

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA**



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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.

Rulemaking 20-08-020  
(Filed August 27, 2020)

**OPENING COMMENTS OF THE CALIFORNIA SOLAR & STORAGE  
ASSOCIATION ON PROPOSED DECISION REVISING NET ENERGY METERING  
TARIFF AND SUBTARIFFS**

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November 30, 2022

*On behalf of the California Solar & Storage  
Association*

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## **Summary of Recommendations**

1. For residential customers, set Step One of the ACC Plus adders at values that achieve 10% monthly savings, including bill reduction and financing payments, for stand-alone solar with a solar cost of \$3.87/Watt. Calculate these values using the E3 model, with corrections for PG&E avoided cost values and standard solar generation profiles.

This would result in the following values:

	PG&E	SCE	SDG&E
Residential Non-CARE ACC Plus Adder (\$/kWh)	0.116	0.128	-
Residential CARE ACC Plus Adder (\$/kWh)	0.165	0.164	0.065

2. For commercial customers, set Step One of the ACC Plus adders at \$0.094/kWh for PG&E, \$0.068/kWh for SCE, and \$0.078/kWh for SDG&E.

3. Clarify requirement for on-site netting for VNEM and NEMA.

4. Apply ACC Plus adders to VNEM customers.

5. Set export compensation values by TOU period, using averages weighted by a standard solar production curve.

6. If export compensation is not changed from hourly to TOU period, eliminate the distinction between weekdays and weekends.

7. Maintain interval netting.

8. If interval netting is not maintained, host a workshop to determine what type of data access would help project developers design systems that meet customer needs.

9. If interval netting is not maintained, require the utilities to provide multiple adjustment factors for different customer types and system designs.

10. Set the lock-in period and the tariff term at 15 years for both residential and non-residential customers.

11. Clarify that the CSLB cover sheet, Consumer Guide, and signed contract are not needed for a complete application for non-residential customers.

12. Clarify that selecting a standard single-line diagram in the application portal constitutes submittal of a single-line diagram.

13. Direct the utilities to fix obstacles that prevent customers from submitting complete applications.

14. Clarify that the tariff sunset will occur 120 days after the effective date of the decision.

15. Make clear that the Implementation Step 1 advice letter is for informational purposes only to help solar and storage providers develop marketing materials and contracts.
16. Order the utilities to file a separate Tier 2 advice letter with actual tariff language.
17. Correct inaccurate characterizations of CALSSA's legal arguments on fixed charge proposals and related misstatements of federal law.

## **OPENING COMMENTS OF THE CALIFORNIA SOLAR & STORAGE ASSOCIATION ON PROPOSED DECISION REVISING NET ENERGY METERING TARIFF AND SUBTARIFFS**

Pursuant to Rule 14.3 of the Commission's Rules of Practice and Procedure, the California Solar & Storage Association (CALSSA) submits these opening comments on the *Proposed Decision Revising Net Energy Metering Tariff and Subtariffs* (PD).<sup>1</sup>

The Commission should not bank on the possibility that massive build-out of large-scale generating facilities located far from energy consumption can be built at the cost of current optimistic projections. The Avoided Cost Calculator (ACC) relies on a shorthand, unrealistic analysis of future transmission needs and does not fully account for load growth from electrification. A more conservative approach would recognize these shortcomings and adopt an analysis that would give the state a reasonable chance of staying on course to meet its greenhouse gas reduction goals.

Export compensation under the net billing tariff will be a fraction of what it has been under net metering. If the Commission creates a true glide path from one tariff to the other, California can make the transition while continuing to be a world leader in clean energy. In practical terms, this transition is about powering the state's evening needs with stored energy that is generated from sunlight. The Commission is right to focus on energy storage, and correctly recognizes that energy storage systems cannot become ubiquitous overnight due to supply constraints and high costs. Balance is needed, and balance is entirely possible through a glide path with interim values that allow for a real transition.

### **1. Glide Path**

CALSSA appreciates the recognition in the PD that "inclusion of a glide path is essential."<sup>2</sup> The PD rightly rejects a minimal glide path proposed by other parties in the form of "one-to-two year interim rates," finding that it is "too short to ensure sustainable growth of the industry."<sup>3</sup> However, the glide path that the PD would adopt is also so minimal that it would not ensure sustainable growth of the industry.

The solar-weighted annual average export values for non-CARE residential customers in the PD, including the adders, are shown in Figure 1. It is plain to see that the ACC Plus adders in the PD would not create any real glide path for these customers. Because the ACC values increase from 2023 to 2028, the small adders only serve to counteract that increase to create a flat line after the initial sharp drop.

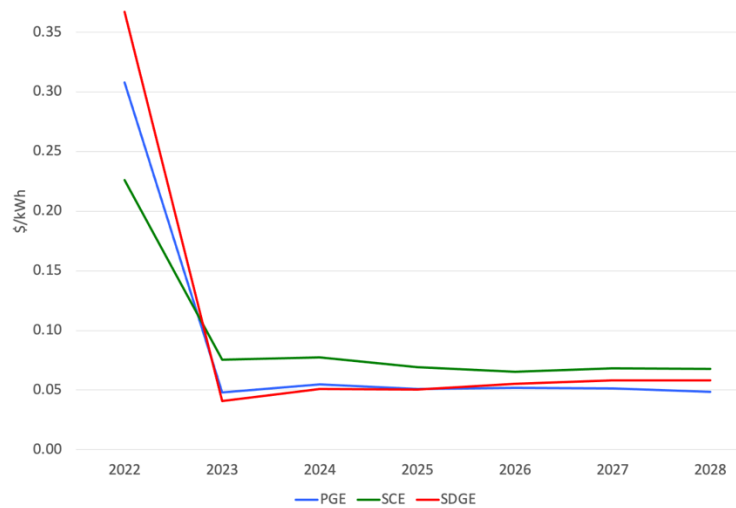
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<sup>1</sup> R.20-08-020, *Proposed Decision Revising Net Energy Metering Tariff and Subtariffs* (Nov. 10, 2022) (PD). All acronyms not otherwise defined in these comments have the meanings set forth in the PD.

<sup>2</sup> *Id.*, p. 142.

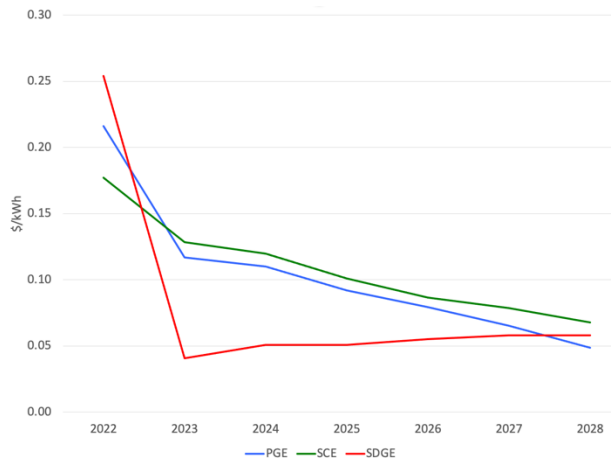
<sup>3</sup> *Id.*, p. 85.

**Figure 1. Non-CARE Residential Export Compensation Values in the PD**

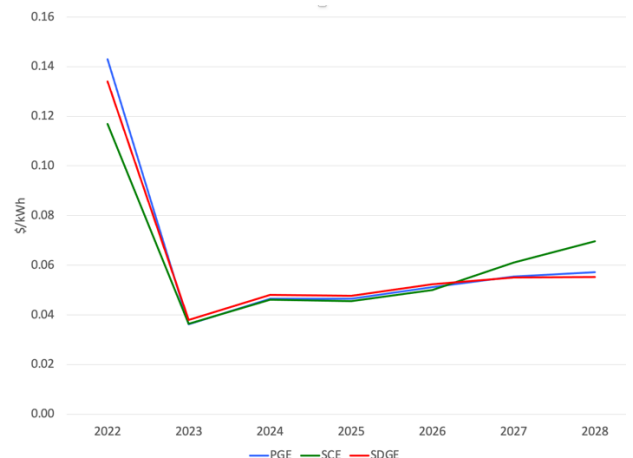


For CARE customers, the ACC Plus adds smooth the transition for PG&E and SCE, as shown in Figure 2. However, the value still falls short of providing savings to customers, as discussed in Section 1.E, and the cliff remains for customers in SDG&E’s service territory. The PD is much worse for non-residential customers, creating a first-year plummet that barely begins to recover in the following years, as shown in Figure 3.

**Figure 2. CARE Export Values in the PD**



**Figure 3. Non-Residential Export Values in the PD**



The PD errs in concluding that “continuing to encourage the adoption of stand-alone solar systems conflicts with the objective of encouraging the adoption of solar paired with storage systems.”<sup>4</sup> These two objectives are interdependent, and the PD rightly recognizes as much elsewhere, affirming CALSSA’s contention that “storage will come on the back of the solar market” and that the Commission should “allow

<sup>4</sup> *Id.*, p. 145.

time for the storage market to mature before relying primarily on paired storage.”<sup>5</sup> The objective of encouraging the adoption of solar paired with storage will not be met if there is an abrupt drop in the stand-alone solar market. Policy in the PD should be consistent regarding this critical interdependence.

### **A. Financing**

The PD recognizes the importance of financing for customer adoption of solar and storage, concluding, “most residential customers installing solar systems will require financing, especially lower-income households.”<sup>6</sup> However, the PD fails to incorporate the economics of financing in its analysis. It implies that financing was considered when determining that \$2.34/W is too low, but makes no attempt to actually measure the impact of financing. As a result, the PD’s modeling does not accurately reflect the economic picture “most residential customers” actually face.

The tables in Appendix B of the PD include “First Year Bill Savings (\$),” but this information is only useful in comparison to an estimate of the annual customer cost of the system.<sup>7</sup> First year bill savings does not equate to first year savings. It would not be rational behavior for customers to be motivated by bill reduction at any cost. Monthly cost reduction includes the cost of paying for a system.

### **B. Solar and Storage Costs**

The PD distorts an outdated CALSSA statement from February 2021 comments on the Lookback Study to conclude that “CALSSA agreed that \$3.80 is high.”<sup>8</sup> The bulleted comment that “[t]he Lookback Study uses a 2018 value, which is higher than solar costs are expected to be when NEM-3 becomes effective” pertains to an expectation that solar installation costs would decline between 2018 and 2022, and that the Commission should use caution in applying findings from 2018 to future cost effectiveness.<sup>9</sup> Since that time, data has shown that the cost of solar has *not* declined. CALSSA stated this very clearly on the record in more recent comments.<sup>10</sup> In light of this data, CALSSA has urged the Commission to recognize that “the right number to use for an accurate analysis for 2023 would be at least \$3.87/W.”<sup>11</sup>

The PD is therefore disingenuous in its conclusion that “all parties agree that this value [\$3.80 per Watt] is higher than solar costs in 2022 or 2023.”<sup>12</sup> Although it may be technically correct to say that all

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<sup>5</sup> *Id.*, p. 94.

<sup>6</sup> *Id.*, p. 80.

<sup>7</sup> *Id.*, Appendix B. *See also id.*, p. 160.

<sup>8</sup> *Id.*, p. 81.

<sup>9</sup> R.20-08-020, *Comments of CALSSA on the NEM-2 Lookback Study*, p. 2 (Feb. 4, 2021) (emphasis added).

<sup>10</sup> R.20-08-020, *Opening Comments of CALSSA on ALJ’s Ruling Setting Aside Submission of the Record to Take Comment on a Limited Basis*, pp. 7-8 (June 10, 2022) (CALSSA Opening Comments on May Ruling).

<sup>11</sup> *Id.*, p. 8.

<sup>12</sup> PD, p. 82.



parties, *at some point during this multi-year proceeding*, stated that \$3.80 per Watt is likely higher than average costs are or will be in 2022, it is unreasonable to support the adoption of a \$3.30 cost figure based on a “consensus” position that does not reflect parties’ more recently stated positions on the record. This reliance on outdated record evidence is especially egregious in light of the Commission’s attention to updating other modeling inputs, such as rates, to be consistent with current real-world conditions.<sup>13</sup>

Storage costs are also too low in the E3 calculator. Current costs of residential energy storage systems are higher than \$1100/kWh.<sup>14</sup> The storage cost in the E3 calculator is \$882/kWh for the sample PG&E non-CARE residential customer and \$818/kWh for the sample SCE and SDG&E non-CARE residential customers.<sup>15</sup>

### **C. Inaccuracies in E3 Modeling**

#### **i. Battery Management Assumptions**

The E3 calculator produces payback periods for solar plus storage that are far shorter than for stand-alone solar. CALSSA agrees that they would be somewhat shorter, but the E3 calculator inaccurately amplifies this difference. The PD explains the battery dispatch modeling for high value hours in Assumption 17-d of Appendix B, which states: “On days when the maximum hourly export rate is greater than the peak period import rate, the battery is instead discharged exclusively based on hourly export rates, without consideration for reducing customer imports.” E3 does not explain how a customer can export from a battery at the same time that they are importing for load.

It is unlikely that during high value hours there will always be enough minutes of zero load that a battery can discharge all of its stored energy in bursts onto the grid during those minutes. This is not realistic because it takes time to discharge a battery and it is uncommon for customer load to drop all the way to zero for an extended period, especially in the early evening. To the extent part of this value could be captured, developing the capability would require time for product engineering and development, would add expense, and would not result in additional grid benefit compared with continuously discharging during the highest value hours.

CALSSA corrected the “Discharging for Exports” formula in the E3 calculator such that energy discharged from a battery would first meet customer load, with any remainder exported to the grid. This

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<sup>13</sup> *Id.*, Appendix B, p. B1.

<sup>14</sup> Exh. CSA-02 at 8 (Figure 3).

<sup>15</sup> Calculated by comparing First-year Upfront System Cost (cell E19 on Results tab) for Solar vs. Solar+Storage Installation Type, with the associated Storage energy capacity (Dashboard tab). Assumption 14 in Appendix B of the PD states that storage cost is modeled at \$1764/kW for a 2-hour battery, which equates to the \$882/kWh cost for PG&E but not the lower effective cost for the other two IOUs.

lengthens the measured payback period by 1.0-1.1 years for SCE and PG&E non-CARE residential customers. Although this does not impact a glide path that is based on stand-alone solar, it is important for the Commission to understand that paybacks for solar plus storage under the net billing tariff will not be as low as the calculator portrays them to be.

## **ii. Incorrect ACC Values**

The version of the E3 model that was released with the PD<sup>16</sup> has incorrect avoided cost values for PG&E. In the Avoided Costs tab, the values in rows 8772-17531, which are supposed to be the values for PG&E, are identical to the values in rows 17536-26295, which are the correct values for SCE. CALSSA has alerted Energy Division to this apparent error.

## **iii. Inflated Solar Production**

The solar generation profiles for SCE and SDG&E have higher annual output than south-facing systems in PV Watts, with more of the generation in later hours. E3 profiles could have a greater portion of generation in high value hours by assuming solar panels are oriented to the west, but such a system would have lower annual output. The fact that the generation profiles in the E3 model have *both* higher annual output *and* more of the output later in the day means the model is using a non-standard solar profile. In the E3 profiles, 5.9% of production is after 4:00 pm, compared to 4.5% for a default PV Watts profile in Corona and 4.3% in Escondido.<sup>17</sup> Customer savings are overstated as a result. Correcting for this anomaly extends the payback period by 0.3 years.

In other contexts, the Commission has ordered the use of PV Watts as the source for generic solar generation profiles.<sup>18</sup> The E3 model should use standard PV Watts generation profiles for the calculation of glide path values.

## **D. Corrected Model Outputs**

Adjusting for the problems detailed above yields the payback periods shown in Table 1 for non-CARE residential customers. These adjustments include: a solar cost of \$3.87/W; storage cost of \$1100/kWh; correct PG&E ACC values; standard PV Watts generation profiles; and modeling energy discharged from batteries to export to the grid only when discharge power is greater than customer load.

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<sup>16</sup> “NBT Model\_11-10-22.”

<sup>17</sup> These locations are in the climate zones that were used in the E3 model (SCE 10 and SDG&E Inland).

<sup>18</sup> D.20-08-001, Attachment A, p. 8; Resolution E-5172, p. 31.

**Table 1. Simple Payback Periods for Non-CARE Residential Customers Under the PD (Years)**

Solar	PG&E	10.7
	SCE	10.9
	SDG&E	7.2
Solar + Storage	PG&E	9.0
	SCE	8.9
	SDG&E	6.2

#### **E. Reasonable Residential Glide Path**

CALSSA has consistently maintained that a seven-year payback is the correct target for designing the successor tariff.<sup>19</sup> When the glide path in the December 2021 proposed decision was set according to a ten-year payback, CALSSA sought improvement by saying it should be “seven to nine years.”<sup>20</sup> Since then, interest rates have increased dramatically, making it more difficult for solar loans to be viable. As a result, “[a] glidepath based on a nine year simple payback is not sufficient for customers to achieve savings that exceed loan payments. A glidepath based on a seven-year simple payback would create savings from a loan.”<sup>21</sup> CALSSA finds the actual threshold to be 7.7 years.<sup>22</sup>

The PD twice quotes TURN’s statement that “a tariff expected to produce a fully discounted payback in a future year may still result in the customer realizing net savings in every year.”<sup>23</sup> This is a meaningless statement. The point is not to say some systems have annual savings, but to determine which do and which do not. CALSSA has found that a glide path designed around a 7.7-year simple payback is the threshold that creates 10% savings at the seven percent interest rates now available to customers.

To achieve sustainable growth in solar adoption,<sup>24</sup> the Commission should set Step One of the glide path to achieve 10% monthly savings, including bill reduction and financing payments, for stand-alone solar with a solar cost of \$3.87/W.<sup>25</sup> This would result in the ACC Plus adders shown in Table 2. Although the glide path will not be based on solar plus storage, paybacks for solar plus storage are an

<sup>19</sup> R.20-08-020, *Opening Brief of CALSSA*, pp. 20, 22, 27, 67 (Aug. 31, 2021) (CALSSA Opening Brief); CALSSA Opening Comments on May Ruling, p. 6 (n. 15).

<sup>20</sup> R.20-08-020, *Opening Comments of CALSSA on Proposed Decision*, proposed Finding of Fact 48 and proposed Conclusion of Law 14 (Jan. 7, 2022) (CALSSA Opening Comments on PD).

<sup>21</sup> 13 Tr. at 2233:6-11 (Brad Heavner, CALSSA).

<sup>22</sup> Based on a 15-year loan at 7% interest. The simple Excel formula to calculate annual bill payments is =PMT(7%,15,system\_cost). This can be compared to the First-Year Bill Savings (\$) in the E3 model.

<sup>23</sup> PD, pp. 76, 157.

<sup>24</sup> Cal. Pub. Util. Code § 2827.1(b).

<sup>25</sup> Percentage monthly savings is bill reduction minus loan payments, divided by the pre-solar bill.

important reference point. For that analysis, the Commission should run the E3 model with a storage cost of \$1100/kWh and correct the unrealistic assumption on storage operation.

**Table 2. Step One of Glide Path to Achieve Ten Percent Monthly Savings**

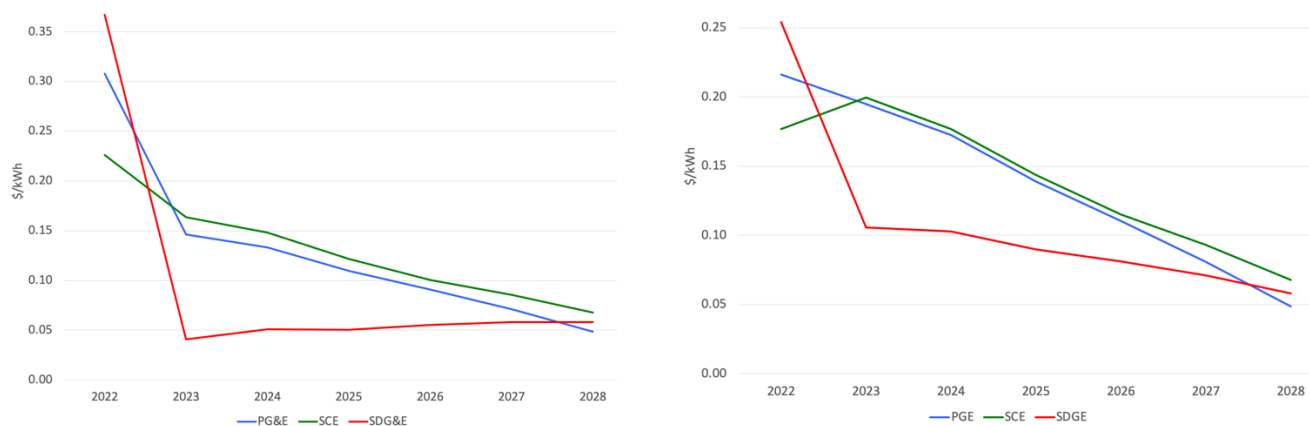
	PG&E	SCE	SDG&E
Residential Non-CARE ACC Plus Adder (\$/kWh)	0.116	0.128	-
Residential CARE ACC Plus Adder (\$/kWh)	0.165	0.164	0.065

The level of these adders is in line with expectations in light of the following factors:

- The weighted average export rate under NEM-2 for non-CARE residential customers is 30 ¢/kWh, averaging all three IOUs. Under the PD it is 3.5 ¢/kWh for 2023 without adders.
- The simple payback under NEM-2 is 5.6 years for residential non-CARE SCE customers, and for PG&E it is 5.1 years. The payback for these customers under the PD is 10.9 years for SCE and 10.7 years for PG&E.
- These are big gaps. Significant adders are needed to create a first step that is a legitimate mid-point.

These adders would create the glide paths shown in Figure 4.

**Figure 4. Residential Non-CARE and CARE Glide Paths Set to Achieve 10% Savings**



As an alternative to setting ACC Plus adders based on true market costs, the Commission can use adders designed to smooth the curve between current export value and future export value, without claiming they are pegged to a customer economic threshold in the year when they are in effect. This would be sound policy. As Raghu Belur of Enphase Energy stated during final oral arguments: “The CPUC estimated last year that the current simple payback is 4.1 years, so immediately jumping to a 9-year payback is too jarring for the industry.”<sup>26</sup> As described above, CALSSA calculates different paybacks than the CPUC values that Mr. Belur quotes, but either set of numbers demonstrates the problem. The

<sup>26</sup> 13 Tr. at 2245:21-24 (Raghu Belur, Enphase Energy).

move from Point A to Point B will undoubtedly impact the market, and it will be too jarring if it does not occur via a series of true transition midpoints.

#### **F. Reasonable Commercial Glide Path**

The PD errs in its framing of the entire discussion of commercial customers by maintaining faulty reasoning from the December 2021 proposed decision. While the PD correctly acknowledges that D.19-05-019 designated the TRC as the primary cost effectiveness test,<sup>27</sup> and that the Lookback Study found that the nonresidential sectors of the NEM-2 tariff had TRC and PCT results of 1.0 or better,<sup>28</sup> it nonetheless concludes that the nonresidential NEM-2 tariff is not cost-effective.<sup>29</sup> In so doing, the Commission is allowing the results of the RIM test alone to trump the other cost-effectiveness test results, contradicting not only D.19-05-019<sup>30</sup> but also *the PD's own conclusion* elsewhere that the cost-effectiveness tests “should not be used individually or in isolation but, instead, allow for the consideration of the tradeoffs between the tests.”<sup>31</sup>

The PD further errs in its conclusions about nonresidential customers by falsely equating all commercial and agricultural customer classes. The E3 model that the PD uses to calculate payback periods does not look at any customers with demand charges, a major component of the bills of medium and large commercial customers and agricultural customers. Demand charges are a deliberate, if outdated, price signal that fundamentally changes the picture of whether installing on-site generation is worth the investment, particularly since rate schedules with demand charges also feature lower volumetric rates. *Ignoring demand charges ignores impacts on entire customer classes.*

The model's analysis of commercial customers is limited to those in the small commercial class, which have rate structures that resemble those of residential customers more than those of medium commercial customers. Small commercial customers are not representative of medium and large commercial customers or agricultural customers.

The Commission has indicated a willingness to reform demand charges in the Demand Flexibility rulemaking. However, it would be illogical and inconsistent for the Commission to decline to create a net

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<sup>27</sup> PD, p. 15.

<sup>28</sup> *Id.*, pp. 48-49.

<sup>29</sup> *Id.*, p. 50.

<sup>30</sup> D.19-05-019, p. 24 and COL 2 (“Hence, we find it reasonable to designate the TRC as the primary cost-effectiveness test, except where expressly prohibited by statute or Commission Decision . . . RIM and PAC test results should only be considered supplemental to the TRC test results”).

<sup>31</sup> PD, pp. 64-65 and FOFs 35-37.

metering glide path for commercial customers over the next five years, while creating one for residential customers, because demand charge reform might be approved and take effect four years from now.

The incomplete modeling leads the Commission to conclude that, “[b]ecause the Commission’s objective is to achieve a simple payback period targeted at nine years, commercial customers will not receive the ACC Plus because of shorter payback periods without the ACC Plus.”<sup>32</sup> However, there is no evidence that the payback period for medium or large commercial customers or agricultural customers under the proposed net billing tariff is less than nine years. Further, in drawing this conclusion, the Commission also fails to take into account that a nine-year payback period would be more of a stretch for commercial customers than for residential customers because of competing investment opportunities.<sup>33</sup>

The value of export credits under NEM-2 is nearer to avoided costs for medium and large commercial customers and agricultural customers than for residential customers because volumetric rates are lower. Thus, there is not a need for a strong course correction in the first year of the net billing tariff. Instead, “[b]ecause commercial solar customers cover their cost of service, have lower mid-day rates, and have lower solar adoption levels, the Commission should create a glidepath for medium and large commercial customers that is based on a straight line transition that starts near a level based on current customer savings and ends at values derived from the ACC.”<sup>34</sup>

In rebuttal testimony, CALSSA recommended an alternative glide path methodology that steps down the difference between NEM-2 and values derived from the ACC. Using that methodology with the 2022 ACC would produce the ACC Plus adders for commercial customers in Table 3. The PD should be revised to include this methodology for a commercial glide path. Because Step Five of the glide path would be so close to zero, it would be simpler to end this commercial glide path after four years. The resulting glide path is shown in Figure 5.

**Table 3. ACC Plus Adders for Commercial Customers Based on a Smooth Transition (\$/kWh)**

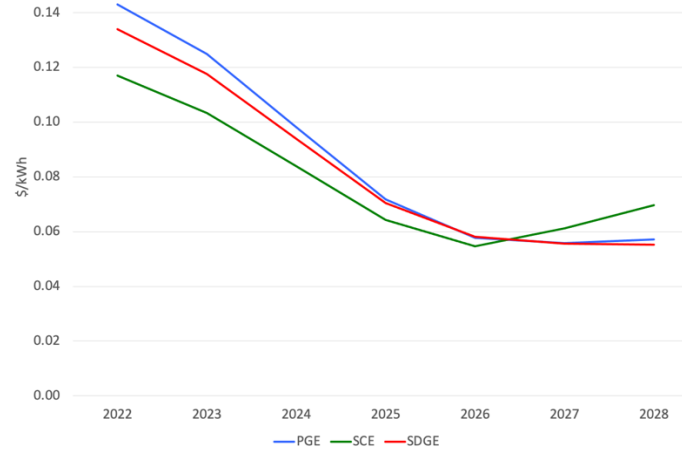
	PG&E	SCE	SDG&E
2023	0.094	0.068	0.078
2024	0.055	0.038	0.044
2025	0.027	0.019	0.022
2026	0.007	0.005	0.006
2027	0.0006	0.000	0.0004

<sup>32</sup> *Id.*, p. 144.

<sup>33</sup> CALSSA Opening Brief, pp. 20-21.

<sup>34</sup> CALSSA Opening Comments on May Ruling, p. 10.

**Figure 5. Glide Path for Non-Residential Customers Based on a Smooth Transition**



## **2. VNEM/NEMA**

### **A. On-Site Netting**

By maintaining the current billing intervals, the PD affirms on-site netting for VNEM and NEMA. This is the most important element for a viable net billing tariff for multimeter properties. Treating all generation as exports has been a much less significant factor under NEM-2 because the difference between export credit and reduced energy purchases has been small. Under the net billing tariff, however, decoupling generation from the building's energy usage would effectively eliminate VNEM due to insufficient customer credit value. CALSSA is concerned that the PD's conclusion in favor of on-site netting is not stated clearly enough and could lead to disputes during implementation. Language to "maintain the netting intervals" should be accompanied by a clear order to perform on-site netting.

### **B. ACC Plus Adder**

VNEM has not been especially effective under NEM-2, as evidenced by the lower adoption levels of multifamily housing compared to single family housing. The PD relies on a new E3 analysis that does not recognize that many customers in market rate apartments are CARE customers, and that developing VNEM projects involves added expenses due to complex project management. The conclusion that projects will be viable after moving immediately to export values derived from the ACC with no transition is wrong on its face. For a sector that is just starting to get moving, a sudden reduction in value will undoubtedly have major negative impacts.

The Commission should adopt a conservative approach to making changes that will affect utility customers in multifamily housing. A large part of the reason that lower income customers have had disproportionately low solar adoption rates is that many lower income customers live in apartments. ACC Plus adders should apply to VNEM benefitting accounts.

### 3. Export Compensation Structure

The PD would adopt an export compensation structure with different values for every hour of the day, and those values would be different each month and on weekdays and weekends. This results in 576 different values. This is an excessive amount of complexity to manage and to explain to customers.

CALSSA maintains that TOU-based values, using averages weighted by a standard solar production curve, would be optimal. This would result in the values in Table 4 for 2023 with no adders. The structure is much simpler than hourly values and still provides strong price signals for daily load shifting in the summer.

**Table 4. 2023 TOU Values Derived from the Avoided Cost Calculator**

	PG&E	SCE	SDG&E
Summer Peak	0.22	0.17	0.33
Summer Mid-Peak	0.08	0.11	0.06
Summer Off-Peak	0.04	0.05	0.03
Winter Peak	0.04	0.04	0.03
Winter Mid-Peak	0.03	0.04	0.03
Winter Off-Peak	0.02	0.03	0.02

At the very least, export compensation values should not be different on weekdays and weekends. As shown in Figure 6, weekday and weekend ACC values have the same general shape, and the levels are not different enough to justify the additional complexity.

**Figure 6. PG&E 2023 Weekday and Weekend Export Compensation Values in the PD**

2023 Weekday Base Export Compensation (no adders)												
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
1	0.052	0.056	0.048	0.047	0.051	0.049	0.051	0.054	0.053	0.050	0.054	0.051
2	0.053	0.056	0.049	0.048	0.052	0.050	0.052	0.053	0.052	0.051	0.055	0.050
3	0.051	0.055	0.051	0.047	0.051	0.051	0.050	0.053	0.051	0.050	0.054	0.049
4	0.051	0.055	0.050	0.048	0.051	0.052	0.050	0.052	0.051	0.050	0.053	0.049
5	0.051	0.055	0.051	0.049	0.056	0.050	0.051	0.053	0.051	0.050	0.054	0.048
6	0.053	0.057	0.051	0.050	0.054	0.052	0.053	0.053	0.053	0.051	0.057	0.051
7	0.056	0.057	0.053	0.040	0.039	0.052	0.053	0.054	0.053	0.052	0.059	0.056
8	0.057	0.061	0.047	0.014	0.020	0.045	0.050	0.056	0.048	0.050	0.061	0.061
9	0.054	0.049	0.028	0.008	0.006	0.037	0.049	0.054	0.039	0.042	0.049	0.055
10	0.048	0.034	0.017	0.010	0.010	0.036	0.049	0.054	0.039	0.041	0.047	0.048
11	0.045	0.028	0.018	0.008	0.012	0.037	0.050	0.054	0.039	0.041	0.043	0.044
12	0.046	0.030	0.018	0.004	0.010	0.037	0.050	0.054	0.038	0.040	0.038	0.042
13	0.044	0.029	0.018	0.002	0.009	0.038	0.050	0.056	0.039	0.040	0.039	0.042
14	0.044	0.030	0.016	0.001	0.009	0.085	0.054	0.061	0.041	0.040	0.040	0.043
15	0.046	0.035	0.020	0.001	0.010	0.139	0.067	0.120	0.053	0.090	0.042	0.046
16	0.052	0.043	0.032	0.006	0.021	0.203	0.087	0.141	0.116	0.109	0.067	0.059
17	0.061	0.063	0.055	0.023	0.041	0.224	0.235	0.332	0.140	0.153	0.065	0.063
18	0.062	0.061	0.065	0.064	0.070	0.286	0.253	0.523	2.657	0.111	0.067	0.066
19	0.064	0.063	0.075	0.072	0.074	0.251	0.248	0.749	3.000	0.107	0.068	0.067
20	0.063	0.063	0.075	0.090	0.086	0.193	0.149	0.351	0.214	0.060	0.065	0.067
21	0.061	0.062	0.065	0.067	0.075	0.084	0.098	0.284	0.088	0.058	0.063	0.066
22	0.058	0.060	0.056	0.059	0.061	0.071	0.084	0.191	0.081	0.055	0.061	0.064
23	0.056	0.059	0.051	0.056	0.057	0.057	0.055	0.061	0.061	0.053	0.059	0.057
24	0.055	0.058	0.048	0.052	0.056	0.051	0.052	0.057	0.058	0.052	0.056	0.055

2023 Weekend Base Export Compensation (no adders)												
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
1	0.054	0.056	0.048	0.049	0.050	0.052	0.054	0.054	0.053	0.050	0.054	0.054
2	0.051	0.056	0.051	0.046	0.050	0.052	0.053	0.051	0.051	0.048	0.051	0.053
3	0.050	0.056	0.048	0.042	0.049	0.053	0.050	0.051	0.050	0.047	0.050	0.053
4	0.048	0.055	0.049	0.041	0.048	0.053	0.050	0.050	0.047	0.045	0.049	0.051
5	0.046	0.054	0.049	0.046	0.047	0.053	0.050	0.047	0.046	0.044	0.049	0.050
6	0.045	0.052	0.048	0.046	0.039	0.051	0.050	0.046	0.046	0.044	0.049	0.049
7	0.055	0.052	0.050	0.014	0.008	0.045	0.039	0.047	0.043	0.042	0.050	0.050
8	0.052	0.045	0.025	0.006	0.006	0.015	0.016	0.035	0.031	0.031	0.046	0.050
9	0.036	0.028	0.009	0.004	0.008	0.014	0.015	0.034	0.030	0.021	0.033	0.047
10	0.027	0.015	0.008	0.006	0.006	0.020	0.018	0.034	0.029	0.021	0.033	0.046
11	0.028	0.018	0.007	0.004	0.006	0.023	0.024	0.034	0.026	0.024	0.030	0.045
12	0.029	0.013	0.004	-	0.003	0.023	0.023	0.033	0.028	0.026	0.029	0.041
13	0.027	0.015	0.003	-	0.001	0.022	0.022	0.033	0.029	0.025	0.029	0.040
14	0.028	0.015	0.001	-	0.001	0.023	0.021	0.036	0.032	0.028	0.029	0.043
15	0.030	0.017	0.001	-	0.003	0.025	0.025	0.047	0.046	0.037	0.038	0.044
16	0.046	0.029	0.008	-	0.003	0.047	0.048	0.072	0.075	0.066	0.058	0.055
17	0.061	0.056	0.039	0.004	0.012	0.087	0.198	0.213	0.107	0.089	0.062	0.060
18	0.060	0.062	0.069	0.057	0.060	0.118	0.224	0.315	2.311	0.197	0.064	0.064
19	0.062	0.066	0.083	0.064	0.072	0.126	0.233	0.585	2.613	0.087	0.066	0.066
20	0.062	0.066	0.086	0.081	0.096	0.112	0.141	0.316	0.201	0.073	0.064	0.065
21	0.061	0.065	0.075	0.063	0.080	0.088	0.081	0.221	0.092	0.064	0.063	0.064
22	0.059	0.063	0.061	0.055	0.059	0.070	0.069	0.176	0.077	0.058	0.062	0.061
23	0.058	0.061	0.056	0.052	0.056	0.059	0.061	0.064	0.060	0.058	0.062	0.059
24	0.061	0.062	0.058	0.053	0.055	0.060	0.061	0.063	0.065	0.065	0.063	0.065



#### **4. No Netting**

Doing away with interval netting would pose challenges for system design and accurate customer savings estimates. The marginal benefit of increased precision of imports and exports would be counteracted by the risk of customers installing systems that are not optimal for their needs.

The PD directs the utilities to “include both channels of data in 15 minute intervals in their customer-authorized energy usage data portals,”<sup>35</sup> but that data is meaningless before a customer has installed solar and storage.<sup>36</sup> Without on-site generation, all of a customer’s interaction with the utility is consumption. The data will all be on one channel. Providing a second channel with zero exports would not be informative to design a system properly.

Companies that provide solar and storage modeling tools have not settled on exactly what type of new data would be useful for accurately designing systems in a no netting environment. CALSSA recommends that the Commission schedule a workshop within a few months of adoption of the decision, with an ensuing Tier 2 advice letter to propose specific data access.

The PD would create an “adjustment factor” to estimate exports with no netting. However, customer load profiles vary greatly, and system design will impact the percentage of generation that is exported. Contractors would need different adjustment factors for systems that offset all of a customer’s usage or part of their usage, and for west-facing versus south-facing panels. Load profiles for commercial customers vary so widely that any adjustment factor may be useless. Contractors would have to guess at system design that best fits a customer’s needs. The Tier 3 adjustment factor advice letters should disclose methodological details and propose multiple adjustment factors for different system designs.

#### **5. Lock-In Period and Tariff Term**

The PD creates a lock-in period in which export compensation values are set according to the values determined by the version of the ACC that is approved in the year of installation. The period is nine years for residential customers and five years for commercial customers.

Customers who finance their systems have loan terms that are typically 20 years. Having compensation defined for less than half of that term would push interest rates higher if financing is obtainable at all. The defined term for both residential and commercial customers should be 15 years.

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<sup>35</sup> PD, p. 129.

<sup>36</sup> CALSSA Opening Comments on PD, p. 19.

The PD finds that the ACC is consistent, so providing certainty to customers and financiers should be acceptable.<sup>37</sup> Confidence in future compensation values will make the difference for many projects between obtaining financing and not being able to develop projects because they are not financeable. Adjusting the values over time is meaningless if projects cannot be developed in the first place.

A shorter lock-in period for medium and large commercial customers is not supported. The PD reasons that, “[b]ecause the Commission’s analysis of the successor tariff indicates a shorter payback period for *small commercial customers*, this decision limits the lock-in period to five years for *nonresidential customers*.”<sup>38</sup> Using an analysis of one set of customers as justification for making changes to a very different set of customers is not reasonable. As discussed above, the E3 calculator on which the PD is based is not capable of analyzing the impacts of customers with demand charges. In the absence of data, the Commission should provide the same lock-in term for commercial customers as residential customers. Also, because nearly all commercial customers finance their systems, it is especially important to have a defined term that approaches a typical financing term.

The PD also breaks with current policy in proposing that the sale of a property would negate a system’s lock-in period. This is adopted without any justification.<sup>39</sup> Issues surrounding the potential impacts of such a change were not raised in this proceeding, and there is no information on this issue on the record. One of the most common questions in the solar sales process is whether a customer will recoup an investment if they do not remain in the home for the lifetime of the system. Telling customers that the purchaser of a home will receive the same terms is extremely important and impacts the value of the home. The Commission should maintain well established policy and have the defined term stay with the system.

Finally, the 15-year lock-in period for export compensation should align with a 15-year tariff term for residential and commercial customers. The term of the export compensation lock-in is meaningless if it can be disrupted by other tariff changes that undermine the tariff’s value proposition. This lock-in period and term should not be eliminated for customers that install systems after the first five years.

## **6. Sunset and Other Implementation Issues**

The PD maintains the 120-day sunset period that was proposed in the previous proposed decision. This is essential for customers who have already signed contracts or invested in project development. Several items related to the sunset period and related implementation issues need attention.

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<sup>37</sup> PD, p. 102, Finding of Fact 95.

<sup>38</sup> *Id.*, p. 139 (emphasis added).

<sup>39</sup> *Id.*, pp. 156-157.

### **A. Signed Contracts Would Not Work for Commercial Customers**

The PD lists items that must be included in a complete interconnection application to be eligible for the sunset period, but some of those items only pertain to residential customers. Non-residential customers do not receive a Contractors State Licensing Board (CSLB) Solar Energy System Disclose Document or a signed California Consumer Protection Guide. Also, while residential customers include a signed contract with interconnection applications, commercial customers do not. It is not standard practice for commercial customers to sign a construction contract before submitting an interconnection application. Grid upgrades and interconnection facilities identified in the interconnection review process often change costs, construction timeline, and system design.<sup>40</sup>

The PD does not indicate that these items are required “if applicable”, but in the case of the CSLB cover sheet and the Consumer Protection Guide, that is clearly the case. CALSSA presumes this is also the case for the signed contract, but the Commission should clarify this explicitly. If the Commission wants the utilities to receive a document that is signed by commercial customer, it can require that the Authorization to Act on a Customer’s Behalf be uploaded.<sup>41</sup> Another option would be a letter of intent from the customer, which is a formal document with expected system design and transaction terms.

### **B. Other Issues**

- For most residential systems, the applicant does not upload a site-specific single-line diagram (SLD) but rather selects from a list of standard designs. Taken literally, the PD could be interpreted to require a site-specific SLD in all cases, which would cause submittal deficiencies because contractors are accustomed to the current Commission-approved practice.
- The Commission should direct the utilities to work collaboratively with representatives of solar and storage contractors to work through challenging situations in deeming applications complete. For example, many PG&E new construction customers have been unable to submit interconnection applications because the service application for the property is stuck in an old version of the PG&E portal.<sup>42</sup> Also, during major remodels, which commonly involve the addition of solar, the IOUs often change the account number while the home is under renovation with a temporary power pole. The solar system may be fully installed and unable to submit an application.

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<sup>40</sup> Interconnection facilities are grid capacity expansions and protective devices that only serve the interconnecting customer, and are paid for by the customer regardless of system size. Grid upgrades are triggered by the interconnecting customer but serve a broader need, and are paid for by the customer only for systems over 1 MW.

<sup>41</sup> See PG&E Form 79-1095 at [https://www.pge.com/tariffs/assets/pdf/tariffbook/ELEC\\_FORMS\\_79-1095.pdf](https://www.pge.com/tariffs/assets/pdf/tariffbook/ELEC_FORMS_79-1095.pdf).

<sup>42</sup> The IOUs were ordered to fix this in D.21-06-002 but major problems remain.

- Conclusion of Law 53 says the sunset date should be “120 days from the adoption date of this decision,” while Ordering Paragraph 13(e) says “*no later than 120 days.*” Correcting the Ordering Paragraph to align with the Conclusion of Law would be valuable for customer certainty.
- Finding of Fact 230 incorrectly states that solar and storage providers will not need to overhaul marketing information and contracts until the end of the one-year transition period. Customers submitting applications after the sunset period will be net billing tariff customers.
- Ordering Paragraph 13 should be revised (1) to clarify that the Tier 1 AL referenced in Step 1 providing the details of the tariff is for informational purposes only to develop marketing materials/contracts, and (2) to include, after Step 4, a Tier 2 AL for the proposal of actual tariff language.

## 7. System Performance

The PD includes a consumer protection provision that was not discussed in this proceeding, directing the IOUs to “propose a process to notify customers when their solar systems . . . appear to be offline for a period of seven days or more.”<sup>43</sup> CALSSA does not object to the IOUs proposing a methodology, but the Commission should not presume that this type of automated notification will be feasible or have a positive impact for customers. Due to customer variability, a methodology that works for one type of customer may not work for another type of customer.

## 8. Fixed Charges

The PD correctly recognizes that R.22-07-005 is the more appropriate venue to consider the issue of fixed charges for all customers, including NBCs, and declines to adopt any NEM-specific fixed charge or to modify NBC policy for net billing tariff customers.<sup>44</sup>

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<sup>43</sup> PD, p. 159.

<sup>44</sup> PD, pp. 112-117. The PD should be revised to correct certain inaccurate characterizations of CALSSA’s legal arguments on fixed charge proposals and related misstatements of federal law. First, the PD does not accurately characterize CALSSA’s argument regarding PURPA’s anti-discrimination provision. PD, pp. 110-111. CALSSA has urged the Commission throughout this proceeding to recognize that PURPA’s regulations require rates for sales to customers with Qualifying Facilities (QFs) to be non-discriminatory. 18 C.F.R. § 292.305(a); 16 U.S.C. § 824a-3(c). Under these regulations, the proponent of any additional fee on QF customers must establish a cost causation basis for imposing differential rate treatment and demonstrate that the rate: (1) is based on accurate data, (2) is established using consistent system wide costing principles, and (3) applies to the utility’s other customers with similar load or other cost-related characteristics. CALSSA Opening Comments on PD, n. 18. CALSSA demonstrated that the fixed charges proposed in this proceeding violated all three of these requirements. Relatedly, the PD’s background discussion of PURPA (PD, pp. 5-7) is incomplete in that it only discusses federal jurisdiction over the pricing of a customer-generator’s transmission of electricity to the utility—which only attaches to net sales to the utility over a billing period—but leaves out any recognition of the PURPA regulations applicable to rates for sales of electricity to QF customers, including NEM customers. See CALSSA Opening Comments on May Ruling, pp. 15-17.

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Respectfully Submitted,

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## **Appendix A**

### **Recommended Changes to Findings of Fact and Conclusions of Law**

CALSSA disagrees with many of the Findings of Fact and Conclusions of Law in the PD, but the recommended changes below are limited primarily to those closely related to the issues covered in these Comments. Lack of edits in this Attachment to any Finding of Fact or Conclusion of Law does not signify assent.

#### **Findings of Fact**

~~5. The NEM 2.0 tariff is not cost-effective for the commercial, industrial, and agricultural customer segments.~~

~~24. The Lookback Study indicates the nonresidential sectors of the NEM 2.0 tariff are not cost-effective.~~

~~49. Neither CALSSA nor SEIA/Vote Solar offer any evidence that increased net energy metering installations will directly result in decreased utility-scale projects.~~

53. The 2013 and 2017 NREL studies show that consumers look at monthly bill savings, including financing costs, when making an economic decision on adopting solar.

56. A target of a ~~nineteen~~nine-year simple payback period for a stand-alone solar system presents a balanced approach to promoting the adoption of solar systems paired with storage.

59. The \$2.34 per watt value for the cost of solar does not include many real world costs, including costs for financing, electrical panel upgrades, or installation delays.

~~60. SEIA/Vote Solar and CALSSA concede that \$3.80 per watt is high for the cost of solar.~~

61. The value of ~~\$3.30~~ \$3.87 per watt for the cost of residential solar reasonably accounts for electrical panel upgrades, delays, and the current inflationary costs.

89. Basing residential retail export compensation rates on retail import rates has resulted in compensation levels 3.8 to 5.4 times higher than the benefits they provide to the electrical systems in the form of avoided costs.

~~99. Requiring the same retail export compensation rate for all successor tariff customers will maintain equal treatment between nonresidential and residential customers, ensuring equity among customers.~~

~~102. If the Commission were to find the NEM 2.0 structure compliant with guiding principles for the nonresidential customer sector, a change in demand charges or high fixed charges in another proceeding could lead to furthering the cost shift in net energy metering that could be challenging to unwind.~~

103. Requiring residential successor tariff customers to take service on retail import rates with high differentials between winter off-peak and summer on-peak rates will improve the price signal to these customers.

106. Requiring residential successor tariff customers to take service on highly differentiated time-of-use rates maximizes the value of the generation to all customers and to the electrical system and ensures equity among all customers.

108. Requiring residential successor tariff customers to take service on highly differentiated time-of-use rates will meet several guiding principles in this proceeding.

~~110. The current design of retail rates no longer provides the ability to accurately calculate a customer's energy and grid usage, with respect to net energy metering customers.~~

116. In R.22-07-005, the Commission will consider the reformation of residential fixed charges.

117. R.22-07-005 is the appropriate regulatory venue to consider the issue of how to accurately recover fixed costs from all customers, including net energy metering customers. ~~calculating a customer's energy and grid usage and ensuring the grid is prepared for intermittent decrease and increase of usage.~~

129. In D.15-07-001, the Commission established a minimum bill of \$5 for CARE customers and \$10 for non-CARE residential customers.

130. R.22-07-005 will consider the reformation of residential fixed charges, which could include the continuance or elimination of a minimum bill requirement.

134. An adjustment factor is useful as a proxy for no netting in developing estimates of monthly bill savings for prospective residential solar customers with a common system design.

152. The glide path is meant to ensure successor tariff customers, including CARE- and FERA-enrolled customers, have a seven-nine-year simple payback period for stand-alone solar systems.

157. The proposed import retail rates will improve the pricing signal to residential successor tariff customers, increase the value of the generation to all customers and the electrical system, and encourage electrification.

178. Analysis of the successor tariff indicates greater bill savings with adoption of electrification rates by residential customers with solar systems paired with storage.

221. The fixed charge proposed in R.22-07-005 is intended to recover certain authorized utility costs that are currently collected through volumetric components of residential electricity bills.

224. It is reasonable to define the interconnection application date as the submission date of an application that is free of major deficiencies and includes a complete application, a signed contract (if applicable), a single-line diagram, a complete CSLB Solar Energy System Disclosure

Document (if applicable), a signed California Solar Consumer Protection Guide (if applicable), and an oversizing attestation (if applicable).

NEW. Selection of a standard single-line diagram within the interconnection application portal constitutes inclusion of a single-line diagram.

230. A ~~one-year implementation~~ 120-day sunset period ~~for before the transition to the successor tariff will allow~~ provide time for behind-the-meter industry providers to ~~sufficiently~~ train their sales force and customer service representatives, and revise marketing material and contracts; ~~and prevent additional contribution to the cost shift, ensure the compensation for these services is cost-effective, and initiate the storage and electrification benefits of the successor tariff.~~

## Conclusions of Law

9. The Commission should consider monthly bill savings and a simple payback period target of ~~nine~~ seven years for a stand-alone solar system as part of the successor tariff.

10. The Commission should adopt the value of ~~\$3.30~~ \$3.87 per watt as the cost of residential solar.

NEW. The Commission should host a workshop to determine the type of data that can be made available to solar and storage providers to help them design systems that best meet customer needs in the absence of netting intervals.

28. The Commission should set retail export compensation rates at monthly values for each hour; ~~differentiated between weekday and weekend/holiday.~~

29. The Commission should adopt Avoided Cost Calculator values based on a ~~five-year~~ 15-year schedule of values for each hour from the most recent Avoided Cost Calculator, adopted as of January 1 of the calendar year of the new successor tariff customer's interconnection application submittal date.

42. The Commission should direct the utilities to perform on-site netting ~~maintain the netting intervals~~ for general VNEM and NEMA subtariffs using the netting intervals as they currently exist.

~~43. The Commission should not provide an ACC Plus adder to VNEM subtariff customers.~~

50. The Commission has the authority to revise NEM 1.0 and NEM 2.0 tariffs, but significant consumer protection concerns arise from revisions to previously guaranteed tariff terms.

52. The Commission should define the interconnection application date as the submission date of an application that is free of major deficiencies and includes a complete application, a signed contract (if applicable), a single-line diagram, a complete CSLB Solar Energy System Disclosure Document (if applicable), a signed California Solar Consumer Protection Guide (if applicable), and an oversizing attestation (if applicable).