Date of Hearing: April 17, 2024

ASSEMBLY COMMITTEE ON UTILITIES AND ENERGY
Cottie Petrie-Norris, Chair
AB 2619 (Connolly) – As Introduced February 14, 2024

SUBJECT: Net energy metering

SUMMARY: Requires the California Public Utilities Commission (CPUC) to develop, by 2027, a new solar tariff to replace the current net billing tariff (NBT). Requires that the new tariff be structured to ensure achievement of an annual rate of rooftop solar installation sufficient to meet anticipated need 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. Finally, requires all publicly owned utilities, except the Los Angeles Department of Water and Power (LADWP), and electrical corporations to revise their NEM tariff, and explicitly prohibits the addition of charges specific to NEM customers from the tariff.

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.[1] 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.[2]

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.[3]

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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[1] 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
[2] D. 22-12-056
[3] 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.[4]

California's Clean Energy Goals – AB 1279 (Muratsuchi, Chapter 337, Statutes of 2022) codified into law the state's goals to achieve net zero greenhouse gas (GHG) emissions and a reduction of statewide anthropogenic GHGs to at least 85% below 1990 levels by 2045. This parallels the state's goals for 100% new zero-emission vehicle sales by 2035 and 100% clean electricity by 2045, as established by Governor Newsom's Executive Order N-79-20 and SB 100 (De León, Chapter 312, Statutes of 2018), respectively. Actualizing these goals will require a significant buildout of clean energy infrastructure. In February 2024, the CPUC adopted its preferred portfolio of generation resources needed to meet our decarbonization goals in 2035.[5] The decision adopted over 56 GW of new resources.[6] For context, in 2018 California's total electric system generation capacity was ~80 GW.[7]

On a longer horizon, the Joint Agency SB 100 Report looks at planning 20+ years out to determine how best to implement the 100% clean electricity by 2045 policy.[8] The first SB 100 report was finalized in March 2021, and included analyses of many pathways to achieve the state's 2045 clean energy goal.[9] While showing that achievement of our 100% clean electricity policy is technically achievable, many barriers and expenses must be overcome. For example, to meet our goals, the SB 100 report showed California will need to roughly triple its current electricity power capacity by 2045. This equates to roughly 6 GW of new solar, wind, and battery storage resources needed annually for the next two decades; an unprecedented acceleration and scale.[10] The SB 100 Report will be updated every four years, with future work focused on critical topics, such as land use. [11]

COMMENTS:

1) *Author's Statement.* According to the author, "California will need to deploy unprecedented amounts of new clean energy generation to achieve 100% clean energy by 2045. We need to make sure that we continue to deploy enough customer-side solar to stay on track to reach our clean energy goals. Net energy metering (NEM) has been the strongest incentive for homeowners to install solar and begin exporting clean energy to the grid. However, the NEM 3.0 decision by the California Public Utilities Commission

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[4] CPUC Fact Sheet; "Modernizing California's Net Energy Metering Program to Meet our Clean Energy Goals." December 13, 2021.
[5] D. 24-02-047; CPUC; *Decision Adopting 2023 Preferred System Plan and Related Matters, and Addressing Two Petitions for Modification;* R. 20-05-003; February 20, 2024.
https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M525/K918/525918033.PDF
[6] Table 4, pg. 68; D. 24-02-047, *Ibid.*
[7] CEC 2018 Total System Electric Generation website: 277,764 GWh/8760h=32GW
[8] CEC, CPUC, & CARB; *2021 SB 100 Joint Agency Report: Achieving 100 Percent Clean Electricity in California: An Initial Assessment*;" March 2021.
[9] Pg. 12, *2021 SB 100 Report.*
[10] Pg. 11, *2021 SB 100 Joint Agency Report Summary, "*Achieving 100% Clean Electricity in California"
[11] Pg. 1, *2021 SB 100 Report.*

(CPUC) dramatically reduced the incentives for new solar customers, causing a steep decline in solar installations, driving widespread job losses in the solar industry, and leading many Californians to decide that, under NEM 3.0, solar doesn't pencil out in their family budgets. This bill requires the CPUC to go back to the drawing board and design a new NEM tariff that will ensure that California stays on track to deploy the amount of customer solar we need to reach 100% clean energy by 2045."

2) *Conflicting Realities.* This bill reverts all NBT customer-generators to the NEM 2.0 tariff, until the new tariff specified in this bill is available in 2027. The bill proposes this reversion despite the CPUC having spent three years developing the record and adopting a successor to NEM 2.0, in an effort to address program inequities while still compensating customer-generators under a reasonable payback period.[12] The author and supporters of this measure justify this reversion by citing the impact NBT has had on the solar industry, including declining solar sales and thousands of lost jobs,[13] compounded with high interest rates making financing of solar more challenging. As noted previously, California needs to roughly triple its electricity power capacity by 2045, and will be relying on all available resources to meet its ambitious goals. The supporters of this bill view the return to NEM 2.0, and the subsequent adoption of the successor tariff as prescribed in this bill, as the minimum needed to keep pace with our clean energy goals.

   However, investor-owned utility (IOU) data provided to the committee paints a different picture of the rooftop solar industry in the state. As shown in Figure 1, data provided by Southern California Edison show a significant rush to interconnect solar systems beginning around December 2022 (when the CPUC issued its final NEM 2.0 decision), and then rapidly declining around summer 2023 (after the application period for NEM 2.0 ended; all subsequent customer-generator interconnections were on the NBT). Data provided by Pacific Gas & Electric show a similar trend. These data seem to indicate the recent decline in sales may have been simply a return to the mean after a spike in NEM applications.

   It is unclear to the committee just how dire the situation is for California rooftop solar under the NBT. The often quoted "80% decline in sales[14]" may be a matter of perspective: 80% decline compared to the high of February – April 2023; or an 80% decline from the historical average? The utilities have stated that 2024 shows a pace of solar adoption similar to 2019-2020 levels, prior to the CPUC kicking off the NEM 3.0 debate. Even so, the California Solar & Storage Alliance, writing in support, notes the historic pace of rooftop solar adoption was falling short of the state's goal even prior to

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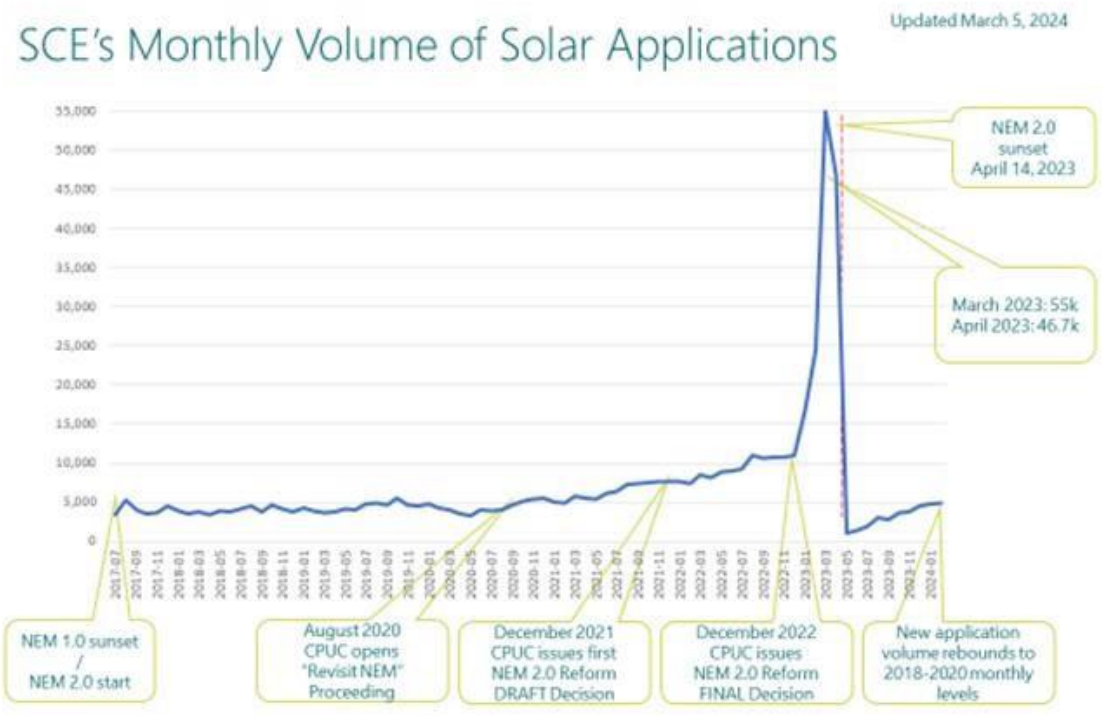
[12] National average payback period ~8.7 years; "What's the Average Solar Panel Payback Period? (2024)" *Architectural Digest;* updated February 6, 2024. For panels that have ~25 year lifespan, a payback of <10 years provides at least 15 years of savings.
[13] Julie Cart; "What's happened since California cut home solar payments? Demand has plunged 80%" *CalMatters*; January 26, 2024.
[14] Ivan Penn, "California Has Dealt a Blow to Renewable Energy, Some Businesses Say;" *NewYork Times*; Jan. 14, 2024.

the rush, providing motivation for the proposed changes to NEM policy as proposed under this measure.

Figure 1 - SCE monthly solar volume (number of applications vs. month); July 2017-Jan 1, 2024.



3) *DER in SB 100.* This bill proposes the creation of a new customer-generator tariff, the detail and impact of which is unclear. The bill merely states the new tariff must ensure the state can achieve an annual rate of installation of solar that is sufficient to meet the anticipated need described in the Joint SB 100 report. As noted above, the Joint SB 100 report is a once-in-four-year planning document outlining how best to implement the 100% clean electricity by 2045 policy.[15] The first iteration of the SB 100 report came out in March 2021; the subsequent edition is expected in the spring of next year.

   As part of the 2021 SB 100 report's analysis of the resource mix needed by 2045, the model was provided a 39 GW input to account for customer-side solar. This 39 GWs is an assumption based off of CEC projections for likely rooftop solar adoption. It's a fixed value. When the model was run to optimize for reliability and least cost, "no additional customer solar was selected."[16] The CEC went on to note "factors outside system costs, such as customer preference and resilience benefits, may affect customer-side resource adoption."

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[15] CEC, CPUC, & CARB; *2021 SB 100 Joint Agency Report: Achieving 100 Percent Clean Electricity in California: An Initial Assessment*;" March 2021.
[16] Pg. 104, SB 100 Report; *Ibid.*

It is therefore unclear what is the SB 100 report's "anticipated need for customer-side solar" called for under this bill to establish the new tariff. Presumably, the author intends the 39 GW input to serve as this "anticipated need." However, as written, the "anticipated need" could be interpreted as 0 GW, as the SB 100 report does not identify a need for rooftop solar as an output.

The SB 100 report is also not a static document. It is updated every 4 years. That update involves a reassessment of its inputs and assumptions. In February, the CEC held a workshop on inputs to inform the 2025 report.[17] That workshop discussed a high DER scenario as a model sensitivity. Given this, it is unclear which value for rooftop solar's "anticipated need" this bill is referencing: the value in the 2021 SB 100 Report; the value to be used in the 2025 update; or the value to be used in the 2025 "DER Focus" scenario.

Given this uncertainty, it is unclear the impact of the new tariff called for under this measure. However, if 39 GW is the assumed target, that would roughly equate to just under 2 GW of rooftop solar installation needed per year. The CPUC reports residential rooftop solar installations were roughly 956 megawatts (MWs) per year in 2021. So the 39 GW target would require a doubling of current installation rates. The subsequent tariff called for under this bill would likely need to be more lucrative than NBT, or even NEM 2.0, in order to sustain that growth.

4) *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.[18] 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.[19]

   Supporters of this bill, however, note the "so-called 'cost-shift' is a utility fabrication." 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. A 2021 analysis commissioned by the CPUC examined NEM cost shifts through the cost

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[17] file:///C:/Users/shybutla/Downloads/TN254504_20240216T082207_Presentation%20for%20SB100%20Inputs%20and%20Assumptions%20Workshop.pdf

[18] CalPAO, "Rooftop solar incentive to cost customers without solar an estimated $6.5 billion in 2024." February 28, 2024.

[19] 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

of service metric. [20] 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."[21] The study found that "residential NEM customers' aggregate utility bills were substantially less than their cost of service,"[22] resulting in non-participating ratepayers seeing increased rates.[23]

5) *Need for Amendments.* While DER, and rooftop solar in particular, has been recognized as playing an important role in California's clean energy future, how best to value these resources – and at what level – has remained a topic of ongoing debate. This bill seeks to tip the scale back toward compensation structures for DER that the CPUC only recently changed. The CPUC's changes were an effort to address growing affordability concerns, which are exacerbated by rooftop solar policies; a claim many in support of this bill dispute. While many of the details of the tariff proposed under this measure are unclear, the CPUC was able to provide an initial analysis of the ratepayer impacts of implementing the bill. They find roughly $21-47 billion in ratepayer costs over a five year period would result if this measure were adopted; this is roughly $11-25 billion more than the cost shift from NBT.

   Given the desire to balance DER development with affordability, and recognizing the benefits DER can provide to local communities, the environment, and the grid, it may be beneficial to permit an evaluation of NEM tariffs, as put forward by this measure. However, given the potential tens of billions of dollars in costs associated with this proposal, it may be prudent to assign any associated costs of implementing the new tariff to an alternative funding source outside of electric rates. *As such, the committee recommends striking the provisions requiring customers to revert to NEM 2.0 until 2027, and instead retain the tariff development proposed by Section 2827.2 of this bill. The committee recommends tying any costs to compensate customer-generators to be paid outside of electric rates, namely the Greenhouse Gas Reduction Fund, such that non-participating ratepayers experience no cost-shift associated with implementing this measure.*

6) *Related Legislation.*

   AB 2256 (Friedman) 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, of the NEM facility. Explicitly states the CPUC is

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[20] 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
[21] 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
[22] *Ibid.*
[23] Pg. 1, *Ibid.*

not required to ensure nonparticipating ratepayer indifference in implementing this bill. Status: *set for hearing* in this committee on April 17, 2024

7) *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 Humboldt
350 South Bay LA
350 Southland Legislative Alliance
350 Ventura County Climate Hub
50 Acterra Action for A Healthy Planet
Alameda County Democratic Party
Aztec Solar INC.
Ballona Institute
Ban Sup (single Use Plastic)
California Alliance for Community Energy
California Climate Voters
California Construction & Industrial Materials Association
California Solar & Storage Association
Californians for Energy Choice
Center for Biological Diversity
Change Begins With Me
Clean Coaliton
Clean Earth 4 Kids
Cleanearth4kids.org
Climate Reality Project, Los Angeles Chapter
Climate Reality Project, San Fernando Valley
Cloverdale Indivisible
Coastal Lands Action Network (CLAN)
Contra Costa Moveon
Courageous Resistance of The Desert
Custom Power Solar
Defend Ballona Wetlands

East Valley Indivisibles
Engie North America
Extinction Rebellion San Francisco Bay Area
Feminists in Action (formerly Indivisible CA 34 Womens)
First Response Solar
Freedom Forever
Glendale Environmental Coalition
Goodleap LLC
Hammond Climate Solutions
Hang Out Do Good
Indian Valley Indivisibe
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 Resisters Walnut Creek
Indivisible Ross Valley
Indivisible Sacramento
Indivisible San Diego Centra
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 West Side LA
Indivisible Yolo
Laguna Beach; City of
Livermore Indivisible
Local Clean Energy Alliance
Long Beach Alliance for Clean Energy
Long Beach Environmental Alliance
Los Angeles Indivisible
Mill Valley Community Action Network
Orchard City Indivisible
Our Revolution Long Beach
Pearlx Infrastructure, LLC
Progressive Democrats of America, California
Progressive Democrats of Santa Monica Mountains
Prologis Management, LLC
Recolte Energy
Rooted in Resistance
San Diego 350
San Joaquin Valley Democratic Club
San Jose Community Energy Advocates
San Luis Obispo Mothers for Peace
Santa Cruz Climate Action Network
Sfv Indivisible
Silicon Valley Youth Climate Action
Socal 350
Solar Optimum
Solar Technologies
Solarcraft
Solaredge Technologies INC
Sonoma County Democratic Party
Sun Light & Power
Sunnova Energy Corporation
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
Valley Women's Club of San Lorenzo Valley
Venice Resistance
Womeen's Energy Matters
Women's Alliance Los Angeles
Yalla Indivisible

Support If Amended

Foundation Wind Power

Oppose

350 Sacramento
Calchamber
California State Association of Electrical Workers
California Wind Energy Association
Coalition of California Utility Employees
Edison International and Affiliates, Including Southern California Edison
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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