Date of Hearing: April 21, 2021

ASSEMBLY COMMITTEE ON UTILITIES AND ENERGY
Chris Holden, Chair
AB 1139 (Lorena Gonzalez) – As Amended April 8, 2021

SUBJECT: Energy: California Alternate Rates for Energy program: net energy metering: electrical corporation distributed eligible renewable energy resource allocations: interconnections

SUMMARY: Repeals the authorization for net energy metering tariffs (NEM 1.0 and NEM 2.0) and requires the California Public Utilities Commission (CPUC) to establish a net energy metering tariff (NEM 3.0) and other new programs. Specifically, **this bill**:

1) Establishes a NEM 3.0 effective July 1, 2022 to credit excess generation at the wholesale rate, charge customers for electricity imported from the grid at the full retail rate, require a grid access charge for all electricity consumed including all transmission and distribution charges;

2) Phases customers on NEM 1.0 and NEM 2.0 tariffs to NEM 3.0 beginning July 1, 2022 with final transition by July 1, 2024;

3) Permits non-residential customers who pay demand charges to retain NEM 1.0 and NEM 2.0 tariffs in effect on December 31, 2021;

4) Allocates up to $300 million annually to discount the initial purchase of renewable generation by customers enrolled in the California Alternate Rates for Energy (CARE) program, in multifamily housing, or in underserved communities, the construction of which would be subject to prevailing wage;

5) Allocates up to $300 million annually to eliminate any rate premium and provide an additional 10% discount for CARE customers participating in the Green Tariff Shared Renewables Program;

6) Allocates up to $500 million annually to discount the initial purchase of renewable generation for public buildings, the construction of which would be subject to prevailing wage;

7) Requires the interconnection of customer self-generation in less than 30 working days;

8) Prohibits the use of distributed energy resources to defer investment in the distribution system; and

9) Increases the average effective discount of the CARE program to 40 to 45 percent of the bill usage of non-CARE customers.

EXISTING LAW:

1) Requires each electrical investor-owned utility (IOU) to offer a NEM tariff with a credit for all electricity generated by a customer-owned renewable resource against the

customer's usage of electricity sold by the utility, on a kilowatt-hour basis (kWh) – net energy metering (NEM). (Public Utilities Code §§ 2827, 2827.1)

2) Requires each IOU to offer a NEM tariff for fuel cells, defined as technologies that chemically convert fuel to electricity. The program has a 500 megawatt (MW) program cap with a five MW cap for each project and an overall sunset date of December 31, 2017. (Public Utilities Code § 2827.10)

3) Establishes program of assistance to low-income gas and electric customers in the CARE program to provide an average effective discount of 30 to 35 percent of bill usage of non-CARE customers. (Public Utilities Code § 739.1)

FISCAL EFFECT: This bill is keyed fiscal and will be referred to the Appropriations Committee for its review of the fiscal effect of this bill.

BACKGROUND:

Net Energy Metering – California's NEM program started in 1997, prompted by SB 656 (1995, Alquist). It allows customers who install eligible renewable electrical generation facilities to serve onsite energy needs and receive credits on their electric bills for surplus energy sent to the electric grid. Most customer-sited, grid-connected solar in California is interconnected through NEM tariffs. Enrolment in the first NEM program, now colloquially known as "NEM 1.0", continued and was phased out between 2016 and 2017.

The Legislature called for the revision of NEM 1.0 per AB 327 (2013, Perea) primarily to address the cost-shifting associated with the full retail credits available under the tariff. Customers are still taking service under that tariff – NEM 2.0 – pay the cost to connect to the grid; take service on a "time-of-use" rate plan; and pay "non-bypassable" charges that are not offset with surplus energy credits. The CPUC has opened a proceeding to revisit the NEM 2.0 tariff parameters and scheduled to adopt a decision later this year.

The Cost Shift – The controversy associated with NEM is that the customers with NEM (most of which have roof-top solar) are subsidized by customers without NEM. Extensive study has occurred for several years. The committee is not aware of any refutation of the cost-shift. All residential non-NEM or non-participating customers, including CARE customers, shoulder an additional rate burden as a result of the cost shift from NEM customers. According to Next10 and the Energy Institute at Haas:

> …residential customers with [rooftop solar] are credited at the retail electricity rate for every kWh of solar electricity they generate. This effectively shifts the burden of fixed cost recovery onto customers that have not adopted [rooftop solar]…this confers a generous subsidy because residential rates significantly exceed social marginal cost (which includes, among other components, the estimated social cost of greenhouse gas emissions). Importantly, the growing gap between the retail rate and marginal cost reflects costs that are not avoided—only shifted—when a household adopts [rooftop solar].[1]

[1] *Designing Electricity Rates for an Equitable Energy Transition*, p. 27-28, Next10 and the Energy Institute at Haas, February 23, 2021, available at https://www.next10.org/sites/default/files/2021-02/Next10-electricity-rates-v2.pdf

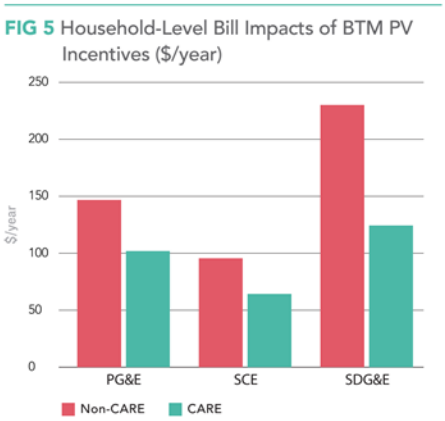
A recent study commissioned by the CPUC also found that, as compared to the general California population, NEM customers are disproportionately older, located in high-income areas, likely to own their home, and less likely to live in a disadvantaged community. Consequently, the costs of NEM are disproportionately paid by younger, less wealthy, and more disadvantaged ratepayers, many of whom are renters.[2]

The following table reflects the costs that ratepayers without solar, in the territories of the three largest electric IOUs, are absorbing to support customers with NEM/rooftop solar which is based on the Next10/Haas study.

Year	Annual NEM Cost Shift ($ Million)			
	NEM 1.0	NEM 2.0	NEM 2.0 Continues	Total Cost Shift
2016	$1,398	$9	$0	$1,407
2017	$1,627	$168	$0	$1,794
2018	$1,654	$512	$0	$2,166
2019	$1,646	$926	$0	$2,572
2020	$1,609	$1,414	$0	**$3,022**
2021	$1,598	$1,851	$0	$3,449
2022	$1,636	$1,903	$350	$3,888
2023	$1,626	$1,857	$716	$4,198
2024	$1,606	$1,807	$1,065	$4,478
2025	$1,541	$1,714	$1,345	$4,601
2026	$1,454	$1,611	$1,554	$4,619
2027	$1,389	$1,534	$1,736	$4,660
2028	$1,338	$1,483	$1,907	$4,728
2029	$1,284	$1,463	$2,127	$4,874
2030	$1,240	$1,454	$2,336	**$5,031**

The following graph reflects the distribution of the NEM cost shifts among CARE and non-CARE customers, for each of the three large electric IOUs, per customer, per year as reported by the Next10/Haas study.[3]

[2] Verdant Study,
[3] *Designing Electricity Rates for an Equitable Energy Transition*, p. 28, Next10 and the Energy Institute at Haas, February 23, 2021, available at https://www.next10.org/sites/default/files/2021-02/Next10-electricity-rates-v2.pdf



COMMENTS:

1) *Author's Statement*. It's entirely unfair that under net energy metering working class families and families of color who have not had the same access to rooftop solar have actually had to foot the bill for this industry and pay higher energy bills. This inequitable cost-shift on to non-solar customers is only expected to continue and increase if we do not make changes to the system. The Solar Equity and Ratepayer Relief Act will gradually reform the energy rate structures to ensure rooftop solar customers pay their fair share, decrease energy bills for non-solar customers with a focus on those who are low-income, and invest in additional renewable energy generation.

2) *What's the Story, How Did We Get Here*? The first NEM (NEM 1.0) authority was created by the Legislature in 1995 but was largely unused due to the high costs of rooftop solar in the last century which was the dominant distributed energy resource at the time. In 2006-07 the California Solar Initiative (CSI) was established to incentivize the adoption of rooftop solar by funding a significant portion of the hardware. The $3 billion program was not cost-effective nor was it intended to be. Its purpose was to transform the solar market and the goal was achieved. The CSI subsidies declined over ten years and market transformation was marked by significant drops in equipment prices indicating that direct incentives were no longer necessary.

   The backbone of the CSI program was NEM 1.0 which allowed a utility customer with rooftop solar to receive a credit on their utility bill, for generation that was not consumed onsite, equal to the retail electricity rate in effect at the time the generation occurred. The credits could be used to offset most of the utility bill, including fixed charges and transmission and generation charges. The credit was calculated in a manner that reduced the NEM customer's contributions to public purpose programs such as CARE, energy efficiency and renewable incentives, and research and development programs that other customers pay.

   Enrollment in NEM 1.0 was capped coincident with the CSI. When the cap was near and CSI incentives were exhausted, it was expected that a rate structure for solar would be limited to a bill credit only for excess generation. A significant rate reform bill was adopted in 2013 and included the parameters for the current NEM 2.0 (AB 327 (Perea, 2013)).

3) *What's the Problem – Cost Shifting*. The fundamental issue with any NEM program is the question of the credit a customer-generator (solar customer) receives for "excess solar." Example – solar production peaks at noon but the customer is at work and using very little solar. The excess is going back out to the neighborhood grid and "spins the meter backwards" creating a kWh credit on paper. At 5:00 p.m. when the customer comes home from work and starts turning on the air conditioning, television and oven, the solar isn't producing; the customer is pulling electricity from the grid and they get to use the kWh credit on paper against that usage. Solar only produces electricity a fraction of the day. Very few customers have "islanded" themselves from the grid. They continue to need to pull electricity from the grid about 2/3 of the day on a good day and in the winter it could be more.

   The controversy with NEM is what costs should be contained in that bill credit? A residential rate of, for example, $0.39 kWh isn't just for the cost of generation. It's the cost, maintenance, and upgrades of transmission and distribution lines, wildfire mitigation for those lines, public purpose programs like CARE, electric vehicle charging, energy efficiency, and others. Under NEM 1.0 and NEM 2.0, the customer gets the same credit for putting electricity out on the grid at noon as the cost of pulling electricity at 5:00 therefore likely zeroing out their bill and never paying for the support of the grid, even though they are using it, and in fact using higher cost electricity at the new peak (5:00) than the value of the electricity generated at noon. The result is that the customers without solar pay more for electricity, distribution, transmission, and public purpose programs to pick up what the rooftop solar customer isn't paying. Is that fair? This is called cost-shifting.

4) *NEM Under AB 1139*. The NEM structure proposed in this measure would terminate NEM 1.0 (although enrollment ended, customers were grandfathered for 20 years) and NEM 2.0, and move all of those customers to a new program no later than 2024.

   The bill would require customer-generators to be credited for electricity sent out to the neighborhood grid at the wholesale market rate (no accumulated bill credit for the distribution and transmission costs or public purpose programs) and charged for importing energy from the grid at the same rate as other customers. Customer-generators would also be charged a grid access fee to cover non-generation retail costs.

   The proposed bill credit is based on whatever the utility is paying for electricity at the time the kWh goes out to the grid. Many have different opinions of the value of rooftop solar to the environment, the grid, and other customers. It's complicated.

   The committee has received no analysis or substantive comments on the faults with the NEM structure proposed in this bill, other than "it will kill the solar industry" or the issue of or reported data for NEM cost shifting.

5) *Other New Program Mandates*. Instead of providing billions of dollars in rate relief to non-solar customers, this bill proposes to take the subsidies created by the NEM tariffs and redirect those funds to other programs benefitting customers for whom supporters argue solar is largely out-of-reach. The CPUC is required to allocate a minimum of $300 million annually to discount purchases of new renewable electrical generation facilities

for CARE customers who live in multi-family housing or underserved communities; up to $300 million annually to offset the program premium and for a 10% discount for CARE customers to participate in new solar under the Green Tariff Shared Renewables Program, and up to $500 million annually to discount purchases of renewable energy generation facilities to serve public buildings. The bill would also expand the CARE discount for low-income energy customers from 30-35%.

6) *Patience Has Run Out*. Most agree that the current NEM 2.0 tariff is a relic and must be revised but have grown impatient with the CPUC's thorough and tedious process. At least two years ago the CPUC began to review NEM 2.0. It has contracted for studies to analyze the costs and benefits of NEM 2.0 and the costs which are shifted to other customers. Two studies[4] have been produced and the committee is unaware of any analysis finding faults with the conclusions. Now informed by those studies, a proceeding is underway to develop a successor tariff (NEM 3.0) to more closely align the NEM tariff with the costs and benefits of distributed energy resources taking service under that tariff. The proceeding has been delayed but the CPUC reports that it expects to issue a final decision by the end of this year. It has taken public comment, received more than a dozen proposed models for a NEM 3.0 tariff which were presented in public workshops.

7) *Will They Act*? This bill jumps ahead of the CPUC's process and arguably takes the NEM tariff from one extreme to another. Sidelining this bill and waiting for the CPUC to act may not provide the certainty needed to ensure that NEM reform occurs. The committee had a bill referred last year on the same topic but the CPUC committed to concluding their work as soon as possible. The delay means that those ratepayers caught in the middle who need relief from rising rates continue to subsidize other customer's cost of service. *The committee may wish to consider amendments that trigger a new tariff if the CPUC does not act. The proposed amendments would establish a new tariff if the CPUC fails to act by February 1, 2022, and, in any event, require all existing NEM customers to transition to NEM 3.0, and require prevailing wage for the installation of any DER that is interconnected under NEM 3.0. Specifically, the proposed amendments would:*

   - Strike content of bill.

   - Establish terms for a successor net energy metering tariff effective December 31, 2023, if the commission fails to adopt a successor tariff by February 1, 2022 in its current proceeding. The terms of the mandated successor tariff must:

     - Cost-effectively achieve the policy goals and objectives of the state, as defined in SB 350 (PUC § 454.51, 454.52, and 454.53) and include specific alternatives designed for growth among residential customers in disadvantaged communities.

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[4] *Net-Energy Metering 2.0 Lookback Study*, Verdant Associates, 2021, available at: https://www.cpuc.ca.gov/nem2evaluation and *Alternative Ratemaking Mechanisms for Distributed Energy Resources in California*, January 28, 2021, available at: https://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=6442467663

- Be based on the costs and benefits of the renewable electrical generation facility for non-participating ratepayers.

- Ensure that the non-participating ratepayer benefits of the standard contract or tariff exceeds or is approximately equal to the participating ratepayer benefits.

- Establish interconnection fees and monthly fixed charges based on the cost to interconnect and serve the customer-generator.

- Credit the customer-generator for any electricity exported at a rate equal to the hourly wholesale market rate applicable at the time of the export and the location of the customer-generator.

- *Regardless of CPUC action,* strike a portion of PUC 2827 (b) (1) which requires that the tariff "ensure that customer-sited renewable distributed generation continues to grow sustainably…";

- *Regardless of CPUC action,* transfer legacy NEM 1.0 and 2.0 customer-generators to the successor NEM 3.0 tariff no later than five years from the date of service for CARE customers and ten years from the date of service for non-CARE customers; and

- *Regardless of CPUC action,* require prevailing wage for the installation of all facilities taking service under NEM 3.0 installed after December 31, 2023; and

- Include in the CPUC's annual report to the Legislature, progress on the growth of distributed energy resources among residential customers in disadvantaged communities.

8) *Prior Legislation.*

AB 2582 (Carillo) required the CPUC to develop a successor NEM tariff not later than July 1, 2021. Status: Held in Assembly Utilities & Energy Committee, 2020.

AB 327 (Perea) instituted several rate reforms and required the CPUC to adopt a successor NEM tariff no later than December 31, 2015. Status: Chapter 611, Statutes of 2013.

REGISTERED SUPPORT / OPPOSITION:

Support

California State Association of Electrical Workers
Coalition of California Utility Employees
Icon CDC

Support If Amended

The Utility Reform Network (TURN)

Oppose

350 Humboldt: Grass Roots Climate Action
350 Silicon Valley

Oppose Unless Amended

350 Bay Area Action
350 Butte County
350 Conejo
Advanced Energy Economy (AEE)
California Alliance for Community Energy
California Interfaith Power & Light
California Solar & Storage Association
Calpirg, California Public Interest Research Group
Center for Sustainable Energy
Clean Power Campaign
Climate Action Campaign
Defenders of Wildlife
Environment California
Environmental Center of San Diego
Environmental Justice Coalition for Water
Feminists in Action (formerly Indivisible CA 34 Womens)
Futures Unbound
Green New Deal At Ucsd
Hammond Climate Solutions
Indivisible Alta Pasadena
Indivisible Ca-33
Indivisible Ca-43
Indivisible Los Gatos
Indivisible Marin
Indivisible Media City Burbank
Indivisible Normal Heights
Indivisible Stanislaus
Indivisible Ventura
Livermore Indivisible
Long Beach Alliance for Clean Energy
Morongo Basin Conservation Association
National Parks Conservation Association
Redwood Energy
Romero Institute
Rooted in Resistance
San Diego 350
San Diego Energy District
Santa Cruz Indivisible

School Energy Coalition
See-la (social Eco Education-la)
Silicon Valley Leadership Group
Socal 350 Climate Action
Solar Energy Industries Association
Solar Rights Alliance
Spur
Sustainable Systems Research Foundation
Upte-cwa
Vote Solar

Other

Earthjustice
Natural Resources Defense Council
Nrdc Action Fund
Sierra Club

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