How Much Power Can My Solar System Produce?

If you've checked with any of our competitors, you'll see widely divergent opinions on how much real electricity a solar system can produce. Our industry is relatively new, so adequate standards of measurement haven't yet been developed or adopted to level the playing field for everyone. In the meantime, all we can do is be completely honest with our customers about the true output they can expect from their solar systems.

STC or "Name Plate" Ratings: STC stands for Standard Test Conditions. It is the rated output in watts that the manufacturer puts on its photovoltaic (PV) modules under laboratory-perfect conditions. STC ratings are generally used by the solar industry, installers, our competitors, and the general public to indicate an objective system size more than a subjective system output.

PTC Ratings: PTC stands for Practical Test Conditions or the ratings under the PVUSA Test Conditions. This is the standard used by the California Energy Commission (CEC), and in general runs about 6% to 12% less than STC.

Real Life Expectations: Many industry professionals have studied the issue of photovoltaic ratings and are uncomfortable with both STC and PTC ratings as they seem overrated to real world conditions. Real Goods attended an excellent seminar at the national solar conference in Portland, Oregon and the consensus was that to be conservative in your expectations you should expect your solar system to yield in AC output to your electrical panel about 75% of STC (manufacturer's name plate) ratings or multiply by 0.75.

3060 WATTS OF SOLAR PANELS	
STC rating	3,060 Watts
PTC rating	2,536 Watts
Real Life rating	2,295 Watts

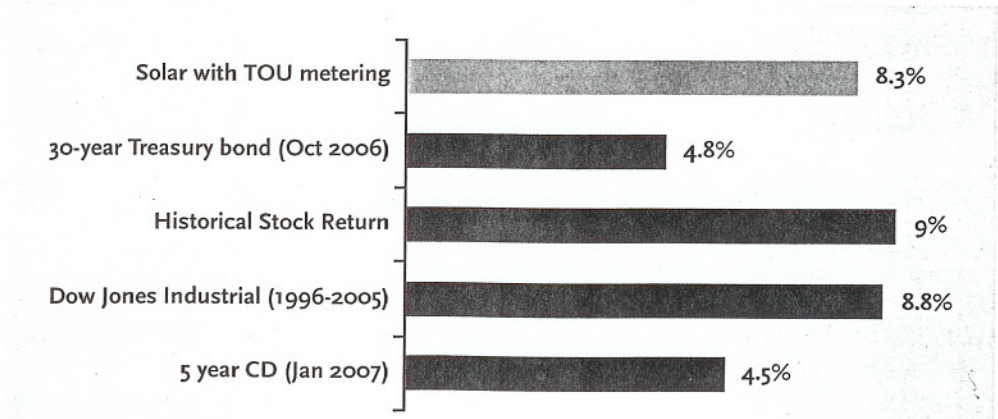
In Summary: Throughout our literature, like all in the solar industry, we will use STC ratings, but we recommend that you be conservative in your expectations and calculate your numbers for "real life" expectations. What this means is well-summarized by the example at the right featuring a solar panel we commonly use for 3kW systems.

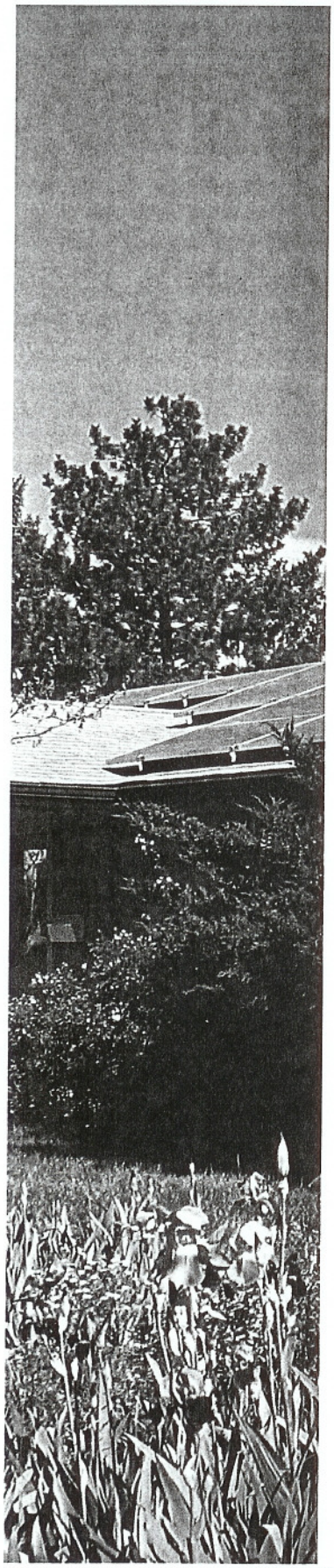
This is how a 3kW system on the outset results in a 2kW reading on the inverter display.

Projected Savings on your 3kW Residential Solar System

The following graph assumes electric utility rates will increase 5.0% annually for 30 years and that a solar system costs you the present amount of $.16/kWh. 5.0% is VERY conservative, considering utility rates have the potential to increase far faster. If this were the case, the Solar return on investment is much higher.

INVESTMENT COMPARISONS





The Bottom Line For Four Sample Systems (systems operate at about 75% efficiency)

	ELECTRIC BILL		LOAN: YEAR 1		25-YEAR RETURN			
System Size (kW) 1	Pre-Solar 2	With Solar 3	Monthly Cost 4	Cash Flow 5	Pre-tax Savings 6	ROI 7	Electric Rate 2	Electric Inflation Rate 8
2.72 kW	$52	$6	$85	$55	$20,676	1.9%	$0.122	3%
3.74 kW	$92	$11	$109	$50	$39,951	5.8%	$0.149	4%
5.95 kW	$186	$13	$161	$19	$97,261	10.9%	$0.200	5%
7.48 kW	$322	$45	$204	$33	$200,350	15.6%	$0.247	7%

1. System size increases due to increased electric (kWh) usage
2. Pre-Solar bills based on PG&E Basic Residential rate schedule with 5% Utility Users Tax
3. Post-Solar bills based on PG&E Net-metering with TOU schedule; 20% of daily usage at peak period (May-Oct, M-F, 1-7pm)
4. 7.5% Equity Loan; interest deductions at 34% (Loan Cost = 66% of Monthly Interest)
5. First year Cash Flow = Electricity Savings - Loan Cost; cash flow improves each year thereafter.
6. Net Present Value of 25 years worth of electricity savings assuming stated Electric Inflation Rate and discounted by a 3% general inflation (CPI)
7. Systems with 100% electric bill reduction have lower ROI and are only recommended for above average electricity consumers and/or those whose environmental initiative exceeds the financial incentive
8. Based on PG&E 5 tier rate structure: inflation rate increases as usage increases (advancing in tiers)

COMPARE RATES ($/KWH) OVER 30 YEARS