Solar Charging for Your Smartphone and Other Devices

Question:

I was thinking about getting a solar device to charge my phone in case of loss of electricity. Do such devices work to power radios, kettles, computers, etc.?

Solar Charging for Your Smartphone and Other Devices

Solar devices to charge smartphones is easy, solar and other devices for powering computers, kettles and other things is more complex, so we'll cover some things tonight, and other backup power sources at a future Q&A

Solar Charging for Your Smartphone and Other Devices

Small pocket size solar chargers are available that will power smartphones and other *small* power demand USB devices (OPCUG had some for door prizes a couple of years ago).

Solar Charging for Your Smartphone and Other Devices

Pocket size solar/USB chargers

- Available in different sizes (‘for little or big pockets’) and power capacities
- Have built-in rechargeable batteries so they can be pre-charged

Solar Charging for Your Smartphone and Other Devices

Pocket size solar/USB chargers

Can be charged with a USB power source or just left in a sunny window or on a picnic table (or on a rock if you're in the middle of Algonquin park) to solar charge

Three devices in my kitchen window

On the table on my deck

Solar Charging for Your Smartphone and Other Devices

Pocket size solar/USB chargers

- Can only power USB (5 volt DC) devices
- Small capacity chargers will handle smartphones, medium to large capacity chargers can handle the smartphones and **some** tablets
- Will power a small radio IF the radio has a USB socket for power input
- Will NOT support laptop or desktop computers

Solar Charging for Your Smartphone and Other Devices

Pocket size solar/USB chargers

- **Prices range from $25 to over $100 for the pocket size (there's a good selection at amazon.ca)**
- **Look for features like:**
  - Built in flashlights
  - Waterproof (OK if left on the picnic table in the rain)
  - Cigarette lighter (can be used with dried leaves to start a fire)

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- There are radios available that have their own solar charger, and can also be powered by normal batteries or charged using a built-in hand crank.
- The radio can also power your smartphone and other small USB devices, and has a built-in flashlight.
- This particular model is the FosPower 2000mAh NOAA Emergency Weather Radio (Model A1) Portable Power Bank with Solar Charging, Hand Crank & Battery Operated, SOS Alarm, AM/FM & LED Flashlight for Outdoor Emergency, $40 at Amazon Canada, 4.5 out of 5 stars from 17,150 reviews

Solar Charging for Your Smartphone and Other Devices

Small pocket-sized solar chargers will work for smartphones and some small tablets, but what about computers, kettles and other stuff?

What are other sources of backup power that will work for them?

Solar Charging for Your Smartphone and Other Devices

- Larger single panel or folding multi-panel solar panels are available to power laptops, small TV's, etc. that have a USB (5 volt DC) or 12 volt DC outputs.
- **IMPORTANT: Check to see whether any of the USB sockets on your laptop or other devices will ACCEPT power as well as giving it!!!** If not, you will need to use some sort of adapter or power inverter to do the job.

Solar Charging for Your Smartphone and Other Devices

- Some panels have built-in batteries, some require an external battery.
- Most panels don’t have the capacity to power larger devices ‘live’, and must have a battery which can be charged over time.

Solar Charging for Your Smartphone and Other Devices

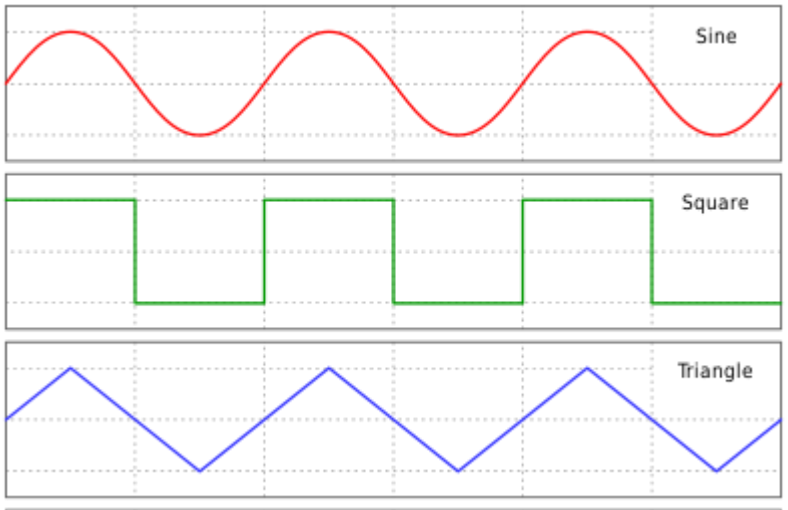
- Make sure you get one with the proper output voltage (e.g. 5 volts for USB, 12 volts to charge car batteries) and MORE than the wattage capacity you need
- ALL solar panels are DC and require an inverter to provide AC power (some have the inverter built-in)

Solar Charging for Your Smartphone and Other Devices

Most solar chargers or smaller solar panel setups do NOT have the capacity to power the intended devices directly and so require some sort of rechargeable battery setup to charge over time.

Solar Charging for Your Smartphone and Other Devices

- Battery powered devices that output AC usually output *'square wave'* AC that is suitable for heating devices, lights, some motors, or plugging in laptop or other power supplies, but may not be suitable to directly power sensitive electronics (e.g. TV's).
- More expensive devices can put out *'modified sine wave'* or *'full sine wave (what you get from the power company)'* AC.



Solar Charging for Your Smartphone and Other Devices

- Rechargeable power packs are available that can be charged with USB (5 volt DC), 12 volt DC and/or 120 volt AC sources, and will output USB (5 volt DC), 12 volt DC and/or 120 volt AC, and some that will even boost start a car with a dead battery.
- They come in various sizes and output capacities
- Some come with their own solar panels, or can use any 5 volt DC and/or 12 volt DC solar panels to charge

Solar Charging for Your Smartphone and Other Devices

- They will power laptops, some desktops, small TV's, small power tools, lights, etc., but some electronics may have waveform (square wave vs sine wave) issues
- Prices range from $100 to well over $1,000 (Canadian Tire often has theirs on sale for up to half price)

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Coming Next Week!!!

Other Backup Power Sources

- 12 volt Booster/Power Packs
- Uninterruptible Power Supplies (UPS's)
- Your own car
- Battery-Powered Inverters
- Generators
- Whole House Backup Generators