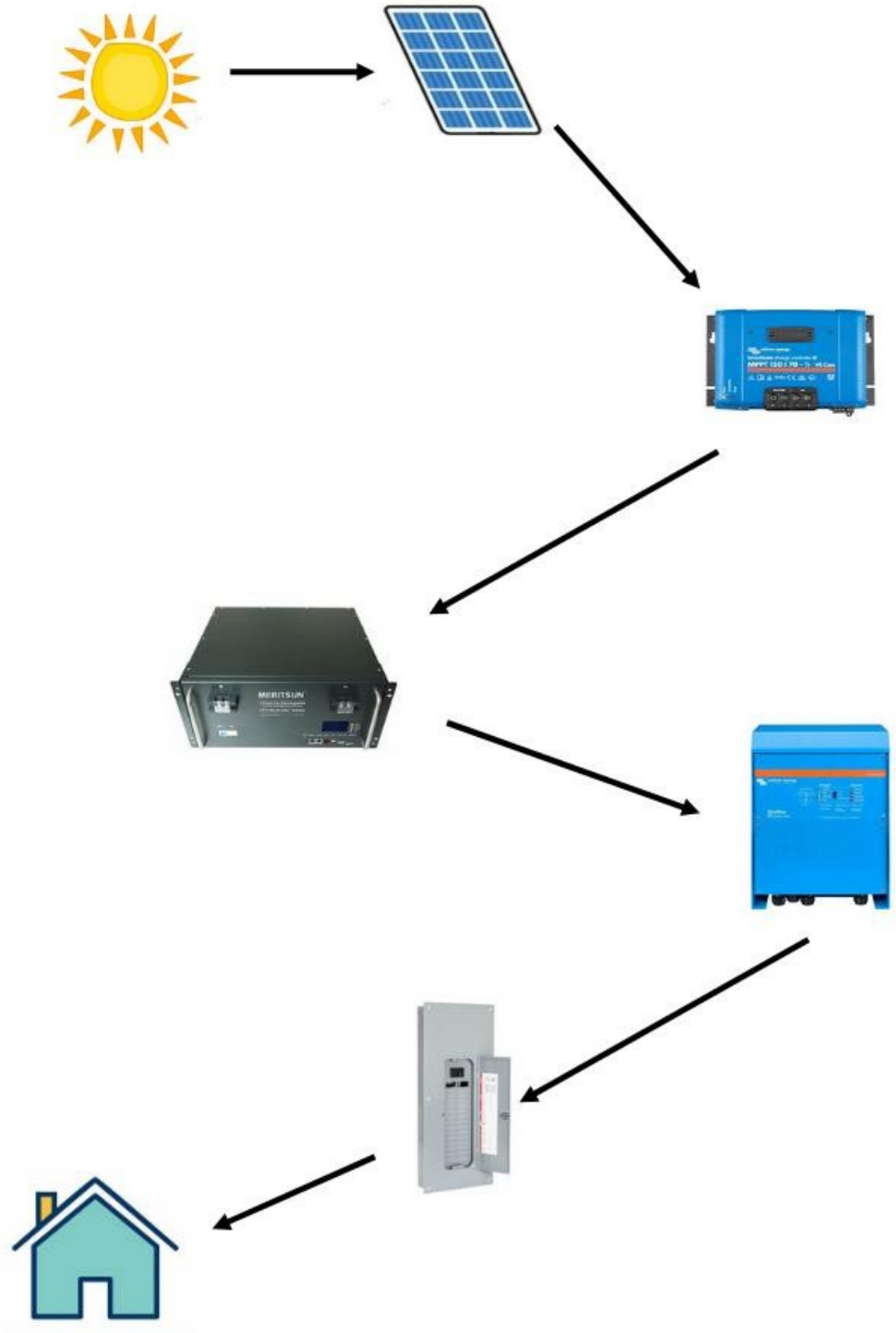
General Solar Overview



General Solar Overview

I am completely and totally fascinated by the whole concept of solar energy! I find it utterly amazing that the technology exists to harvest energy from the sun and turn on lights in a home. Several times a month I stand outside looking at my solar panels and marvel at how that powers my home.

Okay, the insight into my mental state is over...now on with the overview.

Solar power systems are simple in concept and theory. Implementation of a complete and workable system is a whole other matter...and comes in the later chapters of the book.

So, in a nutshell…

1. Solar panels absorb light from the sun and makes it into electricity.
2. That electricity is moved to a charge controller that converts it into a stable and usable form of electricity.
3. That electricity is is moved to either the batteries for storage or directly to the inverter for use.
4. Electricity from the charge controller that went directly to the batteries gets stored in the batteries for later use.
5. Electricity that went directly to the inverter gets converted into electricity that goes to your home for use in lights, appliances, etc.
6. When the solar panels are not producing enough electricity to power your home then electricity is pulled from the batteries and sent to the inverter and gets converted into electricity that goes to your home for use in lights, appliances, etc.

For those of us that are visual learners…

The sun produces energy in the form of light.

A solar panel absorbs that light and turns it into energy called electricity.

The more the sun shines the electricity the solar panel absorbs and the more electricity is produced.

The most electricity is produced when the sun is exactly perpendicular to the solar panel.

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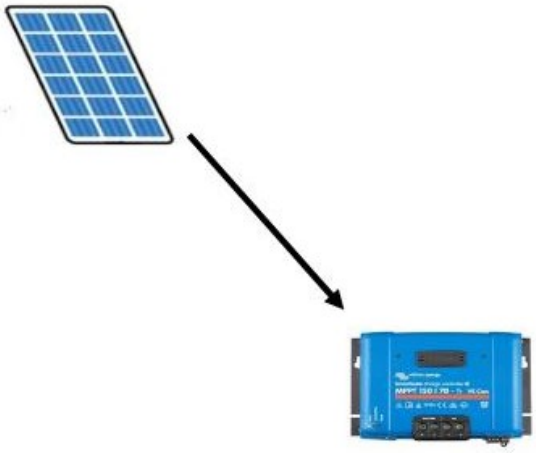


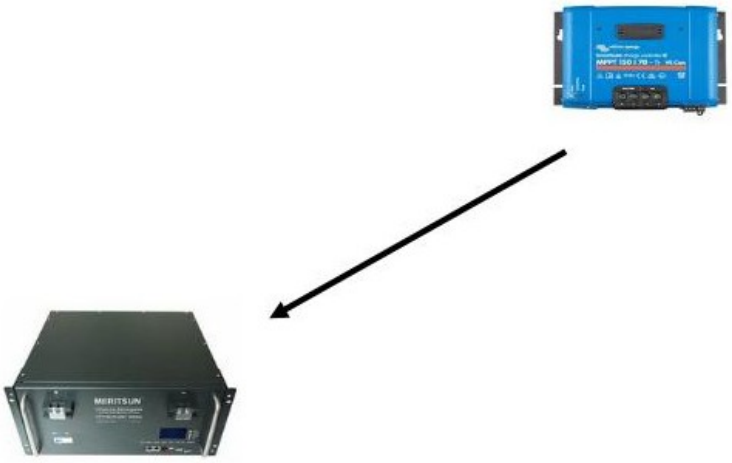
There is a junction box on the back of the solar panel, it is almost always black plastic. It is sealed sufficiently to protect the electrical and electronic components from snow, rain, dust, etc.

The electrical and electronic components work together to collect electricity from the solar panel cells and transfer that electricity to wires that protrude from the back of the panel.

The wires then transfer the electricity to a piece of gear called a charge controller.

The charge controller then converts the incoming electricity into a stable form of electricity that is compatible with the solar system's voltages.

The charge controller then send the power to either the battery or the inverter.



The battery stores the electricity (power) for when it is needed and when the solar panels are not producing power.

The battery releases electricity (power) to the inverter.

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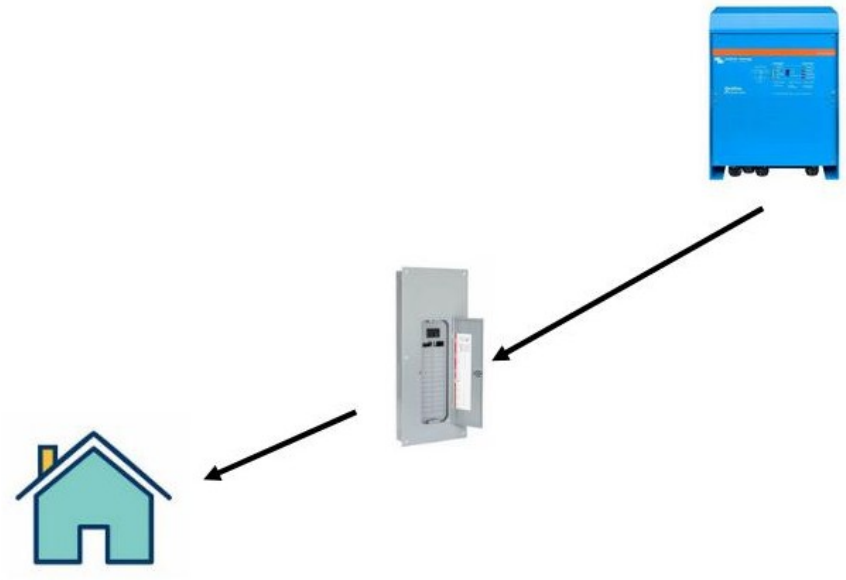

The inverter converts the electricity (power) coming from the battery into electricity that can be used by the house electrical system.

That electricity (power) is sent on to the house main breaker panel where it is distributed to the homes electrical circuits.

Bottom line...harvest energy from the sun, store it, convert it to electrical power, turn on a light switch.