Conserve™ The Energy

It's Tomorrow™

September, 2014 Issue : 3

INSIDE...

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

Article - 1 : TIDAL POWER GENERATION IN WALES

A source of renewable energy has been revealed in Wales. On a trial bases for 12 month, a full-scale, 156 ton tidal power generator has been installed which is meant to display the potential for harnessing tides. The company behind the generator, Tidal Energy, hopes to set up a nine more of these mechanisms the trial goes well. This initial generator will provide 400 kilowatts of energy to the National Grid. The device does not require costly and environmentally destructive seabed drilling and is anchored by weight. This generator is meant to withstand some of the most turbulent ocean currents; those are the ones that provide the most power i.e., the company hopes to minimize maintenance costs as well with this design, Wales' First Minister Carwyn Jones said, "This is a landmark project for Wales, which will not only help us to meet our sustainable energy ambitions, but will also provide significant opportunities for local people and businesses."

(*Image: www.businessgreen.com)

This is the first private marine energy project fully undertaken in Wales, and one of the world's first grid-connected tidal energy sources. "The project achieves a number of firsts, including those relating to the environmental consents, the grid connection and the installation process where the turbine and foundation are installed together", said by Martin Murphy, the managing director of Tidal Energy.

Across the Atlantic in Maine, Halcyon Tidal Power is meeting with state officials, residents, and investors this week as part of its efforts to build a $125-million tidal energy project in Cobscook Bay that could power more than 13,000 homes according to Ted Verrill, the company's president.

The plant would use pressure from falling and rising tides rather than the currents that many other tidal energy installations target called a "tidal barrage". Tidal barrages exist in Canada, France, and South Korea, but Halcyon is especially focused on minimizing environmental impacts and differentiating their device from what could almost be considered a dam. The setup would use pumps to replicate natural tides when necessary and turbines meant to allow for fish to pass through.

(*www.tidalenergy.eu)

Article - 2 : WORLD'S LARGEST SOLAR-POWERED BOAT

In 2012, the MS Tûranor became the first boat to travel around the world using only solar power (photovoltaic). This distinctive looking boat is the world's largest solar-powered ship. "Tûranor" is the Elvish word which means that "Power of the Sun".

It is originally built to be an ambassador of photovoltaic energy, it also servers some addition purposes i.e. scientific, environmental and educational as it journeys around the globe. Being a zero-emission ship and a scientific vessel, the MS Tûranor is studying the Gulf Stream; it allows instruments to collect data that is not contaminated by pollutants from the ship's engines. This provides scientists with accurate information about the chemical makeup of water in the Gulf Stream.

MS Tûranor is working with the waste free ocean foundation. It will begin collecting trash that litters the ocean's surface using a giant trawling net capable of scooping up to 8 tons of marine pollution.

While travelling around the world, the MS Tûranor stops at various ports and offers educational opportunities for local population. The ship hosts a variety of educational activities that teach kids about pollution, marine life, energy and photovoltaics.

Total energy consumption of the ship is about 20 KW out of which 17 KW of power is consumed by the motors and the rest of the boat uses about 3 KW. Motors produce a maximum speed of 14 knots and an average speed of 5 knots.

The electricity is provided by almost 30,000 solar cells covering an area of 512 square meters. These generate up

(*Image: www.prweb.com)

to 93 kW of power. So the ship can run at night and under cloudy conditions, a bank of lithium-ion batteries, weight of these batteries is 8.5 tons, stores the excess energy that the panels generate. Planet Solar claims unlimited self-sufficiency. Considering the fact that it spent 584 days on the ocean without consuming a drop of fuel, it can be said that's a reasonable claim. They try to avoid clouds when possible, so the batteries are only used at night.

The Tûranor is composed primarily of carbon fiber and epoxy resin, providing a shiny, lightweight profile that minimizes drag. It is capable of carrying up to 60 passengers and operates with a crew of only four people. Photovoltaic panels cover nearly the entire deck, with additional panels mounted on rails that hydraulically extend past the sides of the ship when it's at sea. These additional panels are retracted when the Tûranor comes into port. The rear flap can be tilted to track the sun and maximize electrical output. As you can see, the panels are durable enough to be walked upon.

(*www.planetsolar.org)

Article - 3 : INDIAN RAILWAY TO INSTALL SOLAR POWER PLANTS

In order to meet the rising power demand, Indian railways proposes to generate 8.8 MW solar power at railway stations, railway office buildings and level crossing gates by installing solar panels throughout the country under railway funding.

TThese include; provision of 10 KW solar PV modules each at 200 stations under various Zonal Railways, provision of total 4.05 MW Solar Photo Voltaic (SPV) at the roof of 21 railway office buildings and provision of total 1.3 MW capacity Solar Photo Voltaic plants at 2000 level crossing gates on Indian railways.

A consultant has already been roped in by the railways to conduct the feasibility study to install solar panels on rooftops of the platform and the station building. The consultant has been reportedly asked to identify the exact locations on the station premises where solar panels could be installed, apart from the cost of installation.

With the Narendra Modi government emphasizing on harnessing solar power and taking lessons from solar projects in Gujarat, sources said the initiatives in the field are likely to get priority and easy clearances from the ministry.

However, solar power plants have been provide on top of two narrow gauge trains plying on Pathankot to Jogindernagar route in Kangra Valley section and Kalka-Shimla section on trial basis. On evaluation of trial and cost benefit analysis, further study of economic viability will be undertaken. The Railway officials said that once the pilot project at the New Delhi station becomes successful, it would have a model that could be replicated at other stations in the city.

The benefits of these projects are reliable power supply particularly at remote locations and saving in diesel due to reduced running of Diesel Generation.

(*www.railsaver.gov.in)

(*www.indianrailways.gov.in)

Article - 4 : DENMARK BECOMING FOSSILE-FUEL FREE?

According to the new analysis done by Denmark's government, wind energy will be the cheapest form of electricity once new turbines will be in operation in 2016. The estimated price has been about one half of what coal and natural gas cost.

Denmark has relatively modest average wind speed ranging between 4.9 - 5.6 m/s (measured at 10 m height). The country has very large onshore and offshore wind resources, and large areas of sea territory with a shallow water depth of 5–15 m having high wind speed ranging between 8.5 – 9.0 m/s (at 50 m height).

(*www.managenergy.net)

Electricity produced by this way of production in Denmark contributes to about 30% of total production. In 2012 the Danish government adopted a plan to increase the share of the production share to 50% by 2020.

In 2005, Denmark had installed wind capacity of 3,127 MW, giving an actual average production of 755 MW at a capacity factor of 24%. In September 2009, the production capacity was raised to 3,482 MW. The reason behind this was a new offshore wind farm, named Horns Rev-2, was inaugurated of 209 MW. In 2010, capacity grew to 3,752 MW, and most of the year's increase came from the Rodsand-2 offshore wind farm. At the end of 2013, Denmark's capacity stands at 4,792 MW, the largest increase coming from the Anholt wind farm.

(*www.treehugger.com)

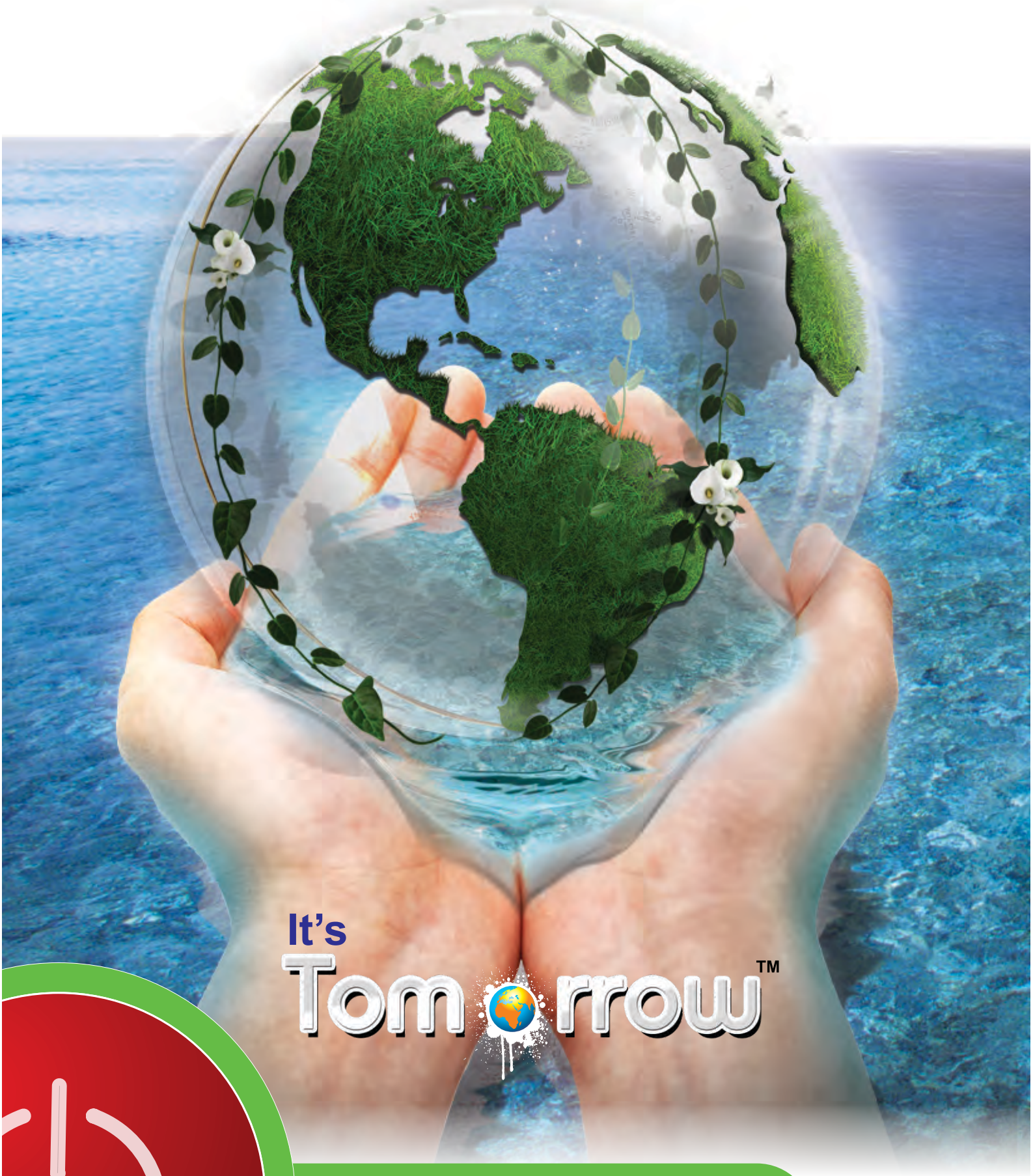
(*Source:treehugger)

Consider that the Danish Energy Authority, in May of 2014, released a statement declaring that a fossil-fuel-free energy system was possible. "It is technically possible to construct an energy system which is not based on coal, oil and natural gas. This has been confirmed in a report issued by the Danish Energy Agency entitled Energy Scenarios for 2020, 2035 and 2050, which calculates the additional costs of an energy supply independent of fossil fuels in 2050, depending on the choice of green energy system."

There is an appealing development taking place as nations are taking steps to be self dependent for energy production which will lead the world towards the cleaner and greener globe. With this initiative the small stepping storm, Denmark is all set to be climate friendly nation.

Conserve the Energy,
Save our Climate!

Conserve™
The Energy



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