

Net Metered PV Estimates

\$ 7.50 per watt installed cost (before incentives and tax credits) for a simple roof top grid tied net-metered PV system of between 3.3kW to 10kW in size. The net system cost will be reduced by up to 50% because of income tax credits and state incentive money. For the typical PV array (facing true south at a tilt angle of between 30 to 45 degrees with no shade falling on the array between the hours of 9:00 AM to 4:00 PM), estimated electric power produced will average 1,050 kWh/yr for each 1 kW of PV power from a typical roof top PV system here in Vermont.

For example a 5 kW PV system will produce 5,250 kWh per year. This electricity will be used in your home, or business. Any excess power that your PV array produces will spin your meter backwards and be used by your local utility. Your utility bill is reduced by the amount of excess electricity that your PV system produces.

The average 5 kW net-metered roof top PV system will cost \$ 36,500 installed. After your State of Vermont incentive rebate of \$8,750 the net cost installed is \$27,750. The system owner is eligible for a federal investment tax credit of \$10,950 (30% of system cost). You will have to pay income tax on the incentive money from the state, so add back, about \$2,500 for a **net total cost of \$19,300** (\$ 3.86 per watt of PV installed). This system will be about 425 square feet in size. The example above is for a roof top system. Ground mounted systems cost more due to excavation, conduit and structural mounting costs. However, ground mounted systems may offer advantages over roof top arrays at some locations.

Environmental & economic benefits of adding net metered PV to your home or business

You can't buy a cheaper source of clean electric power generation than photovoltaic power. Combined with a significant use of energy efficiency measures in your home, you can now offset a high percentage of your electric bill with electricity produced by PV panels installed on your roof, or in your back yard. With retail electric utility rates expected to double within the next ten years, the investment of purchasing your own PV system certainly looks like a wise hedge against escalating price hikes. PV systems typically last from 25 to 35 years (or longer). With these rising electric rates the payback time in dollars is continuing to come down every year. However, any cost benefit analysis has to take into account the immediate environmental payback that begins to take place as soon as your PV system is in place. Consider the following numbers.

Each kilowatt of installed PV capacity offsets the following pollutants annually in San Diego, CA. De-rate these numbers by 30% for Vermont: - up to one pound of oxides of nitrogen . - .04 pounds of sulfur dioxide. - and 1,924 pounds of CO2 (carbon dioxide). Source: www.epa.gov/cleanenergy/egrid. The energy payback time of a typical PV module is now only 1.4 yrs for sunbelt installations and is 2.5 years in less sunny areas. Energy payback is the amount of time that it takes the PV module to produce more energy than it took to manufacture ,and deliver, the module. Source: www.nrel.gov/ncpv/energy-payback.html

