EQ Research

Impacts of California's Proposed NEM 3.0 on Residential Solar Savings

CARY, NC – November 16, 2022 — California's proposal to replace the state's net energy metering (NEM) program with net billing (NB) is one of largest reductions in the value of rooftop solar ever proposed in any state. The Proposed Decision (PD) released by the California Public Utilities Commission (CPUC) on November 10, 2022 (Docket No. R.20-08-020) would eventually reduce the value of solar exports to the grid by more than 80%. Without the "ACC Plus" bonus payment, which will decline by 20% each year before phasing out in five years, compensation for exported electricity would decline between 82.3% and 85.7%. Customers who sign up in the first year of Net Billing and receive the ACC Plus bonus credit would receive between 65.5% and 85.7% less for exported energy relative to the current NEM 2.0 program depending on their utility (SDG&E customers are not eligible for the ACC Plus adder).

The proposal would require new residential solar customers to purchase electricity on highly differentiated time-of-use rates and end their ability to "net" electricity exported to the grid against electricity imported from the grid at a different time. Instead, the new framework would compensate them for electricity exports at the avoided cost rate as determined by the CPUC's Avoided Cost Calculator (ACC), with small, temporary adders (i.e., ACC Plus) in PG&E and SCE territory to accomplish a "glide path" to ACC-based export compensation.

"The November 10 PD is clearly less impactful than the December 2021 PD, but the drop off in export compensation remains quite steep even with the temporary adders. In percentage terms, the decline is comparable to the Public Utility Commission of Nevada's 2015 decision, which was later rescinded," said Justin Barnes, Director of Research at EQ Research.

EQ Research's preliminary analysis of the November 10 PD follows.

Figure 1 - Comparison of Export Compensation Rates Under Current NEM 2.0 and Proposed Net Billing

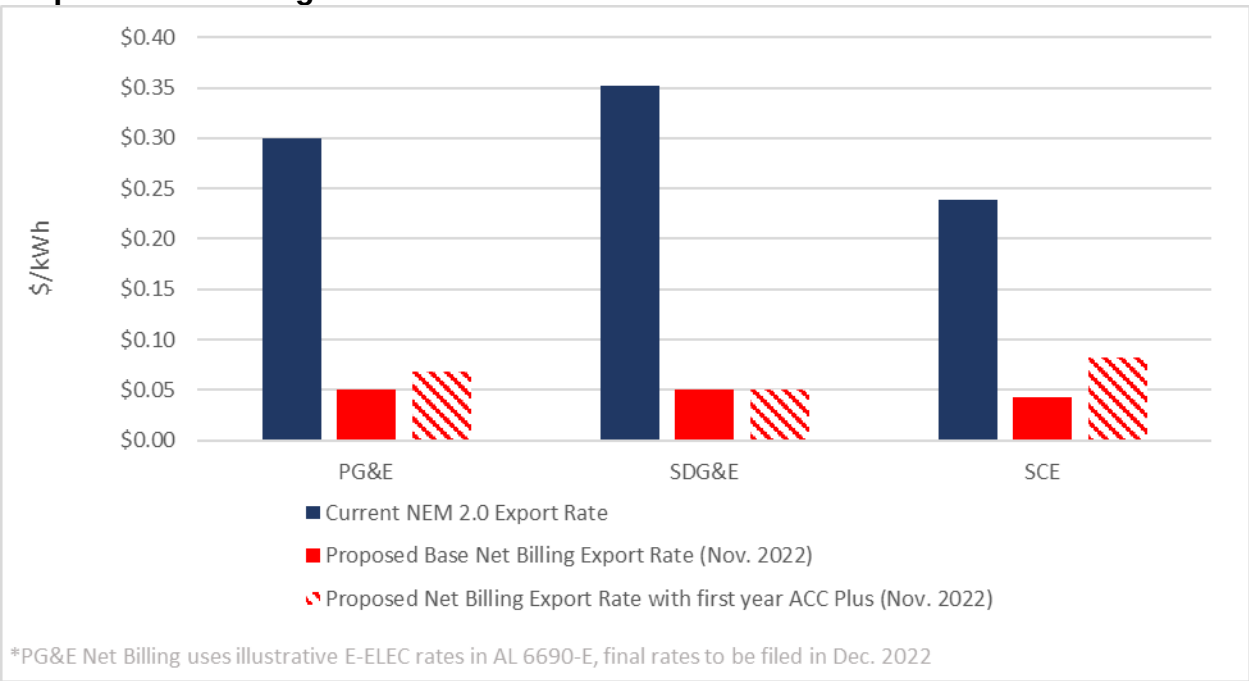


Figure 1 shows a comparison of the compensation rate for electricity exported to the grid under the current NEM 2.0 program and the proposed NB program for the state's three largest utilities. Under the NB proposal, there is a temporary bonus paid for exports, called ACC Plus, for new customers who sign-up within the first five years. Without the ACC Plus bonus payment, compensation for exported electricity would decline between 82.3% and 85.7%, and with the ACC Plus bonus payment, customers who signed up in the first year of NB would receive between 65.5% and 85.7% less for exported energy than under the current NEM 2.0 program depending on their utility (SDG&E customers are not eligible for the ACC Plus adder). The amount of the payments for the ACC Plus bonus and exported energy are locked for nine years, after which the ACC Plus payment is eliminated and customers receive only avoided cost-based compensation for exported energy that will vary from year to year after the nine-year lock-in period.

Figure 2 – National Perspective: Comparison of the Proposed Net Billing Export Rate Reductions to NEM Successor Tariffs in Other States ($/kWh)

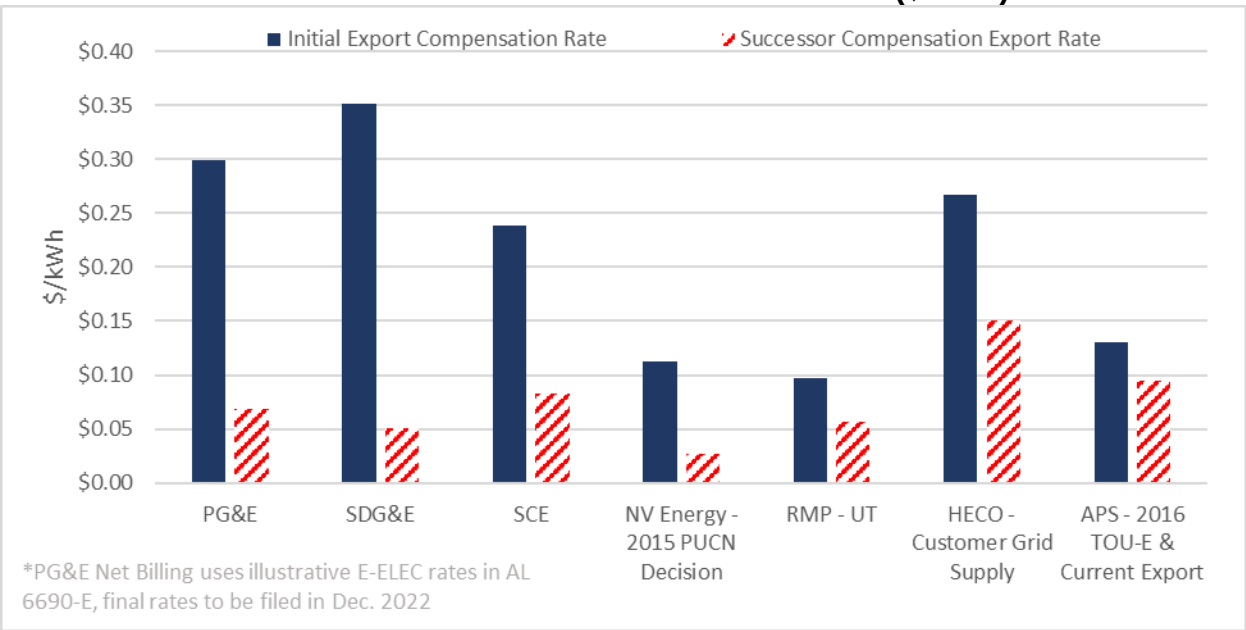


Figure 2 puts the proposed reduction to export compensation for California residential solar customers in a national context. The non-California examples in Figure 2 were selected because they represent states with the largest residential solar markets that have adopted net metering successor programs that significantly reduced the value of rooftop solar. California's proposal would result in some of the largest declines in compensation for electricity exported to the grid by rooftop solar systems in the nation. Even with the first-year ACC Plus temporary bonus payment, export compensation rates would decline from $0.299/kWh to $0.068/kWh for PG&E customers, from $0.352/kWh to $0.05/kWh for SDG&E customers, and from $0.239/kWh to $0.082/kWh for SCE customers. Once the ACC Plus bonus expires, export compensation rates would decline from $0.299/kWh to $0.05/kWh for PG&E customers, from $0.352/kWh to $0.05/kWh for SDG&E customers, and from $0.239/kWh to $0.042/kWh for SCE customers.

Figure 3 – National Perspective: Comparison of the Decline in Proposed Export Rates under Net Billing to NEM Successor Tariffs in Other States ($)

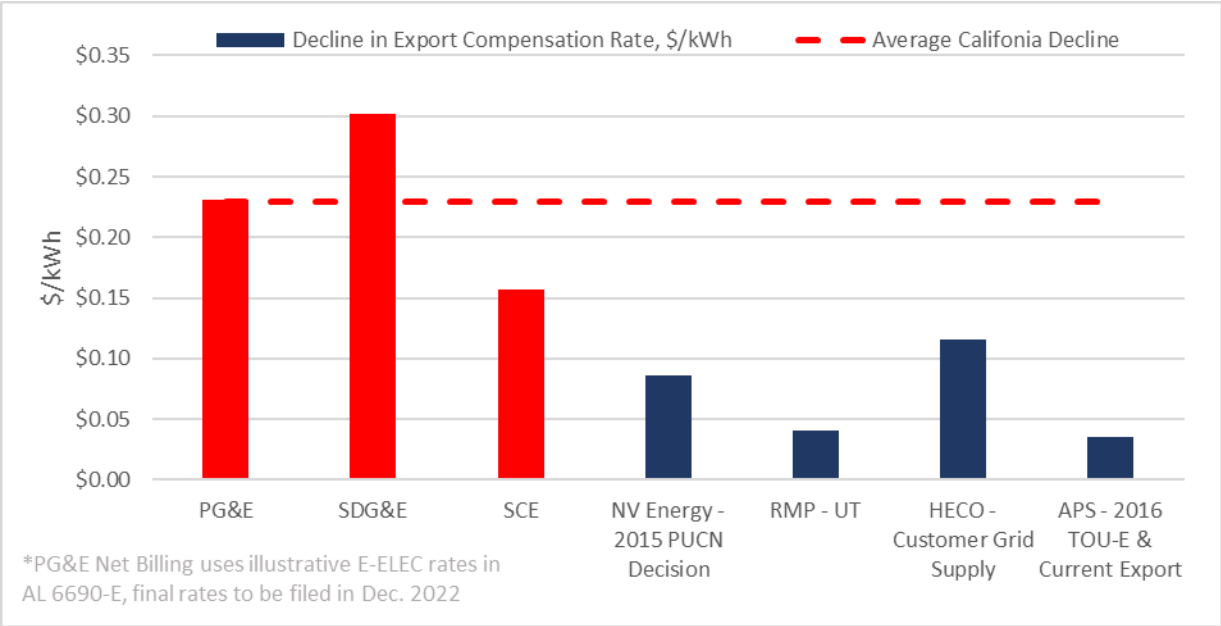
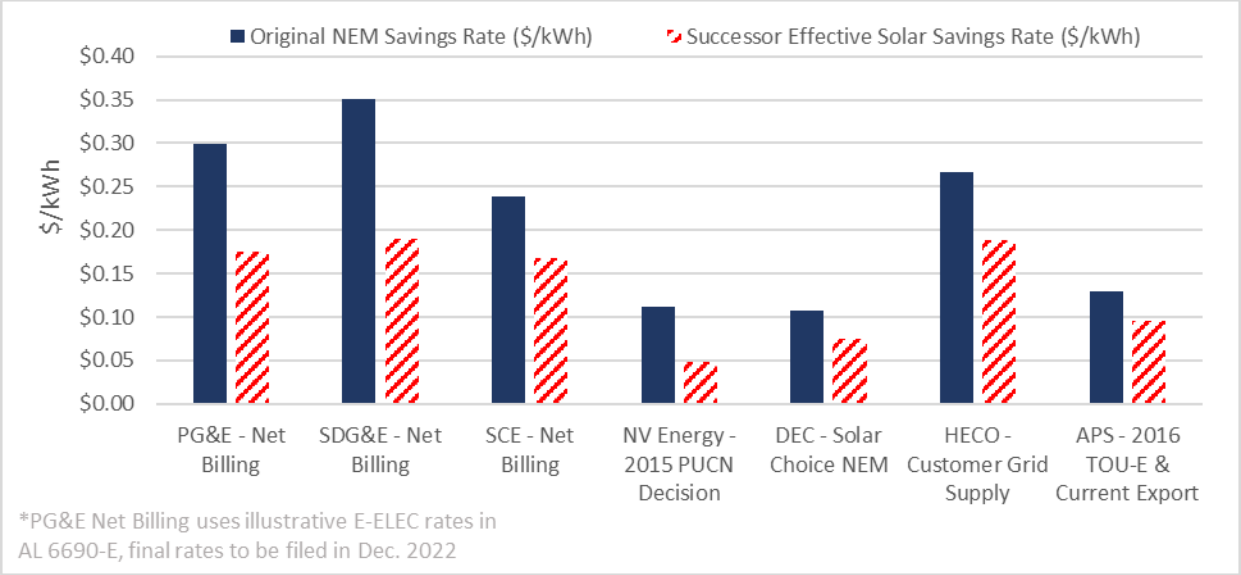


Figure 3 shows the absolute loss in customer value (in cents) for every kilowatt-hour of electricity exported to the grid under the Net Billing proposal vs. NEM 2.0 today. Also shown is the same loss in value from the other relevant NEM successor decisions across the country.

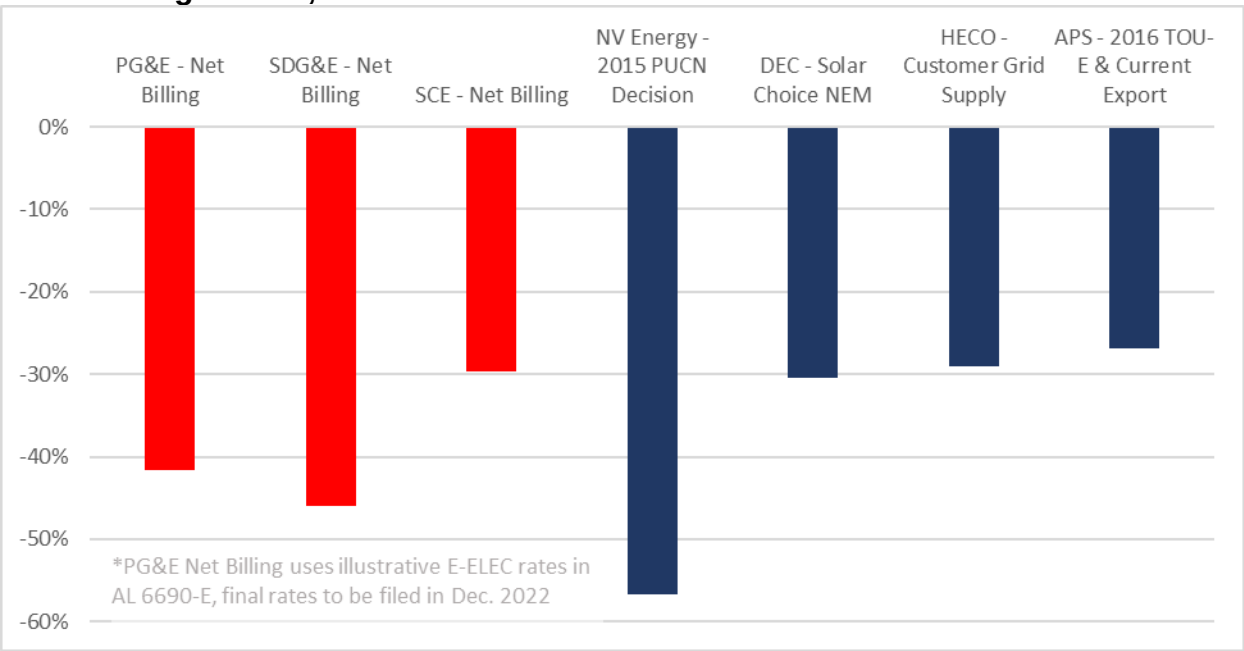
Figure 4 compares California's proposed decline in the per-kWh value of solar electricity with the largest declines previously proposed elsewhere in the country. The residential solar savings rates represent the average amount a customer saves for each kWh generated by their solar system, including the value of both electric bill reductions from on-site use and compensation received for electricity exported to the grid (including the first year ACC Plus bonus payment). Solar savings rates calculations include fixed charges, export compensation, and retail rates for imported electricity. Under the proposed Net Billing program, the solar savings rate would decline from $0.299/kWh to $0.175/kWh for PG&E customers, $0.352/kWh to $0.19/kWh for SDG&E customers, and $0.239/kWh to $0.168/kWh for SCE customers. The statewide average per-kWh savings from new residential solar systems would be reduced by 39.1% including the temporary bonus and by 43.9% excluding the temporary bonus payment for solar electricity exported to the grid.

Figure 4 - National Perspective: Impact of State NEM Decisions on Residential Solar Savings Rates, average $/kWh



As demonstrated in Figure 5, on a percent basis, California has proposed some of the largest declines in residential solar savings rates of any state ever, surpassed only by the controversial 2015 Nevada proposal to reduce the solar savings rate by 56.6% from $0.1121/kWh to $0.0486/kWh that was ultimately overturned by the legislature through the adoption of AB 405 in 2017, which reestablished net metering for residential customers with modestly declining export compensation rates for net excess generation at the end of the billing month. Under the November 10 PD, the residential solar savings rate would decline 41.6% for PG&E customers, 46.0% for SDG&E customers, and 29.7% for SCE customers (even after accounting for the first-year ACC Plus bonus payment). When the ACC Plus bonus is no longer available, the residential solar savings rate would decline 45.6% for PG&E customers, 46.0% for SDG&E customers, and 40.2% for SCE customers.

Figure 5 – National Perspective: Impact of State NEM Decisions on Residential Solar Savings Rates, %



The above examples are based on a rooftop solar system sized to generate 100% of a typical household's annual electricity consumption in each utility's territory in California. Net Billing rates for imports are those specified in the Proposed Decision, including PG&E's not-final illustrative rates filed in Advice Letter 6690-E. Net Billing rates for exports were calculated using the most recent version of the Avoided Cost Calculator from E3 as the average hourly rate for each hour in each month for weekdays and weekends. Also, as specified in Appendix B of the Proposed Decision, avoided cost rates with a negative value were assigned a value of $0, and the elimination of netting was approximated by applying a 6.6% adjustment factor that increased hourly exports by 6.6% and in those same hours increased imports by the same number of kWh.

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