

Date of Hearing: April 24, 2024

ASSEMBLY COMMITTEE ON UTILITIES AND ENERGY

Cottie Petrie-Norris, Chair

AB 2256 (Friedman) – As Amended April 1, 2024

**SUBJECT:** Net energy metering

**SUMMARY:** Requires the California Public Utilities Commission (CPUC) to revise, as appropriate, the net energy metering (NEM) tariff, to include – among other considerations – ensuring the tariff is based on the cost of service analysis and the total benefits, including nonenergy benefits (as defined), of the NEM facility. Explicitly states the CPUC is not required to ensure nonparticipating ratepayer indifference in implementing this bill.

**EXISTING LAW:**

- 1) Requires every electric utility, defined to include electrical corporations, local publicly owned electric utilities, and electrical cooperatives, to develop a standard contract or tariff for NEM, for generation by a renewable electrical generation facility, and to make this contract or tariff available to eligible customer-generators, upon request on a first-come-first-served basis until the time that the total rated generating capacity used by eligible customer generators exceeds five percent of the electric utility's aggregate customer peak demand. (Public Utilities Code § 2827)
- 2) Requires the CPUC, for a large electrical corporation, as defined, to have developed a second standard contract or tariff to provide NEM to additional eligible customer-generators in the electrical corporation's service territory and imposes no limitation on the number of new eligible customer-generators entitled to receive service pursuant to this second standard contract or tariff. (Public Utilities Code § 2827.1)
- 3) Requires the CPUC to ensure that the second standard contract or tariff made available to eligible customer-generators by large electrical corporations ensures that customer-sited renewable distributed generation continues to grow sustainably. Requires the CPUC, in developing this standard contract or tariff, to include specific alternatives designed for growth among residential customers in disadvantaged communities. (Public Utilities Code § 2827.1(b)(1))
- 4) Establishes the policy that all of the state's retail electricity be supplied with a mix of RPS-eligible and zero-carbon resources by December 31, 2045, and 100% of electricity procured to serve all state agencies by December 31, 2035, for a total of 100% clean energy. Requires the California Public Utilities Commission (CPUC), in consultation with the California Energy Commission (CEC), California Air Resources Board (CARB), and all California balancing authorities, to issue a joint report to the Legislature by January 1, 2021, reviewing and evaluating the 100% clean energy policy. (Public Utilities Code § 454.53)

**FISCAL EFFECT:** Unknown. This bill is keyed fiscal and will be referred to the Committee on Appropriations for its review.

**BACKGROUND:**

*Net Energy Metering (NEM)* – California’s NEM program started in 1997, prompted by SB 656 (Alquist, Chapter 369, Statutes of 1995). 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. Enrollment 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 (Perea, Chapter 611, Statutes of 2013) primarily to address the cost associated with the full retail credits available under the tariff. The CPUC responded with what is commonly referred to as NEM 2.0 in 2016. Customers 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. On August 27, 2020, the CPUC initiated Rulemaking 20-08-020 to develop a successor to the NEM 2.0 tariff, as part of the requirement in statute and a commitment in a previous decision to review the current tariff to address the shift in costs to nonparticipating customers. The CPUC released a proposed decision in December 2021.<sup>1</sup> However, the final decision was delayed while the CPUC considered party comments and evaluated alternatives. On December 15, 2022 the CPUC adopted a new decision establishing the NBT, or colloquially NEM 3.0.<sup>2</sup>

The NBT applied to customers who submit an interconnection application on or after April 15, 2023. The NBT made a number of changes from NEM 2.0, replacing export compensation tied to the retail rate with the avoided cost calculator, and financially incentivizing customers to install battery storage paired with their solar. Moreover, the NBT decision did not affect existing rooftop solar customers; those legacy NEM 1.0 and NEM 2.0 customers remain on their tariff. The NBT decision also did not include any charges unique to solar customers (despite early draft decisions doing that). The result of these changes led to a drop in the compensation rooftop solar customers will receive, increasing the payback period to 9 years.<sup>3</sup>

According to the CPUC, as of 2021, the NEM program had enabled 1.3 million customer installations, equating to roughly 10 gigawatts (GWs) of customer-sited renewable generation,

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<sup>1</sup> See *Decision Revising Net Energy Metering and Subtariffs*, CPUC, December 13, 2021, at: <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M430/K903/430903088.PDF>

<sup>2</sup> D. 22-12-056

<sup>3</sup> CPUC, “Fact Sheet: Modernizing NEM to Meet California’s Reliability and Climate Goals;” November 10, 2022. <https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/net-energy-metering-nem/nemrevisit/final-fact-sheet-nem.pdf>

almost all of which is rooftop solar. Now, NEM systems reduce the demand on the electric grid by as much as 25% during midday when the sun is shining.<sup>4</sup>

#### COMMENTS:

- 1) *Author's Statement.* According to the author, "AB 2256 requires the California Public Utilities Commission (CPUC) to consider the total costs and benefits of rooftop solar, including "non-energy benefits" which are environmental or public health benefits of rooftop solar that accrue to society as a whole, including improved local air and water quality, and avoided land use impacts. The CPUC currently only considers some economic benefits of rooftop solar. As NEM is not simply a rate structure but rather, a far-reaching policy initiative with goals and outcomes that will shape the future of clean energy and climate change in California, it is critical for policy makers to consider all relevant information in re-designing the tariff that has proven integral to meet our climate goals."
- 2) *The Cost Shift.* The controversy associated with NEM is that the customers with NEM (most of whom have roof-top solar) are subsidized by customers without NEM (i.e. "non-participants"). Extensive study has occurred for several years describing and categorizing the cost shift. According to a recent report by the Public Advocates Office (PAO), the annual cost of NEM on non-participants has approximately doubled since 2021, resulting in an estimated \$6.5 billion for the program in 2024 alone.<sup>5</sup> For reference, PAO notes the cost of NEM was approximately \$3.4 billion in 2021.

The CPUC in its annual utility cost report has noted "three critical and overlapping policy fronts must be actively managed to address the risk of high electric rates." These include ballooning wildfire expenses, the need to ensure low-income customers benefit from electrification, and the need to mitigate cost shifts from DER incentives.<sup>6</sup>

Supporters of this bill, however, note the "so-called 'cost-shift' is a utility fabrication."<sup>7</sup> They raise issue with the use of retail energy rates in the calculations used by PAO and others to quantify the cost shift. Instead, they point to "cost of service" as a better metric by which to judge NEM. A cost of service analysis compares an estimate of the utility cost of servicing a customer with an estimate of the customer's bill. The cost of servicing a customer is based on the customer's use of the grid and an allocation of the fixed costs of service. Unlike the CPUC's cost-effectiveness tests, which evaluate both the cost-effectiveness to NEM-participants and non-participating ratepayers, the cost of service analysis focuses exclusively on the benefits to the NEM customer.

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<sup>4</sup> CPUC Fact Sheet; "Modernizing California's Net Energy Metering Program to Meet our Clean Energy Goals." December 13, 2021.

<sup>5</sup> CalPAO, "Rooftop solar incentive to cost customers without solar an estimated \$6.5 billion in 2024." February 28, 2024.

<sup>6</sup> Pg. 17, CPUC, *2022 Senate Bill 695 Report*, May 2022. <https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/office-of-governmental-affairs-division/reports/2022/2022-sb-695-report.pdf>

<sup>7</sup> Coalition support letter, April 9<sup>th</sup>, 2024.

A 2021 analysis commissioned by the CPUC examined NEM cost shifts through the cost of service metric.<sup>8</sup> The study notes, “Comparing estimates of bills and cost of service prior to the installation of NEM-eligible technologies to the post-installation values, however, will provide evidence of whether the installation of NEM-eligible technologies is causing cost shifts.”<sup>9</sup> The study noted that “residential NEM customers’ aggregate utility bills were substantially less than their cost of service,”<sup>10</sup> finding that prior to NEM 2.0 installation, customers paid approximately \$200 million more in their utility bills than the estimated cost for the utility to provide them service; after installing their NEM systems, residential customers paid \$500 million less in their utility bills than the utility’s cost to serve them.<sup>11</sup> This \$500 million deficit results in non-participating ratepayers seeing increased rates; i.e. a cost shift.<sup>12</sup>

While the cost shift measured via a cost of service metric is significant, it is two orders of magnitude less than that measured by the cost-effectiveness test. The same 2021 analysis found that “the NEM 2.0 tariff is cost-effective to participants. However, NEM 2.0 projects are not cost-effective from the perspective of ratepayers and result in a cost shift of more than \$12 billion from program participants to non-participants.”<sup>13</sup> It is this distinction in how to value the system, and from whose perspective to evaluate that value, that has driven much of the controversy around NEM policy.

- 3) *Nonenergy Benefits*. This bill seeks to examine the cost shift calculation even further by requiring the CPUC, as appropriate, to revise the NEM tariff to not only a cost of service basis but also the total benefits, including “quantifiable” nonenergy benefits of the solar system. The bill then defines nonenergy benefits as metrics that may be difficult to quantify. For example, some land-use benefits are listed, including improved water quality and quantity, and the protection or preservation of open-space resources and wildlife habitats. It is unclear whether there is an agreed upon standard or valuation for these nonenergy benefits upon which the CPUC could draw, or if the bill seeks the CPUC to develop the monetary amounts for each. The latter could be highly ambiguous and variable.

In 2019, the CPUC ordered the testing of a Societal Cost Test (SCT) in the Integrated Resource Planning (IRP) proceeding.<sup>14</sup> The testing of an SCT was assigned to the IRP model so that the impact of societal costs on both supply and demand side resource

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<sup>8</sup> Verdant, NEM 2.0 Lookback Study; July 21, 2021. [https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/net-energy-metering-nem/nem-evaluation/nem-2\\_lookback\\_study.pdf](https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/net-energy-metering-nem/nem-evaluation/nem-2_lookback_study.pdf)

<sup>9</sup> Pg. 95, Verdant, *NEM 2.0 Lookback Study*; July 21, 2021. [https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/net-energy-metering-nem/nem-evaluation/nem-2\\_lookback\\_study.pdf](https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/net-energy-metering-nem/nem-evaluation/nem-2_lookback_study.pdf)

<sup>10</sup> *Ibid.*

<sup>11</sup> Marin, William; Shelton, Jean; Rufo, Mike; and Robinson, Lauren; Verdant Associates; “Are California’s Net Metering Tariffs Fair, and How Can We Avoid a Cost-Shift?” 2022 International Energy Program Evaluation Conference, San Diego, CA. [https://verdantassoc.com/wp-content/uploads/IEPEC-2022\\_NEM-Cost-Shift.pdf](https://verdantassoc.com/wp-content/uploads/IEPEC-2022_NEM-Cost-Shift.pdf)

<sup>12</sup> Pg. 1, *Ibid.*

<sup>13</sup> Marin, et al., pg. 1; *Ibid.*

<sup>14</sup> D. 19-05-019

procurement could be considered. An SCT is one of the five cost tests envisioned in the California Standard Practice Manual and used for evaluating DER. The IRP scenario incorporated the central estimates for all societal cost components, including the social cost of carbon, air quality impacts, methane leakage, and a social discount rate. The evaluation found the addition of the SCT results in “minimal changes to the supply-side portfolio,” and minimal changes to the cost-effectiveness of DERs.<sup>15</sup> In other words, when the SCT was applied across all resource types, DERs were not selected.

In their March 13, 2024, Business Meeting, the CEC opened an order instituting informational proceedings to serve as a forum to discuss nonenergy benefits. They also held a joint agency workshop on Tuesday, April 16, 2024, to discuss the approach and implications of examining nonenergy benefits for resource selection in the SB 100 Report.<sup>16</sup> It is unclear to the committee at this time which metrics are included in the nonenergy benefit evaluation at the CEC versus those listed in this measure versus those included in the SCT.

These efforts highlight the challenge in evaluating the cost-effectiveness or societal benefits of a particular resource. Certainly, the absence of adequate accounting of costs and benefits can distort energy planning; but so can the inclusion of too vague or too assumptive metrics. Moreover, if development of benefits tests occurs scattered across the various state agencies, different results could arise for the same resource, leading to further confusion, disagreement, or venue shopping.

- 4) *Need for Amendments.* This bill seeks an assessment of the full suite of DER benefits, including societal benefits as specified. Such an evaluation aligns with past and current work at state energy agencies, and recognizes that DERs can provide benefits beyond electricity generation, including their speed to get online, load modifications, and potential reduction in needed infrastructure or land use conflicts. However, there does not appear to be agreement on which benefits should apply nor their value. As such, it would be premature to prescribe changes to a tariff with undefined criteria. *Therefore, the committee recommends striking the provisions of this bill revising the NEM tariff, and instead amending this bill to require the CPUC to conduct an independent cost of service analysis of the recent NEM 3.0 tariff.* In this way, supporters of NEM policy may have an accounting of the benefits the NEM 3.0 tariff provides to participants – similar to what was conducted for NEM 2.0. Such an evaluation will be especially telling given the changes to financing that have occurred since the new tariff came online; namely, higher interest rates and higher IOU electric rates.

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<sup>15</sup> Pg. 5, CPUC, “Societal Cost Test Impact Evaluation,” January 2022.

<sup>16</sup> <https://www.energy.ca.gov/event/workshop/2024-04/2025-senate-bill-100-report-non-energy-benefits-workshop>

5) *Related Legislation.*

AB 2619 (Connolly) requires the CPUC to develop, by 2027, a new solar tariff to replace the current net billing tariff. Requires that the new tariff be structured to ensure achievement of an annual rate of rooftop solar installation sufficient to meet anticipated needs described in the Joint SB 100 Report. Reverts all NBT customer-generators to the prior net energy metering (NEM) tariff, until the new tariff is available in 2027. Status: *set for hearing* in this committee on April 17, 2024.

6) *Prior Legislation.*

AB 1139 (Lorena Gonzalez) directed the CPUC to adopt a new NEM standard contract or tariff, which the bill defines as the "replacement tariff," by August 1, 2022, and requires an electrical IOU to offer the replacement tariff to an eligible customer-generator by December 31, 2023. If the CPUC fails to act, the CPUC is required to adopt a new tariff under terms prescribed by this bill. Status: Died – Assembly Inactive file.

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**

350 Bay Area Action  
 350 Conejo  
 350 Conejo / San Fernando Valley  
 350 Humboldt  
 350 South Bay Los Angeles  
 350 Southland Legislative Alliance  
 350 Ventura County Climate Hub  
 Acterra: Action for A Healthy Planet  
 Active San Gabriel Valley  
 Adopt a Charger  
 Advanced Energy Economy  
 Alliance of Nurses for Healthy Environments  
 American Solar Energy Society  
 Ballona Institute  
 Ban Sup (single Use Plastic)  
 California Alliance for Community Energy  
 California Center for Sustainable Energy  
 California Climate Voters  
 California Interfaith Power and Light  
 California Solar & Storage Association  
 Californians for Energy Choice  
 Californians for Western Wilderness

CalPIRG  
CalPIRG Students  
Catholic Charities, Diocese of Stockton  
Center for Biological Diversity  
Center for Biological Diversity, INC.  
Center for Community Energy  
Center for Progressive Reform  
Change Begins With Me (INDIVISIBLE)  
Clean Coalition  
Clean Earth 4 Kids  
Cleaneearth4kids.org  
Climate Hawks Vote  
Cloverdale Indivisible  
Coastal Lands Action Network (CLAN)  
Consejo De Federaciones Mexicanas (COFEM)  
Contra Costa Moveon  
Courageous Resistance of The Desert  
Culver City Democratic Club  
Custom Power Solar  
Defend Ballona Wetlands  
East Valley Indivisibles  
Elders Climate Action Northern California Chapter  
Elders Climate Action Southern California Chapter  
Environment CA  
Environment California  
Environmental Protection Information Center  
Environmental Working Group  
Episcopal Diocese of Northern California  
Extinction Rebellion San Francisco Bay Area  
Feminists in Action (formerly Indivisible CA 34 Womens)  
Fridays for Future Orange County  
Friends Committee on Legislation of California  
Glendale Environmental Coalition  
Habitable Designs  
Hammond Climate Solutions  
Hammond Climate Solutions Foundation  
Hang Out Do Good  
Hillcrest Indivisible  
Indian Valley Indivisibles  
Indivisible 36  
Indivisible 41  
Indivisible 43  
Indivisible Alta Pasadena  
Indivisible Auburn CA  
Indivisible Beach Cities  
Indivisible CA 45  
Indivisible Ca-25 Simi Valley Porter Ranch  
Indivisible California Green Team  
Indivisible Claremont / Inland Valley

Indivisible Colusa County  
Indivisible East Bay  
Indivisible El Dorado Hills  
Indivisible Elmwood  
Indivisible Euclid  
Indivisible Manteca  
Indivisible Marin  
Indivisible Media City Burbank  
Indivisible Mendocino  
Indivisible Normal Heights  
Indivisible Oc 46  
Indivisible Oc 48  
Indivisible Petaluma  
Indivisible Resistance San Diego  
Indivisible Resisters Walnut Creek  
Indivisible Ross Valley  
Indivisible Sacramento  
Indivisible San Diego Central  
Indivisible San Jose  
Indivisible San Pedro  
Indivisible Santa Barbara  
Indivisible Santa Cruz County  
Indivisible Sausalito  
Indivisible Sebastopol  
Indivisible Sf  
Indivisible Sf Peninsula and Ca-14  
Indivisible Sonoma County  
Indivisible South Bay LA  
Indivisible Stanislaus  
Indivisible Ventura  
Indivisible Westside L.A.  
Indivisible Yolo  
Livermore Indivisible  
Local Clean Energy Alliance  
Long Beach Alliance for Clean Energy  
Long Beach Environmental Alliance  
Los Angeles Indivisible  
Lutheran Office of Public Policy - California  
Mill Valley Community Action Network  
North County Climate Change Alliance  
Orchard City Indivisible  
Our Revolution Long Beach  
People Power Solar Cooperative  
Progressive Democrats of America, California  
Progressive Democrats of Santa Monica Mountains  
Progressive Zionists of California  
Recolte Energy  
Rooted in Resistance  
Samuel Lawrence Foundation



San Joaquin Valley Democratic Club  
San Jose Community Energy Advocates  
San Luis Obispo Mothers for Peace  
Santa Barbara; City of  
Santa Cruz Climate Action Network  
Santa Monica Democratic Club  
Sfv Indivisible  
Silicon Valley Youth Climate Action  
Social 350  
Social 350 Climate Action  
Solar United Neighbors  
Sonoma County Democratic Party  
Sunflower Alliance  
Sunnova Energy Corporation  
Sunrise Movement Orange County  
Sustainable Systems Research Foundation  
The Climate Alliance of Santa Cruz County  
The Climate Center  
The Resistance Northridge-indivisible  
Together We Will Contra Costa  
Tww/indivisible - Los Gatos  
UC Santa Cruz Climate Coalition  
Usc Schwarzenegger Institute  
Valley Women's Club of San Lorenzo Valley  
Venice Resistance  
Vote Solar  
West LA Democratic Club  
Womeen's Energy Matters  
Women's Alliance Los Angeles  
Yalla Indivisible

**Oppose**

California State Association of Electrical Workers  
California Wind Energy Association  
Coalition of California Utility Employees  
Edison International and Affiliates, Including Southern California Edison  
Independent Energy Producers Association  
Pacific Gas and Electric Company  
San Diego Gas and Electric Company  
The Climate Reality Project: Silicon Valley  
The Utility Reform Network (TURN)

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