BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

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

OPENING BRIEF OF GRID ALTERNATIVES, VOTE SOLAR, AND SIERRA CLUB

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TABLE OF CONTENTS

TABLE OF AUTHORITIES

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Pursuant to Rule 13.12 of the California Public Utilities Commission ("Commission") Rules of Practice and Procedure and the oral ruling of Administrative Law Judge ("ALJ") Kelly A. Hymes at the conclusion of evidentiary hearings on August 10, 2021, GRID Alternatives, Vote Solar, and Sierra Club timely file this Opening Brief on the Scoping Memo's identified Issues 2 through 6 for low-income residential and other Environmental Justice and Social Justice ("ESJ") communities, as defined in the Commission's Environmental and Social Justice Action Plan.[1]

The Net Energy Metering tariff has provided significant clean energy capacity to the grid, societal and economic benefits to communities, and considerable financial benefits to participating customers. As the Commission reviews proposals in this proceeding to create a successor tariff, it is important to recognize that the majority of proposals will make it more difficult for customers in low-income households and other ESJ communities to deploy clean energy. Yet, these same communities tend to be more vulnerable to air pollution, outages, and climate change.

These challenges require a more distributed, participatory, and democratized clean energy economy that is able to respond to a rapidly changing environment—the consequence of decades of disproportionate impacts from burning fossil fuels on these same communities. In order to both address past inequities while also ensuring access to electrification technologies, we urge the Commission to develop multiple tariffs to increase renewable energy access for ESJ communities including low-income households. Similarly, we recommend that the Commission

[1] The ESJ Action Plan, adopted by the Commission in February 2019, is available at https://www.cpuc.ca.gov/news-and-updates/newsroom/environmental-and-social-justice-action-plan.

consider equity impacts throughout this proceeding in both the general market and equity tariff development.

I. Introduction and Summary of Recommendations

There is clear demographic disparity between ESJ communities and the general market in adopting distributed renewable energy and storage, and this proposal to develop targeted incentives to encourage adoption by ESJ communities including low-income households is consistent with both California law and Commission precedent. The Joint Parties specifically designed this proposal to align with and advance many of the Guiding Principles established in D.21-02-007.

In alignment with Guiding Principle (a), the policies supported in this brief comply with Public Utilities Code § 2827.1, which requires the Commission to "include specific alternatives designed for growth among residential customers in disadvantaged communities." The Code did not define disadvantaged communities. This proposal will make onsite clean energy more accessible and affordable for residential customers in ESJ communities, which includes the Commission's definition of disadvantaged communities as well as tribal and low-income communities. It will also boost onsite clean energy deployment among customers in the bottom half of California's income distribution. The proposal will help customer-sited renewable distributed generation to grow sustainably, as well as to provide a powerful means for ESJ communities and low-income customers to reduce their energy burden.

Our proposals also support Guiding Principle (b) to ensure equity among customers because the policies aim to limit non-participant impacts while also advancing equitable participation in clean energy deployment via the successor tariff. The Commission has previously determined that the statutory requirements for the successor tariff, such as the requirement for cost-effectiveness, should not be applied in the development of alternatives for disadvantaged communities.[2] However, Policy A would limit impacts to non-participants by fixing export billing credits to 2021 rates, ensuring that the benefits do not increase with time as

[2] D.18-06-027 at 10 ("As noted in D.16-01-044, parties argue, and we find, that the statutory criteria for the successor tariff, such as the requirement to ensure that the total costs are approximately equivalent to total benefits, should not be applied in the development of alternatives for DACs." Internal citations omitted.).

retail rates are projected to increase substantially in coming years. Policy B aims to control non-participant costs by setting high standards for eligibility to ensure that only projects that benefit ESJ communities may participate.

In alignment with Guiding Principles (c), (f), and (g), our proposal aims to increase customer protection and transparency by ensuring predictable, consistent bill savings as well as providing a reasonable payback period in a relatively simple and transparent way. This will reduce uncertainty about how future rate escalation might impact customer bills, while also allowing developers to more accurately and confidently model future bill savings. This will also contribute to building market trust and strengthening relationships between customers and developers.

Our proposal is technology neutral in support of Guiding Principle (d). It also aligns with existing Commission and state energy policy by making renewable energy and storage systems more accessible to low-income households and ESJ communities, comporting with Guiding Principle (e). Last, our recommendations advance Guiding Principle (g) by increasing equity in clean energy deployment and incentivizing the adoption of storage to provide clean energy when the grid needs it most.

In order to ensure that Environmental and Social Justice communities, including low-income households, have access to distributed generation and storage, the Joint Parties recommend that the Commission:

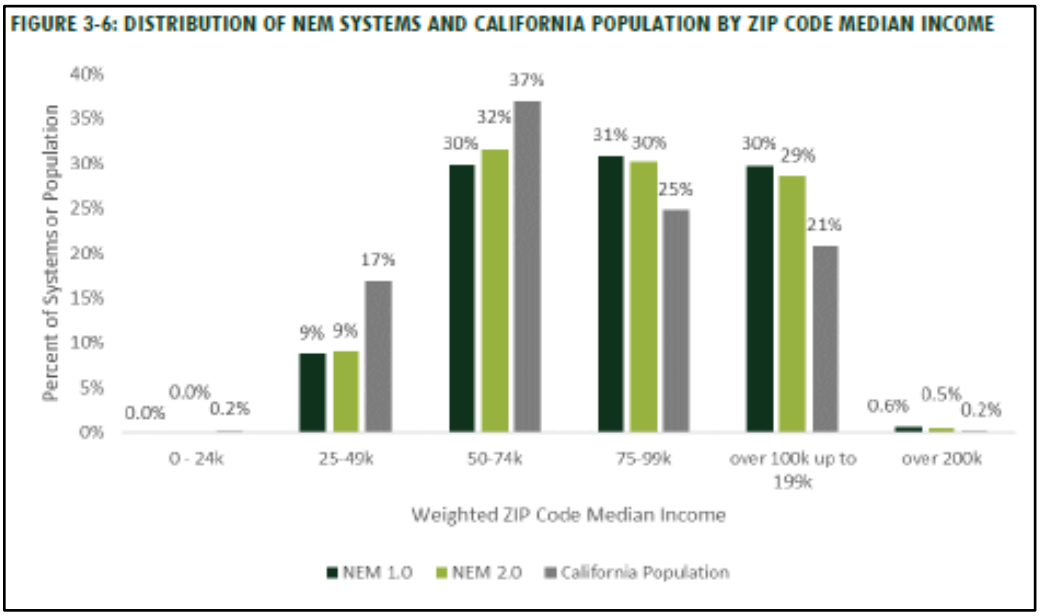
1. Adopt Policy A to ensure low-income customers have the opportunity to access the bill savings and resilience benefits associated with the NEM 2.0 tariff and increase demographic parity.
2. Adopt Policy B to provide a pathway for Environmental and Social Justice communities to own and operate distributed generation and storage projects in their communities and to their benefit.
3. Reject the Joint IOUs' income-qualified proposal.
4. Reject PAO's recommendation that third-party owned models should be disallowed for low-income participants.
5. Modify and adopt the Joint IOUs' STORE pilot, incorporating an underlying tariff that is accessible to low-income customers with a household income equal to or less than 80% area median income, and either incorporating a third-party program administrator or combining the STORE program with clean energy existing programs.

II. Issue 2: NEM 2.0 Lookback Study Information that Should Inform the Successor and How the Commission Should Apply Those Findings

The NEM 2.0 Lookback Study provided two key pieces of information regarding NEM participation among low-income customers and customers living in disadvantaged communities.

First, the study made clear that low-income customers are not participating at levels equal to other residential customers. Figure 3-6 in the Lookback Study specifically compared the percentage of NEM participants in each income bracket against the percentage of the California population that made up the same bracket.[3] The figure showed that the three lowest income brackets had lower rates of NEM participation compared to their share of the population, whereas the three highest income brackets gathered more than their proportional share of NEM participation.[4] This constitutes a substantial disparity in the levels of adoption between high- and low-income zip codes.

Figure 1: NEM 2.0 Lookback Study Figure 3-6: Distribution of NEM Systems and California Population by Zip Code Median Income



[3] Verdant Associates, *Net-Energy Metering 2.0 Lookback Study*, at 33 (Figure 3-6) (Jan. 21, 2021) *available at* https://www.cpuc.ca.gov/industries-and-topics/electricalenergy/demand-side-management/net-energy-metering/net-energy-meeting-nem-2-evaluation [hereinafter "NEM Lookback Study"].
[4] *Id.*

This conclusion is consistent with other findings. For example, the Lawrence Berkeley National Laboratory ("LBNL") similarly concluded that onsite clean energy adoption in recent years remains higher for higher-income customers than for low-income customers in California.[5] An update to that report reflecting 2019 adoption data shows that lower income customers have increased their adoption rates compared to earlier years, but are still not equaling demographic parity.[6] The Commission's first takeaway from the NEM Lookback Study should be that substantially more low-income onsite clean energy deployment is needed to reach demographic parity, and progress towards increasing NEM participation for low-income customers should be protected and encouraged.[7]

Multiple parties agree that more needs to be done to increase solar access for low-income participants. The Joint Parties do not believe any of the parties that discussed low-income customers suggested the same exact treatment for low-income customers as they propose for non-low-income customers. This is evident by the following select examples. TURN recommends a Market Transition Credit ("MTC"), either from ratepayers or from non-ratepayers to standalone solar NEM participants enrolled on CARE, but TURN does not recommend ratepayer funding for standalone solar for non-CARE customers.[8] Similarly, Cal Advocates recommends that CARE/FERA customers be exempt from the Joint Investor-Owned Utilities ("Joint IOUs") proposed grid benefits charge ("GBC").[9] The Joint IOUs also proclaim a concern regarding the "existing adoption gap" between lower and higher income customers.[10] The Joint

[5] Ex. GRD-1 at 7:4-10 (citing Galen Barbose et al., *Income Trends Among U.S. Residential Rooftop Solar Adopters*, Lawrence Berkeley National Laboratory, at slide 21 (Feb. 2020), *available at* https://emp.lbl.gov/publications/income-trends-among-us-residential).
[6] Lawrence Berkeley National Laboratory, *Income Trends Among US Residential Solar Adopters*, Feb. 2020. California data can be viewed at https://emp.lbl.gov/solar-demographics-tool.
[7] Ex. GRD-1 at 6:25-29 (Although solar adoption in the lower-income zip codes increased under NEM 2.0 compared to NEM 1.0, the increase was very modest, and substantially more low-income deployment is needed").
[8] Tr. Vol. 9 at 1548:13-1549:14 (Chait, TURN).
[9] Ex. PAO-01 at 3-52:3-3-55:4.
[10] Ex. IOU-01 at 163:25-16:2 ("While we believe that eliminating the cost shift is the best way to benefit the most customers, we also have concerns about the existing adoption gap between non-low, higher-income customers and lower-income customers.").

Parties believe the record is clear that prospective low-income NEM participants need different treatment in order to adopt solar and solar paired storage.

Second, the NEM Lookback Study indicated that California's solar programs hold significant potential for low-income customers to benefit from participating in NEM programs in the near future, through both California solar incentive programs as well as via utility bill savings flowing from the successor tariff. The study stated, "[p]rograms such as SOMAH, the Single-Family Affordable Solar Homes Program (SASH), the Multifamily Affordable Solar Housing Program (MASH), and other equity-focused programs [*e.g.,* DAC-SASH] may further accelerate system installations in less affluent and more diverse areas going forward."[11] This information suggests that NEM participation will continue to increase in low-income and disadvantaged communities and that solar incentive programs should be leveraged and scaled up to continue growing rooftop solar and storage adoption among low-income customers.[12] The Commission's second takeaway from the NEM Lookback Study should be that programs supporting rooftop solar as well as solar plus storage adoption by low-income and disadvantaged communities should be protected and supported.

Third-party ownership ("TPO") models are included in California's solar incentive programs and have a proven track record of supporting rooftop solar adoption by low-income customers.[13] TPO models refer to rooftop solar systems that are owned and maintained by a third-party (i.e. not the utility and not the site owner. Typically, the customer enters into a lease or a power purchase agreement ("PPA") with the third-party for the power produced by the solar system. Third-party ownership models have been empirically documented to be effective tools for fostering distributed generation and all of the associated benefits to low- and moderate-income customers.[14] Solar adoption among low- and moderate-income customers have tended to

[11] NEM Lookback Study at 39.
[12] Ex. GRD-02 at 4:17-21 (recommending that these programs help low-income and disadvantaged communities access the resiliency, social, and economic benefits of rooftop solar and storage).
[13] Ex. GRD-02 at 5:21-24 (citing Ex. GRD-03, Eric O'Shaughnessy et al., *The impact of policies and business models on income equity in rooftop solar adoption*, Nature Energy (Jan. 2021) *available at* https://emp.lbl.gov/publications/impact-policies-and-business-models (originally published by LBNL in Nov. 2020, *available at* https://emp.lbl.gov/publications/impact-policies-and-business-models) [hereinafter "O'Shaughnessy et al., Report"]).
[14] Ex. GRD-02 at 5:9-12 (citing Ex. GRD-03, O'Shaughnessy et al., Report).

increase after communities adopted low-and-moderate customer incentives and TPO models.[15] In studying the effectiveness of specific policy interventions, LBNL researchers found the following about customers:

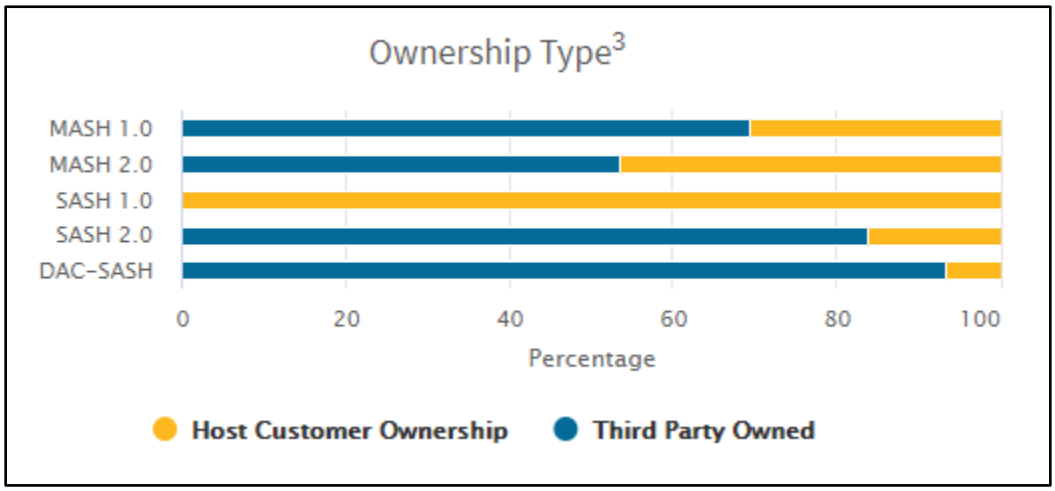
> [E]arning less than county median income use all three interventions [LMI incentives, leasing and Property Assessed Clean Energy (PACE) financing] more frequently than adopters earning more []. Further, adopters earning less than 25% of county median income use the interventions more frequently than adopters earning just under county median income. These data suggest that the interventions are reaching LMI households in general, and low-income households specifically.[16]

The Joint Parties support the research findings of LBNL but note, as stated in opening testimony, we do not support PACE financing as an avenue to grow low-income solar when alternative and less risky options exist.[17]

The California DG Stats website presents data showing that TPO systems make up a large majority of customer-sited solar projects that have been built via the Multifamily Affordable Solar Housing ("MASH"), Single Family Affordable Solar Housing ("SASH 2.0") and Disadvantaged Communities - Single Family Affordable Solar Housing ("DAC- SASH") programs. As of August 24, 2021, the website showed that for MASH 1.0, 69% of the installed capacity is TPO, while for MASH 2.0, 53% of capacity is TPO. As of the same date, for SASH 2.0, 84% of capacity is TPO, while for DAC-SASH, 94% is TPO, and for SOMAH, 80% is TPO.[18] Disallowing TPO models would unnecessarily obstruct the ability for tens of thousands of low-income tenants and homeowners to benefit from clean energy bill savings.

[15] Ex. GRD-03 at 87.
[16] *Id.*
[17] Ex. GRD-02 at 6:16-20.
[18] *Statistics and Charts: Low Income Solar PV*, California Distributed Generation Statistics, *available at* https://www.californiadgstats.ca.gov/charts/li (last visited Aug. 26, 2021). *See also Statistics and Charts: SOMAH* California Distributed Generation Statistics, *available at* https://www.californiadgstats.ca.gov/charts/somah (last visited Aug. 26, 2021).

Figure 2: Low-Income Solar Program Incentive Applications by Ownership Type[19]



Leasing and PPA agreements help low- and moderate-income customers overcome barriers to solar adoption by allowing them to avoid the upfront costs associated with adopting rooftop solar. These agreements often require the customer to pay no upfront installation or equipment costs. Given the inclusion of leasing options in current NEM programs and the NEM Lookback Study's support for low-income solar programs, the Commission should recognize that third-party ownership models can be an effective tool for helping low-income customers overcome barriers to solar and storage adoption. We recommend that, contrary to Cal Advocates' recommendation,[20] the Commission ensure that third-party ownership models remain an available option for low-income customers.

III. Issue 3: Methods to Analyze the Program Elements and the Resulting Proposals, while Ensuring the Proposals Comply with the Guiding Principles

A. Analysis of Tariff Elements Should Consider Non-Energy Benefits

The Commission should consider non-energy benefits ("NEBs"), meaning the community and societal benefits, of each program element and proposal in this proceeding. NEBs include job training and job creation for low-and moderate-income workers; increased homeowner wealth through solar ownership; increased participation in the energy transition (e.g., "Solar for All"); better engagement with underserved communities, remediation of

[19] *Id.*
[20] Ex. PAO-01 at 2-34:13-14 ("Therefore, third-party ownership arrangements should not be prioritized as a means of equalizing access to NEM for CARE and DAC customers.").

environmental injustices and housing/lending discrimination, and energy resilience.[21] The societal impact of these benefits is significant and should be considered in every proposal evaluated by the Commission.

B. Tariff Elements Should Be Analyzed Based on Whether They Will Increase Solar and Storage Adoption by Environmental and Social Justice Communities Including Low-Income Households

The Commission is required to identify specific alternatives to support clean energy adoption by disadvantaged community members. The Public Utilities Code requires "specific alternatives designed for growth among residential customers in disadvantaged communities."[22] In addition, Guiding Principle (b) requires that any successor tariff advances equity among customers.

Through the Environmental and Social Justice Action Plan ("ESJ Action Plan"), the Commission has committed to addressing historic inequities that some populations have faced in the form of higher barriers to safe and affordable utility service.[23] The ESJ Action Plan outlines overarching goals as well as specific actions that the Commission will take to support underserved customer segments. The Commission specifically adopted five goals relevant to the NEM program.

Table 1: ESJ Action Plan Goals Related to NEM Equity[24]

Goal #	Relevant ESJ Action Plan Goals for NEM Equity Proposals
Goal 1	Consistently integrate equity and access considerations throughout Commission proceedings and other efforts.
Goal 2	Increase investment in clean energy resources to benefit ESJ communities, especially to improve local air quality and public health.
Goal 4	Increase climate resiliency in ESJ communities.
Goal 6	Enhance enforcement to ensure safety and consumer protection for ESJ communities.
Goal 7	Promote economic and workforce development opportunities in ESJ communities.

[21] Ex. GRD-01 at 5:10-18 (internal citations omitted).
[22] Pub. Util. Code § 2827.1(b)(1).
[23] ESJ Action Plan at 10 ("The Commission is tasked with serving all Californians, and to do so effectively, the Commission must acknowledge that some populations in California face higher barriers to access to clean, safe and affordable utility services.").
[24] ESJ Action Plan at 6-8.

These goals provide specific considerations for supporting equity in every Commission proceeding, including this one. We recommend that the Commission evaluate each proposal—particularly all proposals targeted towards supporting low-income and other equity communities—for whether and how well a given proposal advances each of these goals.

The ESJ Action Plan identified particular communities to serve, including:

- Predominantly communities of color or low-income;
- Underrepresented in the policy setting or decision-making process;
- Subject to a disproportionate impact from one or more environmental hazards; and,
- Likely to experience disparate implementation of environmental regulations and socio-economic investments in their communities.[25]

Specifically, the Action Plan identified specific communities as "ESJ Communities" including:

- Disadvantaged communities located in the top 25 percentiles of communities scored by Cal EPA's CalEnviroScreen;
- All Tribal Lands;
- Low-income households (defined as those with household incomes below 80 percent of the area median income); and,
- Low-income census tracts (defined as census tracts with average household incomes less than 80 percent area or state median income).[26]

In fulfilling its commitment to the ESJ Action Plan, the Commission should evaluate all proposed NEM successor tariff program elements according to whether and how well the elements advance the relevant ESJ Action Plan goals. The Commission should adopt program elements that will together increase equitable participation in NEM-based solar deployment, and increase—not decrease compared with today's levels—adoption of customer-sited clean distributed generation and storage in ESJ communities.

In evaluating program elements through the ESJ Action Plan lens, we recommend that the Commission consider each of the following aspects of each low-income specific proposal.

1. Evaluate ESJ participant bill savings;
2. Evaluate ESJ participant payback periods;
3. Evaluate whether the proposal allows ESJ participants to overcome barriers to adoption; and,

[25] ESJ Action Plan at 9.
[26] Ex. GRD-02 at 7:19-8:1 (citing ESJ Action plan at 9-10).

4. Evaluate whether proposals will effectively incent ESJ participants to adopt solar and storage.

We provide additional detail on each of these considerations below.

1. Evaluate ESJ Participant Bill Savings

Customer bill savings can be significantly impacted based on each distinct tariff element, and how each individual tariff element, when summed, results in a value proposition that an interested customer will consider for participation. Customer economics are the primary consideration for any customer in deciding whether to adopt rooftop solar.[27] This is especially true for low-income customers, who face greater economic barriers to adopting rooftop solar.[28] A customer needs to know that they will receive immediate, persistent, and adequate bill savings in order to adopt rooftop solar or storage. It is therefore incumbent on the Commission to consider whether equity proposals will deliver enough bill savings to ensure ESJ customers understand the value in their potential participation.

In addition to complicating customer decision-making, insufficient bill savings also make financing more difficult. The lack of bill savings has been a particular problem for encouraging participation by CARE and FERA customers in the NEM 1.0 and NEM 2.0 tariffs. Multiple parties identified that CARE and FERA NEM participants had fewer bill savings compared to other customers because their solar exports received a discounted rate.[29] Due to this lower export value, solar installers tend to find it difficult for third party owners to finance solar systems on a PPA with CARE and FERA customers. As a direct result, CARE and FERA customers have disproportionately low levels of participation in both NEM 1.0 and 2.0. Going forward, the Commission should therefore consider whether equity proposals provide sufficient bill savings to each category of ESJ customers—including CARE and FERA customers—to ensure that they will receive reasonably certain and sufficient bill savings to participate.

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[27] Tr. Vol. 3 at 437:19-23 (Morien, Joint IOUs); Ex. GRD-01 at 13:10-12 ("The most important consideration a low-income household makes when deciding to adopt onsite solar is the ability to save money and protect against future electric utility rate increases").
[28] Ex. GRD-01 at 13:10-12.
[29] *See, e.g.*, Ex. IOU-01 at 19:23-28 (identifying the bill savings deficiency for CARE and FERA customers).

2. Evaluate ESJ Participant Payback Periods

The customer payback period refers to the amount of time required for a customer to operate the solar or solar-plus-storage system in order to pay off the cost of installing and operating the system, and it can be calculated by dividing the total project cost by the annualized monthly bill savings.[30] It provides the simplest indicator of economic usefulness for customers.[31]

The Commission should analyze equity proposal elements according to the projected payback period for participating ESJ customers, and the Commission should ensure that every equity program provides a reasonable, simple payback period for ESJ participants. In particular, proposals should aim to equal or reduce the payback period for low-income customers, compared with the payback period they would have received under NEM 2.0.

3. Evaluate Whether the Equity Proposal Allows ESJ Participants to Overcome Barriers to Adoption

The Commission should evaluate equity proposals based on whether and how well the tariff elements allow ESJ participants to overcome identified barriers to adopting clean energy technology. The SB 350 Low-income Barriers Study identified a number of barriers that low-income customers in California face in adopting and benefitting from distributed clean energy. The identified barriers include limited disposable income, difficulty in securing financing, low home ownership rates, the age and condition of roofs, lack of awareness about energy programs and more.[32]

For example, a low-income customer's limited disposable income presents a particular barrier to rooftop solar or storage adoption because purchasing and installing a solar system requires a large upfront cost.[33] However, third-party ownership models including PPAs allow low-income customers to avoid those upfront costs altogether.[34] Therefore, evaluating whether a

[30] Ex. GRD-01 at 13:14-15.
[31] *Id*. at 13:12-15.
[32] California Energy Commission, *Low-Income Barriers Study, Part A: Overcoming Barriers to Energy Efficiency and Renewables for Low-Income Customers and Small Business Contracting Opportunities in Disadvantaged* Communities, at 2-3 (Dec. 2016), *available at* https://efiling.energy.ca.gov/getdocument.aspx?tn=214830 ["SB 350 Barriers Study"].
[33] *Id*. at 35.
[34] Tr. Vol. 12 at 2141:17-22 (Buchholz, PAO).

proposal allows multiple eligible ownership models will identify whether a proposal can assist low-income customers overcome a primary barrier to solar adoption.

4. Evaluate Whether Equity Proposals Will Effectively Incent ESJ Participants to Pair Battery Storage with Their Onsite Solar

Last, the Commission should evaluate equity proposals according to whether and how well the proposal will incent ESJ participants to pair batteries with their onsite solar—regardless of whether the customer already has solar or will install it in the future. Adopting onsite storage presents many of the same barriers for low-income customers as onsite solar, but adding storage also allows any solar system to provide significantly more benefit to individual customers, their surrounding community, as well as the grid, by storing clean renewable energy and allowing it to be used during times of peak demand. Additionally, solar paired storage uniquely enables increasingly significant resilience benefits. Given the additional benefits, the Commission should ensure that the program provides effective incentives for ESJ customers to pair onsite solar with batteries.

IV. Issue 4: Program Elements or Specific Features the Commission Should Include in a Successor to the Current NEM Tariff

The Joint Parties recommend that any successor equity proposals be evaluated based on how well they advance the Commission's ESJ Action Plan, particularly by looking at bill savings, payback periods, the ability to overcome barriers to adoption, and incenting storage adoption. Accordingly, it is important that the Commission include tariff elements that achieve these goals. We include recommendations for specific elements in the following sections.

A. Increase Local Solar Deployment for ESJ Customers

The ESJ Action Plan specifically identified a goal to increase investment in clean energy resources to benefit ESJ communities.[35] In addition, Goal 4 aims to increase climate resiliency in ESJ communities.[36] Both of these objectives can be achieved by adopting program elements that increase local solar deployment for ESJ customers. Multiple program elements and features can support increased rooftop solar and solar-plus-storage adoption by ESJ customers.

[35] ESJ Action Plan at 15.
[36] *Id.* at 17.

1. Low-income Eligibility Requirements Consistent with the ESJ Action Plan

First, income eligibility requirements for any equity program should be made consistent with the ESJ Action Plan. The ESJ Action Plan specifically identifies low-income customers as those with household incomes equal to or less than 80% of area median income ("AMI").[37] Using the 80% AMI threshold is an appropriate representation of low-income status in California because it provides regional context. The California Department of Housing and Community Development maintains low-income designations for each county. Because the 80% AMI threshold incorporates locational context, it reflects local costs-of-living far better than the 200% federal poverty threshold used for CARE and FERA eligibility.[38] Using a national threshold does not adequately capture the California housing and living costs that vary by county and are generally higher than the national average.

Using the 80% AMI eligibility is also practical, as other Commission-approved programs already use the same eligibility threshold. The Self-Generation Incentive Program ("SGIP") Equity Program uses the same low-income threshold of 80% AMI.[39] It is worth noting that other stakeholders support the 80% AMI designation in other programs.[40] Public Advocates specifically highlighted the SGIP Equity Fund as one of the programs "most likely to successfully increase successor tariff adoption" in disadvantaged communities.[41]

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[37] ESJ Action Plan at 10 nn.6-7.
[38] *CARE/FERA Programs: Discounts on energy bills for income qualified households*, CPUC, *available at* https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/electric-costs/care-fera-program (last visited Aug. 30, 2021).
[39] *Participating in Self-Generation Incentive Program (SGIP)*, CPUC, *available at* https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/demand-side-management/self-generation-incentive-program/participating-in-self-generation-incentive-program-sgip (last visited Aug. 27, 2021); *see* also Tr. Vol. 12 at 2137:11-16 (Buchholz, PAO).
[40] Tr. Vol. 12 at 2137:11-22 (Buchholz, PAO) (supporting the 80 percent AMI definition as an eligibility requirement for the SGIP equity fund).
[41] Ex. PAO-01 at 3-59:12-13 ("As explained below, the programs that are most likely to successfully increase successor tariff adoption in DACs based on the criteria above are DAC-GT and the SGIP Equity Fund.").

2. Location-Based Eligibility Requirements Consistent with the ESJ Action Plan

Second, any location-based eligibility requirements for a NEM equity program should be made consistent with the ESJ Action Plan. The ESJ Action Plan specifically identified the following areas as ESJ communities:

- Disadvantaged communities located in the top 25 percentiles of communities scored by Cal EPA's CalEnviroScreen;
- All Tribal Lands;
- Low-income households (defined as those with household incomes below 80 percent of the Area Median Income); and,
- Low-income census tracts (defined as census tracts with average household incomes less than 80 percent area or state median income).[42]

ESJ communities cover more areas than disadvantaged communities alone, but these criteria are also being used in other Commission programs, and it is appropriate to standardize these definitions across proceedings and programs.

B. Ensure Payback Periods and Bill Savings for ESJ Customers Are Equal to or Greater than Those Offered via NEM 2.0

As we described above, customer economics are the primary consideration for most customers, including low-income customers.[43] Payback periods and bill savings are two different ways of looking at the same equation: when will participating customers break even (if owning a system) and regain their initial capital outlay (in years), and the level of immediate bill savings to be sustained over a defined period of time (if TPO) so interested customers can participate in the benefits of locally sourced clean energy. Any equity program should ensure that participants can achieve a reasonable payback period and adequate monthly bill savings for their participation. This could be achieved in a number of ways, including the following.

1. Ensure that CARE and FERA Customers Receive Non-Discounted Value for their Solar Exports

The Joint Parties recommend to decouple the export rate from the retail rate because current NEM 1.0 and NEM 2.0 CARE/FERA customers receive reduced bill savings due to their exports being reduced by 18%-35% depending on family size.[44] The NEM 1.0 and NEM 2.0

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[42] Ex. GRD-02 at 7:19-8:1 (internal citations omitted).
[43] Tr. Vol. 3 at 437:19-23 (Morien, Joint IOUs); Ex. GRD-01 at 13:10-12.
[44] California Public Utilities Commission, *Family Electric Rate Assistance Program (FERA)* webpage*, https://www.cpuc.ca.gov/consumer-support/financial-assistance-savings-and-*

structure also limits the ability of TPO providers to find a reasonable value proposition that both parties (the service provider and the service recipient) find mutually beneficial. However, we want to maintain the CARE/FERA discount on energy purchases because this is a critical bill protection tool for vulnerable ratepayers. To simplify implementation, we propose to maintain the current metering setup but simply crediting the exports at the Non-CARE 2021 TOU rate. Furthermore, increasing the export value while maintaining the CARE discount on BTM results in net bill savings compared to removing the CARE discount altogether.

Any proposal that provides CARE and FERA customers with an export value below the current discounted retail rate would only further exacerbate this problem. For example, the Joint IOUs proposed that CARE and FERA customers should receive "export compensation at the full (non-discounted) avoided cost as determined by the Avoided Cost Calculator available to other Reform Tariff customers"[45] which is both well below the discounted retail rate that CARE and FERA customers currently receive in export compensation. The Joint IOUs' proposal would therefore only worsen this inequity.

2. Ensure Bill Savings and Payback Periods for ESJ Customers Consistent with NEM 2.0

ESJ customers have not been able to participate in the NEM tariff at similar levels to wealthier customers. It is entirely appropriate for the Commission to afford ESJ customers the opportunity to reap economic benefits of a NEM tariff for a longer period than non-ESJ customers to produce a more equitable outcome. Some portion of low-income customers have found NEM bill savings levels to be acceptable.[46] This policy is designed to increase bill savings for the lowest income customers while also ensuring that the equity tariff does no harm to the bill savings for low-income customers that were established in NEM 2.0. Therefore, we recommend that the Commission require any equity proposal to produce equal or greater bill savings and payback periods in a successor equity tariff.

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discounts/family-electric-rate-assistance-program (describing 18% discount for FERA customers). California Public Utilities Commission, *California Alternative Rates for Energy* webpage, https*://www.cpuc.ca.gov/care/* (describing 30-35% discount for CARE customers).

[45] Ex. IOU-01 at 203:28-204:1 (internal footnotes omitted).

[46] Ex. GRD-01 at 24:11-13.

3. Prohibit fixed charges for ESJ customers participating in NEM 3.0

The Commission should aim to ensure that solar adoption by ESJ customers continues at or exceeds its current pace. Implementing a new fixed monthly charge for this demographic cannot reasonably be expected to advance that goal.[47] In response to questioning around the Joint IOUs' income qualified proposal, the utilities could not produce any persuasive explanation of how the addition of a new fixed charge would accelerate low-income solar adoption.[48] A new fixed charge would decrease the bill savings and extend the payback period for any ESJ customer. Such fixed charges are not appropriate and should not be adopted.

4. Exempt Low-income Solar Customers from any Requirement to Adopt an Electrification Rate

Low-income solar customers should not be required to take service on an underlying untiered TOU rate, otherwise known as an electrification rate. Requiring greater TOU differentials for low-income clean energy customers on their underlying rate could significantly increase their energy bills, since many low-income customers have difficulty load-shifting and cannot easily afford smart appliances that would help them load shift.[49]

C. Allow Third-Party Ownership Models that Help ESJ Communities, Including Low-income Households, to Adopt Solar

As described in Section II.A above, PPA and leasing models have been used in low-income solar markets for years in CA and supported by the Commission.[50] PAO suggests that third-party ownership arrangements should not be prioritized in an equity tariff because they provide less benefits to low-income customers than ownership.[51] While direct ownership may provide additional benefits to low-income customers, it is critical to note that third-party

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[47] Tr. Vol. 11 at 1896:2-6 (Wright, Joint IOUs) (stating the new, decreased export compensation will not help accelerate solar adoption by low-income customers); *Id.* at 1897:17-18 (supporting no increased funding for low-income solar incentive programs; *Id.* at 1893:22-1894:1 (declining to state that the new grid charge will accelerate solar adoption by low-income customers.

[48] *Id.*

[49] Ex. GRD-1 at 19:17-20 (noting that Policy A would allow low-income successor tariff participants to stay on their current underlying rates and fixing export rates at current TOU rate schedules would not widen TOU differentials for low-income customers because "doing so could significantly increase their energy bills, since many low-income customers have difficulty load-shifting and cannot afford smart appliances that would help them load shift.").

[50] Ex. GRD-02 at 5:21-24 (citing Ex. GRD-03, Eric O'Shaughnessy et al., Report).

[51] Ex. PAO-01 at 2-34:13-14 ("Therefore, third-party ownership arrangements should not be prioritized as a means of equalizing access to NEM for CARE and DAC customers.").

ownership arrangements have proven to be an effective tool for providing low-income customers access to rooftop solar where other incentives have failed. Third-party ownership models are included in at least three California low-income solar incentive programs (SASH 2.0, DAC SASH, and SOMAH) and have a proven track record of supporting rooftop solar adoption by low-income customers.[52] The availability of third-party leasing has improved solar adoption rates among low and moderate income customers where these options have been made available.[53] Customers in the lowest income brackets (earning less than 25% of county AMI) made use of these options most frequently, suggesting that flexible ownership options provide the most vulnerable customers with a necessary service.[54]

Given the inclusion of PPA and leasing options in current low-income solar programs and the NEM Lookback Study's support for low-income solar programs, the Commission should recognize that third-party ownership models can be an effective tool for helping low-income customers overcome barriers to solar and storage adoption. We recommend that the Commission ensure that third-party ownership models remain an available option for low-income customers.

D. Incent Adoption of Storage by ESJ Customers

ESJ customers face similar barriers to adopting storage as to adopting solar, but they also face additional vulnerability to economic, health, and other impacts from power outages or shutoffs. Resilience has a considerable value, and the IOUs claimed that resiliency is a central consideration for solar and storage adoption. The addition of storage provides significant additional resilience benefits to the customer as well as additional value to the grid by displacing emissions-intensive energy in the evening. Given the evident value of storage when paired with solar, the Commission should aim to ensure that ESJ customers have a strong incentive to adopt storage alongside any existing or new solar system. Program elements that could incent the adoption of storage by ESJ customers include the following.

[52] Ex. GRD-02 at 5:21-24.
[53] Ex. GRD-03, O'Shaughnessy et al., Report at 87.
[54] *Id.*

1. Prohibit Fixed Charges for ESJ Customers to Avoid Disincentivizing Storage

Fixed charges tend to disincentivize customers from installing storage, because they reduce the economic value of using storage to reduce on-peak energy use. This is another reason the Commission should prohibit ESJ customers from paying NEM-specific fixed charges.

2. Provide Funding to Overcome Upfront Installation Costs for Low-Income Customers

Upfront installation costs are an identified barrier to low-income customer participation in renewable energy adoption. As resilience becomes increasingly necessary due to outages and shutoffs, upfront funding for storage systems would be a powerful pathway to adoption for low-income customers. Currently, funding for storage systems is available to low-income customers through the Self-Generation Incentive Program ("SGIP") Equity Program. A similar grant of funds to defray storage installation and/or purchase costs in a NEM proposal would assist low-income customer adoption while also providing clean renewable energy during peak load conditions.

V. Issue 5: The proposals that should be adopted as a successor to the current NEM tariff and the timeline for implementation

GRID Alternatives, Vote Solar, and Sierra Club propose two equity programs for the NEM successor tariff: Policy A and Policy B. Both of these policies comply with statutory authority and advance the Guiding Principles adopted in D. 21-02-007. Policy A provides an alternative equity tariff to grow solar adoption among low-income households. Policy B is specifically tailored to foster community solar and storage adoption in disadvantaged communities as well as low-income and Tribal communities.

The Joint Parties propose that each equity program be assessed with an opportunity to update the program in 2027, with the potential to adjust ESJ alternatives. At this point, it is clear that low-income and ESJ communities need incentives to reach demographic parity with non-low-income customers. Over the long term, there is a lot of uncertainty over future rates and the cost of renewable energy. Accordingly, the Commission should evaluate any adopted equity proposals on a regular basis.

A. Policy A: Reduce the Energy Burden for Low-Income Customers by Fixing the Export Values to 2021 NEM 2.0 Rates

The Joint Parties propose that "low-income customers, defined as those with incomes at or below 80% of AMI, have their NEM export value equalized to non-low-income customers by decoupling income-eligible customers' NEM export rates from their retail rates and fixing exports at value equal to the customer's IOU's 2021 default residential TOU rate."[55] Participating customers would be guaranteed their export rate for a legacy period of 20 years from their interconnection date.[56] These export rates would be fixed to 2021 values, so export rates would not change even if the customer's underlying import TOU rates or TOU periods change during the legacy period.[57]

Low-income customers who participate in Policy A should not be required to take service on an underlying untiered TOU rate, otherwise known as an electrification rate. Requiring greater TOU differentials for low-income clean energy customers on their underlying rate could significantly increase their energy bills, since many low-income customers have difficulty load-shifting and cannot easily afford smart appliances that would help them load shift.[58]

Under Policy A, participants in the Solar on Multifamily Affordable Housing ("SOMAH") program would have the option to maintain their current tariff for exports as well. This is because SOMAH participants currently have the ability to exempt themselves from the NEM 2.0 requirement to take service on a TOU rate. To protect NEM 3.0 SOMAH customers' savings, Policy A would allow future NEM 3.0 SOMAH customers' exports to remain pegged to their existing tariff, if they do not choose to enroll on a TOU rate.

The primary aim of Policy A is to correct the CARE and FERA discounted value impact described above in Section III.B.1. Specifically, low-income customers on a CARE or FERA rate receive lower solar bill savings from a rooftop solar system compared to wealthier customers due to their discounted rates.[59] Because a CARE or FERA customer's solar exports are netted against their consumption, they functionally receive a discounted value for the energy that they

[55] Ex. GRD-01 at 8:13-17.
[56] *Id.* at 8:17-18.
[57] *Id.* at 8:18-21.
[58] Ex. IOU-12, Proposal of GRID Alternatives, Vote Solar, and Sierra Club for a Net Energy Metering Successor Tariff, at 8-9 (Mar. 15, 2021); Ex. GRD-01 at 19: 17-20.
[59] Ex. GRD-01 at 8:23-27.

provide to the grid. Policy A would ensure that CARE and FERA customers would receive a fair return on the energy that they export to the grid.

The second aim of Policy A is to ensure that other low-income customers (those not on a CARE or FERA rate) would receive an additional incentive in order to overcome existing financial barriers to low-income adoption of clean energy. By setting eligibility at all households with an income below 80% of area median income, this policy would set income eligibility consistent with the ESJ Action Plan's identification of low-income.[60] As described in Section IV.A.1, using the 80% AMI threshold is a far better representation of low-income experience in California because it provides more regional context. Because the 80% AMI threshold incorporates locational context, it better reflects costs-of-living in California than the 200% and 250% federal poverty thresholds used for CARE and FERA eligibility, respectively.

1. Policy A Eligibility

Using the 80% AMI eligibility is also practical, as other Commission-approved programs already use the same eligibility threshold. The SGIP Equity Program uses the same low-income threshold of 80% AMI.[61] It is worth noting that other stakeholders support the 80% AMI designation in other programs.[62] Public Advocates specifically highlighted the SGIP Equity Fund as one program "most likely to successfully increase successor tariff adoption" in disadvantaged communities[63] and specifically does not oppose the use of the 80% AMI low-income threshold in that program.[64]

This eligibility threshold would be no more difficult to implement than the current income threshold for CARE or FERA, as the California Department of Housing and Community Development maintains low-income designations for each county. We propose that household income eligibility be proved in the same manner that customers currently show income eligibility

[60] ESJ Action Plan at 10.
[61] *Participating in Self-Generation Incentive Program (SGIP)*, CPUC, *available at* https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/demand-side-management/self-generation-incentive-program/participating-in-self-generation-incentive-program-sgip (last visited Aug. 27, 2021); *see* also Tr. Vol. 12 at 2137:11-16 (Buchholz, PAO).
[62] Tr. Vol. 12 at 2137:11-22 (Buchholz, PAO).
[63] Ex. PAO-01 at 3-59:12-13 ("As explained below, the programs that are most likely to successfully increase successor tariff adoption in DACs based on the criteria above are DAC-GT and the SGIP Equity Fund.").
[64] Tr. Vol. 12 at 2137:17-22 (Buchholz, PAO).

for CARE or FERA: by providing a prior year federal tax return or alternative documentation for every member in the household to verify income. [65] The IOUs currently accept a broad variety of documentation to prove CARE or FERA eligibility, and we propose that the same range of documentation be accepted to prove eligibility in Policy A.[66] The IOUs would then do a one-time comparison to household income via the charts maintained by the California Department of Housing and Community Development to ensure that the household income is equal to or under 80% AMI.[67]

2. Policy A Export Values

Policy A would allow participating customers to lock in their export credits at 2021 default TOU rates for 20 years.[68] This is an appropriate legacy period for low-income customers because retail rates are expected to continue to increase over the coming years, meaning that rates set at 2021 TOU levels should provide a lower incentive than a net metering structure.[69] Additionally, a locked export rate would provide certainty for customers and, if necessary, solar leasing companies. Financing systems for low-income customers requires additional certainty in order to overcome the financing risk. Incorporating a legacy period would assist in overcoming the difficulty in obtaining financing—a specific risk identified in the 350 Barriers study.

We chose to apply Policy A only to the low-income customer export value, and not also to the bill savings those customers receive from energy produced and consumed behind the meter ("BTM"), in order to reduce administrative complexity. CARE and FERA customers' discounted rates will continue to reduce their BTM bill savings under Policy A, but solving that problem would require an expensive additional meter or an imprecise estimate of the kilowatt-hours generated and consumed BTM every month. It is more reasonable to limit the scope of Policy A to exports, rather than make the policy more complex to administer.

[65] Ex. GRD-01 at 17:5-18:7.
[66] *Id*. at 18:1-7.
[67] *Id*. at 18:8-10.
[68] *E.g.*, *id*. at 11:9-13.
[69] Ex. PCF-35, "CPUC, Utility Costs and Affordability of the Grid of the Future, February 2021" (projecting mega rate increases).

3. Policy A Impacts, Bill Savings, and Payback Periods

Policy A would likely increase solar adoption by low-income customers, in full alignment with the ESJ Action Plan goals by increasing investment in clean energy resources and increasing climate resiliency in ESJ communities. Additionally, it is specifically targeted to overcome identified barriers to solar adoption for ESJ communities. It will significantly boost onsite clean energy deployment among customers in the bottom half of California's income distribution, compared with the reductions in clean energy customer savings that are expected in the residential general market successor tariff that CPUC adopts. The proposal will not only help customer-sited renewable distributed generation to grow sustainably, but will also provide a powerful means for lower-income customers to reduce their total monthly cost-of-living expenses. GRID Alternatives has received feedback from their low-income NEM customers that $40 per month typically clears customers' threshold for desired NEM savings, although individual cases may vary.[70] Policy A would deliver meaningful savings to participating low-income customers.

Policy A would also help sustain low-income solar adoption for non-CARE and FERA customers by having broader eligibility. It would also ensure that CARE and FERA customers receive a fair value for their solar exports.

The projected bill savings for low-income participants under Policy A would be considerable. The Public Advocates Office estimated that low-income Policy A participants would save between 15% and 30% on their bills,[71] a significant savings for a customer segment that faces a high energy burden.[72] Customers would also benefit from maintaining persistent, meaningful bill savings for a defined period of time, leading to increased customer trust and protection.[73] By locking in 2021 residential TOU rates, Policy A would also reduce net cost impacts to nonparticipants over time compared with maintaining NEM 2.0, as retail rates increase.[74] Last, it would simplify the process for modeling cost savings for the developers who

[70] Ex. IOU-12, Proposal of GRID Alternatives, Vote Solar, and Sierra Club for a Net Energy Metering Successor Tariff at 15-16 (Mar. 15, 2021).
[71] Ex. PAO-02 at 5-27:1-2 (Table 5-10)
[72] Tr. Vol. 12 at 2147:22-27 (Buchholz, PAO) (endorsing a program that would deliver 20% bill savings to customers).
[73] Ex. GRD-01 at 19:9-10.
[74] *Id*. at 19:15-16.

want to serve low-income customers, as the customer's export value would be consistent and predictable for a set period of time.[75]

The Commission should consider in this proceeding how a prospective customer will evaluate whether they should adopt customer-sited distributed generation. The easiest method to compare how individual tariff elements add up to form a value proposition is to consider the simple payback period. The simple payback period is just one of many metrics the Commission will consider for a decision, but the longer the customer payback period is for low-income customers, the fewer low-income households and communities will be able to use customer-sited distributed generation: 1) to improve their household and community-level resilience; and 2) to provide the corresponding economic and social benefits.

Generally, low-income customers require a shorter expected payback period than wealthier customers require to adopt customer-sited distributed generation. Below are four tables, recreated from E3's June 15 Study estimates[76] of simple payback periods for select NEM 3.0 proposals. Each table evaluates the simple customer payback from the perspective of a CARE customer accessing the successor tariff in 2023 and in 2030, either for standalone solar or for solar-paired-storage. After each table is a brief summary of relevant observations the Commission should consider when analyzing which tariff elements, when taken together, add up to form a value proposition successor tariff customers will consider when deciding to adopt customer-sited distributed generation.

Table 2[77] and Table 3[78] include E3's projected payback periods for CARE customers who adopt standalone solar or solar-paired-storage in 2023.

[75] *Id*. at 19:21-23.
[76] The Joint Parties do not endorse E3's estimated paybacks as accurate here, given there have been concerns with how the inputs of solar costs impact paybacks, but the information is nonetheless useful as a baseline comparison.
[77] Ex. GRD-02 at 9:12-13 (citing E3, *Cost-Effectiveness of NEM Successor Rate Proposals under Rulemaking 20-08-020: A Comparative Analysis*, CPUC at 36 (June 15, 2021), *available at* https://willdan.app.box.com/s/3jpscul3lbtof5erje7f4bkqkk96uahp. [hereinafter "E3 Cost-Effectiveness Study"])
[78] Ex. GRD-02 at 10:6-7 (citing E3 Cost-Effectiveness Study at 37).

Table 2: Residential Solar, 2023 CARE

Table II. Residential Solar, 2023 CARE			
Proposal	PG&E CARE Customer Payback (yrs.)	SCE CARE Customer Payback (yrs.)	SG&E CARE Customer Payback (yrs.)
NEM 2.0	7	7.7	4.7
Joint IOUs	13.9	14.9	8.6
Cal Advocates	13.5	14.2	9.4
NRDC	10	10.5	8
SEIA/VS	6.7	7.8	4.6
Sierra Club	6.7	7.8	4.4

The SEIA/VS and Sierra Club paybacks noted for CARE customers in 2023 for standalone solar or solar-paired-storage (Table 3 next page) are approximately equal to the current payback estimates for NEM 2.0 CARE customers. The Policy A proposal should reflect precisely the same treatment for low-income customers, defined as households whose income is 80% of AMI or less, which SEIA has supported, so E3 erred in reporting them separately.

Using 2021 NEM 2.0 paybacks as the baseline, the Joint Parties' treatment of CARE customers maintains a reasonable payback period while controlling for future costs. Customer paybacks exceeding ten years generally obstruct the ability for low-income communities to benefit from customer-sited distributed generation, irrespective of how they purchase or finance a system. In stark contrast, as shown in Table 2, the Joint Utilities and Cal Advocates proposals for CARE/FERA customers nearly doubles the payback period for solar-only customers compared to current NEM 2.0 levels, for each IOU.

Table 3: Residential Solar+Storage, 2023 CARE

Table III. Residential Solar+Storage, 2023 CARE			
Proposal	PG&E CARE Customer Payback (yrs.)	SCE CARE Customer Payback (yrs.)	SG&E CARE Customer Payback (yrs.)
NEM 2.0	9.3	8.9	6
Joint IOUs	14.7	12.7	8.8
Cal Advocates	12.2	11.4	8
NRDC	8.2	8.6	8.6
SEIA/VS	9	8.9	9
Sierra Club	9	8.9	6

Similarly, for solar-paired storage systems in 2023, the Joint Utilities and Cal Advocates significantly extend customer paybacks compared to NEM 2.0. Extending payback periods beyond 10 years plainly obstructs the ability for the majority of low-income customers to benefit from customer-sited solar or customer-sited, solar-paired-storage. Instead of further helping ESJ communities to access the benefits of customer-sited solar that wealthier customers have enjoyed for decades, the long payback periods for the Joint Utilities and Cal Advocates proposals would effectively end the ability for these communities to access those same benefits.

Based on this data, the Joint Parties note that if the Joint Utilities or Cal Advocates proposals for income-qualified customers were adopted without serious modification, households' paybacks for these customers would likely put customer-sited solar out of reach for ESJ communities for the greater part of this decade.

The 2030 projections show payback periods that are shorter than 2023 projections for CARE customers, but are still unreasonably long. The Joint Parties' proposal again yields payback periods similar to NEM 2.0 for standalone solar CARE customers in 2030, while continuing to control for future non-participant costs by pegging export value to 2021 rates.

Table 4: Residential Solar, 2030 CARE[79]

Table IV. Residential Solar, 2030 CARE			
Proposal	PG&E CARE Customer Payback (yrs.)	SCE CARE Customer Payback (yrs.)	SG&E CARE Customer Payback (yrs.)
NEM 2.0	4.2	4.6	2.8
Joint IOUs	14.9	12.5	7
Cal Advocates	9.5	9.1	6
NRDC	9.7	10.4	5.5
SEIA/VS	4	4.6	4
Sierra Club	4	4.6	2.1

The Joint Utilities' payback period, for both scenarios, is again nearly doubled compared to NEM 2.0 treatment. Cal Advocates' payback periods improve (compared to 2023 payback periods), but they are still substantially longer than the paybacks yielded by the Joint Parties.

[79] Ex. GRD-01 at 11:1-3.

Table 5: Residential Solar+Storage, 2030 CARE[80]

Table V. Residential Solar+Storage, 2030 CARE			
Proposal	PG&E CARE Customer Payback (yrs.)	SCE CARE Customer Payback (yrs.)	SG&E CARE Customer Payback (yrs.)
NEM 2.0	6.8	6.5	4.4
Joint IOUs	15.6	11	8.8
Cal Advocates	9.4	8.1	5.8
NRDC	8.8	7.7	5.5
SEIA/VS	6.6	6.5	4.4
Sierra Club	6.6	6.5	4.4

The Joint Parties oppose increasing payback periods compared with NEM 2 for ESJ communities who want to access customer-sited clean energy, as the Joint Utilities and other parties have proposed. Instead, we recommend moving in the opposite direction, making local clean energy more affordable and accessible for ESJ communities.

Policy A would also maintain existing protections for SOMAH participants, ensuring that the new equity tariff would coordinate with protections for existing solar incentive programs. Policy A would provide new SOMAH participants the option to maintain their current ability to exempt themselves from the NEM requirement to take service on a TOU rate. This would protect SOMAH customers' savings by allowing these customers to remain pegged to their existing tariff, if they do not choose to enroll on a TOU tariff.

4. Guiding Principles

Policy A is specifically tailored to align with all of the Guiding Principles, with particular support for Guiding Principles (a), (b), (c), (f), and (g). Policy A is a "specific alternative [] designed for growth among residential customers in disadvantaged communities," as required by Public Utilities Code 2827.1(b)(1). The Legislature did not define disadvantaged communities, but the Commission has adopted a working definition based on CalEnviroScreen scores. Policy A is targeted for customers who are low-income, a large number of whom are likely to reside in disadvantaged communities. We expect that Policy A will provide more bill savings to low-income customers than the general market successor tariff, boosting clean energy deployment

[80] *Id*. at 11:8-9.

among customers in the bottom half of California's income distribution, and enabling them to reduce their energy burden while decreasing the greenhouse gas intensity of their energy use.

Policy A also advances Guiding Principle (b) to ensure equity among customers because it increases equitable access to renewable energy and storage for a customer segment that has not previously participated in clean energy adoption at rates proportionate to their population. The Commission has previously determined that the statutory requirements for the successor tariff, such as the requirement for cost-effectiveness, should not be applied in the development of alternatives for disadvantaged communities.[81] However, Policy A would limit impacts to non-participants by fixing export billing credits to 2021 rates, ensuring that the benefits do not increase with time as retail rates are projected to increase substantially in coming years. Maintaining bill savings will be important to allow these customers to decarbonize their electricity use while also making it financially easier for them to adopt electrification technologies.

Policy A also aligns with Guiding Principle (c), (f), and (g) by increasing customer protection and transparency through predictable, consistent bill savings and a reasonable payback period in a relatively simple and transparent way. This policy will allow developers to accurately and confidently model future bill savings, reducing the odds that a low-income customer will face uncertainty about their future savings. This will also contribute to building market trust and strengthening relationships between low-income customers and developers.

B. Policy B: Preserve the NEM 2.0 Rates for Projects Owned and Controlled by the Community

In Policy B, the Joint Parties propose that clean distributed solar and solar-plus-storage projects that are (1) located in an ESJ community, (2) owned and controlled by the community, and (3) benefit ESJ communities be allowed to retain the NEM 2.0 structure.[82] After proving eligibility, project sponsors would be able to preserve the benefits of the NEM 2.0 structure—

[81] D.18-06-027 at 10 ("As noted in D.16-01-044, parties argue, and we find, that the statutory criteria for the successor tariff, such as the requirement to ensure that the total costs are approximately equivalent to total benefits, should not be applied in the development of alternatives for DACs." Internal citations omitted.).
[82] Ex. GRD-01 at 21:8-10].

meaning that exports are valued at the participant's full retail rate, minus non-bypassable charges—for 20 years from the date of interconnection.[83]

1. Policy B Eligibility

Project sponsors would need to prove that the project is located in an ESJ community as defined by the ESJ Action Plan, meaning that it is located in at least one of the following:

- A disadvantaged community located in the top 25 percentiles of communities scored by Cal EPA's CalEnviroScreen;
- A Tribal Land;
- A low-income household (defined as those with household incomes below 80 percent of the Area Median Income); or
- A low-income census tract (defined as census tract with average household incomes less than 80 percent area or state median income).[84]

In addition, the project sponsor would need to show that the project is owned and controlled by the community. This could be shown in any of the following ways:

- A NEM project taking service on a residential tariff that is owned by a California cooperative corporation, as defined by the California Corporations Code, or a nonprofit organization;
- A NEM project taking service on a commercial or industrial tariff that is owned by a California cooperative corporation or nonprofit organization (and which may be located at private, government or other types of properties), or
- A NEM project owned by the state, a county, a city, a city and a county, or a California community college district.[85]

We clarify that projects owned by nonprofit organizations and projects owned by a state, county, city, city and a county, or a California community college district should require no further evidence to confirm that the project provides benefits to ESJ communities. Cooperative corporations, however, should be required to make an additional showing that not only is the project located in an ESJ community, but all of the project beneficiaries also reside in ESJ communities. Cooperatives deserve this additional scrutiny in order to ensure that non-ESJ communities do not organize themselves to build net metered projects in ESJ communities in order to access savings flowing from NEM 2.0 under Policy B, which is intended to serve ESJ communities. Cooperative corporations could show this by providing either:

[83] *Id*. at 21:15-17.
[84] Ex. GRD-02 at 7:19-8:1.
[85] Ex. GRD-01 at 21:19-29.

1. The articles of incorporation establishing the cooperative corporation demonstrating a requirement that all individual members reside in an ESJ community as defined by the ESJ action plan; or
2. Documentation proving that each cooperative corporation member provides address or income verification establishing eligibility.

2. Policy B Impacts, Bill Savings, and Payback Periods

Policy B would increase the ability of ESJ communities to deploy clean distributed energy with local benefits and increased resiliency. Policy B would align with the ESJ Action Plan by investing in clean energy resources in ESJ communities, increases climate resiliency, and provides economic and workforce development opportunities. It would also lower barriers to clean energy adoption by providing clear, sustained bill savings during the legacy period.

Participant savings from Policy B were not modeled by E3 in its June 2021 analysis. However, Table 5.5 of the Lookback Study estimated paybacks under NEM 2.0 by customer sector. Many projects eligible for Policy B—those owned by nonprofits and governments and located on buildings on commercial tariffs—would be part of the commercial sector, which the Lookback Study estimates would pay back on average between 10.7 and 15.8 years. Some other projects eligible for Policy B—those owned by cooperatives and located on residential buildings, for example—would have average paybacks of 7.9 to 10.8 years, according the Lookback Study's NEM 2.0 analysis.

Table 6: Summary of Payback Results by Sector and Utility[86]

	Weighted Average Payback Years			
Utility	**Agriculture**	**Commercial**	**Industrial**	**Residential**
PG&E	9.4	10.9	13.4	10.2
SCE	16.5	15.8	18.3	10.8
SDG&E	13.1	10.7	13.4	7.9

This policy would also enable ESJ communities to pool resources and deploy community solar-scale systems to power Community Resilience Hubs while ensuring certain, steady bill savings. It would promote "equitable access to solar for customers who have historically been unable to benefit from existing NEM policies.[87] Many ESJ communities face barriers to solar and solar-plus-storage adoption similar to low-income customers, including lack of disposable income and lack of land or building ownership.[88] However, enabling communities to come

[86] NEM Lookback Study at 85 (Table 5-5).
[87] Ex. GRD-01 at 22:2-3.
[88] *Id.* at 22:5-7.

together, pool resources, and develop a community project that provides economic benefits and energy resilience is a worthy policy.

3. Guiding Principles

Like Policy A, Policy B is specifically tailored to align with all of the Guiding Principles, with particular support for Guiding Principles (b), (c), (f), and (g). Policy B is also a "specific alternative [] designed for growth among residential customers in disadvantaged communities," as required by Public Utilities Code 2827.1(b)(1). This policy is specifically targeted to ESJ Communities, which includes disadvantaged communities as well as other vulnerable groups identified in the ESJ Action Plan. Policy B will provide savings to renewable energy projects that provide direct benefits to ESJ communities. This will advance equity among customers as required in Guiding Principle (b) because it will enable communities that have been left behind in energy infrastructure and planning to adopt renewable energy and potentially storage.

Policy B would also limit impacts to non-participants by setting a threshold for eligibility. Policy B projects must be located in an ESJ community, be owned and controlled by the community, and provide benefits to ESJ community members. This is a reasonable threshold for obtaining the bill savings established in NEM 2.0.

C. The Commission Should Not Adopt the IOU Income-Qualified Discount Proposal Because It Will Erode Bill Savings for Participants

The Commission should reject the IOUs' income-qualified proposal because it will reduce bill savings for participants and add new monthly fixed costs. Despite the Joint IOUs' voiced concern for the gap in solar adoption rates between low-income and wealthy customers, the IOU proposal will do nothing to actually increase solar adoption by low-income customers. There are three elements of the Joint IOUs' proposal that will frustrate the ability of low-income customers to adopt rooftop solar. At hearing, the Joint IOUs could provide no explanation of how any element—much less the entire income-qualified proposal—would increase solar adoption by low-income customers compared with today's levels.[89]

[89] Tr. Vol. 11 at 1896:2-6 (Wright, Joint IOUs) (stating the new, decreased export compensation will not help accelerate solar adoption by low-income customers); *Id.* at 1897:17-18 (supporting no increased funding for low-income solar incentive programs; *Id.* at 1893:22-1894:1 (declining to state that the new grid charge will accelerate solar adoption by low-income customers.

First, the Joint IOUs' proposal will worsen the CARE and FERA defect in NEM 2.0. Under NEM 2.0, CARE and FERA NEM participants receive a discount on their imported energy, and their exported energy is also discounted, reducing the bill savings from their solar system.[90] The Joint IOUs acknowledged that CARE and FERA customers currently receive a lower value for their solar exports than non-CARE and non-FERA customers receive.[91] Despite this, the Joint IOUs' income-qualified proposal will further reduce the value that CARE and FERA customers will receive.[92] Under the Joint IOUs' proposal, CARE and FERA income-qualified customers will receive an even lower export compensation: the avoided cost value as determined by the Avoided Cost Calculator ("ACC").[93]

Second, the Joint IOUs' proposal will impose a new monthly customer charge on income-qualified customers, ranging from $12.02 in SCE territory to $24.20 in SDG&E territory.[94] The Joint IOUs propose that income-qualified customers receive no discount on this new fee. The Joint IOUs could provide no explanation for how this program element would increase low-income customer adoption.[95]

Third, the Joint IOUs propose to add a monthly Grid Benefits Charge ("GBC") to income-qualified customers at a rate of $1.50/kW AC.[96] Although the IOUs are suggesting that income-qualified customers receive a discounted GBC, this new low-income charge still constitutes a new monthly charge in addition to the monthly customer charge plus the decreased export value.

Further, eligibility for the Joint IOUs' income-qualified program would be limited only to CARE and FERA customers, not to other low-income customers.[97] By restricting eligibility to these customers only, the Joint IOUs' proposal has severely limited potential for impact. But the

[90] Ex. GRD-01 at 3:13-14.
[91] Ex. IOU-01 at 15:25-29 ("Because the NEM program is tied to retail rates, the program provides better value for higher-income customers than those income-qualified customers on discounted rate plans (e.g., California Alternate Rates for Energy (CARE) program)").
[92] Ex. GRD-02 at 13:22-24.
[93] Ex. IOU-01 at 203:28 -204:1.
[94] *Id*. at 111:25-123.
[95] Tr. Vol. 11 at 1893:13-23 (Wright, Joint IOUs) (declining to state which, if any, element of the IOU proposal would accelerate solar adoption among low-income customers).
[96] Ex. IOU-01 at 169:2-3.
[97] *Id*. at 166 (Table V-36) (only CARE/FERA customers will be eligible).

failure to include any meaningful bill savings ensures that this proposal will have no impact because no customers will have any reason to participate.

No element of the Joint IOUs' proposal will accelerate solar adoption by low-income customers. When asked which element of the income-qualified proposal would accelerate low-income solar adoption, the Joint IOUs' witness could not identify a single element.[98] The Commission should reject the Joint IOUs' income-qualified proposal in its entirety.

D. The Commission Should Adopt the STORE Proposal with Necessary Revisions

The Joint Parties support some elements of the Joint IOUs' STORE proposal. This proposal would offset the entire cost of a battery, provided that the customer is either:

1. A CARE or FERA customer in a single-family home with standalone, individually dedicated solar (i.e. NEM 1.0 or NEM 2.0 customer) who agrees to transition to the successor tariff; or
2. A new solar CARE/FERA enrolled customer installing solar at their residence under the successor tariff.[99]

We agree that this program would offer long-term energy bill savings to participating customers,[100] engage participating customers in early adoption of behind-the-meter storage technology, and generate grid benefits for all customers through utility dispatch during crucial times.[101] These are all elements with the potential to advance ESJ Action Plan goals, as well as the guiding principles of this proceeding.

However, four elements of the STORE proposal would need to be changed before adoption by the Commission.[102]

First, the underlying solar tariff needs to be accessible and affordable to low-income customers. A battery requires an onsite renewable energy source in order to generate emissions-free power, and the simplest way to do this is to pair a battery with solar. Therefore, success of

[98] Tr. Vol. 11 at 1893:13-1897:12 (Wright, IOU) (asking which element of the income-qualified program would accelerate low-income solar adoption, vague references to the whole in combination with existing solar incentive programs at current budget levels).
[99] Ex. GRD-02 at 17:8-14 (citing Ex. IOU-01 at 173-74, 176).
[100] *Id*. at 17:25-26.
[101] *Id*. at 17:25-18:4 (citing Ex. IOU-01, 173).
[102] *Id*. at 18:28-20:9.

the STORE program relies on a reasonable underlying solar tariff that would allow a low-income customer to recognize immediate and sustained bill savings.

Second, the income eligibility threshold for the STORE program should be expanded to include households with incomes at or below 80% of AMI. The Joint IOUs propose that the STORE program be available only to CARE and FERA customers, meaning that the households must make less than 200% of the federal poverty level. This metric is not appropriate for this program. Using a household income threshold of at or below 80% AMI would better reflect which households are actually low-income in California because it provides some regional consideration for California costs of living. This is far superior to a federal poverty level that makes no distinctions between costs of living in California versus Texas or New Hampshire. Additionally, the 80% AMI low-income threshold is consistent with the SGIP Equity Fund as well as the income thresholds identified by in the ESJ Action Plan.

Third, we recommend that the STORE program adopt measures to optimize program administration efficiency, which in turn must be based on community trust. One means to improve program administration from the community perspective would be to incorporate a third-party program administrator or solicit a competitive request for proposal for a program administrator. It currently appears that the Joint IOUs envision some mix of administering the program and outsourcing the installation, but we recommend that the Commission require a program administrator in order to ensure transparency and accountability. The Joint IOUs stated at the hearing that they intend to have competitive bids for program administrator,[103] but the IOU-01 testimony suggests they only intend a competitive bid for the underlying equipment, not program administration.[104] This program element requires clarification. In addition, the STORE program should take advantage of, and reinforce, the opportunities, resources, and community relationships already provided by existing low-income clean energy programs such as DAC-SASH. Leveraging these existing programs to the greatest extent feasible will help ensure the pilot is based on community trust and ultimately successful. Any additional resources needed to

[103] Tr. Vol. 11 at 1900:26-1901:4 (Wright, IOU) (stating the Joint IOUs propose either hiring a program implementer via a competitive bid process or delivering direct grants to customers).
[104] Ex. IOU-01 at 173:19-20, 176:15-17.

incorporate elements of the STORE program into these existing clean energy programs would be well spent toward ensuring overall program success."

Last, we recommend that the Commission require the STORE program to balance between participant bill savings and grid needs. GRID Alternatives, Vote Solar, and Sierra Club are cautious of the Joint IOUs' recommendation that existing NEM CARE and FERA customers participating in the STORE Pilot be required to transition to the NEM successor tariff.[105] Specific elements of an adopted NEM successor tariff are unknown, and low-income participants must be protected from excessive monthly fixed charges. Without such protections, low-income customers who participate in the STORE program could face a large monthly customer charge plus a Grid Benefits Charge that together could exceed $90 per month, based on the IOU proposal.[106] Even if low-income participants receive a temporary reduction in the GBC, this is too high a price for low-income households to pay for energy resilience.

Most parties, including the Joint Parties, are clear that the principal motivation for whether to adopt solar is to save money and/or manage their electricity bills.[107] The main drivers for solar-paired storage adoption are bill savings and energy resilience.[108] Furthermore, the Joint IOUs observe, "[r]esilience reigns supreme. 65% of [storage] installers say that resilience - having backup power in the event of a major storm event or power outage - is the primary driver of consumer interest in storage, a sizable increase from 2019."[109]

As power outages and shutoffs drive the adoption of distributed storage, it is important to recognize that the loss of power is a new and unwelcome motivation to adopt solar that increasingly competes with low-income customers' need to realize bill savings. At the same time, the Joint IOUs have a unique position from which to influence the reliability of power to the same customers. The greater the need for resilience, the smaller the bill savings that

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[105] *Id*. at 176:25-26.
[106] If the Income Qualified Discount were adopted and then permitted to expire, an SDG&E CARE customer could pay a $24.10/month default rate fixed charge plus a $14.06/kw/month Grid Benefits Charge. For a 5kW system, this equals $94.38/month.
[107] Ex. IOU-01 at 42:16-43:1 ("For solar, the principal motivation for household adopters is to save money on and/or manage their electricity bills…").
[108] *Id*. at 43:5-6 ("[t]he same principal motivation [bill savings] also tends to drive households' adoption of storage, along with one other significant factor: ensuring access to electricity during power outages.").
[109] *Id.* at 43:7-9.

customers will tolerate in order to adopt storage. However, low-income customers already face barriers to adopting storage. In this scenario, there would be a race to the bottom of bill savings each time the resilience need increased. Due to this tradeoff between the utilities' position of power and the need for low-income customers to have reliable energy, the Joint Parties recommend additional protection for low-income customers before imposing any new successor tariff rate in exchange for additional resiliency.

In order to ensure that low-income customers can obtain reasonable bill savings from a solar-paired storage system, they will need an underlying tariff that offers such support, like the Joint Parties' Policy A alongside the STORE pilot proposal.

With the above modifications, the Joint Parties support the STORE proposal.

VI. Conclusion

For the above stated reasons, the Joint Parties urge the Commission to adopt multiple equity-focused programs in the successor tariff. We respectfully request that the Commission:

1. Adopt Policy A to ensure low-income customers have the opportunity to access the bill savings and resilience benefits associated with the NEM 2.0 tariff and increase demographic parity.
2. Adopt Policy B to provide a pathway for Environmental and Social Justice communities to own and operate distributed generation and storage projects in their communities and to their benefit.
3. Reject the Joint IOUs' income-qualified proposal.
4. Reject PAO's recommendation that third-party owned models should be disallowed for low-income participants.
5. Modify and adopt the Joint IOUs' STORE pilot, incorporating an underlying tariff that is accessible to low-income customers with a household income equal to or less than 80% area median income, and incorporating a third-party program administrator or enhance the STORE program with existing program infrastructure.

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Respectfully submitted,

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