



Inverter Sizing for Northern Climates

Panel Power, LLC specializes in northern climate commercial solar installations that use the latest solar technology. We have developed close relationships with our vendors to reduce costs, improve efficiency, and achieve a better return on investment. One of those improvements is how we optimize the inverter sizing. To do this there are a few unique characteristics of solar components that we should talk about first.

Solar panels are tested under standard test conditions with 1000 watts / square meter with a flash of light. This test allows the panels to stay at room temperature. In the field, that same 1000 watts/ square meter of light would raise the temperature of a panel to over 20 degrees. A warmer solar panel does not operate as efficient as a cooler panel. In real testing, we find that panels don't often get 1000 watts / square meter of sunlight power or if they are at certain angles they will not ever hit that power rating. A 40KW PV Array will often work well with an inverter rating of only 80% of that.

We run a simulation on each job that will show the % clipping of the PV power because the inverter can't take the extra power. This is still a low 0.1-0.2% over system life even with an 80% lower power rating inverter than the solar array power. This has been backed up with our real world installation data.

At Panel Power, LLC we focus on designing systems correctly before we start installing so our time at your location is minimized. We also provide charts that show actual savings backed up by real customer data. Feel free to contact us with any comments or questions.