

Non-Bypassable Charges

What are they & how do you calculate them?

Non-bypassable charges (NBCs) are assessed to make sure every customer pays into programs that have broad benefits, even if they get their kWh from an outside supplier (such as direct access customers and CCA customers). Solar customers have been avoiding some NBCs because they pay utilities only for net consumption. Electricity consumed from the grid in the evening is offset by NEM credits, so NBCs have not been assessed on those kWh even though it is electricity drawn from the grid.

This will change in NEM 2.0. The decision states, “customers must pay nonbypassable charges on each kWh of electricity they consume from the grid in each metered interval.” Electricity produced and consumed behind the meter will not be subject to the charge, but all other consumption will be.

The challenge in modeling this is that customers will still pay NBCs for monthly net consumption as part of their overall kWh rates. Simply measuring all consumption from the grid will produce the correct total amount of NBCs, but customers will pay this in two separate buckets – as part of their normal energy charges for monthly net consumption and with a new fee for the rest of their consumption from the grid. We need to calculate the difference between gross consumption from the grid and monthly net consumption.

This difference is equal to the amount of consumption that is offset by NEM credits. One way to approximate this is to calculate how much power generated by a solar system will be exported to the grid. Previously, we have not had to predict how much power is used behind the meter and how much is exported to the grid, since exports produced credits at full retail value. Now the energy consumed behind the meter will be more valuable, so we need to calculate exports.

CALSEIA strongly encourages solar companies to subscribe to a proposal generator tool such as OnGrid, Energy Toolbase, or Solar Nexus. These services are currently building NEM 2.0 into their models. And as other changes come that make the value proposition more complicated, they will keep their tools updated.

However, if you have your own model or want to do your own NBC analysis, here is a guide to doing it.

For commercial customers

1. Get the customer’s interval data from the past year and the PV Watts production profile of the proposed system. Convert the production data from hourly to 15-minute.

2. Match the cells in a spreadsheet and subtract usage from production to determine net imports from the grid or exports to the grid in each 15-minute billing interval.¹
3. Add up all the values from intervals that have net exports within the interval. This is equal to the total NEM credits for the year.
4. Look up the NBCs for the rate schedule the customer will use for this meter. In the unbundled rates category of the schedule, add the following four charges.
 - Public Purpose Programs²
 - Nuclear Decommissioning³
 - Competition Transition Charge⁴
 - DWR Bond⁵
5. Multiply the total NBCs by the total NEM credits.

Note that this will overestimate the NBC charge because NEM credits that are unused at the end of a month are converted to dollar amounts rather than maintained as kWh credits. Again, the NBC fee will only be on consumption that is offset by kWh NEM credits. This difference will be greater for customers that accumulate a lot of NEM credits in particular months such as customers with low summer daytime consumption. To make this analysis more precise, you can add up all of the imports and all of the exports in each month, take the lesser of the two, and apply the NBCs to those values.

For residential customers

The analysis for residential customers is the same except that the billing interval is hourly. However, because the dollar amounts are smaller and load patterns are more consistent, it may be good enough to estimate the NBC fee without using interval data. A typical residential solar customer uses around 60% of the power behind the meter and exports around 40% to the grid. You can adjust this up or down based on what you know about the customer's load profile and the system size. If a system produces 7500 kWh per year and exports 3000 kWh, the NBC fee on a schedule where NBCs are 2 c/kWh works out to \$5/month.

¹ Matching these up is tricky and takes good spreadsheet skills. Be careful of daylight savings time, which can get you out of alignment if you are not careful.

² Listed as "PPP" on SDG&E schedules.

³ Listed as "NDC" on SCE schedules and as "ND" on SDG&E schedules.

⁴ Currently does not exist for SCE. Listed as "CTC" on SDG&E schedules.

⁵ Listed as "DWRBC" on SCE schedules. Listed as "DWR-BC" on SDG&E schedules on a different sheet from the other NBCs.