

NEM 3.0 Update No.4

As of December 16, 2021

The latest on what California's next Net Metering policy might look like, and how it will affect solar projects and owners, from the experts at Sage Energy Consulting.

Latest News

The California Public Utilities Commission (CPUC) released the long-awaited [Proposed Decision](#) (PD) in the NEM-3 proceeding on December 13, proposing dramatic changes to Net Energy Metering (NEM) that will significantly reduce the value of solar PV energy. The PD is scheduled for a final decision on or after January 27, 2022, with the new NEM 3.0 tariff becoming effective four months later. The transition from NEM 2.0 to 3.0 could take place as early as May 27, 2022, for customers of the three regulated utilities, Pacific Gas & Electric (PG&E), Southern California Edison (SCE), and San Diego Gas & Electric (SDGE).

NEM 3.0 as proposed in the PD will result in a steep reduction in the value of energy produced by residential and commercial solar PV systems in California, on the order of 20 to 75 percent. Those impacted will include current residential solar customers grandfathered under NEM 1.0 or 2.0 who would see their grandfathering decreased from 20 to 15 years, transitioning them to NEM 3 while their systems still have plenty of life and while many will still be paying off loans and power purchase agreements (PPAs). Others impacted are customers who want to expand their systems, which could bump them to NEM 3, and all future solar customers. The reduction in solar energy value envisioned by the PD will significantly add to the challenge facing the industry from the step-down in the federal solar tax credit.

Due to the loss of value associated with NEM 3.0, any planned or anticipated California solar project should do everything possible to be [grandfathered](#) under the current NEM 2.0 rules. Sage can develop and submit the interconnection package for commercial and public clients, or if you've already selected a solar project contractor, they can develop and submit the application. Unfortunately, a new and unanticipated provision has been introduced in the PD that requires solar projects to have signed construction/financing contracts within 120 days of the final decision to qualify for NEM 2.0 grandfathering. That means **project contracts must be signed by May 27th**.

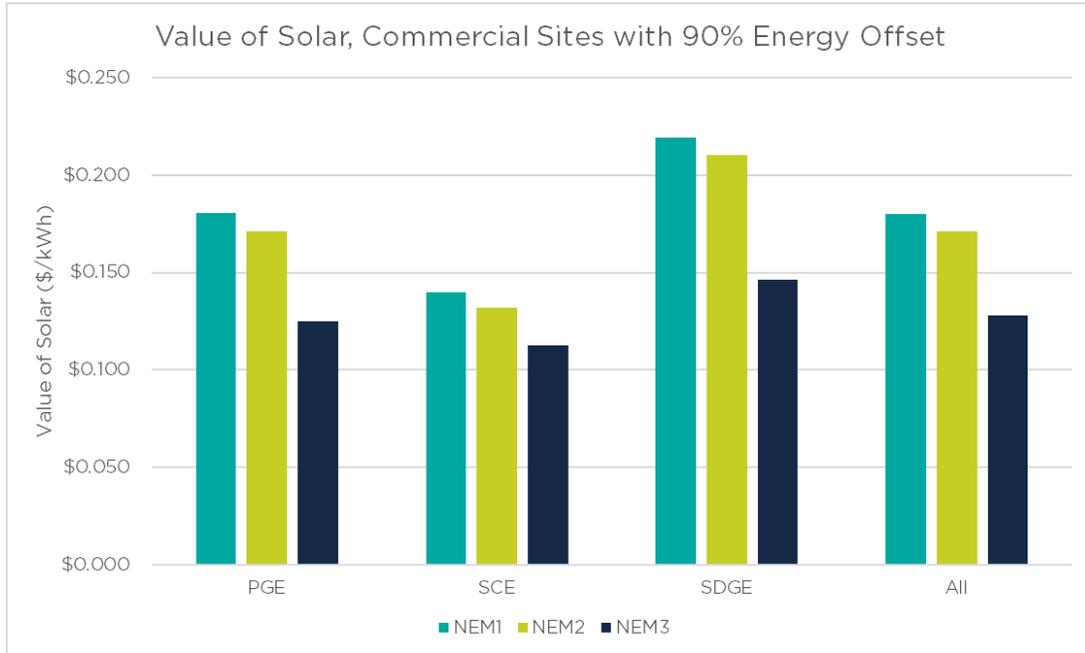
The NEM 3.0 proceeding is far from over. The PD was released on December 13 which started a minimum 30-day public comment period. Due to CPUC Commission meeting schedule, the earliest the PD could be adopted by the CPUC would be January 27, 2022. This leaves 47 days for the public to comment on the proceeding and the CPUC to make changes to the PD or for one of the commissioners to introduce an Alternate Proposed Decision (APD). We encourage you to make your voice heard by submitting letters to the CPUC.

Throughout the decision process, we will continue these periodic updates, to which anyone can subscribe at no cost here:

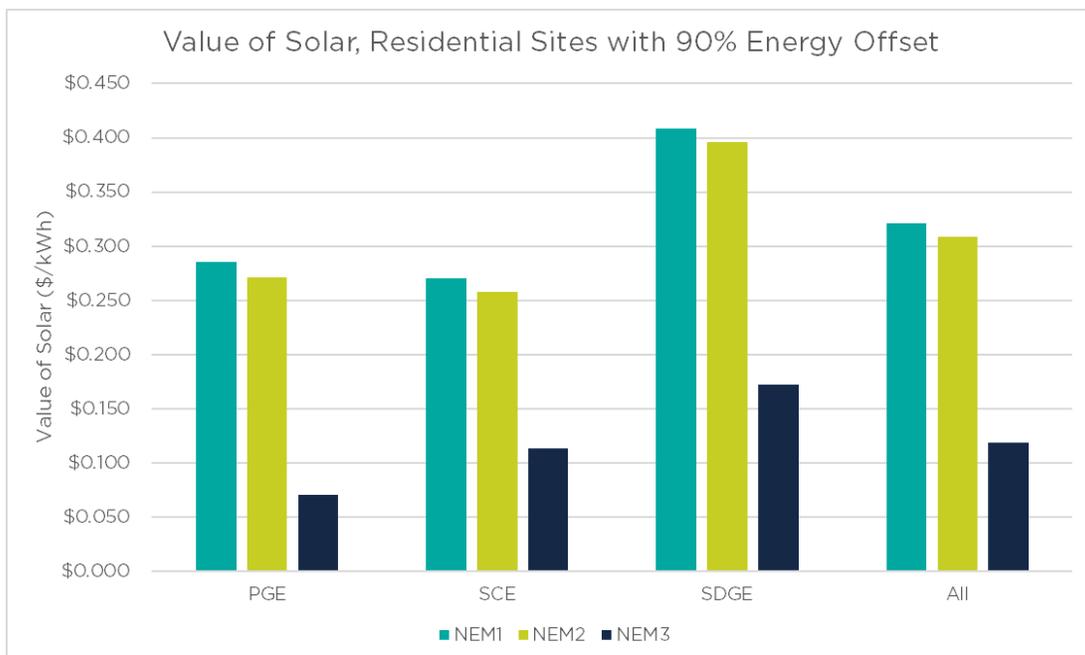
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Impacts of December 13 PD NEM 3.0 on Solar PV Energy Value

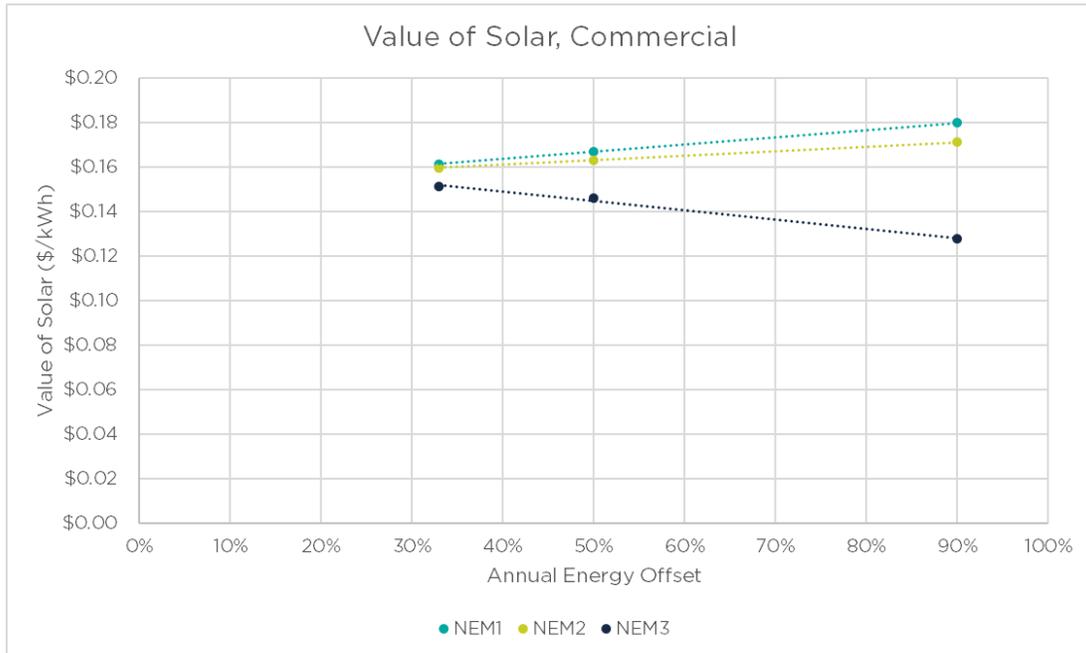
Depending on the final structure of the NEM 3.0 tariff, and the customer's existing rates, NEM 3.0 could result in a mild to dramatic loss in solar PV energy value. Sage's modeling of the PD shows that commercial customers with a solar PV system sized to offset 90% of their load, a typical target system size, would see a loss in the value of solar in the range of 15%-30%.



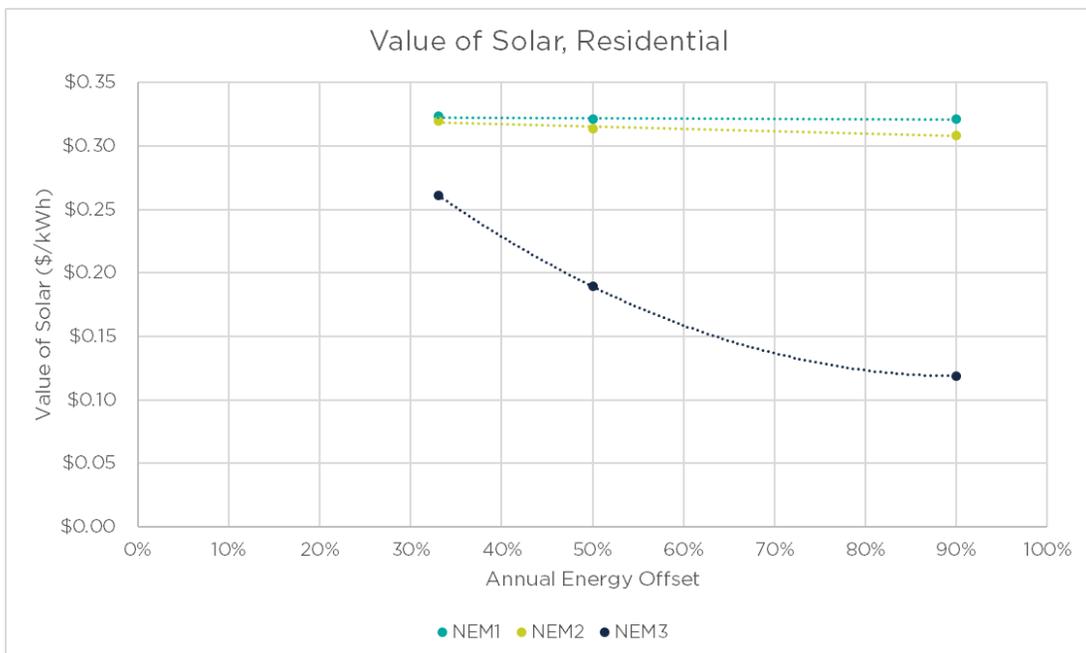
Residential systems modeled under the same assumptions show a 55%-75% loss in the value of solar.



The proposed structure attempts to incentivize solar-plus-storage systems by reducing the value of any energy that is exported to the grid, rather than consumed onsite. This means that solar-only systems will have to be smaller to maximize the value of solar, which negates cost efficiencies of scale and leads to higher installed costs. The PD does not envision tariff changes that would improve the economics of installing energy storage systems.



This impact is much more pronounced in residential applications.



This steep reduction in value will make it much more challenging for small solar PV systems to provide positive financial returns. And, in the case of residential customers, the monthly fees over time could add up to more than the cost of the systems themselves. Especially if the federal Investment Tax Credit (ITC) for solar PV systems steps down from 26% today to 10% for commercial customers and 0% for residential customers in 2024, as currently scheduled by Congress, solar PV systems could struggle to compete with utility energy prices in all customer classes.

However, the fight in California remains underway. As CALSSA has pointed out, “The law requires the CPUC to approve a tariff that maintains ‘sustainable growth’ in the solar market, and we intend to hold them to it.”

Changes to NEM Grandfathering in the December 13 PD

The PD includes several surprising changes to NEM 1.0 and NEM 2.0 grandfathering. Residential customers that are currently grandfathering on NEM 1.0 or NEM 2.0 will have their grandfathering period reduced from 20 years to 15 years from the date of initial operation. While it is within the CPUC’s authority to change grandfathering, such retroactive changes call into question whether this is really grandfathering or simply a temporary arrangement that customers cannot rely upon. Low-income customers are exempt from this change.

To secure NEM 2.0 grandfathering, customers must have a signed installation, lease, or PPA project contract by the sunset date (May 27th as currently scheduled). This differs from the precedent during the transition to NEM 2.0, which only required that Interconnection Applications be submitted to the utility prior to the sunset date to preserve NEM 1.0 grandfathering. If the interconnection application was submitted prior to the final decision, the customer would be eligible for 20 years of grandfathering. If the application is submitted between the final decision and the sunset date, only 15 years of grandfathering would apply.

Interconnection applications submitted after the sunset date will temporarily be billed on NEM 2.0 until the utilities are able to implement NEM 3.0 in their billing systems, at which time those customers would immediately transition to NEM 3.0 billing.

Proposed Structure and Impacts of NEM 3.0

Now that the CPUC has published the PD, in which they refer to the successor tariff as the “Net Billing” tariff, rather than “NEM 3.0”, we have a clearer picture of the important elements and the impacts relative to the current NEM 2.0 tariff.

Solar PV Exported Energy Rate

The CPUC proposes decoupling the retail rate of electricity from the value of exported energy by using the Avoided Cost Calculator to determine compensation to customers for all energy produced by their generating systems and exported to the utility grid. The PD suggests that export rates vary by hour and by month, with differentiation for weekends versus weekdays, and by climate zone. While this results in

thousands of different compensation rates with a large range in values, the average value of these exports in 2022 are expected to be \$0.05/kWh-\$0.06/kWh based on the current ACC.

When a customer installs generation, they will be locked into the calculated rates at the time of installation for the first five years. After this time, rates will be calculated in January each year by the most current ACC.

Tariff Structure

The two major structural changes to the NEM 3.0 tariff are the implementation of Net Billing and, for residential customers, a Grid Participation Charge (GPC). A Market Transition Credit (MTC) for some residential customers provides a temporary incentive to offset some of the lost value due to the other changes.

1 Net Billing

In a Net Billing scenario, the PV system is connected on the customer side of the meter and offsets the customer's electricity usage. Any exported energy from the PV system is valued at a fixed price. This fixed price differs by hour and month, as described above, using the ACC. The CPUC did not choose to adopt the Joint IOU's proposal of adjusting True Up periods to be monthly and by TOU period.

2 Grid Participation Charge (GPC)

Another component of the proposed tariff is a GPC (previously referred to as a Grid Benefits Charge), or a monthly charge for all solar PV customers that is not dependent on the generation or consumption of the customer. For non-low-income residential customers, this charge is proposed as a monthly base fee of \$8 per kW-AC of installed solar. However, SCE and SDG&E residential customers are required to take service on tariffs that have an additional \$12 and \$16 monthly fixed fee, respectively. This will reduce the value of solar for a typical residential solar customer by \$48-\$64 per month, which represents a significant portion of the energy savings.

Low-income residential customers would be exempt from these charges, as one of several attempts to increase equity through this proposal. Commercial customers would also not pay a GPC, reflecting the fact that current commercial electric rates already recover grid expenses through demand charges.

3 Market Transition Credit (MTC)

As a mechanism to create somewhat of a transition glidepath for residential customers, the PD includes a temporary upfront incentive referred to as the Market Transition Credit. This is a monthly credit for the first 10 years after interconnection that is sized by the kW-AC size of the system.

Customer Segment	PG&E	SCE	SDG&E
Residential	\$1.62/kW-AC	\$3.59/kW-AC	\$0/kW-AC
Low-Income Residential	\$4.36/kW-AC	\$5.25/kW-AC	\$0/kW-AC

As shown above, the credit is increased for low-income residential customers, while SDG&E offers no credit. Although each qualifying customer will receive 10 years of the credit at the rate of the MTC during the year they interconnect, the MTC itself will be stepped down by 25% per year until it reaches zero after four years. There is no incentive for commercial customers.

New home construction, which are required to install solar by the California Energy Commission 2019 update to the Title 24 Building Energy Efficiency Standards, are not eligible for the Market Transition Credit.

California NEM Background

Net Energy Metering (NEM), also called “Net Metering,” is the electric utility tariff that allows customers who have certain kinds of onsite electricity generation, such as solar PV panels, to export excess energy back to the utility grid and receive credit for those exports at current retail prices for electricity. NEM has existed in California since 1995 and has undergone various revisions over time. The most significant revision of NEM occurred in January 2016, when the California Public Utilities Commission (CPUC) created NEM 2.0, which was rolled out to utility customers in late 2016 and early 2017. Both NEM and NEM 2.0 customers are currently grandfathered on those tariffs for 20 years from the date that their solar PV system or other form of on-site generation first went into operation.

From an electricity customer’s perspective, NEM 2.0 is essentially identical to the original NEM except that customers no longer receive bill credits for the “non-bypassable” rate tariff components on exported energy. Non-bypassable rate components are currently the Wildfire Fund Charge, Competition Transition Charge (CTC), Nuclear Decommissioning (ND), and Public Purpose Program (PPP) charges, which add up to approximately two cents a kilowatt-hour (\$0.02/kWh). This change to NEM 2.0 reduced the value of exported energy by roughly 10-20% of exported energy value, depending on the customer’s rate tariff.

The NEM 2.0 decision was considered an interim solution by the CPUC, allowing the commissioners more time to study the impacts of NEM systems on electricity grids and other utility customers. As a part of the NEM 2.0 decision, the CPUC mandated that they would revisit the NEM policy beginning in 2019 using the outcome of impact studies and that a new tariff, NEM 3.0, would be created based on this information.

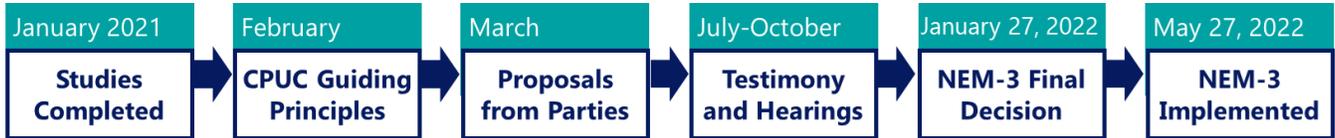
NEM 3.0: Current Timeline

The CPUC resumed studying the effects of NEM on the electricity grid and customers in 2019, with the initial study completed in January 2021. Based on that and other information, the CPUC finalized the “Guiding Principles” of the NEM 3.0 tariff in February, and then opened the proceedings to proposal inputs from interested parties in March.

The three investor-owned utilities filed a joint proposal in the spring of 2021 to replace net metering with a tariff that would reduce the value of residential solar to 23% of its value today including fixed fees based on a customer’s solar PV system size. Under this utility proposal, residential generators would typically pay \$75 a month in new fees, and commercial generators would be charged \$1,000-\$3,400 a month for a 250-kW system, according to an analysis by CalSSA.

In June, the [CPUC voted](#) to adopt an updated Avoided Cost Calculator (ACC), which included dramatic reductions to the calculated avoided value of solar energy on the California grid. The ACC sets the basis for the proposed net metering tariffs and was used in the December 13 PD.

The Proposed Decision was released on December 13, 2021, with a final decision scheduled for January 27 after a public comment period. The new tariff will be effective four months after the final decision.



What You Can Do

- Plan to submit an interconnection application for upcoming solar PV projects BEFORE the Final Decision. If possible, also plan to sign a contract within 120 days of the Final Decision.** If you are planning a NEM solar project in PG&E, SCE, or SDG&E territory in the next two years or so, you need to start planning to submit an interconnection application to secure NEM 2.0 for your project. Sage can develop and submit the interconnection package for you, or if you've already selected a solar project contractor, they can develop and submit the application. If the project design is not fully developed at the time when the interconnection application is submitted, Sage recommends claiming a larger system size than you think is necessary on the application. You can reduce the system size later without having to resubmit the application, but you can't increase it.
- Stay informed.** Sage will continue to provide [regular updates](#) as the NEM 3.0 proceeding advances. You can follow along via the CPUC's official website (proceeding R2008020). You can also receive more information about NEM 3.0 on CALSSA's website at www.calssa.org/net-metering.
- Get involved.** If you know of others who are considering installing solar PV systems in the next year or two in PG&E, SCE, or SDG&E territory, pass this information along to them and let them know about the pending transition to NEM 3.0. And if you're willing to write a letter, the California Public Utilities Commission accepts [public comments](#) online, in writing, and at certain public events.

The main pro-solar advocacy groups are the [Solar Energy Industries Association](#) (SEIA), state operations such as the [California Solar + Storage Association](#) (CalSSA), the [Smart Electric Power Alliance](#) (SEPA), [Vote Solar](#), [Citizens for Responsible Energy Solutions](#), and the [Environmental Law and Policy Center](#), among others. To receive further updates like this one on the progress of California's NEM 3.0 policy — and how net metering affects solar owners and operators, and everyone considering going solar — sign up here.

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