Project Endeavour

Various Renewable energy sources to power home

Clean renewable electrical energy generation systems are becoming increasingly accessible to the average homeowner either installed at home and connected to the grid or purchased as Green Power.

Renewable energy can also be used for home heating and cooling, hot water and even cooking.

Electricity accounts for about 53% of the energy used in Australian households but creates around 87% of the greenhouse gas emissions (DEWHA 2008). Most is generated by burning non-renewable fossil fuels: coal, oil, natural gas and liquid petroleum gas (LPG).

Renewable power systems use renewable energy sources to produce electricity with very low greenhouse gas emissions. These sources, such as the sun, wind and water, are replenished naturally but are not available continuously. In stand-alone systems, back-up electricity can be supplied from storage batteries and/or generators. For grid connected systems, the predominantly fossil fuel based electricity (i.e. coal or gas generated) supplied through the grid can act as back-up when renewable systems are not generating. If fossil fuel generators are used for back-up power sources, greenhouse gases are produced.

Using renewable energy to power your home can reduce or completely eliminate your utility bills, and the tax incentives for installing renewables can make them even more cost effective. Here are seven different ways to power your home with renewable energy.

Various types are as follows:

Rooftop Solar Panels

This is probably the most common and obvious method, if looking into renewable power. Solar panels typically go on houses's roof, although it can also be installed in your yard. Depending on your latitude and the orientation of the panels, you could generate 10 or more watts per square foot. A typical house consumes at least a kilowatt of power, so a few square feet of solar panels should be enough to power most or all of your needs.

If your current roof is nearing the end of its lifespan, you could also consider investing in solar shingles. Where standard rooftop solar panels are mounted on top of your current roof, solar shingles actually take the place of your roof tiles. Elon Musk's SolarCity recently announced a plan to start producing solar shingles, and other companies like SunTegra have been making them for years. Of course, one big weakness of solar power is that it only works when the sun is up. If you want to power your home when the sun is down, you'll need to pay for grid electricity or invest in a second type of renewable energy.

Wind Turbines

Wind turbines are most commonly found in windfarms or floating offshore, but if you have enough real estate you can install a small wind turbine on your property to power your home.

There are a few downsides to a wind turbine that make them less popular in residential areas. They can be ugly and make a lot of noise. They take up space, and depending on where you live, local laws and zoning regulations may outright forbid it.

But if these disadvantages don't apply to you or don't bother you, wind power may be a great asset. Wind power is more stable than solar, and a good-sized wind turbine can easily generate most or all of your electricity needs. Depending on your area, wind might be a better renewable investment than solar.

Solar Oven

Perhaps you're not ready to power your entire home with renewable energy. That's a big project, and maybe it's just not feasible for all sorts of reasons. You can still power a part of your home with renewable energy by building a solar oven.Solar ovens are typically a science fair project, but ovens actually use quite a bit of electricity. Using the sun to passively heat your food is a good way to get started in the world of renewable energy.Solar ovens work by trapping sunlight to heat food. You can buy a solar oven or build your own out of a few common materials.

Solar ovens have several advantages, in that they heat your food for free, and they work even during a power outage or emergency. You'll never have to have a cold meal due to a lack of power.

Hydro Power

Diversion of some stream to flow through a turbine and power your home. There are a number of ways to go about doing this, but at its most basic, you'll want to find the largest vertical distance the water will travel, and divert that water so it flows through a turbine in a controlled manner. Depending on the amount of water and vertical distance, you can produce a substantial amount of power this way. Setting up a hydro power generator is not easy, and you may need to have a professional install it for you. If you have some engineering knowledge, though, you could even build it yourself from scratch.And the advantages to hydro power are immense. Unlike solar and wind, hydro is stable and continuous, which means you'll always get the same input no matter

what. You'll never have to worry that your generator won't be able to power your home. That piece of mind might be worth a little engineering project.

Solar Water Heating

Solar power doesn't just have to generate electricity. You can also use the power of the sun to heat your home. Solar water heaters use the sun to heat a reserve of water, which can then be pumped through your radiators or out your faucets or showerheads. This system is much cheaper than using gas or electricity to heat your water, and is easier to install than solar panels. If you're not willing to completely commit to powering your entire home with renewable energy, solar water heating can be a good alternative.

Solar Air Conditioning

It might seem strange to use heat from the sun to cool your home, but that's exactly what solar air conditioning does. Solar air conditioning uses the same principles of the solar water heater, but uses that hot water in an air conditioning system.Air conditioning uses more electricity than almost anything else in your home. Air conditioning can cost you a substantial amount of money every year, especially if you have central air and you live in a hot climate. Using hot water to cool your home can save you money and help the environment. As a bonus, the hot water

produced for air conditioning can also be used for other applications in your home. Depending on your setup, you can get the benefits of solar water heating with bonus air conditioning as well.

The Project will focus on conducting a research on various households in Udaipur city and around to find the possibility of use of renewable energy source and also to find number of households using such sources.