most disadvantaged communities; 2) help reduce or avoid the need to operate conventional gas facilities in these communities, which are exposed to some of the poorest air quality in the state; and 3) to ensure that low-income customers, and non-profit or public sector organizations in disadvantaged or low-income communities, have access to energy storage resources.

COMMENTS:

1) Author's Statement. SB 700, as proposed to be amended, would extend the California Public Utilities Commission's critically important Self-Generation Incentive Program (SGIP) for five years by authorizing revenue collection through the end of 2024 and program administration through January 1, 2026. Nearly all SGIP funding is currently dedicated to helping offset the costs of small-scale, behind-the-meter energy storage systems and ultimately achieving market transformation in this area, similar to how the California Solar Initiative and other programs launched the rise of the modern solar power industry ten years ago. Energy storage is a critical tool in addressing the surplus of renewable energy during midday periods of low demand (the "duck curve") while saving ratepayers money on transmission and distribution investments, and behind-the-

meter systems can ensure that owners of home solar systems in particular can reap the full benefits of their investment. Small-scale, localized energy storage systems also provide valuable resiliency in cases of wildfire or other natural disasters, when traditional power lines may be severed or unusable. Unfortunately, under current law the SGIP is set to expire at the beginning of 2021, likely creating only 700 MW or less of storage capacity during that time period. The five-year SGIP extension envisioned in SB 700 could lead to as many as 2,000 MW of storage total deployed across California through the program, on a par with the amount necessary to achieve true market transformation.

2) Re-Direction. The original intent of this bill was to establish a new ten-year program "Energy Storage Initiative" to provide rebates to customers of IOUs for the installation of "customer-sited energy storage systems" that are "dispatch capable" to achieve market transformation. Upon further investigation, it was determined that the current SGIP has comparable funding to the proposed ESI, 80% of which is dedicated to energy storage. The program has been fully operational for a number of years and the CPUC has the ability to modify the program as technologies and the markets change. Consequently, the author has proposed to instead focus on an extension of the SGIP to address the growing need for development of the energy storage market.

3) Customer-sited Storage. The SGIP program has funded storage on the customer's side of the meter for several years. The "2016 Energy Storage Impact Evaluation" revealed that the operation of these storage systems resulted in hundreds of tons of GHG emissions in 2016. SGIP technologies are required to reduce GHGs in order to be eligible for incentives. The systems also showed an increase to peak demand from SGIP energy storage systems under 30 kilowatts in size. This resulted in a failure to maximize ratepayer value of SGIP energy storage fleet due to increased marginal utility costs from systems under 30kW in size. The CPUC is pursuing program revisions to address these issues.

4) GHG Emissions Factor. A key requirement of the program added by the Legislature in 2009 is to limit SGIP eligibility to distributed generation resources that the CPUC determines would support state goals for the reductions of GHG emissions. The CPUC was later required to calculate a GHG emissions factor that explicitly reflects the displaced emissions from existing capacity and the avoided need for new capacity as a result of the SGIP technology. That factor should change as GHG declines in the electricity sector and was last updated in 2015. This bill requires the CPUC to update the GHG factor again by 2020.

5) Related Legislation.

   AB 1030 (Ting) Required the CPUC and the governing boards of local publicly owned utilities (POUs) to establish a rebate program dedicated to energy storage and that carves out a portion of funding for low-income customers and disadvantaged communities. Status: Failed passage, Assembly Utilities & Energy Committee, 2017.

   AB 2695 (Ting) Authorized an additional annual collection of up to $140 million for energy storage systems in the SGIP. Status: Assembly Utilities & Energy Committee, no hearing.

6) Prior Legislation.

AB 1637 (Low) Doubled the annual funding authorization for the SGIP and extended and revised the net energy metering program for fuel cells for five years. Status: Chapter 658, Statutes of 2016.

SB 861 (Committee on Budget and Fiscal Review) extended SGIP annual collections of $83 million per year through December 31, 2019. Status: Chapter 35, Statutes of 2014.

AB 1478 (Committee on Budget, Chapter 664, Statutes of 2014) modifies eligibility requirements for incentives under SGIP to clarify eligibility for technologies that shift electricity load off peak and make technical changes that clarify performance measures under the program.

AB 1150 (Pérez, Chapter 310, Statutes of 2011) extended SGIP funding through 2014, authorized CPUC to adjust incentive amounts, and added additional program interests, including ratepayer relief, energy efficiency, peak-load reduction, load management and environmental characteristics

SB 412 (Kehoe, Chapter 182, Statutes of 2009) extended SGIP through 2015, defined eligible technologies as those the CPUC determined will reduce GHG emissions, set the annual program budget at $83 million, and added bonus incentive for California suppliers.

AB 970 (Ducheny, Chapter 329, Statutes of 2000) established the SGIP program in response to the energy crisis.

REGISTERED SUPPORT/OPPOSITION

Support*

***Positions may be affected by bill as proposed to be amended**.

510 Solar
A. Philip Randolph Institute
ACR Solar International Corp.
Adriot Energy, Inc.
Advanced Energy Economy
Advanced Energy Management Alliance
Advanced Microgrid Solutions, Inc.
Aeterna Energy
Agenergy Systems
Alive Industries
Alpha Energy
Alternative Energy Systems Inc.
Altever Inc.
Ameco Solar Inc.
American College of Rheumatology
Asian Neighborhood Design
Avalon Battery Corporation
Aztec Solar Inc.
BOMA California
Borrego Solar Systems, Inc.
Bosch
Brightline Defense Project

CalCorn Solar, Inc.
California Apartment Association
California Business Properties Association
California Energy Storage Alliance
California Environmental Justice Alliance
California Housing Partnership
California Solar and Storage Association
California Solar Energy Industries Association
CALPIRG
Capital City Solar
CED Greentech Santa Rosa
Center For Climate Protection
Center for Sustainable Energy
Centrica Business Solution
Chint Power Systems
Civic Solar
Clean Solar
Cleantech Energy Solutions Inc.
Climate Action Campaign
Cobalt Power Systems Inc.
Community Young Center
Cosmic Solar
Direct Energy
Earth Electric Inc.
Eco Foundation Systems Inc.
Emerald Cities San Francisco
EnergeiaWorks
Energy Toolbase
Engie Services U.S. Inc.
Enphase
Entersolar LLC
Environment California
Environmental Solar Design, Inc.
Everest Solar Systems
Everyday Energy
Evolution Energy
Feather River Solar Electric
Fossil Free California
Fresource Energies Inc.
Friends Committee on Legislation of California
Friends of the Earth
Generate Capital
GFA
Gigawatt Inc.
Green Charge
Grid Alternatives
Growing Energy Labs, Inc.
Hes Solar
Home Energy Systems
Horizon Solar Power Corporation
International Council for Shopping Centers
JKB Energy
John Nimmons & Associates Inc.
Just Energy Solutions, Inc.
Kahn Solar
Luminalt
Marin County Board of Supervisors
McCalmont Engineering
Mendocino Solar Service
Mercedes Benz Energy
Mission Hiring Hall
Mohr Power Solar, Inc.
NAIOP of California
Namaste Solar Electric
Neovolta Incorporated
Newport Power
OpTerra Energy Services
Outback Power
Pathways Energy
Poco Solar Energy
Promise Energy Inc.
Regenerative Solutions
ReGreen
Renaissance Entrepreneurship Center
Renewable Solar
Renova Energy Corporation
Renvu
Rising Sun
San Diego County Solar
San Diego Energy District
Sattler Solar Inc.
School Energy Coalition
SDI Insulation Inc.
Sea Bright Solar Inc.
Sierra Club California
Silicon Valley Leadership Group

SoCal 350 Climate Action
Solar Action Network
Solar Cowboyz
Solar Energy Collective
Solar Energy Industry Association
Solar Forward
Solar Optimum
Solar Richmond
Solar Rights Alliance
Solar Roof Dynamics
Solar Sense Energy Solutions
Solar Spectrum
Solar Technologies
Solar Works
Solare Energy Inc.
SolarGnosis
SolarHut, LLC
Sollega Inc.
South Bay Los Angeles 350 Climate Action
Spectrum Energy Development Inc.
Sullivan Solar Power
Sun Energy
Sun Light & Power
Suncool Energy
SunEarth
Sungenia Solar Solutions
Sunlight Electric
Sunpower Corporation
Sunrun
Sunverge
Sustainable Energy Group Inc.
Swell Energy
Technet-technology Network
TerraVerde Energy
The Greenlining Institute
U.S. Solar Distributors, Inc.
Verdera Partners Inc.
Villara Building Systems
Vista Solar
Vivint Solar
Voices for Progress - Education Fund
Vote Solar
Xandex Inc.
Xero Solar
Yaskawa Solectria Solar
Ygrene Energy Fund
YouthPower Community Solutions

Oppose*

***Positions may be affected by bill as proposed to be amended**.

California Chapters of the National Electrical Contractors Association
California Municipal Utilities Association
California State Association of Electrical Workers
Coalition of California Utility Employees
Pacific Gas and Electric Company
San Diego Gas and Electric Company
Southern California Edison
Southern California Public Power Authority

Analysis Prepared by: Kellie Smith / U. & E. /

SB 700 (Weiner)
As proposed to be amended

Public Utilities Code Section 379.6.

(a) (1) It is the intent of the Legislature that the self-generation incentive program increase deployment of distributed generation and energy storage systems to facilitate the integration of those resources into the electrical grid, improve efficiency and reliability of the distribution and transmission system, and reduce emissions of greenhouse gases, peak demand, and ratepayer costs. It is the further intent of the Legislature that the commission, in future proceedings, provide for an equitable distribution of the costs and benefits of the program.

(2) The commission, in consultation with the Energy Commission, may authorize the annual collection of not more than double the amount authorized for the self-generation incentive program in the 2008 calendar year, through December 31, ~~2019~~ 2024 . The commission shall require the administration of the program for distributed energy resources originally established pursuant to Chapter 329 of the Statutes of 2000 until January 1, ~~2021~~ 2026 . On January 1, ~~2021~~ 2026, the commission shall provide repayment of all unallocated funds collected pursuant to this section to reduce ratepayer costs.

(3) The commission shall administer solar technologies separately, pursuant to the California Solar Initiative adopted by the commission in Decisions 05-12-044 and 06-01-024, as modified by Article 1 (commencing with Section 2851) of Chapter 9 of Part 2 of Division 1 of this code and Chapter 8.8 (commencing with Section 25780) of Division 15 of the Public Resources Code.

(b) (1) Eligibility for incentives under the self-generation incentive program shall be limited to distributed energy resources that the commission, in consultation with the State Air Resources Board, determines will achieve reductions in emissions of greenhouse gases pursuant to the California Global Warming Solutions Act of 2006 (Division 25.5 (commencing with Section 38500) of the Health and Safety Code).

(2) On or before July 1, ~~2015~~ 2020, the commission shall update the factor for avoided greenhouse gas emissions based on the most recent data available to the State Air Resources Board for greenhouse gas emissions from electricity sales in the self-generation incentive program administrators' service areas as well as current estimates of greenhouse gas emissions over the useful life of the distributed energy resource, including consideration of the effects of the California Renewables Portfolio Standard.

(c) Eligibility for the funding of any combustion-operated distributed generation projects using fossil fuel is subject to all of the following conditions:

(1) An oxides of nitrogen (NOx) emissions rate standard of 0.07 pounds per megawatthour and a minimum efficiency of 60 percent, or any other NOx emissions rate and minimum efficiency standard adopted by the State Air Resources Board. A minimum efficiency of 60 percent shall be measured as useful energy output divided by fuel input. The efficiency determination shall be based on 100 percent load.

(2) Combined heat and power units that meet the 60-percent efficiency standard may take a credit to meet the applicable NOx emissions standard of 0.07 pounds per megawatthour. Credit

shall be at the rate of one megawatthour for each 3,400,000 British thermal units (Btus) of heat recovered.

(3) The customer receiving incentives shall adequately maintain and service the combined heat and power units so that during operation the system continues to meet or exceed the efficiency and emissions standards established pursuant to paragraphs (1) and (2).

(4) Notwithstanding paragraph (1), a project that does not meet the applicable NOx emissions standard is eligible if it meets both of the following requirements:

(A) The project operates solely on waste gas. The commission shall require a customer that applies for an incentive pursuant to this paragraph to provide an affidavit or other form of proof that specifies that the project shall be operated solely on waste gas. Incentives awarded pursuant to this paragraph shall be subject to refund and shall be refunded by the recipient to the extent the project does not operate on waste gas. As used in this paragraph, "waste gas" means natural gas that is generated as a byproduct of petroleum production operations and is not eligible for delivery to the utility pipeline system.

(B) The air quality management district or air pollution control district, in issuing a permit to operate the project, determines that operation of the project will produce an onsite net air emissions benefit compared to permitted onsite emissions if the project does not operate. The commission shall require the customer to secure the permit prior to receiving incentives.

(d) In determining the eligibility for the self-generation incentive program, minimum system efficiency shall be determined either by calculating electrical and process heat efficiency as set forth in Section 216.6, or by calculating overall electrical efficiency.

(e) Eligibility for incentives under the program shall be limited to distributed energy resource technologies that the commission determines meet all of the following requirements:

(1) The distributed energy resource technology shifts onsite energy use to off-peak time periods or reduces demand from the grid by offsetting some or all of the customer's onsite energy load, including, but not limited to, peak electric load.

(2) The distributed energy resource technology is commercially available.

(3) The distributed energy resource technology safely utilizes the existing transmission and distribution system.

(4) The distributed energy resource technology improves air quality by reducing criteria air pollutants.

(f) Recipients of the self-generation incentive program funds shall provide relevant data to the commission and the State Air Resources Board, upon request, and shall be subject to onsite inspection to verify equipment operation and performance, including capacity, thermal output, and usage to verify criteria air pollutant and greenhouse gas emissions performance.

(g) In administering the self-generation incentive program, the commission shall determine a capacity factor for each distributed generation system energy resource technology in the program.

(h) (1) In administering the self-generation incentive program, the commission may adjust the amount of rebates and evaluate other public policy interests, including, but not limited to, ratepayers, energy efficiency, peak load reduction, load management, and environmental interests.

(2) The commission shall consider the relative amount and the cost of greenhouse gas emissions reductions, peak demand reductions, system reliability benefits, and other measurable factors when allocating program funds between eligible technologies.

(i) The commission shall ensure that distributed generation resources are made available in the program for all ratepayers.

(j) In administering the self-generation incentive program, the commission shall provide an additional incentive of 20 percent from existing program funds for the installation of eligible distributed generation resources manufactured in California.

(k) The costs of the program adopted and implemented pursuant to this section shall not be recovered from customers participating in the California Alternate Rates for Energy (CARE) program

(l) The commission shall evaluate the overall success and impact of the self-generation incentive program based on the following performance measures:

(1) The amount of reductions of emissions of greenhouse gases.

(2) The amount of reductions of emissions of criteria air pollutants measured in terms of avoided emissions and reductions of criteria air pollutants represented by emissions credits secured for project approval.

(3) The amount of energy reductions measured in energy value.

(4) The amount of reductions of customer peak demand.

(5) The ratio of the electricity generated by distributed energy resource generation projects receiving incentives from the program to the electricity capable of being produced by those projects, commonly known as a capacity factor.

(6) The value to the electrical transmission and distribution system measured in avoided costs of transmission and distribution upgrades and replacement.

(7) The ability to improve onsite electricity reliability as compared to onsite electricity reliability before the self-generation incentive program technology was placed in service.