



Limited resources and unlimited usage.  
*How can we save it?*

Newsletter



**Conserve the energy,  
Save our climate!**

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Issue : 4

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## Why ???

We the people on the earth are gifted with wonderful energy sources by the nature, which has made our routine much more smother & easier... However, this gift of the nature is ' limited '. What we have done is, with the growth of science & technology, we have started using it extremely, because of which the energy resources are going to finish in near future. Hence, let us take the pledge to conserve the energy - save the energy!!!

## Tips of the Month



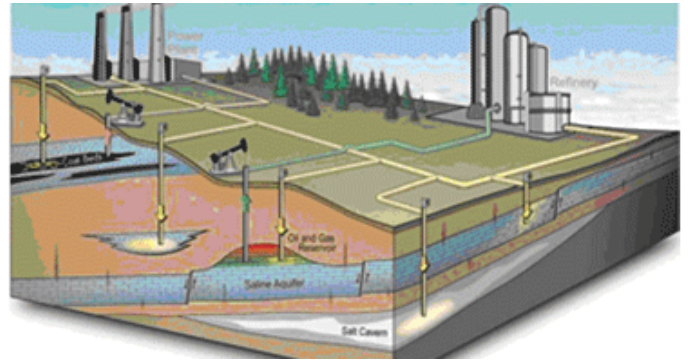
Always try buying products sold in recyclable containers and ensure that your garbage gets recycled.

## Article - 1 : CLEAN COAL TO COMBAT CLIMATE CHANGE

Clean coal is a key for tackling climate change and developing this technology is a big challenge. This is because there are two big challenges to be faced. Firstly we need to meet the world's energy needs and secondly the need for combating the climate change.

Kenyon-Slaney, the energy chief of the mining giant Rio Tinto said that the emissions that drive climate change are the world's biggest problems. He supports the power generating technologies including the renewable energy.

He feels that the abundance of coal means it will remain the world's main source of large scale reliable and affordable energy. The advancing research and development in carbon capture storage (CCS) in order to make it viable shall be a key goal for governments and businesses. The technologies can all help in fighting climate change but breakthroughs in lower emission coal generation will be fundamental. They will definitely break the back of this problem.



(\*Image: <http://www.eoearth.org>)

While CCS has been hailed as solution to make fossil fuels cleaner, the technology at this stage is proving to be costly, risky and energy inefficient. It involves trapping CO<sub>2</sub> emissions from power plants and other large sources by liquefying them and storing them deep underground. The world should focus more on power generating solutions now. Rio's energy sections composed of coal narrowed its losses to US \$19 million in six months from US \$52 million during the previous reporting period.

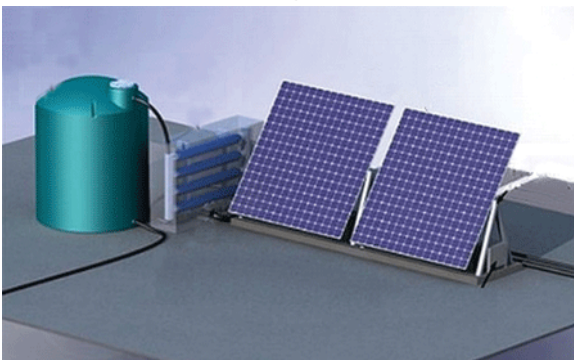
Source: [www.spacedaily.com](http://www.spacedaily.com)

## Article - 2 : PHOTOVOLTAIC DESALINATION TECHNOLOGY

Scientists at MIT have come up with a desalination technology which is powered by solar panels. It will provide clean and palatable drinking water to meet the needs of India's water deficient villages. Sixty percent of India has salty water and much of that area does not have an electric grid that could run conventional reverse osmosis distillation plants.

This different technology is called electrodialysis and can supply the needs of a typical village. This technology can be possible in India because there are relatively low levels of salinity as well as lack of electric power. The moderately salty water does not have a direct toxic effect on people but on the long run its unpleasant taste can cause people to opt for other dirtier sources.

Researchers say that this method will not only be economically viable but also culturally acceptable as it would easily meet the demands of 2000 to 5000 people. Deployment of such systems would double the area of India in which groundwater- which is inherently safer in terms of pathogen loads than surface water could provide acceptable drinking water.



(\*Image: <http://tunza.mobi/articles/small-is-beautiful>)

These village scale systems would be more effective than the currently used home based filtration methods used in many homes in India. This is because home based systems are much harder to monitor to ensure effective water treatment.

Electrodialysis works by passing a stream of water between two electrodes with opposite charges. Because the salt dissolved in water consists of positive and negative ions, the electrodes pull the ions out of water, leaving fresher water at the centre of the flow. A series of membranes separate the freshwater stream from increasingly salty ones.

Both electrodialysis and reverse osmosis require the use of membranes, but those in an electrodialysis system are exposed to lower pressures and can be cleared of salt buildup simply by reversing the electrical polarity. In addition, electrodialysis systems recover more than 90% water compared to reverse osmosis systems which recovers only about 40 to 60% of it. This is a big advantage in areas where water is scarce.

Researchers Wright and Winter had initially conceived this approach for village scale, self contained systems but the same technology could also be useful for applications such as disaster relief and for military use in remote locations.

Source: [www.technologyreview.com](http://www.technologyreview.com)

## Article - 3 : NEW GENERATION WIND TURBINES IN FRANCE

To mask low altitude airborne objects, production of stealth wind turbine has begun by a French company which will lead to zero interference of airborne objects with radars. Some elements have been borrowed from modern fighter jets for the production of the renewable power generators.

According to the Reuters report, to minimize the interference with civil and military operating nearby, France's EDF Energies Nouvelle a 'green energy' branch of the state has made an announcement for the production of towers.

Denmark's Vestas who is the world leader in land based wind turbine production have made the new blades for the wind towers.

An EDF spokeswoman said that the "world premiere for this new technology" will be taking place at the Ensemble Eolien Catalan wind farm near Perpignan during next spring. The new technology on two turbines was tested in a wind park in Auvergne by EDF EN in central France.

Ensemble Eolien Catalan will be the largest wind farm in France once the designed capacity of 96 megawatts will be reached.

Vestas is planning to launch the product on the international market after a couple of years with companies from the US and UK becoming the first possible client.

Operations of a large number of wind farm and projects have been blocked or denied worldwide because of potential radar interference they cause which result in 'hiding' low altitude aerial objects behind the rotating

blades of the rotor.

According to the French Windfarm Federation (FEE), projects of 6,000 megawatts have been blocked in France alone because of possibility of interference with military or weather radars.

Demands of obligatory consultations with any company who is planning to install wind farms within a 30 km range of military radar station have been done by the French military. There is little wonder about the military's resistance to wind towers, as the newest turbines can be up to 150 meters high.

Some of the turbine's elements have been borrowed



(\*<http://www.alstom.com>)

from military aircraft. Nicholas Wolff, head of the French unit of Vestas said, "We have used surface treatment technologies, including those derived from military applications".

Source: <http://www.winddaily.com>

## Article - 4 : THREE 'R'S FOR SUSTAINABLE LIFE

Formation of "Waste Hierarchy" was done to improve the overall waste management processes and programs. It is the order of priority of actions to be taken to reduce the amount of waste generated "Reduce, Reuse & Recycle". They are also called as three R's of waste management which are inter-connected with each other. This waste hierarchy is the guidance suggested for creating a sustainable life.

To incorporate these principles in your life, all you have to do is to bring a small change in to your daily life style to reduce waste which will lead to reduced amount of waste going to the landfill and avoid buying things which you don't need, reuse those things which can be reused instead of disposing it and dispose reusable things in to appropriate recycling centers and contribute towards a healthier planet.

The concept behind first 'R'- Reduce is the correlation between what is produced and what is consumed. The logic behind it is simple to understand, if there is less waste then there is less to recycle or reuse. The process of reducing begins with an examination of what you are using, and what it is used for. This can be done by using multi-purpose products, by reusing products and also by using only those products which are essential for life.

The concept behind second 'R'- Reuse is to reduce the consumption of reusable products. You may have a box of things you keep that are broken or that you don't have a use for that you hang on to in case you find another use for them; or you may find bargains on old furniture or go trash picking and get things that you can refinish, in either case you are working towards reusing the item.

The third 'R' – Recycle is the last step of the waste hierarchy. Recycling something simply means that transforming it again into a raw material that can be shaped into a new item. There are very few materials on the earth that cannot be recycled.



ImageSource: <http://blogs.sch.gr/gymagath/files/2013/04/RECYCLE.jpg>

One of the issues facing communities that want to become more involved with a recycling effort is that while the relying collection and sorting process may be reasonable to implement, there still has to be a facility to receive and transform the discarded waste into a raw material. More progress is being made toward uniting recycling plants with industries that can process the waste material through agreements and incentive credits.

One needs to learn as to what products can be recycled and what not. By taking precautions in selecting the products that can be recycled, can be a first step towards a sustainable life.

(\*Source: [www.factmonster.com](http://www.factmonster.com))

Conserve the Energy,  
*Save our Climate!*

**Conserve™**  
**The Energy**



It's  
**Tomorrow™**

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