

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

Newsletter



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

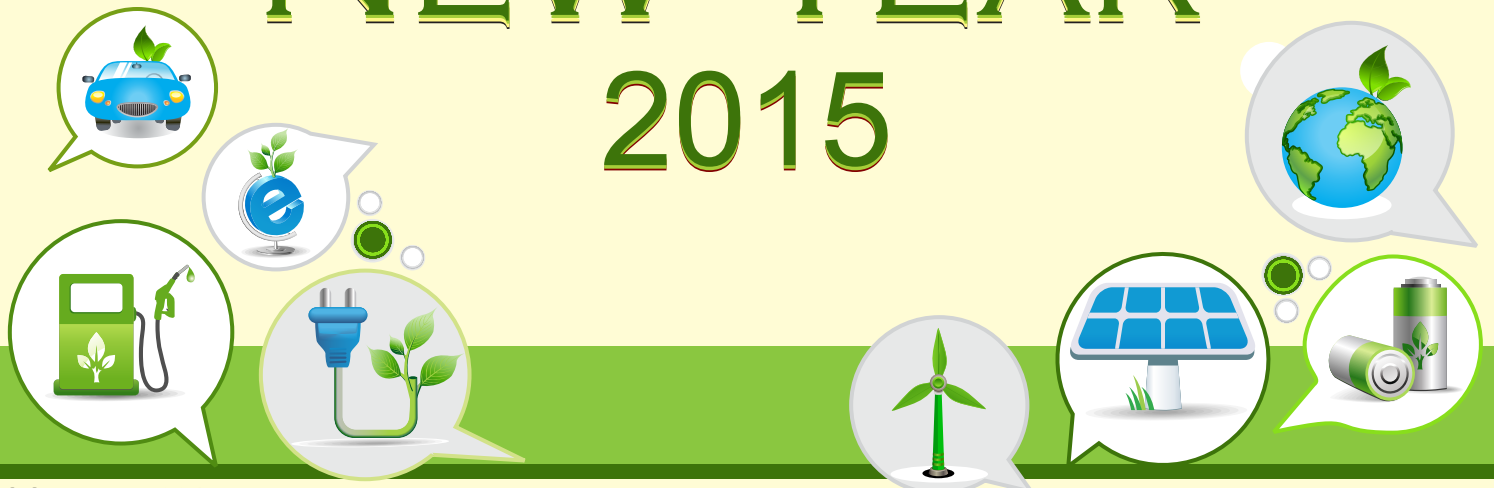
Conserve™
The Energy

ELECTRICITY
NON-RENEWABLE
CLEAN NATURE
RESERVE
WIND
WINDMILL
ECOLOGY
POTENTIAL
AIR
COMPONENT
FORM
SOLAR
RENEWABLE
RECYCLE
NATURAL
RESOURCES
ENVIRONMENT
OCEAN
CONSERVATION
GREEN
WATER
UBIQUITOUS
RAINFOREST
BIOTIC
ENERGY



Have a Happy & Energy efficient

**NEW YEAR
2015**



INSIDE...**Article : 1 ISRAEL USES...**[Read more...](#)**Article : 2 POLAND TAKES A ...**[Read more...](#)**Article : 3 UK'S FIRST ...**[Read more...](#)**Article : 4 WATER SPLITTER...**[Read more...](#)**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

Make online payments, it will not only save your time but also will reduce paper wastage.

ConserveTM
The Energy

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We, at Nanoland, are trying to spread awareness among the masses through our daily floating tips and articles that primarily focus on utilizing renewable energy. We believe that people should take it as an opportunity and take a step towards saving our natural resources. The gradual shift that is being made to conserve the energy by using renewable sources like wind, water, solar etc will help achieve sustainability in the longer run.

Article - 1 : ISRAEL USES BIOFUEL AS A RENEWABLE SOURCE OF ENERGY

With the New Year come new initiatives and new goals concerning our future energy use and sustainability. The world still runs on fossil fuels and our fuel demands are growing daily. As newly emerging economies grow at a rapid pace our demand for fossil fuels will have to continue to grow exponentially to keep up. Our increased extraction has begun depleting the most easily obtainable fossil fuels, leaving us with more labor intensive, environmentally hazardous, and expensive methods of extraction. These include hydraulic fracturing, which is facing opposition, and deep water oil drilling, which precipitated one of the worse offshore crises with the 2010 BP spill. The increasing demand for worldwide growth and the difficulty associated with new extraction methods has spurred investment in alternative energies.

In 2011, worldwide renewable energy supplied an estimated of global final energy consumption, and encompasses all different types of renewable energies, including: solar, geothermal, tidal energy, and wind energy. However, one of the most promising of these energy sources is biofuels, where Israel is quickly becoming an industry leader. Biofuels are derived from biological carbon fixation. This includes any type of biomass or recently living organisms, and can be categorized into first generation and advanced biofuels:

First generation biofuels are derived from seed and oil crops. This includes corn, canola, palm oil cassava, wheat etc. Yet there are obvious problems that have been encountered with this type of biofuel. Food prices and environmental degradation from monoculture have taken their toll on people's faith in first generation biofuels, and, as such, most research is now starting to move towards advanced biofuels.

Advanced biofuels are non-food crop biofuels and can be divided into the two most promising sources of future energy: algae oil and cellulosic ethanol.

Algae derived fuel is made from the resulting biomass of growing algae. When the algae grows it takes CO₂ out of the atmosphere, it's burned as a fuel which puts the CO₂ back into the atmosphere, giving it a carbon neutral property. In another process, the algae biomass that's not used to make fuel can be skimmed off and buried along with all the carbon it locked away during its growing process.

In Israel, renewable energy accounts of energy usage, with the majority of power generation and transportation energy demands being met by fossil fuels. Yet while Israel may be slow in adopting alternative energy solutions, they are leading the pack in the R&D and commercialization of renewable energy technologies, particularly in advanced biofuels. Due to its large commitment of government resources, strong academic backing, and a robust private cleantech sector, Israel is well-positioned for success.

**source: <http://www.israelenergyportal.com>*

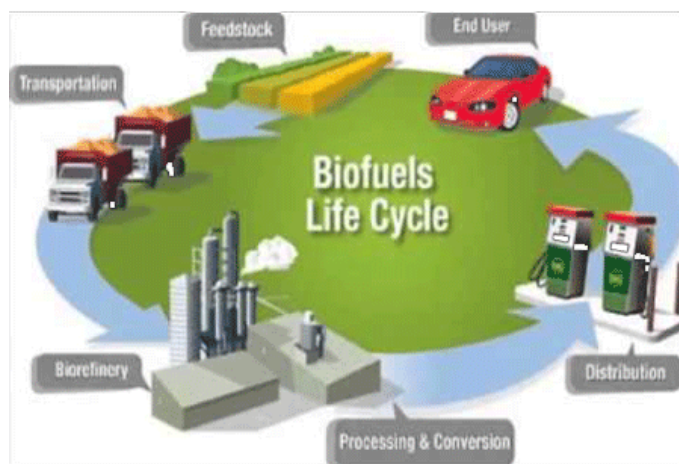


Image source: spacedaily.com



Article - 2 : POLAND TAKES A STEP TOWARDS ACHIEVING 100% RENEWABILITY

The Polish town of Kisielice is 100% powered by renewable energy, specifically wind and biomass. It has been awarded the ManagEnergy Award 2014 for its clean energy leadership. The mayor received thanks for his work to reduce emissions, abandon dependence on coal and improve air quality.



Image source: assets.inhabitat.com

The abundance of agricultural land makes it possible to place a lot of wind turbines on the farmland. Over 50 wind

turbines with a total capacity of 94.5 MW have been installed there. Wind turbines are especially good at fitting onto a farm without hindering its output. In some cases, the wind turbines can improve yields.

Kisielice also has a 6 megawatt boiler to supplement the wind turbines. It burns cereal straw that comes from local farmers, which boosts their income. It is connected to a district heating network that provides heat for 85% of the community's buildings. A third wind farm of 24 MW is currently under construction and partly in operation. Later this year, the town will announce a tender for the purchase and installation of the region's first solar photovoltaic plant. Poland has already started working to kick away its horrible dirty energy habit. Hopefully this town inspires others to follow suit. Alstom secured its first deal for implementation of wind energy project in Poland. This project expected to be commissioned by the end of 2015 would be one of the largest wind farms in Poland, and would be built at an estimated cost of 80 million pounds.

*source: cleantechnica.com; inhabitat.com

“Spare a Watt; save a lot”



Article - 3 : UK'S FIRST SUSTAINABLE BIO-BUS STARTS OPERATING

A 40-seater Bio-Bus, which runs on gas generated through the treatment of sewage and food waste (that's unfit for human consumption), is being trialled on the A4 between Bristol and Bath. The bus, with its rather distinguishing wrap promoting sustainable fuel, is being operated by Bath Bus Company.

Running on waste products that are both renewable and sustainable, the bus can travel up to 300km on a full tank of gas, which takes the annual waste of around five people to produce. The biomethane gas is generated at Bristol sewage treatment works – a plant run by GENeco, a subsidiary of Wessex Water. GENeco also provides the gas it generates to the national gas network.

Through treating sewage and food that's unfit for human consumption they are able to produce enough biomethane to provide a significant supply of gas to the national gas network that's capable of powering almost 8,500 homes as well as fuelling the Bio-Bus. Using biomethane in this way not only provides a sustainable fuel, but also reduces our reliance on traditional fossil fuels.

Bristol sewage treatment works processes around 75 million cubic metres of sewage waste and 35,000 tonnes of food waste collected from households, supermarkets and food manufacturers each year. A total of 17 million cubic metres of biomethane - the equivalent of meeting the power needs of 8,300 homes - is generated each year at the plant through a process known as anaerobic digestion.

Charlotte Morton, chief executive of the Anaerobic Digestion and Bioresources Association, added: "A home generated green gas, biomethane is capable of replacing around 10% of the UK's domestic gas needs and is currently the only renewable fuel available for HGVs." The bus also clearly shows that human poo and our waste food are valuable resources.

Food which is unsuitable for human consumption should be

separately collected and recycled through anaerobic digestion into green gas and biofertilisers, not wasted in landfill sites or incinerators. Gas powered vehicles have an important role to play in improving air quality in UK cities, but the Bio-Bus goes further than that and is actually powered by people living in the local area, including quite possibly those on the bus itself.

Up to 10,000 passengers are expected to travel on the A4 service in a month, which is available not only for airport travel, but also local journeys along the route through Saltford, Keynsham, Brislington, Knowle and Hengrove. The timing of this initiative could not be more appropriate as we approach 2015 when the City of Bristol itself becomes European Green Capital.

With so much attention being directed towards improving air quality generally, the public reaction to the appearance of this bus on a service between a World Heritage City and an airport will further focus on the potential for this particular fuel.

*source: www.dailymail.co.uk; www.currentaffairsonline.in



Image source: techspark.co

“Energy cannot be created but it is being destroyed, save it!”



Article - 4 : WATER SPLITTER PRODUCES ECO FRIENDLY HYDROGEN

Scientists at Stanford have developed a cheap, emission free device that uses a 1.5 volt battery to split water into hydrogen and oxygen at room temperature. This device uses an ordinary AAA battery to produce hydrogen by water electrolysis. The hydrogen gas could be used to power fuel cells in zero-emission vehicles.

In 2015, American consumers will finally be able to purchase fuel cell cars from Toyota and other manufacturers. Although touted as zero-emissions vehicles, most of the cars will run on hydrogen made from natural gas, a fossil fuel that contributes to global warming.

The battery sends an electric current through two electrodes that split liquid water into hydrogen and oxygen gas. Unlike other water splitters that use precious-metal catalysts, the electrodes in the Stanford device are made of inexpensive and abundant nickel and iron.

Using nickel and iron, which are cheap materials, they were able to make the electro catalysts active enough to split water at room temperature with a single 1.5 volt battery. This is the first time anyone has used non-precious metal catalysts to split water at a voltage that low. It is quite remarkable because normally we need expensive metals like platinum or iridium to achieve that voltage.

In addition to producing hydrogen, the novel water splitter could be used to make chlorine gas and sodium hydroxide, an important industrial chemical.

The promise of hydrogen:

Automakers have long considered the hydrogen fuel cell a promising alternative to the gasoline engine. Fuel cell technology is essentially water splitting in reverse. A fuel cell

combines stored hydrogen gas with oxygen from the air to produce electricity, which powers the car. The only byproduct is water – unlike gasoline combustion, which emits carbon dioxide, a greenhouse gas.



Image source: news.stanford.edu

Splitting water to make hydrogen requires no fossil fuels and emits no greenhouse gases. But scientists have yet to develop an affordable, active water splitter with catalysts capable of working at industrial scales.

Saving energy and money:

The nickel/nickel-oxide catalyst significantly lowers the voltage required to split water, which could eventually save hydrogen producers billions of dollars in electricity costs.

The researchers also plan to develop a water splitter than runs on electricity produced by solar energy.

Hydrogen is an ideal fuel for powering vehicles, buildings and storing renewable energy on the grid, said Dai. It is a good achievement to make a catalyst that's very active and low cost. This shows that through nanoscale engineering of materials we can really make a difference in how we make fuels and consume energy.

**Source: Mark Shwartz wr at the Precourt Institute for Energy at Stanford University.*

“Energy conservation- a little less now, a little more for the future”



Conserve the Energy,
Save our Climate!

Conserve™
The Energy



It's
Tomorrow™


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