

Thank you for your interest in a solar energy solution from Tinitop Technologies. My name is Dewole Ajao; I've worked as a network engineer for several years and I have over 20 years experience as a solar energy user and I currently live mostly off-grid. Getting the perfect solar power solution starts with knowing exactly what appliances you want to power, what time of day you will be using the appliances, and for how many hours you will be using them.

With this knowledge, we can estimate the size of system that you need by looking at the components below.

Inverter size (kVa) - determines the maximum load your system can carry together at once. For example, a 10kva inverter can power roughly 10 units of 1 horsepower air-conditioner. This is similar to planning the kva size of your diesel/petrol generator.

Battery size (kWh) - determines the maximum amount of energy you can store in your backup for use in powering appliances when the grid (NEPA) is off or disconnected. This is similar to the size of your fuel holding tank in a generator example or in NEPA analogy, the number of credits you have on your meter before it goes to zero and your light goes off. The bigger your fuel tank, the longer you can survive without NEPA on a full tank.

Solar panel array capacity (kilowatts) - determines how much energy you can capture from the sun either to power your appliances as a replacement for NEPA whenever the sun is shining, or to store energy in your batteries for use in powering your appliances later. The higher your solar generation capacity (solar panels), the faster you can charge your batteries, and also, the lower the amount of money you pay to NEPA since you are getting more free electricity from the sun.

Above are the three main factors in sizing your demand. Of course the maximum possible capacities will be desirable but with budget constraints, a decision has to be made regarding which part of the system to downsize. You will also need to make decisions like how many appliances you want to power at the same time and for how long you would like to power them daily, and what time of the day you would like them to run.

The beauty of the Tinitop process is that we can work with you to design a system that can grow with you without discarding components down the line.

For example you can start without putting all your appliances on the solar system; that way, you can use a smaller inverter. When you are ready to scale up, more inverters can be added to increase the total capacity.

Another example is to start with battery capacity that can store enough energy to power all your load independently for a certain number of hours e.g. 6 hours. That means you will still be running on generator or NEPA outside those hours. When you are ready, additional batteries can be introduced to increase the hours of independent power.

Another major component is the PV cable connecting your solar panels to the inverter. This has to be appropriately sized to ensure there is no risk of overheating or fire outbreak. There is also the need to ensure that the system is properly earthed. This is to direct any surges from lightning or NEPA to the ground. Good earthing protects your appliances.

We can be reached on +2347034692587 or +2348039661012 for supply of lithium batteries (12v and 48v), solar panels, inverters, system design consulting and installation. You can also order from www.cornershops.ng/solar where we have a free demand sizer with instant cost estimator estimator