

NEM 3.0 Update No.1

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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

Executive Summary

Net Energy Metering (NEM) in California will transition from the current scheme, called NEM 2.0, to a new scheme called NEM 3.0 sometime in mid-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 is likely to result in a significant reduction in the value of energy produced by customer solar PV systems in these utility territories, which will add to the challenge facing the industry and its customers from the step-down in the federal solar tax credit. This week the utilities' opening salvo was to ask the California Public Utilities Commission to reduce residential NEM credits to less than a quarter of their value today, and to charge hefty monthly fees for both residential and commercial customers.

However, customers still have time lock in (grandfather) the current NEM 2.0 rules for 20 years for their solar PV projects, if they submit interconnection applications before NEM 3.0 is implemented in 2022.

In this white paper, Sage Energy Consulting provides background on California's NEM programs, and what we can expect to see in the upcoming NEM 3.0 transition. Throughout 2020 and 2021, we will continue a series of updates on NEM 3.0, which anyone can subscribe to at no cost here:

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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 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 policy beginning in 2019 based on the outcome of impact studies and that a new tariff, NEM 3.0, would be created based on this information.

There is considerable action on the Net Metering front across the country, with a number of states moving away from true net metering (for those that had it) to various forms of export compensation. One of the main issues at stake in California's NEM 3.0 proceeding is whether people who have solar PV are receiving more value for it than they contribute to the grid as the utilities claim. Between cost of service, equity issues, and the fact that generation of electricity is getting cheaper, compensation for onsite, behind-the-meter energy generation is likely to decrease in real dollars over time. On the other hand, the cost of purchase and installation of solar-plus-storage systems is coming down faster than the decreasing value of the electricity they generate.

Some other states have already dropped Net Metering, including Hawaii, Arizona, and Utah, which has significantly slowed adoption of solar PV for retail electricity customers in those states. At present it does not appear that any state is moving toward increasing the value of retail solar (Alabama, Tennessee, and South Dakota don't have any form of Net Metering nor export compensation, so they could conceivably improve the incentive to go solar if they adopted any form of export compensation.)

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 have now filed a joint proposal to replace net metering with a tariff cutting residential solar to 23% of its value today; charge residential generators about \$75 a month in fees; and charge commercial generators fees of \$1,000-\$3,400 a month for a 250- kW system, according to an initial analysis by the California Solar + Storage Association (CalSSA).

Testimony and hearings on the NEM 3.0 proceeding are expected to get underway by June, with a proposed decision due out in October. The commissioners would then be scheduled to adopt a final decision at their regular November 2021 meeting. Once they issue their final decision, utility companies are expected to implement it within 6 months.



However, CPUC proceedings, especially those that are as contentious as this one, often run behind schedule. Sage believes that it is likely that the final decision in the NEM 3.0 proceeding will wind up being 2-3 months behind schedule, which would push back implementation by the utilities until late in Q2 of 2022.

Anticipated Structure and Impacts of NEM 3.0

It is still too early to know with any confidence what NEM 3.0 will look like and how it will impact current and future solar PV and other NEM customers. We do know from the NEM-2 proceeding in 2015-16 that the utilities and other interested parties such as environmental groups and consumer advocates will fight hard on the details. Following are the most important elements and what Sage believes will be considered.

Solar PV Exported Energy Rate

From recent studies of PG&E, SCE, and SDG&E on the cost of energy and the value of solar PV, and from Sage's own analyses, we have a reasonable idea of the value of solar during various time-of-use (TOU) periods under the current policy. Combining that information with the results of previous studies on the impacts of NEM 2.0 customers on utilities and non-NEM customers, we see that the value of solar PV energy in California is about 11 cents a kilowatt-hour (~\$0.11/kWh), though it varies significantly between utilities and customer types. Sage is currently using this as the assumed weighted average value of solar PV energy production and export in our assumptions about NEM 3.0. This average energy value would apply to the tariff structures described below.

Tariff Structure

Many tariff structures are possible, but given the Guiding Principles put forward by CPUC staff, and the intent to strictly control the value of solar PV energy in California, we believe that either a Feed-In Tariff (FIT, also known as Buy All, Sell All), or Net Billing will be mandated.

Feed-In Tariff (FIT)

FITs, or buy-all, sell-all arrangements, separate the customer's energy usage from the customer's PV system energy generation. In this scenario, the customer's PV system is connected in front (on the utility side) of their electric meter; the customer cannot consume the electricity produced by their PV system. All energy the customer consumes is metered at their retail tariff rate, and all generated electricity is exported to the grid through a separate meter and valued typically at a fixed price. This is not net energy metering. This type of interconnection and billing would not be easily applied to existing NEM interconnections with PV systems connected behind the customer's utility meter on their property. It could, however, be mandated for future NEM 3.0 interconnections.

Net Billing

Another possible form of the NEM 3.0 tariff is Net Billing. In this 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. Net Billing arrangements typically settle up monthly, exported energy credits are shown and accounted for on each monthly billing statement. Customers would not be able to bank nor accumulate bill credits from exported energy and true up at the end of the billing year, as is done with annual NEM. Like a FIT, Net Billing is also not NEM, but is a likely candidate for the NEM 3.0 policy.

Impacts of NEM 3.0 on Solar PV Generated 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. For larger commercial customers that currently purchase energy at relatively low prices, an \$0.11/kWh value of solar PV would not be much less than the value of solar on today's commercial and industrial tariffs. However, smaller commercial customers and residential customers could see a loss in the value of the electricity they generate in the 20%-40% range or even much more, if the utilities get their way.

This steep reduction in value will make it much more challenging for small solar PV systems to provide positive financial returns. And 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 has just begun. As CalSSA points 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."

What You Can Do

- **Plan to submit an interconnection application for upcoming solar PV projects BEFORE the NEM 3.0 deadline.** 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 be providing [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 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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