

Fast Facts

- Genability created the Verify product, which calculates actual cost savings from a residential photovoltaic system.
- National Renewable Energy Laboratory (NREL) independently validated the accuracy of Genability's Verify product.
- NREL analyzed the accuracy with which Genability reproduced 1,500 monthly utility bills in California. The differences between their results and the actual bills are small, with 90% of the differences being within \$0.28 and a maximum difference of \$0.55/month.
- NREL also created a separate utility bill savings calculation tool and independently verified Genability's calculations. The average difference ranged from \$0.01 to \$0.05/month for two standard residential PG&E cases, one standard residential SCE case, and one time-of-use residential SCE case.
- The U.S. Department of Energy's SunShot Initiative Incubator program provides early-stage assistance to help startup companies cross technological barriers to commercialization while encouraging private-sector investment.

Verify by Genability – Providing Solar Customers with Accurate Reports of Utility Bill Cost Savings

The National Renewable Energy Laboratory (NREL), partnering with Genability and supported by the U.S. Department of Energy's SunShot Incubator program, independently verified the accuracy of Genability's monthly cost savings. For the cases evaluated as part of this study, Genability's savings calculations were 99.5% accurate.

Verification of Cost Savings

NREL and Genability both calculated monthly cost savings for the following cases: two Pacific Gas & Electric (PG&E) standard residential tariffs, one Southern California Edison (SCE) standard residential tariff, and one SCE time-of-use residential tariff (TOU). The maximum difference in monthly savings between the NREL calculations and Genability calculations was \$0.29, with the average utility cost difference ranging from \$0.01 to \$0.05 (Table 1).

Table 1. Differences between NREL and Genability data

Calculated Variable	SCE-TOU Redlands	PG&E Madera	PG&E Campbell	SCE Thousand Oaks	1,500 Utility Bills
Average Difference [\$]	0.01	0.02	0.04	0.05	0.02
Minimum Difference [\$]	0.01	0.01	0.00	0.00	0.00
Maximum Difference [\$]	0.29	0.16	0.15	0.14	0.55

NREL also reviewed 1,500 actual utility bills and compared the accuracy with which Genability was able to match costs on the bills given only billing dates and electricity usage. The average difference between the actual monthly utility bills and Genability's results was \$0.02, with the maximum difference for an individual bill of \$0.55.

Statistical tests were used to compare the similarity of the actual utility bills to Genability's results. The tests include a difference of mean (T-test) and difference in variance (F-test). The output ranged from 0.998 to 1.000, with a value of 1 indicating perfect similarity. Therefore, the Genability results are nearly identical in mean and variance to actual costs on the 1,500 utility bills.

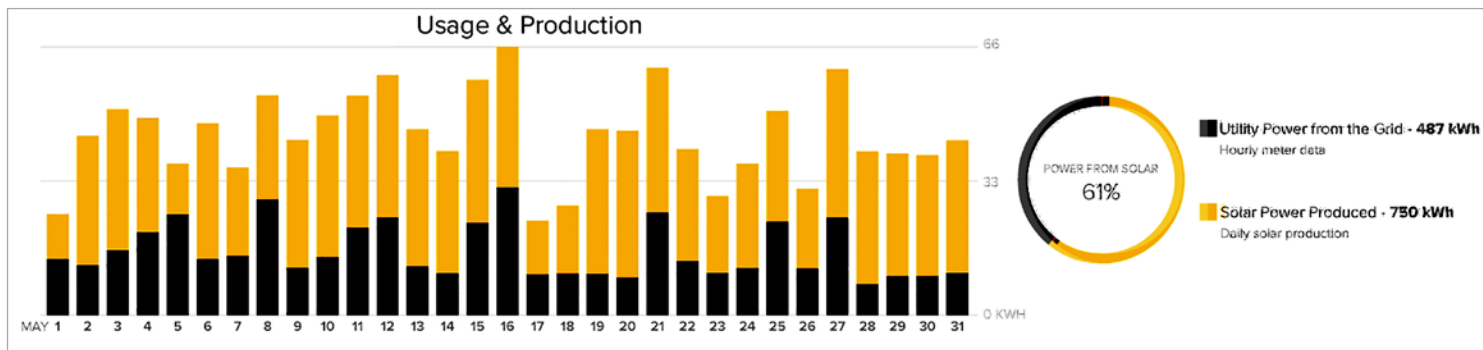


Figure 1 – Measured Solar Production vs Utility Power from the Grid

Background

Residential consumers purchase a solar photovoltaic (PV) system or enter into a solar lease or power purchase agreement (PPA) with the expectation of saving money. Verify, a product developed by Genability, provides homeowners with an accurate summary of monthly energy cost savings. It also brings transparency to solar savings with the goal of increasing customer engagement and lowering support costs.

Verify uses electricity consumption data from customers' utility accounts along with solar production data from their PV systems to generate monthly savings reports. Enrolled customers receive monthly emails summarizing savings, along with access to an interactive website with detailed information about electricity usage and cost savings.

Verify reports show customers what their electricity bills would have been if they hadn't purchased solar and compares that with the combined cost of utility and solar electricity. Figure 1 provides a visual representation of the energy produced from solar versus energy purchased from the grid for each day of a given month. Figure 2 shows customers their total electricity cost with solar compared to what they would have paid without solar.

Potential Soft Cost Savings

Genability's Verify product has demonstrated the ability to accurately verify electricity cost savings associated with solar PV across a range of diverse rate structures. California has some of the most advanced rate structures in the country and the product was able to accurately calculate solar cost savings for both standard residential and more advanced TOU tariffs.

Genability's goal is to increase consumers' confidence when considering solar, and their satisfaction after the purchase. The objective is to create products that present the most accurate savings information for current and future solar customers. Verify should help reduce customer support costs, increase customer satisfaction, and improve conversion and referral rates.

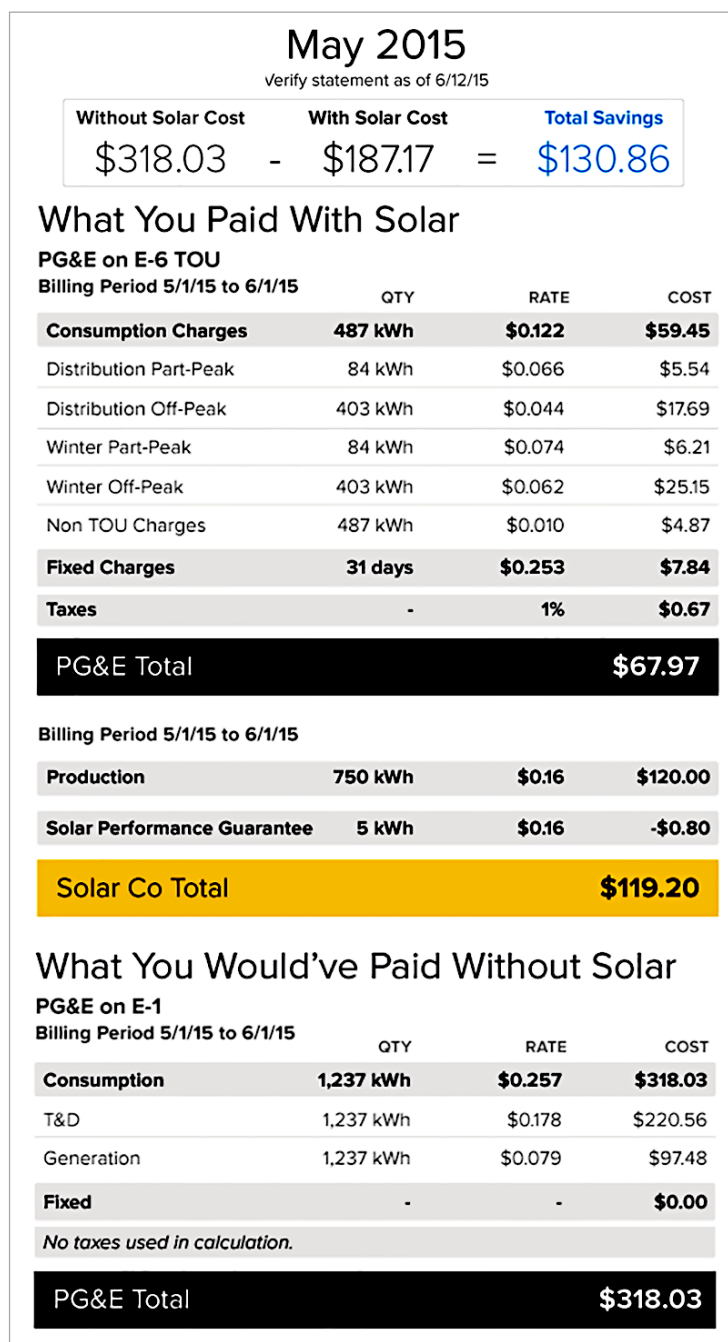


Figure 2 – Utility Costs With and Without Solar

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NREL is a national laboratory of the U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, operated by the Alliance for Sustainable Energy, LLC.

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