BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Revisit Net Energy Metering Tariffs Pursuant to Decision 16-01-044, and to Address Other Issues Related to Net Energy Metering.	R.20-08-020 (Filed August 27, 2020)

CLOSING BRIEF OF THE PROTECT OUR COMMUNITIES FOUNDATION

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SUMMARY OF RECOMMENDATIONS

Pursuant to Rule 13.12 of the Commission's Rules of Practice and Procedure, the Protect Our Communities Foundation provides the following summary of its recommendations.

In this proceeding, the Commission should:

- Comply with Public Utilities Code section 2827.1(b)(1)'s mandate to ensure that customer-sited renewable generation continues to grow sustainably by evaluating proposed successor tariffs based on whether prospective NEM participants would receive a reasonable economic value proposition sufficient to continue the current rate of BTM solar installations. As shown by data from other states in which reforms undercut customers' economic value propositions and decimated behind-the-meter adoption rates, a continued economic value proposition is essential to ensuring continued sustainable growth.

- Reject parties' interpretations of Section 2827.1(b)(1) that focus exclusively on the word "sustainably" and ignore the text's emphasis on growth and continuity. Indeed, the directive to ensure that distributed generation "*continues* to grow sustainably" reflects the Legislature's determinations that (1) current rates of deployment are sustainable, and (2) those rates of deployment should continue.

- Comply with Public Utilities Code section 2827.1(b)(4)'s mandate to account for "total" costs and benefits by using the Societal Cost Test variation of the Total Resource Cost test to analyze the cost-effectiveness of the current and proposed successor NEM tariffs.

- Reject parties' interpretations of Section 2827.1(b)(4) that call for ratepayer indifference and/or the elimination of a claimed cost shift. Section 2827.1(b)(4) refers to balancing total costs and benefits "to *all* customers and the electrical system," while ratepayer indifference concerns effects on *some* customers. The statutory text calls for an evaluation of cost-effectiveness—not cost shift.

- After consideration, reject the Ratepayer Impact Measure ("RIM") test, which fails to comply with Section 2827.1(b)(4), penalizes customers for reducing their consumption of energy from the grid, and discourages energy conservation efforts.

- Use the NEM 2.0 Lookback Study's cost-of-service analysis as the basis for establishing the costs of customer-sited renewable generation.

- Account for the full benefits of customer-sited renewable generation, including avoided transmission costs, resiliency and reliability benefits, and air quality and climate benefits excluded from or inadequately credited by the Avoided Cost Calculator.

- Reject parties' misleading narrative that the current NEM tariffs are uniquely inequitable, when, in fact, those tariffs are not causing a cost shift and any inequities are systemic, rather than specific to the current NEM tariffs. Instead, the Commission should address equity among customers by adopting programs that will expand access to distributed renewable generation to lower-income individuals and renters. These programs should include community storage, community solar, and tariffed on-bill financing tied to the meter.

Further, in adopting a successor tariff to the current NEM tariffs, the Commission should:

- Retain the current NEM 2.0 tariff with targeted modifications to incent storage, increase access to historically under-represented groups, and maximize the benefits of customer-sited renewable generation to customers and the grid.

- Adopt modified time-of-use rates to increase incentives for standalone solar and solar + storage customers to optimize their consumption and discharge patterns to provide maximum benefits.

- Reject parties' proposals calling for regressive and unfair Grid Benefits Charges that penalize NEM customers for reducing energy use from the grid.

- Reject parties' proposals calling for compensating NEM customers' exports at the value of their avoided costs as determined by the Avoided Cost Calculator. The Avoided Cost Calculator undervalues customer-sited renewable generation by understating avoided transmission costs and inadequately crediting or omitting societal benefits.

- Expand access to beneficial clean energy to historically under-served populations, including low-income individuals, renters, and residents of multi-unit buildings, by:

    - Adopting community solar and community storage programs.

    - Adopting a carve-out allowing low-income customers continued access to the NEM 2.0 tariff.

    - Mandating that the utilities offer a tariffed on-bill financing program tied to customer meters to remove barriers related to high upfront costs of adoption and difficulties obtaining financing.

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I. Introduction

In Public Utilities Code section 2827.1(b),[1] the Legislature required that any successor to the current Net Energy Metering ("NEM") tariffs continue the sustainable growth of customer-sited renewable generation. To comply with this directive, the Commission must ensure that the successor tariff offers customers an economic reason to invest in behind-the-meter ("BTM") systems. As shown by the record in this proceeding, a tariff that would prevent customers from recovering their initial investments would decimate rates of BTM-system adoption and badly damage the solar industry.

The Legislature has further directed that any successor tariff be based on the costs and benefits of BTM resources. The tariff must also ensure that the total benefits of these resources to all customers and the electrical system are approximately equal to their total costs. As the Commission has recognized, this balance requires the Commission to measure total resource costs as a whole—and not the tariff's effects on particular customer sub-groups. In other words, the Commission must use a cost-effectiveness test, and not a test that purports to measure cost shifts. But while the Commission has directed the use of the Total Resource Cost test in this

[1] All subsequent statutory references are to the Public Utilities Code unless otherwise indicated.

proceeding, only the societal test variation of the Total Resource Cost test can achieve the statutory mandate to account for "total" benefits of customer-sited resources. The societal test takes into account environmental and other benefits that have demonstrated value. In evaluating "total" benefits, the Commission cannot choose to ignore certain categories of benefits.

Despite these statutory requirements, the successor tariffs proposed by the Joint Utilities, Cal Advocates, TURN, and NRDC,[2] as well as the Joint Recommendations submitted by the self-proclaimed "independent parties," would render customer-sited renewable generation economically unattractive to customers. Underlying all of these proposals is an assumption that the Commission must eliminate the bill savings that NEM customers receive when they generate their own electricity. These proposals further ignore the substantial benefits provided by distributed, renewable generation and fail to balance the costs and benefits to "all" customers as required by the statute. The combined result of these assumptions and oversights is a series of recommendations that ignores the Legislature's determination that current growth rates are sustainable and that they must continue. The recommendations also assume the existence of an alleged cost shift that the evidence in this proceeding does not support and that the Legislature certainly did not identify as a justification for halting the continued growth of distributed solar when it adopted AB 327.

Ultimately, the anti-NEM proposals for a successor tariff would have the Commission turn its back on its greatest achievements of the last two decades—the deployment of clean generation to support California's climate goals and the creation of a robust, innovative solar industry with nationwide impact. In contrast, the Protect Our Communities Foundation's

[2] Hereafter referred to as the "anti-NEM" parties.

("PCF") proposals—and, to a lesser extent, the proposal of the California Solar and Storage Association ("CALSSA")—would build on the success of the current NEM tariffs and continue the growth of customer-sited renewable generation. The latter proposals would help achieve a modern electric grid featuring clean energy generated by distributed solar and made available at all hours by distributed storage. The Public Utilities Code, the Commission's prior decisions in this proceeding, and sound public policy require the Commission to adopt PCF's proposals.

II. Legal framework: Public Utilities Code section 2827.1 and the Guiding Principles Decision support the Protect Our Communities Foundation's vision for the successor tariff.

The anti-NEM parties misconstrue Section 2827.1, the statute governing successor NEM tariffs, arguing that it requires the Commission to eliminate any cost shifts. In contrast to the anti-NEM parties' claims, Section 2827.1 in fact requires that the successor tariff (1) ensure the continued growth of customer-sited renewable generation and (2) be cost-effective from the perspective of *all* customers. The statute does not require that the Commission address a claimed cost shift or focus on the tariff's effects on only *some* customers. Further, the anti-NEM parties' failure to account for the *total* benefits of customer-sited renewable generation violates the statutory cost-effectiveness mandate.

A. The anti-NEM parties fail to harmonize the requirements that customer-sited generation continue to grow sustainably and that its costs and benefits be approximately equal.

The Joint Utilities assert that the requirement that customer-sited renewable generation "continues to grow sustainably" mandates the elimination of an alleged "cost shift,"[3] which they

[3] PCF's opening brief demonstrates that, contrary to the claims of the anti-NEM parties, a complete and accurate accounting of the actual costs—based on the utilities' costs to serve NEM customers—and the full benefits of the current NEM tariffs shows that the tariffs are not causing (footnote continued on next page)

consider to be unsustainable.[4] In focusing narrowly on the word "sustainably," however, the Joint Utilities ignore the statute's emphasis on growth and continuity. The statute's requirement that distributed generation "*continues* to *grow* sustainably"[5] demonstrates the Legislature's belief that (1) current rates of deployment are sustainable, and (2) that those rates of deployment must continue. The Joint Utilities' assertion that current NEM-system installation rates are unsustainable directly conflicts with this Legislative direction and impermissibly ignores the definition of "continue," which requires that distributed generation growth be "maintain[ed] without interruption."[6]

The Joint Utilities argue that this reading of the sustainable growth provision cannot be harmonized with the statute's cost-effectiveness provisions.[7] Their argument, however, relies on the false claims that a cost-shift exists and that the cost-effectiveness provisions "require the Commission to address cost shifts."[8] A cost shift does not exist, and, in any event, the cost-effectiveness provisions do not require that any cost shifts must be addressed. Section

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a cost shift. This brief nevertheless uses the term "cost shift" to respond to the anti-NEM parties' arguments that assume such a shift.

[4] R.20-08-020, Joint Opening Brief of Pacific Gas and Electric Company (U39-E), San Diego Gas & Electric Company (U 902-E), and Southern California Edison Company (U-338) (Aug. 31, 2021) ("Joint Utilities Opening Brief") at pp. 19-20 (asserting that Section 2827.1(b)(1) requires that "the customer-sited DG industry grows in a way that maintains its own viability. In other words, the growth should be self-sufficient and not dependent upon a cost shift.").

[5] Pub. Util. Code § 2827.1(b)(1) (emphasis added).

[6] *See* "Continue," Merriam-Webster.com Dictionary, Merriam-Webster, https://www.merriam-webster.com/dictionary/continue (accessed Aug. 26, 2021).

[7] Joint Utilities Opening Brief at pp. 20-21 (asserting that reading the sustainable growth provision to require maintaining approximate current rates of growth "would put the statutory provisions, which also require the Commission to address cost shifts, at war with one another, as opposed to in harmony.").

[8] *Ibid*.

2827.1(b)(3) and (b)(4) respectively require that the successor tariff be "based on the costs and benefits" of the renewable generation facility, and "[e]nsure that the total benefits of the . . . tariff to all customers and the electrical system are approximately equal to the total costs." The Utilities assert that these provisions require the elimination of subsidies to participants.[9] But balancing costs and benefits "to all customers and the electrical system" requires a cost-effectiveness test analyzing effects on participants and non-participants as a collective whole, not an evaluation of a cost shift *between* two customer groups.

Reading both the sustainable growth and the cost-effectiveness provisions correctly—i.e., to require the successor tariff to maintain approximate current rates of growth and to balance costs and benefits of customer-sited renewable generation to all customers—harmonizes those provisions. Maintaining the growth of customer-sited resources is sustainable and consistent with balancing costs and benefits to all customers because the benefits of customer-sited resources outweigh the costs when assessed accurately.[10] Even assuming, for the sake of argument, that the current tariffs were shifting costs from participants to non-participants (they are not), there would still be no conflict between the sustainable growth provision and the cost-effectiveness provisions. Customer-sited renewable generation could continue to grow sustainably while shifting costs from one class of customers to another, provided that those costs are outweighed by benefits received by all customers and the grid such that the whole system is in balance.

Essentially, the Joint Utilities' cost-shift-focused interpretation of Section 2827.1(b) requires the assumption that the Legislature in 2013 drafted the Utilities' current conclusions

[9] *Id.* at p. 20.

[10] *See* R.20-08-020, Opening Brief of the Protect Our Communities Foundation (Aug. 31, 2021) ("PCF Opening Brief") at pp. 20-21.

about the claimed cost shift into law. The text of the statute does not support this assumption. Instead, Section 2827.1(b) focuses on cost-effectiveness and does not reflect any legislative determination about cost shifts.

TURN and Cal Advocates similarly misconstrue the statutory directives at issue. First, TURN asserts that the mandate to ensure any successor tariff reflect the costs and benefits of customer-sited generation requires that export compensation be measured by the Avoided Cost Calculator.[11] However, the statute says nothing about export compensation nor avoided costs. Rather, Section 2827.1 requires that the PUC ensure the total costs and benefits of customer-sited generation be "approximately equal."[12] Similarly, Cal Advocates' claim that rates for NEM customers must be "just and reasonable" says nothing about how to structure the NEM tariff.[13] If anything, the requirement that rates be just and reasonable supports using the cost of service—which is the metric by which rates are set—to determine the cost of serving NEM customers. Under Section 2827.1 these costs would then be balanced against the *total* benefits of BTM generation to determine a just and reasonable rate. As PCF demonstrated in its opening brief, the total benefits of BTM generation outweigh any gap in the cost to serve these customers.[14] Thus, any modifications to the current tariff should be structured to expand the adoption of BTM generation, particularly by low- and moderate-income customers.

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[11] R.20-08-020, Opening Brief of The Utility Reform Network Regarding a Successor to the Current Net Energy Metering Tariff (Aug. 31, 2021) ("TURN Opening Brief") at p. 100.

[12] Pub. Util. Code § 2827.1(b)(4).

[13] R.20-08-020, Opening Brief of the Public Advocates Office (Aug. 31, 2021) ("Cal Advocates Opening Brief") at p. 3.

[14] PCF Opening Brief at pp. 20-21.

Finally, TURN's assertion that the successor tariff need not be consistent with the cost-effectiveness requirements of Title 24 because Section 2827.1 directs the Commission to establish the successor tariff "notwithstanding any other law" proves too much.[15] Under TURN's theory, this clause would obviate the need to ensure that rates are "fair and reasonable" under Section 451—an absurd result that undermines TURN's interpretation of the statute. The Commission's decision adopting guiding principles for this proceeding ("Guiding Principles Decision") correctly recognizes that any modifications to the NEM tariffs should be coordinated with other statutory goals and policies, including SB 100 and the Title 24's solar mandate.[16]

B. Public Utilities Code section 2827.1 does not require ratepayer indifference.

The Joint Utilities' assertion that Section 2827.1(b)(3) and (4) require ratepayer indifference[17]—i.e., that ratepayers who are not on the tariff see no impact to their rates—relies not on a close reading of the statutory text, but on citations to a witness's testimony about a *different* statute. Specifically, the Joint Utilities claim that CALSSA witness Brad Heavner conceded that Section 2827.1(b) includes ratepayer indifference principles.[18] In the cited portion of testimony, however, Mr. Heavner distinguishes the ratepayer indifference principles in Senate Bill 43 with those in Section 2827.1,[19] and emphasizes that Section 2827.1 does *not* require the

[15] TURN Opening Brief at p. 61.

[16] D.21-02-007, Decision Adopting Guiding Principles for the Development of a Successor to the Current Net Energy Metering Tariff (Feb. 11, 2021) ("Guiding Principles Decision") at p. 20.

[17] Joint Utilities Opening Brief at p. 19.

[18] *Ibid.* (citing Reporter's Transcript Vol. 6, 1039:17-1040:8 (Testimony of CALSSA witness B. Heavner)).

[19] Reporter's Transcript Vol. 6, 1039:3-1040:8 (Testimony of CALSSA witness B. Heavner).

elimination of any cost shift, as the Joint Utilities suggest.[20] Indeed, as CALSSA demonstrated in its opening brief, when the Legislature wants to require non-participant indifference, it does so explicitly.[21]

The Joint Utilities also assert that the Guiding Principles Decision requires ratepayer indifference and the elimination of any cost shifts.[22] The Guiding Principles Decision does nothing of the sort. While the Decision finds that AB 327 "addresses cost shifts,"[23] it repeatedly rejects any proposals that assume such a cost shift exists.[24] Instead, the Guiding Principles Decision finds only that AB 327 encompasses the issue of whether there is a cost shift, and, if so,

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[20] *Id.* at 1039:23-1040:1 ("The reason that we think ratepayer indifference is problematic and was struck from the NEM statute is because the Commission has interpreted it in such a conservative way to err so far on the side of ensuring that no costs are shifted.").

[21] R.20-08-020, Opening Brief of the California Solar & Storage Association (Aug. 31, 2021) ("CALSSA Opening Brief") at pp. 12-13; *see also* Pub. Util. Code § 399.20(d)(4) ("The commission shall ensure, with respect to rates and charges, that ratepayers that do not receive service pursuant to the tariff are indifferent to whether a ratepayer with an electric generation facility receives service pursuant to the tariff."); Pub. Util. Code § 2833(q) ("The commission shall ensure that charges and credits associated with a participating utility's green tariff shared renewables program are set in a manner that ensures nonparticipant ratepayer indifference . . . and ensures that no costs are shifted from participating customers to nonparticipating ratepayers.").

[22] Joint Utilities Opening Brief at pp. 18-19 (citing D.21-02-007, Guiding Principles Decision).

[23] *Ibid.* (citing D.21-02-007, Guiding Principles Decision at p. 39 (Finding of Fact 31)).

[24] D.21-02-007, Guiding Principles Decision at p. 6 (rejecting TURN's argument that the guidelines should focus on eliminating a cost shift, and stating "The Commission should not determine what guiding principles to adopt in this decision based on information that is not final and not in the record of this proceeding."); *id.* at pp. 13-14, 38 (Finding of Fact 14) (declining to adopt a definition of equity tied to reducing cost shifts, and stating that such a definition "is based on a contention that has yet to be provided in the record of this proceeding."); *id.* at 21-22 (reiterating "that principles cannot be based on information that is not final nor in the record of this proceeding"); *id.* at p. 36 (Finding of Fact 1: "Certain specific metrics proposed by parties rely on facts not currently in the record of this proceeding."); *ibid.* (Finding of Fact 3: "It is inappropriate to adopt principles that require findings of facts we cannot make prior to the service of testimony or evidentiary hearings."; *id.* at 39 (Finding of Fact 33: "Protections against cost shifts should not pervade every guiding principle.").

what to do about it. Nowhere does the Decision find that AB 327 requires ratepayer indifference when addressing any alleged cost shift.

In fact, the Guiding Principles Decision expressly rejects the proposition that Section 2827.1(b) requires ratepayer indifference. As noted by the Commission, "evaluating proposals for a successor to the net energy metering tariff in terms of impacts on nonparticipants promotes a standard that does not fully reflect the actual legislative requirement of 'all customers and the electrical system.'"[25] The Commission thus specifically requires the Total Resource Cost test, which concerns costs and benefits to *all customers*, rather than the Ratepayer Impact Measure (RIM) test, which estimates impacts to non-participants.[26] As the Commission determined, the RIM test fails to address Section 2827.1(b)(4)'s requirement to balance costs and benefits from the perspective of "all customers and the electrical system."[27]

In short, neither the text of Section 2827.1(b) nor the Commission's interpretations of that text supports the proposition that the successor tariff eliminate any alleged cost shift. Instead, both the statute and Commission decisions require that the successor tariff be cost-effective from the perspective of all customers and the electrical system as a whole.

C. The anti-NEM parties' failure to properly account for the benefits of customer sited renewable generation violates Section 2827.1(b)'s mandate to balance "total" costs and benefits.

Section 2827.1(b)(4) requires that the Commission balance the "total benefits" of a successor tariff with its "total costs." To comply with this statutory mandate, the Commission

[25] D.21-02-007, Guiding Principles Decision at pp. 35-36.

[26] *Ibid.*; *id.* at pp. 36-37 (Finding of Fact 4).

[27] *Ibid.*

must account for *all* of the successor tariff's costs and benefits.[28] The anti-NEM parties fail to meet the statute's requirements by calculating benefits using the Avoided Cost Calculator despite that tool's (1) inadequate valuation of transmission benefits and (2) complete omission of resiliency benefits.

Cal Advocates admits the Avoided Cost Calculator only includes the deferred value of unspecified transmission projects.[29] Cal Advocates, however, fails to acknowledge how that approach underestimates the ability of customer-sited renewable generation to avoid transmission costs entirely. The Avoided Cost Calculator identifies a generic figure for transmission costs that is substantially smaller than the actual transmission costs identified in CAISO's transmission planning process.[30] The Commission justified this smaller number because the benefits of specific avoided transmission spending can be identified through the transmission planning process and the Distributed Investment Deferral Framework, which focus on the costs of specific projects.[31] However, the Commission did not find that customer-sited renewable generation failed to confer an economic benefit as a result of the cancellation of

[28] *See* "Total," Merriam-Webster.com Dictionary, Merriam-Webster, https://www.merriam-webster.com/dictionary/total (accessed Sept. 8, 2021) (defining "total" as "comprising or constituting a *whole*; *entire*").

[29] Cal Advocates Opening Brief at p. 11.

[30] *See* PCF Opening Brief at pp. 15-16 (documenting the vast disconnect between the Avoided Cost Calculator's estimated transmission costs and those identified in CAISO's transmission planning process.)

[31] D.20-03-005, Decision Adopting Staff Proposal On Avoided Cost And Locational Granularity Of Transmission And Distribution Deferral Values (March 12, 2020) at p. 12.

transmission projects generally. Instead, the Commission simply opted not to quantify the benefit at that time.[32]

The Avoided Cost Calculator also underestimates the value of customer-sited renewable generation by including rooftop solar mandated by Title 24 in its "No DER" scenario.[33] The "No DER" scenario is designed to model the transmission costs that would be incurred if no distributed resources were built. However, because that scenario includes a substantial amount of rooftop solar that will significantly reduce load and therefore transmission costs, it does not capture the avoided transmission costs conferred by that distributed resource.

While the Avoided Cost Calculator ignores most of the avoided transmission benefits, it entirely omits resiliency benefits. In its opening brief, TURN reiterates its position that resiliency benefits are purely private,[34] and trivializes the value of consistent and reliable electricity service as little more than the ability to watch TV or play video games.[35] The record, however—including testimony by witnesses from the Joint Utilities, Cal Advocates, and TURN—demonstrates the societal value of maintaining electricity service during a power outage.[36] For example, TURN's witness testified:

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[32] PCF-24 at p. 17 [R.20-08-020, PCF, Rebuttal Testimony of Bill Powers, P.E. (July 16, 2021) ("Rebuttal Testimony of B. Powers")] (noting that D.20-03-005 "sidestepped the issue of NEM solar's role in eliminating new transmission, stating 'this decision does not draw a conclusion regarding the unspecified transmission deferral value.'") (quoting D.20-03-005 at p. 1).

[33] R.14-10-003, CPUC Energy Division Staff Proposal for 2020 Avoided Cost Calculator Update (Apr. 16, 2020) at p. 35 (available at https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M334/K786/334786698.pdf).

[34] TURN Opening Brief at p. 29.

[35] *Ibid.*

[36] Reporter's Transcript Vol. 5, 892:6-9, 894:5-895:5 (Testimony of Cal Advocates witness K. Rounds); Reporter's Transcript Vol. 3, 403:16-22, 405:15-24, 406:19-23, 407:5-16 (Testimony

(footnote continued on next page)

> Q: And do you agree that the loss of power during a multiday utility shutoff can result in food spoilage?
> A: Yes.
> Q: Or that it could prevent children from logging into school or completing homework?
> A: I think that that's possible.
> Q: Do you agree that there's a societal value to avoiding emergency room visits or premature deaths?
> A: I think that there's a personal value to that and there's probably a societal value to it also. I haven't quantified that or thought about it.
> Q: Okay. And do you agree that there's a societal value to ensuring children can attend schools consistently, [and] do their homework?
> A: Absolutely.[37]

While the individual owner of a BTM system may receive the most direct benefit, the benefits of consistent electrical service that accrue to society as a whole include a reduction in emergency room visits, the ability to complete school work or attend school, and reduced food waste. Further, because solar + storage provides resilience, targeted deployment of such systems in high fire danger areas could save ratepayers billions of dollars in wildfire-related grid-hardening costs.[38] TURN's failure to credit the value of customer-sited renewable generation properly ignores its own witness's testimony and ignores the societal benefits that accrue from

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of Joint Utilities witness S. Wray); Reporter's Transcript Vol. 9, 1628:3-12, 1628:23-1629:14 (Testimony of TURN witness M. Chait).

[37] Reporter's Transcript Vol. 9, 1628:23-1629:14 (Testimony of TURN witness M. Chait).

[38] PCF-24 at pp. 28-32 [Rebuttal Testimony of B. Powers].

ensuring people retain power during a power outage. Under Section 2827.1, those benefits should be quantified and included in any cost test.

By relying only on the Avoided Cost Calculator's estimate of avoided transmission costs and failing entirely to account for resiliency benefits, the anti-NEM parties understate the benefits of customer-sited renewable generation. They also fail to properly credit that value when they tie export compensation to the Avoided Cost Calculator. While the Commission may have had reasons to structure the Avoided Cost Calculator as it did, exclusive use of the Calculator's limited valuation approach would violate the Legislature's mandate that this proceeding account for the "total benefits" of customer sited renewable generation.[39]

III. Issue 3: What method should the Commission use to analyze the program elements identified in Issue 4 and the resulting proposals, while ensuring that the proposals comply with the guiding principles?

PCF proposes four principles to guide the Commission's analysis of proposed program elements and successor tariffs. First, to comply with Section 2827.1(b)(3) and (4), the Commission must analyze the cost-effectiveness of proposed successor tariffs—not, as the anti-NEM parties assert, whether these proposed tariffs would cause a cost shift. Second, to capture the "total" benefits of customer-sited resources, the Commission should employ the societal test variation of the Commission-mandated Total Resource Cost test. Third, to comply with Section 2827.1(b)(1), the Commission should evaluate whether the payback periods calculated for successor tariffs will present customers with an attractive economic value proposition and, thus, enable customer-sited renewable generation to continue to grow sustainably. Finally, to ensure that a successor tariff ensures equity among customers, the Commission should view the equity

[39] Pub. Util. Code §2827.1(b)(4).

implications of the current and proposed successor tariffs in the appropriate factual context rather than relying on the soundbites offered by the anti-NEM parties.

A. The Public Utilities Code requires a cost-effectiveness test and not an evaluation of cost shifts.

The anti-NEM parties disparage the Commission-required Total Resource Cost test. Their criticism, however, relies on their incorrect reading of Section 2827.1(b) to require an analysis of "cost shift" rather than cost-effectiveness. For example, the Joint Utilities assert that the Total Resource Cost test "does not . . . enable the Commission to evaluate the costs and benefits of a tariff to all customers" because it treats "bill savings and incentives . . . as transfer payments" that "cancel out."[40] TURN and Cal Advocates similarly complain that the Total Resource Cost test does not measure any costs shifted from one customer class to another.[41]

In arguing that the statute requires a focus on non-participants, the Joint Utilities rewrite the statute to replace "all" customers with "some" customers. The statute's requirement to balance costs and benefits "to all customers and the electrical system" does not require a narrow focus on *non-participants*, but rather a broader focus on the system as a whole. Moreover, setting aside their tortured reading of the statute, the Joint Utilities in fact concede that the Total Resource Cost test accomplishes the statutory objectives: they acknowledge that the test "indicate[s] whether a demand-side program is cost-effective to the grid," including "to those investing in the program (utilities and its ratepayers), as well as the program participants."[42] The

[40] Joint Utilities Opening Brief at p. 54.

[41] TURN Opening Brief at p. 50; Cal Advocates Opening Brief at p. 9.

[42] Joint Utilities Opening Brief at p. 54.

grid and the ratepayers, including program participants, make up "all customers and the electrical system" as a whole.

B. The Commission should use the societal test variation of the Total Resource Cost test to capture the "total" benefits of customer-sited renewable generation.

PCF's opening brief explains why the Commission should adopt the societal test variation of the Total Resource Cost test. The societal test variation—as expressed in the Societal Cost Test—accounts for benefits omitted from the Total Resource Cost test and allows the latter to achieve Section 2827.1(b)'s requirement that the Commission account for "total" benefits and costs of customer-sited renewable generation.[43]

Despite the societal test variation's features, the Joint Utilities parties assert that the Commission should not use the Societal Cost Test because it has not yet been fully approved.[44] The Commission, however, has determined that the Societal Cost Test quantifies benefits that actually exist.[45] Additionally, taking those benefits into account would ensure "that cost-effectiveness analyses accurately reflect the environmental policies of the Commission and California."[46] The record in this proceeding amply supports both of these determinations.[47]

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[43] PCF Opening Brief at pp. 21-22; *see also* Reporter's Transcript Vol. 9, 1630:22-1631:2 (Testimony of TURN witness M. Chait) ("The Standard Practice Manual has a test called the Societal Test. And it's similar to the Total Resource Cost test that we are required to use in this proceeding. So my belief is that that test would be appropriate to quantify societal benefits that would not be calculated in the TRC.").

[44] *See, e.g.*, Joint Utilities Opening Brief at p. 57.

[45] *See* D.19-05-019, Decision Adopting Cost-Effectiveness Analysis Framework Policies for All Distributed Energy Resources (May 16, 2019), at pp. 29-30.

[46] *Ibid.*

[47] Reporter's Transcript Vol. 5, 875:17-23 (Testimony of Cal Advocates Witness K. Rounds) ("[Q:] In your opinion, do distributed energy resources provide any societal benefits? A: Yes. Q: Do you believe such benefits have a quantitative value greater than zero? A: Yes."); *see also*

(footnote continued on next page)

Although TURN complains that the results of the TRC test are static across different successor tariff options,[48] the statute and the Guiding Principles Decision mandate this analysis. Moreover, the Societal Cost Test shows that NEM solar resources are cost-effective.[49] SEIA/VS performed a version of the TRC that incorporates many elements and approximates the results of the SCT. The results show that NEM resources are cost-effective when one takes into account societal benefits.[50] Because NEM solar is cost-effective, each additional MW deployed will bring greater benefits. Therefore, proposals that lead to increased adoptions will bring greater benefits relative to those that discourage adoptions.

Critically, while there is evidence in the record that societal benefits have a value greater than zero,[51] there is *no* evidence in the record that they have *no value whatsoever*. Thus, if the Commission ignores categories of benefits, or treats these benefits as if their value is zero, the Commission's decision would not be supported by substantial evidence in the record.[52] Further, as argued in PCF's opening brief, ignoring categories of benefits would violate Section

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Reporter's Transcript Vol. 9, 1630:17-21 (Testimony of TURN witness M. Chait) (Q: "[I]f the Avoided Cost Calculator does not quantify a benefit of NEM solar, is it TURN's position that that benefit should be excluded from consideration in this proceeding? A: No."); *id.* at 1630:22-1631:2 ("The Standard Practice Manual has a test called the Societal Test. And it's similar to the Total Resource Cost test that we are required to use in this proceeding. So my belief is that that test would be appropriate to quantify societal benefits that would not be calculated in the TRC.").

[48] TURN Opening Brief at p. 50.

[49] *See* SVS-03 at p. 19 [R.20-08-020, Prepared Direct Testimony of R. Thomas Beach on behalf of the Solar Energy Industries Association and Vote Solar (July 22, 2021) ("Testimony of R.T. Beach")].

[50] *Ibid.* (showing results of 1.30 for solar and 1.41 for solar + storage, taking resiliency benefits into account).

[51] *See id.*

[52] *See* Pub. Util. Code § 1757(a)(4).

2827.1(b)(4)'s requirement that the Commission assess "total" benefits of customer-sited generation.[53]

PCF acknowledges that the Commission has not adopted final versions of all elements of the Societal Cost Test. The Commission should nevertheless use its best estimate of societal costs based on the most recent version of the Societal Cost Test as an interim value until the test is finalized. Alternatively, the Commission could postpone a decision on the successor NEM tariff until it issues a decision finalizing the Societal Cost Test. As noted above, the Commission should also ensure that the full benefits associated with avoided transmission costs be incorporated into any cost-effectiveness analysis.

C. The Commission should evaluate payback periods to ensure that the successor tariff maintains the growth of customer-sited renewable generation.

Paradoxically, the anti-NEM parties acknowledge that the successor tariff must provide customers a viable economic opportunity to ensure that customer-sited renewable generation continues to grow,[54] but they propose successor tariffs that fail to meet that standard. For example, the Joint Utilities assert that their successor tariff will "foster solar adoption" because customers on the tariff would see bill savings.[55] The Joint Utilities' conclusion, however, is based on calculations that cherry-pick data. For example, the Joint Utilities' calculation of continued bill savings uses the utility (SDG&E) with the highest electricity rates and,

[53] PCF Opening Brief at pp. 7, 21 (citing *Center for Biological Diversity v. National Highway Traffic Safety Administration* (9th Cir. 2008) 538 F.3d 1172, 1198, and *National Association of Home Builders v. E.P.A.* (D.C. Cir. 2012) 682 F.3d 1032, 1040).

[54] Joint Utilities Opening Brief at p. 46 ("For solar, the principal motivation for household adopters is to save money on and/or manage their electricity bills.").

[55] Joint Utilities Opening Brief at p. 5.

consequently, the shortest payback period. But, according to a third-party evaluator, the Joint Utilities' calculations overstate the customers' savings.[56] The Joint Utilities' calculations also use inaccurate inputs. For example, neither E3 *nor* the Joint Utilities take into account the additional cost of interest payments, making their calculations unrepresentative for most middle- and lower-income customers without sufficient cash on hand to afford an upfront cash payment for their BTM systems.[57] The Joint Utilities also do not use the California Distributed Generation

[56] *Compare* R.20-08-020, E3, Cost-effectiveness of NEM Successor Rate Proposals under Rulemaking 20-08-020: A Comparative Analysis (June 15, 2021) at p. 3 (showing a 21-year payback period for the Joint Utilities' proposed successor tariff in PG&E's service territory) *with* IOU-01 at p. 105 [R.20-08-020, Corrected Joint IOU Opening Testimony of Southern California Edison Company (U 338-E), Pacific Gas and Electric Company (U 39-E) and San Diego Gas & Electric Company (U 902-E) on Issues 2-6 of Joint Assigned Commissioner's Scoping Memo and Administrative Law Judge Ruling Directing Comments on Proposed Guiding Principles (June 18, 2021) ("Joint Utilities Opening Testimony")] (showing a 19-year payback period for the Joint Utilities' proposed successor tariff in PG&E's service territory).

[57] PCF Opening Brief at pp. 44-46; *see also* SVS-03 at p. 51 [Testimony of R.T. Beach] ("The simple payback understates the actual economic payback, because it ignores costs for financing and O&M, and does not consider the time value of money."); *id.* at p. 28 (stating that a cash purchase "is an option available mostly to wealthier customers who can afford the initial cash outlay"); Reporter's Transcript Vol. 2, 202:20-25 (Testimony of Joint Utilities witness Dr. S. Tierney) ("Q: Do you agree that if a customer was also paying interest or financing charges on a loan to fund a purchase [of a solar installation] that would extend the payback period? A: Under that hypothetical, I—presumably so."); Reporter's Transcript Vol. 10, 1857:25-1858:7 (Testimony of NRDC witness Mohit Chhabra) ("Q: Would a customer who is paying interest on loans to finance a NEM system have a longer or shorter payback period compared to a customer who purchased a system in cash, holding all else equal. A: . . . [E]verything else equal, if someone pays cash, that means they aren't paying interest, and so—so yeah, they'll have a lower payback period."); Reporter's Transcript Vol. 10, 1857:8-16 (Testimony of NRDC witness M. Chhabra) ("[Q:] In your opinion, is a lower-income customer more likely than a higher-income customer [to] require loans or other forms of financing in order to install a NEM system? A: Because of the first cost barrier among other things. Q: . . . [I]s that a yes? A: Yes. Because dot, dot, dot, yes.").

Statistics reported cost of solar, making their savings estimates inaccurate for California customers.[58]

The anti-NEM parties also fundamentally misunderstand customer decision-making related to how payback periods relate to adoption. As a Joint Utilities' witness acknowledged, the Joint Utilities did not "do any research or have any documentation" showing that the payback periods calculated for their proposed successor tariff "would result in customers investing in solar."[59] In fact, the evidence in this proceeding shows that if payback periods increased from three years to fifteen years, as the Joint Utilities assert they would in SDG&E's service territory under their proposed successor tariff,[60] the portion of the market willing to adopt solar would drop from 80% to slightly more than 10%.[61] The Joint Utilities attempt to counter this evidence by pointing to the experience of other states that have changed their NEM tariffs.[62] But the data actually shows that the states that enacted similar tariffs to those proposed by the anti-NEM

[58] *See* CSA-02 at p. 6 [R.20-08-020, Prepared Rebuttal Testimony of Brad Heavner and Joshua Plaisted on behalf of the California Solar and Storage Association (July 16, 2021)] ("The one source of actual reported solar system cost data in California is the California Distributed Generation Statistics database, which is maintained under contract with the Commission.").

[59] Reporter's Transcript Vol. 3, 440:16-23 (Testimony of Joint Utilities witness G. Morien) ("Q: So the IOUs didn't do any research or have any documentation that would show that the solar payback periods in [Table IV-14 of the Joint Utilities' opening testimony] would result in customers investing in solar, correct? A: No. But like I stated, I think there are other reasons a customer might adopt the technology besides the payback."); *see also* Joint Utilities Opening Brief at p. 46 ("For solar, the principal motivation for household adopters is to save money on and/or manage their electricity bills.").

[60] IOU-01 at p. 105 [Joint Utilities Opening Testimony].

[61] CSA-01 at p. 62 [R.20-08-020, Prepared Direct Testimony of Brad Heavner and Joshua Plaisted on behalf of the California Solar and Storage Association (Aug. 2, 2021)] (Figure 14, NREL Adoption Curve in dGen Model).

[62] Joint Utilities Opening Brief at pp. 38-39.

parties experienced dramatic declines in solar adoption rates.[63] The states that did not experience such declines either did not adopt similar reforms or have not yet had their reforms take effect.[64]

TURN and Cal Advocates also propose payback periods that are unsupported by any data and that fail to provide sufficient value to prospective NEM customers. The record demonstrates that the payback period for TURN's successor tariff, taking into account interest payments,[65] would be 30 years for non-CARE customers, and Cal Advocates' tariff would have a payback period of 20 years.[66] TURN does not try to defend the patently uneconomic payback period its successor tariff would impose on non-CARE customers. The evidence also demonstrates that Cal Advocates' proposal, which has a payback period in the range of 20 years, would be uneconomic

[63] PCF Opening Brief at pp. 31-33; *see also* SVS-03 at pp. 11, 13 [R.20-08-020, Prepared Direct Testimony of Sean Gallagher on behalf of the Solar Energy Industries Association and Vote Solar (July 22, 2021) ("Testimony of S. Gallagher")] (after Nevada changed its NEM tariff, the rate of new installations decreased 94% from its peak); SVS-02 at pp.8-9 [R.20-08-020, Prepared Direct Testimony of Will Giese on behalf of the Solar Energy Industries Association and Vote Solar (July 22, 2021) ("Testimony of W. Giese")] (after Hawaii changed its NEM tariff, the rate of new installations decreased 80% from its peak).

[64] PCF Opening Brief at pp. 33-34; *see also* Reporter's Transcript Vol. 2, 198:15-199:12 (Testimony of Joint Utilities Witness Dr. S. Tierney) (reform noted for Sacramento Municipal Utility District was different from the Joint Utilities' proposed successor tariff); Reporter's Transcript Vol. 1, 132:9-133:11 (Testimony of Joint Utilities witness Dr. S. Tierney) (changes to National Grid New York NEM tariff did not yet go into effect); *id.* at 130:14-131:25 (changes to Duke Energy NEM tariff did not yet go into effect).

[65] SVS-03 at p. 51 [Testimony of R.T. Beach] (stating that "[t]he simple payback understates the actual economic payback, because it ignores costs for financing and O&M[,]" and estimating that interest payments could result in payback periods 60% longer than "simple" payback periods).

[66] *See* CSA-32, at p. 34 [Pages from Updated Cost-Effectiveness of NEM Successor Rate Proposals (June 15, 2021)]. Cal Advocates result of 12.5 years increased by 60% = 20 years; TURN result of 18.9 years increased by 60% = 30.24 years; Joint Utilities result of 21 years increased by 60% = 33.6 years.

for consumers.[67] Although Cal Advocates claims its payback periods are much shorter,[68] those shorter time frames are simple payback periods that do not take into account interest payments or other financing costs.

TURN's proposal for CARE customers fares no better. For example, TURN claims its 10 year payback for CARE customers is reasonable based on a comparison to stock market investments and internal rates of return.[69] However, TURN provides no evidence that these provide a relevant metric by which to measure the financial decisions of low income customers.[70] TURN's witness also acknowledged that the payback period under its proposal was similar to that under the NEM 2.0 tariff, which TURN claims has failed to successfully enroll CARE customers.[71] Moreover, TURN admits that its proposal would provide less payback overall to CARE customers.[72]

The Joint Utilities' and TURN's discussion of legacy periods encapsulates the anti-NEM parties' failure to grasp the dynamics of customer adoption behavior. For example, TURN proposes that customers under the current tariffs should transition to a new tariff at the end of their payback period.[73] But if customers were to only barely break even, they would have little incentive to invest. Further, the time it takes for a customer to break even under a simple

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[67] PCF Opening Brief at pp. 42-47.

[68] Cal Advocates Opening Brief at p. 33, fn. 140.

[69] TURN Opening Brief at pp. 40-41.

[70] Reporter's Transcript Vol. 9, 1634:20-24 (Testimony of TURN witness M. Chait).

[71] *Id.* at 1635:2-6.

[72] *Id.* at 1641:25-1642:4 ("Q: I just want to clarify . . . that TURN's proposal . . . would provide less of a financial payback to CARE customers than NEM 2.0, is that correct? A: It provides less ongoing payback, but more upfront payback.").

[73] TURN Opening Brief at p. 68.

payback calculation does not account for unforeseen complications or maintenance expenses, interest payments, or a customers' decision to move residences before the end of the payback period. If any of these eventualities occur, then a system calculated to barely break even no longer pays for itself.

D. The anti-NEM parties' briefs repeat the same distorted "equity" narrative refuted and contextualized in the Protect Our Communities Foundation's opening brief.

The anti-NEM parties assert that the current NEM tariff is a "Reverse Robin Hood"—i.e., stealing from the poor to give to the rich.[74] This soundbite, however, is all style and no substance. As an initial matter, the current NEM tariffs are not causing a cost shift.[75] But even assuming, for the sake of argument, that they were, the Joint Utilities' own witness acknowledged that the share of the alleged cost shift that would fall on lower-income customers is proportional to the overall share of system-wide costs those customers bear.[76] Thus, any equity issue is systemic, rather than specific to the current NEM tariffs. Moreover, the Joint Utilities have acknowledged that shifting costs to further explicit state policy goals is an accepted part of ratemaking.[77] Finally, despite their invocation of Robin Hood, the anti-NEM parties propose solutions that would not put more money in customers' pockets. Rather, the anti-NEM successor tariffs would make customer-sited renewable generation less economically attractive to all

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[74] Joint Utilities Opening Brief at p. 2 ("TURN describes the state's NEM policy as a 'Reverse Robin Hood.' We agree.").

[75] *See* PCF Opening Brief at pp. 20-21.

[76] Reporter's Transcript Vol. 2, 314:6-28 (Testimony of Joint Utilities witnesses A. Pierce, R. Thomas, and C. Kerrigan) (stating that the "portion of the cost shift [that] would be borne by CARE customers" is "in line with . . . the overall portion of bills paid by CARE customers relative to the [ ] total IO[U] revenue requirement").

[77] Reporter's Transcript Vol. 1, 85:11-86:11 (Testimony of Joint Utilities witness Dr. C. Peterman).

customers, decrease adoptions of distributed generation, and increase the need for utility-scale solar and investments in supporting transmission infrastructure that would increase utility shareholder profits at the ratepayers' expense. Moreover, the anti-NEM parties' promotion of regressive fixed charges that would have a greater impact on lower-income customers shows that their "Reverse Robin Hood" argument is, at best, disingenuous.[78]

The anti-NEM parties have interpreted the Commission's direction that the successor tariff should "ensure equity among customers"[79] in terms of a claimed cost shift from participants to non-participants. However, a correct accounting of the full costs of the current NEM tariffs, as measured by the cost to serve NEM customers, and the full benefits, taking into account societal benefits and an accurate measure of avoided transmission costs, demonstrates that no cost shift is occurring.[80] Thus, to comply with the Commission's equity principle, instead of focusing on the claimed cost shift, the successor tariff should focus on expanding access to NEM resources to historically under-represented customers, including lower-income individuals and renters. As described in section V of PCF's opening brief, the Commission may eliminate barriers to adoption facing under-represented groups and expand access to NEM resources by adopting community solar and storage programs and requiring the utilities to provide tariffed on-bill financing tied to the meter.

[78] *See* PCF-24 at pp. 42-43 [Rebuttal Testimony of B. Powers] ("[F]ixed monthly charges that are the same for all residential customers are . . . highly regressive, in that they take a much larger share of household income or expenditures from lower-income households than from wealthy customers.").

[79] D.21-02-007, Guiding Principles Decision at p. 45 (guiding principle (b)).

[80] PCF Opening Brief at pp. 20-21.

IV. Issue 4: What program elements or specific features should the Commission include in a successor to the current net energy metering tariff?

A. The Commission should adopt a tariff that incentivizes the deployment of storage.

Most parties, including PCF, support the deployment of storage. As PCF established in opening testimony, however, the current shortfall in battery supply has resulted in prices that far exceed the cost of production.[81] As a result, customers and the system as a whole would benefit from delaying storage requirements until battery prices decrease. For that reason, PCF opposes party proposals, including the Joint Recommendations,[82] that would set energy export rules in a manner that requires NEM customers to install storage immediately to have any chance of recovering their initial investments.

PCF has established that BTM solar has reduced—and will continue to reduce—peak demand, even without paired storage.[83] As noted in PCF's opening testimony, until peak demand shifts to after sunset, each new BTM system reduces peak demand. The CAISO has also recognized the benefits of BTM generation in pushing the peak demand later in the day and within each local area. CAISO stated that solar expands the opportunities for storage to contribute: "[t]he good news though is that with behind-the-meter solar being so common, that actually sharpens our peak demand window and the post-solar window and it increases the opportunity for storage to be a major player . . . in helping with local capacity."[84]

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[81] PCF-01 at pp. 11-12 [R.20-08-020, PCF, Testimony of Tyson Siegele (June 18, 2021) ("Testimony of T. Siegele")].

[82] *See* Joint Recommendations § 2.

[83] PCF-01 at p. 10 [Testimony of T. Siegele].

[84] SCL-03 at p. 7:2-6 [R.20-08-020, Rebuttal Testimony of M. Vespa] (citing IEPR, Joint Agency Workshop on Summer 2021 Electric and Natural Gas Reliability-Day2, Session 4, at

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PCF recommends that the Commission continue the current NEM tariff, which incentivizes BTM systems paired with storage. This incentive structure has resulted in the largest and second-largest residential solar installers in the U.S. installing, on average, over 50% of their systems with batteries attached.[85] The size and purchasing power of these two companies have allowed for a natural transition toward more battery installations.

Many small solar installers, however, currently cannot procure batteries due to supply constraints.[86] Thus, any change to the NEM tariff that would require new solar customers to deploy batteries immediately to recover their initial investments would unfairly put many, if not all, small solar installers out of business. But battery supply constraints are expected to be temporary. As the shortfall in battery supply eases in the next several years, more solar installers will be able to secure batteries, and they, too, will install batteries with BTM systems at higher rates.

Consequently, if the Commission decides to require that NEM systems be paired with batteries, PCF recommends delaying the requirement such that all new NEM systems would be required to add storage within five years of interconnection. This delayed storage requirement will accomplish three goals. First, it would establish that all new NEM systems will, in the mid-term, be upgraded to not only reduce peak load, but also reduce net-peak load. Second, it would provide a more level playing field for solar installers regardless of company size. Finally, it

58:43 (July 9, 2021), https://www.energy.ca.gov/event/workshop/2021-07/iepr-joint-agency-workshop-summer-2021-electric-and-natural-gas-1).

[85] PCF-01 at p. 11 [Testimony of T. Siegele]; PCF-24 at p. 31 [Rebuttal Testimony of B. Powers].

[86] Reporter's Transcript Vol. 7, 1218:7-20 (Testimony of CALSSA witness B. Heavner).

would maximize customer dollars in the service of the grid by allowing customers to pay the reduced battery prices that will be available five years further into the future.

Finally, while PCF does not support requiring storage immediately for all customers, Proposal PCF-A, described in PCF's Opening Brief,[87] would fund community storage programs implemented by Community Choice Aggregators. This proposal would promote storage installation, expand the ability of BTM solar generation to address peak demand, and enable a broader range of customers to realize the direct benefits of distributed generation.

B. Grid Benefits Charges provide recovery of unearned utility revenue and thus unfairly charge NEM customers for services that they do not receive.

Both the Joint Utilities and Cal Advocates propose fixed charges on NEM customers, purportedly to address these customers' self-consumption. Both parties assert that NEM customers, when self-consuming, do not contribute revenue to maintain the grid that is collected from non-NEM customers through volumetric rates. These "grid benefits charges," however, would be set as fixed costs based on the capacity of the customers' systems and either the average export rate or average production profiles for NEM customers in each utility's territory.[88] These charges are designed to reflect self-consumption; as a result, the grid benefits charge would be a charge on consumption that does not rely on the grid.[89] Moreover, because

[87] PCF Opening Brief at pp. 55-56.

[88] PAO-01 at pp. 3-23, 3-40 [R.20-08-020, CPUC Public Advocates Office, Prepared Testimony for a Successor Tariff to the Current Net Energy Metering Tariffs (June 18, 2021)] (Grid Benefits Charge based on system capacity and average production profile); IOU-01 at pp. 138 [Joint Utilities Opening Testimony] (Grid Benefits Charge based on size of system and export averages).

[89] Reporter's Transcript Vol. 12, 2059:8-16, 2059:23-28, 2060:11-16 (Testimony of Cal Advocates witnesses B. Gutierrez and N. Chau).

these charges are fixed, customers could do nothing to limit their payments by reducing their self-consumption.

The fixed charges show that the Joint Utilities and Cal Advocates are primarily motivated by recovering unearned utility revenue from customers who adopt BTM systems, rather than by promoting clean energy or efficient behavior. For example, the Joint Utilities admit that their proposed tariff, and particularly the grid benefits charge, is *designed* so that customer behavior does not matter. The Joint Utilities assert that "changing only export compensation would not be a durable solution, because parties can avoid exports by smaller system sizing and/or storage adoption"[90]—never mind that storage adoption brings considerable benefits to customers and the grid,[91] or that larger systems could support expanded electrification loads.[92] Further, the fixed charges discriminate against NEM customers by penalizing their chosen method of reducing energy from the grid: energy efficiency measures have the same effect,[93] but customers adopting energy efficiency measures are not assessed fixed charges for allegedly "shifting costs" to others. Indeed, as CALSSA has stated, these fixed charges are nothing more than a "solar fee."[94]

TURN's Nonbypassable, Unavoidable, and Shared ("NUS") fixed charges serve a similar role to the grid benefits charges discussed above. The NUS charges are not fixed in that they

[90] Joint Utilities Opening Brief at p. 24.

[91] *See id.* at pp. 64-65 (admitting that paired storage "can provide grid benefits," including by allowing "excess energy [to] be stored—instead of going to waste—to meet load at its peak later in the day. Today, we rely upon fossil fuels, like gas fired generation, to integrate renewables. Paired storage will reduce our dependency upon those carbon emitting resources.").

[92] PCF-24 at p. 46 [Rebuttal Testimony of B. Powers].

[93] PCF Opening Brief at pp. 24-25.

[94] CALSSA Opening Brief at p. viii.

would be assessed either by an engineering estimate or by actual metering of self-consumption.[95] However, under TURN's proposal—as under those of Cal Advocates and the Joint Utilities—NEM customers would still be charged for services based on consumption that does not actually rely on the grid.[96]

In making customer behavior irrelevant and/or charging customers for services they do not receive, the anti-NEM parties' fixed and unavoidable charges would decouple utility rates from services provided to NEM customers. As such, they would violate many of the Commission's rate design principles set in D.14-06-029.[97] First, by charging NEM customers for services they do not receive—self-consumption that does not rely on the grid[98]—the proposed fixed charges would violate both principle three, "[r]ates should be based on cost-causation principles," and principle seven, "rates should generally avoid cross-subsidies." Ironically, the latter is the principle the anti-NEM parties claim their fixed charges are intended to promote. Second, by penalizing NEM customers for decreasing their use of energy from the grid, the fixed charges would disincentivize conservation and energy efficiency, violating principle four. Third, the fixed charges would be based on factors divorced from the individual customer's usage and would be one of many elements of the tariff, and a customer would need to understand each of

[95] TRN-01 at pp. 50-51 [R.20-08-020, TURN, Direct Testimony of Michele Chait on Net Energy Metering Reform Proposals (July 30, 2021)]; TURN Opening Brief at p. 78 (NUS are based on self-consumption from BTM system).

[96] *See, e.g.,* TURN Opening Brief at p. 79 (NUS include transmission and distribution).

[97] D.14-06-029, Decision on Phase 2 Rate Change Proposal Settlement Agreements of Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric Company for Summer 2014 Rate Reform (June 12, 2014). The rate design principle numbers used in this paragraph correspond to the principle numbers established on p. 12 of the decision.

[98] *See* Reporter's Transcript Vol. 12, 2059:8-16, 2059:23-28, 2060:11-16 (Testimony of Cal Advocates witnesses B. Gutierrez and N. Chau).

those elements—some of which involve hypothetical avoided costs—to calculate their final bill. As a result, the fixed charges would be part of an opaque rate structure, violating principles six, "[r]ates should be stable and understandable," and eight, "incentives should be explicit and transparent."

In addition to violating the Commission's rate design principles, charging NEM customers for grid services based on self-consumption also fails to comply with California's policy goals by discouraging electrification efforts. As noted by E3, customers often increase their electricity use and adopt more electrification technologies after installing BTM generation.[99] Assessing charges based on their self-consumption penalizes customers who do exactly what the NEM tariff should encourage—increasing the use of clean, self-generated electricity to support the adoption of electric technology.

Finally, although the anti-NEM parties complain about the failure of NEM customers to contribute to wildfire costs, they ignore the potential of BTM generation substantially to mitigate these costs. As established in PCF's rebuttal testimony, saturation deployment of customer-sited solar and storage in extreme High Fire Threat Districts (HFTDs) has the potential to save customers a substantial portion of the nearly $40 billion the CPUC forecasts will be spent by the utilities on hardening the existing transmission and distribution systems in extreme HFTDs in the 2020-2030 period.[100] The continued reliance by the utilities on public safety power shutoffs

[99] PCF Opening Brief at pp. 49-50 (citing PCF-15 at pp. 4, 30, 62 [Verdant, Net-Energy Metering 2.0 Lookback Study (Jan. 21, 2021)].

[100] PCF-24 at pp. 28-32, fn. 98 [Rebuttal Testimony of B. Powers] (citing CPUC, Utility Costs and Affordability of the Grid of the Future (Feb. 2021), at pp. 4-5 (Figures ES-1, ES-2, and ES-3).

(PSPS) is a testament to the ineffectiveness of the utility grid hardening strategies to assure reliable power under high fire threat conditions.[101]

Customer-sited solar and storage exists as an alternative solution that would allow the utilities to initiate PSPS events as needed without interrupting customer power supply and without requiring a huge capital investment in grid hardening projects. Assuming only half of the proposed $40 billion is avoided by saturation deployment of NEM solar and batteries in the extreme HFTDs, the annual avoided transmission and distribution hardening costs would be on the order of $2 billion per year.[102] This savings totals more than three times the residential NEM cost-shift of $618.6 million per year identified in the NEM 2.0 Lookback Study. In fact, addressing wildfire mitigation with NEM solar + batteries would result in a substantial cost-shift from NEM residential customers to non-NEM residential customers, with NEM residential customers creating major transmission and distribution hardening cost-savings for non-NEM residential customers that would otherwise not occur.

C. If the Commission adopts significant changes to the current NEM tariffs, those changes should occur gradually.

CALSSA's opening brief notes that abrupt changes to the current NEM tariffs could badly damage the solar industry and that a devastated solar industry would be unable to deliver

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[101] PCF-24 at p. 30, fn. 103 [Rebuttal Testimony of B. Powers] (citing Los Angeles Times, *Another summer of California power outages poses threat to Newsom as he faces recall* (May 24, 2021): https://www.latimes.com/california/story/2021-05-24/california-summer-blackouts-threaten-newsom-political-power. "So-called public safety power shut-offs have become common practice in California to prevent disaster as climate change drives record-setting wildfire seasons.").

[102] Assumes annualized PG&E transmission cost factor of 0.1046, *see* PCF-24 at p.15 [Rebuttal Testimony of B. Powers] applied to $20 billion in T&D fire hardening capital investment. Therefore, annualized avoided T&D costs attributable to NEM solar + battery = 0.1046 × $20 billion = $2.09 billion/yr.

the additional storage needed to help the State achieve its climate-related goals.[103] The data from other states that have enacted abrupt changes to their NEM tariffs shows that such a course would decimate rates of solar adoption.[104] In contrast, Arizona's experience enacting a phased reform shows that a gradual approach may help maintain adoption rates.[105]

If the Commission decides to adopt major changes to the current NEM tariffs, then any changes should be introduced gradually. Gradual change will allow the solar industry time to adapt. Further, if a successor tariff's gradual changes cause the rate of solar adoptions to slow, and thus violate Section 2827.1(b)'s requirement to maintain rates of growth, the Commission may revert to a prior version of the tariff that does not conflict with the statutory mandate.

V. Issue 5: Which of the analyzed proposals should the Commission adopt as a successor to the current net energy metering tariff and why? What should the timeline be for implementation? How would the recommended proposal meet the guiding principles?

The Commission should adopt the proposals of the Protect Our Communities Foundation—or, failing that, the proposal of the California Solar and Storage Association—for the reasons stated in PCF's opening brief. PCF here explains why the Commission should not adopt the joint recommendations of the self-proclaimed "independent parties."

[103] CALSSA Opening Brief at pp. 2-3.

[104] PCF Opening Brief at pp. 31-33; *see also* SVS-01 at pp. 11, 13 [Testimony of S. Gallagher] (after Nevada changed its NEM tariff, the rate of new installations decreased 94% from its peak); SVS-02 at pp.8-9 [Testimony of W. Giese] (after Hawaii changed its NEM tariff, the rate of new installations decreased 80% from its peak).

[105] PCF Opening Brief at p. 34; *see also* SVS-01 at p. 20 [Testimony of S. Gallagher]; Cal Advocates Opening Brief at 41 (noting Arizona reforms).

A. The Joint Recommendations would neither meet the statutory requirements nor achieve the Commission's goals for a successor tariff.

The Commission should reject the independent parties' recommendation to compensate NEM customers' exports at the value of their avoided costs as determined by the Avoided Cost Calculator.[106] The Avoided Cost Calculator does not value the full benefits of customer-sited renewable generation because it understates avoided transmission costs (by excluding a value for specific cancelled transmission projects), ignores the value of resiliency benefits, and inadequately accounts for air pollution reduction benefits.[107] As a result, valuing exports using the Avoided Cost Calculator would under-compensate NEM customers for the benefits they provide to the grid, violating Section 2827.1(b)(3)'s requirement that the successor tariff be "based on the costs and benefits of the renewable electrical generation facility." Further, the Commission should not require instantaneous netting.[108] Instantaneous netting would burden standalone solar customers and would effectively require battery installation to allow customers to recover the costs of their investments. As discussed in section IV.A, above, the Commission should not require all BTM systems to immediately install batteries.

The Commission should reject the recommendation to include a Grid Benefits Charge in the successor tariff.[109] As explained in section IV.B, above, Grid Benefits Charges unfairly penalize NEM customers for reducing their use of energy from the grid and treat NEM customers differently from other customers who reduce energy usage. Moreover, by penalizing

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[106] *See* Joint Recommendations §§ 1, 2.

[107] *See* section II.C, *supra*; *see also* PCF Opening Brief at pp. 18-19 (citing SVS-03 at pp. 20-21 [R.20-08-020, Prepared Direct Testimony of R. Thomas Beach on behalf of the Solar Energy Industries Association and Vote Solar (July 22, 2021)]).

[108] *See* Joint Recommendations § 2.

[109] *See* Joint Recommendations § 3.

self-consumption, Grid Benefits Charges discourage the use of clean energy and could discourage electrification adoption by NEM customers. Fixed charges are also regressive, and would fall harder on lower- and middle-income customers. Finally, Grid Benefits Charges would make customer-sited renewable generation less economically attractive to NEM customers, thus reducing adoption rates and undermining the successor tariff's ability to comply with Section 2827.1(b)(1)'s directive to ensure that customer-sited renewable generation continue to grow sustainably.

PCF agrees that the Commission should reduce structural barriers facing lower-income customers and expand access to customer-sited generation to that group.[110] The Commission, however, should not adopt policies that would make NEM prohibitively expensive to all customers without significant upfront subsidies, as this would hinder customer-sited renewable generation's ability to continue to grow sustainably. Instead, the Commission should (1) adopt community solar and community storage programs that would expand access to NEM tariffs to lower-income individuals, renters, and residents of multi-unit buildings; and (2) require the utilities to establish robust tariffed on-bill financing programs tied to the meter (rather than to the customer) to ensure lower-income individuals and renters have equal access to financing for NEM solar and storage.[111]

Finally, the Commission should reject the independent parties' recommendation to transition customers on existing NEM tariffs to the successor tariff. These customers undertook a significant investment with the expectation that they would receive fair compensation for their

[110] *See* Joint Recommendations § 1.

[111] *See* PCF Opening Brief at pp. 55-58 (describing PCF's community storage and community solar proposals).

contributions to supplying their own energy needs and the grid with clean energy. Changing the terms applicable to existing customers would be unfair and would contradict prior Commission decisions.[112]

VI. Conclusion

In requiring that a successor tariff (1) balance costs and benefits to all customers and the electrical system and (2) ensure that customer-sited distributed generation "continues to grow sustainably," the Legislature established clear rules. Despite the anti-NEM parties' assertions, these rules neither reference a cost shift nor require the Commission to address any cost shift. Moreover, making customer-sited renewable generation economically unattractive to customers, as proposed by the anti-NEM parties, would violate the statutory mandate requiring continued growth. Instead, to achieve the Legislature's objectives, the Commission should maintain the current NEM tariffs and make minor changes to promote storage, maximize the combined benefits of solar and storage, and enhance access to distributed solar for lower-income customers and renters.

[112] D.16-01-044, Decision Adopting Successor to Net Energy Metering Tariff (Feb. 5, 2016) at p. 115 (Conclusion of Law 14: "In order to promote consistency in the treatment of customers . . . under the NEM successor tariff established by this decision, customers should be able to use the NEM successor tariff as it existed at the time they completed their interconnection application for 20 years from the year of the interconnection of their system."); *see also ibid.* (Conclusion of Law 15).

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Respectfully submitted,

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