

Information on Residential Solar Electric Installation

This is a **SAMPLE** price chart for *photovoltaic solar electric* systems. Please ask an installer about prices for *solar hot water* systems. Rebates are for Tucson Electric Power – other utilities are somewhat different, but in the same range. TEP provides a rebate of \$3,000 per kilowatt (DC), up to 60% of the cost of the system. Customer must pay at least 15% of total cost.

THIS CHART IS MEANT AS A BASIS FOR COMPARISON ONLY. Please consult a reputable installer for actual prices.

<i>System Size in DC Watts</i>	<i>Equivalent System in AC Watts</i>	<i>KWh Produced Each Year</i>	<i>Total System Cost Before Rebate and Tax Credits</i>	<i>TEP Rebate \$3,000/kW</i>	<i>State Tax Credit (25% with \$1,000 cap)</i>	<i>Federal Tax Credit (30% - no cap)</i>	<i>Net Project Cost</i>
1520 W = 1.52 kW	1079 W = 1.079 kW	2562 kWh	\$13,081	-\$4,560	-\$1,000	-\$2,256	\$5,265
2470	1754	4163	\$18,423	-\$7,410	-\$1,000	-\$3,004	\$7,009
3040	2158	5124	\$21,388	-\$9,120	-\$1,000	-\$3,380	\$7,888
4560	3238	7686	\$30,254	-\$13,680	-\$1,000	-\$4,672	\$10,902
6080	4317	10248	\$40,023	-\$18,240	-\$1,000	-\$6,235	\$14,548
6840	4856	11530	\$44,514	-\$20,520	-\$1,000	-\$6,898	\$16,096
8550	6071	14412	\$54,434	-\$25,650	-\$1,000	-\$8,336	\$19,448

- **Many variables can affect the price:**
 - each installation company has different rates and different brands
 - cost of permitting
 - available roof space, slope of the roof, and difficulty/time of the installation
 - as a rule, the bigger the system, the greater the volume discount

- **Inverters – changing DC watts produced into usable AC watts:**
 - solar panels produce DC (direct current). However, almost everything in your house runs on AC (alternating current), which is what the utility provides.
 - the power from your panels must flow through an **inverter** which changes it to AC, which can be used for your home or pushed onto the grid.
 - there is a loss of power by about 20 – 30% when it is converted from DC to AC.
 - the utility incentive is for the system size in DC watts.

- **Conversion chart:**

1000 watts (W) = 1 kilowatt (kW)	<i>example: a house might use a 2 – 5 kilowatt system</i>
1000 kilowatt (kW) = 1 megawatt (MW)	<i>example: a big box store might use a 200 kilowatt system</i>
1000 megawatts (MW) = 1 gigawatt (GW)	<i>example: a coal power plant or a thermal solar plant might produce 200-500 megawatts of power</i>

- A kilowatt hour (kWh) is the amount of electricity it takes to run a 100 watt light bulb for 10 hours.
- The average household uses around 11,000 kilowatt hours (kWh) per year.