

DIY Solar Panel - Complete Analysis On Home Solar Power Systems

Research on home solar power systems. Find out how a DIY solar panel can benefit you and your family. Also, learn how you can build your very own solar panels at home.

July 29, 2009 - [PRLog](#) -- Do you know that the amount of energy received from the sun every hour is sufficient to satisfy all energy needs for the whole humanity during one full year?

To put this statement in numbers, NASA has estimated that the Sun irradiates the earth every day with 174 Petawatts (Pw) of solar energy. 30% of this energy is reflected back into space, and another significant share is absorbed by our atmosphere. Now, even if we receive only 10% of this energy - 17.4 Pw per day, this is still much more than the whole daily energy requirement worldwide (roughly 45 Gigawatts - as a clarification, 1 Petawatt equals 1 million Gigawatts).

These are concrete Solar Energy Facts. With this prospect of abundance, how is it possible that 2 billion people in the world don't have electricity at home (if any home at all)? The answer is that we are simply not capable of canalizing fully all this energy to meet our requirements. Most Solar Cells available in the market are quite expensive to be accessible to the purchase power of developing and third world countries, and in most of the globe these technologies still remain completely unknown. In that regards you are certainly a lucky and successful person, because you understand that these resources are already available to satisfy your needs today.

How to take advantage of this technology today?

You can start building your own solar panels. You only need a set of good instructions, some simple materials and a small portion of patience and dedication. With little as US\$ 200 you could have your first solar energy generator available and start enjoying the following benefits. The following are some Solar Energy Facts if you decide to welcome this clean energy source into your life:

- You will start saving in energy bills right away by building your own DIY solar panel and generate your own electricity - Your DIY Solar Panels will be producing energy for you for several years - You will set a good example by cooperating with the environment and producing clean energy. - You can even get some money by providing your electricity company from your spare energy. - You can store your energy in a battery and enjoy your free electricity even during the evenings or cloudy days - Depending on the number of panels you build; you can live completely off the grid.

Are you ready to build your own DIY Solar Panel, become "Green" and save some money in the process?

There is a cheap way to build your own DIY solar panel, if there wasn't many of us would be stuck paying thousands of dollars for retail systems.

Firstly were going to need some parts if we are to find a cheap way to build a solar panel. Surprisingly most of the parts required for our build we will be able to find at a local hardware store. Take a look around your house before you set out, you might already have some parts:

- Wire crimping tool
- Wire cutters
- A sheet of plywood
- Copper wires
- Screwdriver

- Cobalt steel jobbers' twist drill bit, heavy duty, wire gauge size 26, 3" L, 1c" L flute
- Machine screw size high-speed steel hand tap taper, 10-24, H3 pitch diameter, 4 flute
- 7/32 drill bit
- Plastic sheet cutter
- Reamer
- Pliers
- Hacksaw
- Solder, 60/40 or silver
- Soldering iron, or soldering station
- Sheets of glass
- Drill

Other materials that are required can be found in online stores. Parts such as solar cells and diodes are inexpensive and not too hard to find online especially on eBay.

The placement of your solar panel plays a big part in the effectiveness it will have at generating electricity. If you have an unobstructed south facing roof to your house that will be the best spot for it. If that is an unavailable option, try and put it where it can get the most sunlight possible.

How much power do you use?

The first task is to determine just how much energy you are using. See our related articles on energy audits to reduce energy waste. Next, look at your power bill. You should see your monthly and yearly usage. This information will be helpful in determining just how much solar energy you really need. You should also note how much your power is costing you in dollar per kilowatt-hour (\$/kw-hr).

Are there rebates and tax credits?

The short answer is 'YES!' There are hundreds of programs around the country to encourage people to install solar power systems on their homes. The federal government has a 30% tax credit for solar and wind systems. Contact your local power utility for information on rebates that they offer. In some parts of the country the power utilities are offering to pay for nearly half the system. Add this to the federal incentive and you might have 80% of your system paid for by others.

Comparing with a professionally made solar panel:

If you assume that an installed system will cost about \$10/watt, you can estimate a rough budget for the project. For instance, if you start with a 1,000 watt system (which is nice place to start for a lot of homeowners) it would cost about $\$10 \times 1000 = \$10,000$ for the labor and materials. Remember, there are plenty of incentives out there. So if you had a \$2/watt rebate from the utility and took the 30% federal tax credit, your actual system cost would be $\$10,000 - (\$2/\text{watt} \times 1000\text{watts}) - (.30 \times \$10,000) = \$5,000$.

Can you do a little now and add more later?

One of the best things about solar energy is that it is very expandable. You can put in a few panels now, monitor their performance, and then add on to the system as your needs and budget allows. It is generally better to start out knowing you are going to expand later, so that you can plan your space and equipment usage better.

What's the next step?

Learn more about how to build you own DIY solar panel at:

<http://www.greenearth4energy.com>

You may also want to get your DIY installation guide at:

<http://www.earthenergyguide.com>

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Andy O Silliven is an engineer and author in the fields of electrical engineering. He enjoys writing about the topic and keeping up with current events and research in the area of renewable energy sources.

Recommends: <http://www.greenearth4energy.com>

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