



PLANET HOME

# Generate Your Own Power

Whether it's bio gas, water for washing the patio or electricity for your garden lights, if you took interest and made the effort, you could produce them all yourself at home

Impressions | Benoy Sebastian,  
with inputs by Shyam Balsekar, CEO, Linear Technologies

## GREY WATER RECYCLING

Grey water gets its name due to its cloudy appearance. It is neither fresh nor highly polluted and is generated from all domestic processes, except the lavatory. It comprises of 60 per cent of all residential wastewater! If collected using a separate plumbing system domestic grey water can be recycled directly within our homes.

Recycled grey water is never clean enough to drink, but it can be used for washing or flushing toilets and watering plants.

## BENEFITS

Helps plant growth  
Induces recharging of the groundwater  
Reduces fresh water usage



**W**hat if you could generate power and recycle water in your own home, cut down on monthly utility bills and save the planet, all in one go? All you have to do is tap a few alternate, eco-friendly sources of energy and water.

## DIFFERENT METHODS OF GENERATING POWER

The different methods of generating power at home include:

- Solar Power
- Wind Energy
- Bio-gas



Photograph: Corbis



## RAIN WATER HARVESTING

Rainwater harvesting is the process of collecting naturally filtered rainwater into underground store wells.

The term rainwater harvesting is being used frequently these days. Rainwater harvesting is the process of collecting naturally filtered rainwater into underground store wells through the use of artificial methods. It is nothing but the conscious collection and storage of rainwater for drinking, domestic and irrigation purposes. In case of an individual home (bungalow or villa) with a roof area of approximately 1,500 sqft, you can collect upto three lakh litres of water with an annual rainfall of about two metres. The water collected during the monsoon season can last for 10 months and can fulfill the needs of a four member family (when individual consumption doesn't cross 150 litres per day).

### WHY RAINWATER HARVESTING

- To arrest ground water decline and augment ground water table
- To conserve surface water wasted during monsoon
- To reduce soil erosion
- To inculcate a culture of water conservation

### METHODS OF RAINWATER HARVESTING

- Arresting the runaway water from rooftops and driveways during monsoon
- Rooftop harvesting

Photograph: Corbis





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### SOLAR POWER

Solar power is generated when sunlight is converted into electricity. Except for the installation costs and some maintenance, solar power is essentially free – a huge relief at a time when electricity bills keep on soaring. Most importantly, solar power is clean power, generated by a solar panel system. A solar panel, made up of photovoltaic (PV) cells, transforms the sun's high voltage heat into electricity, thus generating ample voltage and current. This power can then be stored in a single battery or a set of batteries. If your solar panels cover a 100 sqft area approximately, then you can generate 4-5 units of electricity in one day.

#### COSTING

The cost of setting up solar powered panels strictly depends on your household's needs. Prices start from Rs.15,000 and go up to several lakhs. Solar water heaters that can heat 100 litres per day for a family of four will cost around Rs. 21,000- Rs. 22,000.

#### SOLAR WATER HEATERS

Conventional electrical water heaters consume a lot of electricity and constitute almost 30-40% of our billing. They can easily be replaced with a solar water heater, which has absolutely no running cost. A single solar water heater panel can heat approximately 100-125 litres of water a day.

#### SOLAR GARDEN LIGHTS

These stand-alone garden lights have an inbuilt, solar panel to capture the sunlight during the day to transform it into electricity during night. Solar garden lights can be installed anywhere without you worrying about the cabling or about someone getting electrocuted after the rains.

#### SOLAR POWER BENEFITS

Using solar powered lights have some major advantages over conventional electrical lights.

These include

- You can avoid rising electrical bills
- There is zero pollution and no dangerous chemicals or gases are released
- If you have enough roof space, you can meet your entire home's electricity needs
- Enjoy uninterrupted power supply inside your home during general power cuts

Correctly-sized and installed wind power systems can provide clean, reliable electricity and are currently one of the most cost-effective sources of renewable energy.



### WIND ENERGY



*Wind Power* converts wind energy into a useful form of energy, like electricity, using fan blades for homes or wind turbines in larger sites requiring more power.

Small wind mills for residential homes can easily generate 500 watts to three kilowatts.

#### BENEFITS

- Wind energy generates no pollution and is a permanent source of renewable energy
- Wind in our atmosphere is generally available 5-10 hours daily (depending on the season)
- Wind energy is eco-friendly since you don't burn any waste to generate the much needed electric power
- A simple wind powered mill takes up relatively less space and can be installed in the terrace or in your backyard

#### COSTING

Setting up a basic wind mill for your home will cost you around Rs. 50,000 - Rs. 60,000.



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### BIO GAS



It is an alternative home-based energy source. Bio-gas is essentially methane gas, which can be generated from any bio-waste material in our backyards. Using local resources like cattle waste, kitchen garbage and other organic wastes, you can generate energy for your home and manure for your garden. In case of individual homes, bio-gas systems are available, which can generate enough bio-gas for cooking, room heating and lighting. Generating bio-gas is

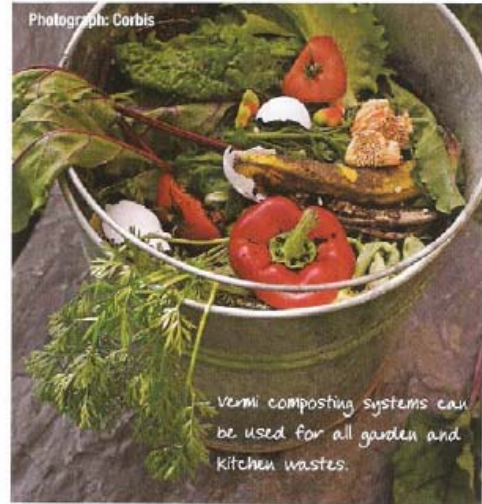
simple. Collect all the food waste (garbage), cow dung (if available) and sufficient amounts of water. Put this mixture into the bio-gas plant. The waste then decomposes to generate bio-gas.

#### BENEFITS OF BIO-GAS

- Disposal of wet garbage generated by the household
- Bio-gas produced can be used for running a generator
- Source of a very good organic manure for gardening purposes
- A smoke-free and ash-free kitchen
- Reduces respiratory infections

#### COSTING

Small bio-gas units are available relatively cheap for home set-ups. The cost for a small household unit ranges from Rs. 17,000 to Rs. 20,000.



Photograph: Corbis

Vermi composting systems can be used for all garden and kitchen wastes.



#### VERMI COMPOSTING

The process of using earthworms to turn organic waste into very high quality compost. This is probably the best way of composting kitchen wastes. With general composting pits, adding small amounts of wet kitchen scraps every day can disrupt the decomposition process. But with vermi composting, adding wastes daily works just fine. Vermicomposting systems can be used for all garden and kitchen wastes. If you don't have a garden, a worm box can be used indoors. The resulting compost is extremely rich in microbial activity and plant growth regulators, and is fortified with pest repellent attributes as well.



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