

One size does not fit all in the world of solar power

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When designing a net-metering grid tie solar system, string sizing is very important.

This is the number of solar panels in a series required to make up the operating voltage for the inverter.

Without enough solar panels in the string, the inverter may not come on in the heat of the sum-

mer. With too many solar panels, you can have too high voltage that will harm the inverter.

It is critical that the string size is within the inverter's specifications.

There is not a "one size fits all"

when it comes to string sizing. Solar panels come in different voltages and amperages. The inverters have different specifications that will vary string size.

A designer should give a table that tells the output of the string and the operating specifications of the inverter with your bid.

Alternative Power Systems, Inc. will design the system and supply a packet with all the information so the customer can make an informed decision.

With a string of six Sharp panels, it is likely that the array will have too low of a voltage for the inverter to engage when it is hot.

There may be down time or no production at all over 77° F. A house located in St George with a Fronius inverter may never see the inverter stay on all day. Most inverters operate from 150 volts to 600 volts.

If the voltage of the solar panel array is under (too few solar panels) the specification, the inverter may never come on.

It is recommended to stay away from starter kits or systems that sound like too good of a deal. There is always a catch to these systems and sometimes a costly one. If the deal sounds too good to be true, it probably is.

With a string of eleven Sharp panels, the array may be oversized or an over voltage problem may exist. A house located in Cedar City with a Fronius inverter may be hurt with too high of voltage in the winter. To compensate for cold conditions, increase the number of amps and the volts by up to 125 percent of the panel rating.

If the voltage is over the specifications, the inverter may never

necessary, you will waste your money.

Creating more power than what the inverter is capable of delivering to the grid.

Another option is thin film panels sold by Kaneka. The down fall of these panels is that they take up twice the space of crystalline panels (such as Sharp, Solar World or BP). With only a finite amount of space on the roof, you want to make the most of it.

Kaneka's amorphous silicon PV module (a-Si) has superior light absorption per nominal watt power. Compared with monocrystalline silicon PV modules (c-Si) or polycrystalline silicon PV modules (poly-Si), it generates considerably more power per nominal watt power in hot or cloudy weather. The open circuit is 97 volts and when they are under full power they are 67 volts.

There are some great products on the market. Panels are definitely improving, but at a slow pace.

It would be nice to have a panel that you could put a film on and it would double or triple its output. Unfortunately, there is nothing out there of that nature. Be careful of grandiose claims and wild ideas of new products.

Alternative Power Systems, Inc is NABCEP certified and licensed in Utah and Nevada. We use only UL listed products.

We would be happy to answer any questions as well as come out and look at your present system or give you a bid for a new one.

Remember, under sizing the array will not allow the inverter to stay tied to the grid in hot weather. Oversizing your system may result in wasted money. The

If the voltage is over the specifications, the inverter may never work again. If the amperage is too high, the inverter will still only put out the amount of power it is rated.

Grid tie inverters are current limiting. When the array is too large for the inverter output, causing more amperage than is

weather. Oversizing your system may result in wasted money. The inverter is current limiting and will only put out what it is rated.

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