

Always have free power at home



These folks get free fuel for their car.

The Black and yellow thing above is called a power station which puts the battery (a more powerful smaller, lighter dry Lipo battery) in a portable case with the charge controller and inverter and ports all built in. If you choose to get one of these all you now need is a solar panel and wires.

This is a very short article from a college professor who actually gets free power himself.

About the free part. It is free daily but only after you acquire solar panels and a power unit or battery. And this can be done for under \$100 to power lights, charge phones, small electronic devices a small flat screen TV and laptop computer. To power more add more solar panels (at this time a 100 watt panel is around \$100 but prices are going down) Used car batteries can be had on the cheap but golf cart and deep cell batteries are much better and a power unit with lithium batteries is even better.

This can all be done as a Do It Yourself project because it is so easy and no licenses are required. Most cities don't even have to be notified as you are putting in a low voltage temporary system just as if you were camping. Lightweight flexible panels can be purchased that can set inside at a window facing the sun. These panels usually come with two wires that plug directly into a power unit. You then can directly lug in your phone charger cord, 12 volt camping lights, fans, coffee pots, cookers etc. or you can plug in regular 110 AC plugs to run TVs, laptops, fans, small appliances and lots of lights. However, Refrigerators, Freezers, and home sized air conditioners will need a bigger inverter that can handle the large amount of wattage to start their big compressors. Electric stoves, water heaters do require even larger amounts of power requiring large power inverters and several batteries to keep them going.

Make a search on Google for solar panels. You will find Amazon, Home Depot and others selling them.

Avoid Polycrystalline panels. They are cheaper but waste of your money because they are less efficient than monocrystalline panels. For just a few dollars more you get much better efficiency. There are new perovskite panels coming out which will be much more efficient and a lot cheaper but don't hold your breath. If you are getting glass panels it may be best to order from a place like Home Depot who can receive and inspect them then you can pick them up from their store. As opposed to having UPS leaving a glass panel at your door in who knows what condition after being thrown around in transport. Flexible panels would be less risky for damage. Tesla solar roof panels are interesting but haven't heard of anyone getting them except for an entire roof.

If you are on a low budget, you can start small and add to it. Foldable camping or recreational panels are portable and usually lower cost. They can be set in a sun facing window or on a rack outside. A low cost rack can be made of pex, pvc pipe or scrap wood. Zip ties can be used for fasteners but get the kind

that are resistant to sun damage or paint them. Panels can also be hung on racks fastened to window frames and or fastened above air conditioners. Some people mount them on a garage or shed roof or behind them. I started by putting panels on my roof then a week later it snowed. I had thought that since they were black the sun would melt the snow and ice. Well in southern Michigan the snow can partly melt then change to ice and the block the sunlight from letting the panel do its job of making electricity. And it is not safe or practical to climb up on a roof perhaps several times in a winter to clean off the panels. My panels ended up on a 2x4 rack behind my house facing the sun which is easy to brush off with a brush on a long pole. Have had to do this an average of 3 times each winter not bad. I am just north of Detroit and our winters are a little milder because of the great lakes and due to living in a large urban area.

Panels should face the sun for best performance. A panel set to face the sun at mid day is fine and does not have to be rotated. The sun should be perpendicular at to the panel exactly at mid day. Be aware that saving time may advance or retard that position so noon is not necessarily mid day. Being off a few degrees will not matter. Be aware that the sun is lower in the winter and higher in the summer so some people adjust for this but if they are on fixed panels it is not worth the hassle.

Insurance companies don't like things on roofs. Most can give you a rider at little to no additional cost. Racks are ignored. Oh you may have to stake or weigh down a rack. I added a wind shield out of plywood at each end to that in a strong wind the wind would be directed away from the panel not under it where it might rip it off of the mounts. You may not even need one but conder the rare strong wind from all directions and prevent disaster. See the longer article for more details.