Conserve The Energy™

It's Tomorrow™

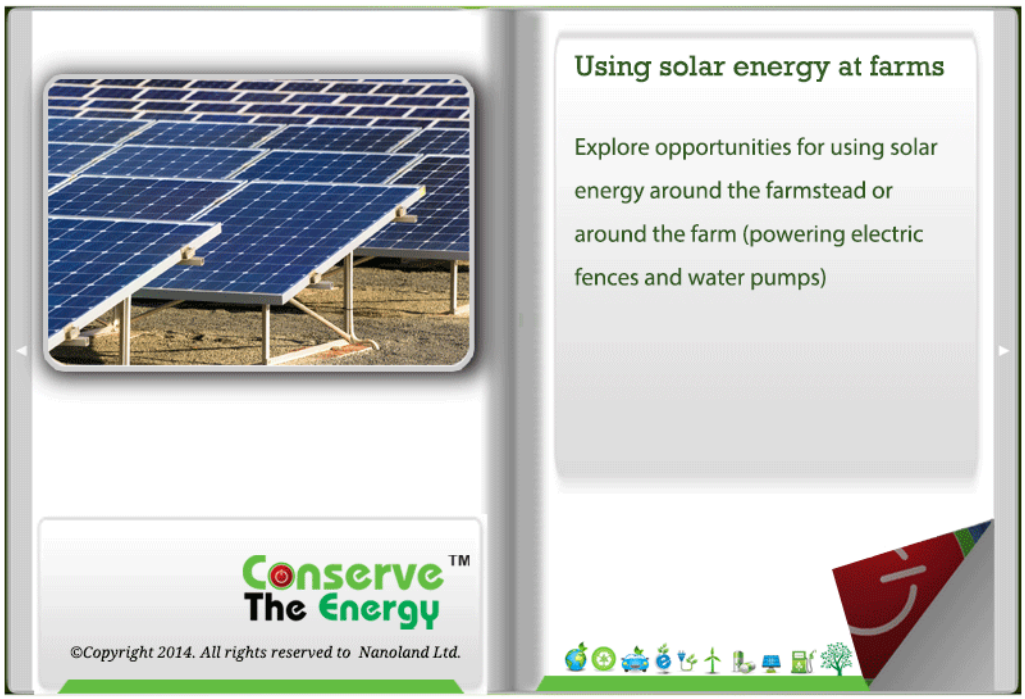
June - 2018 Issue : 20

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 : Green concrete

Making cement for concrete is energy-intensive. Extremely energy-intensive. Here's how it works: you heat pulverized limestone clay — which is heavy in carbon — along with sand to 1,450°C (2,600°F), usually with a fossil fuel like coal or natural gas. Unsurprisingly, that process generates a lot of carbon dioxide: manufacturing one metric ton of cement releases 650 to 920 kilograms of CO2. The nearly 3 billion metric tons of cement that were produced worldwide last year accounted for about 5% of all CO2 emissions.

The good news is that there are enormous carbon savings that could be realized by making cement production more energy efficient. For example, the company Hycrete had reformulated the products used to waterproof concrete in a way that allows for recycling in the future, reducing the lifetime energy footprint of a building. The London-based startup Novacem is going further, working on a new cement production method that would actually absorb more CO2 than it releases, by substituting cabon-rich limestone with magnesium silicates that contain no stored carbon. As the cement hardens, CO2 in the air actually reacts to make solid carbonates that strengthen the cement while holding onto the gas. Novacem can't yet use its process on a commercial scale, but if it can, concrete could become carbon negative.

*Source:http://content.time.com/time/specials/packages/article/0,28804,2030137_2030135_2021669,00.html

*Image Source: http://www.concretecountertopinstitute.com/blog/2014/08/concrete-perfect-reason/

Article - 2 : Biofuels and Bioenergy

Bioenergy will remain crucial over the next decade in order to reach the renewable energy targets in 2020, which is why the EU member states incorporated the bioenergy option in their National Renewable Energy Action Plans (NREAPs). As the JRC aims to provide independent scientific advice related to the production and use of biofuels, it assesses the environmental sustainability, evaluates the technological developments, estimates the land use change due to an increased biofuels demand, and calculates the direct and indirect emissions from biofuels, land use change and different bioenergy pathways.

Biomass is derived from different types of organic matter: energy plants (oilseeds, plants containing sugar) and agricultural or urban waste. Biomass can be used for generating heat and electricity, and for transport biofuels. Bioenergy and biofuels in 2010 contributed to around 63 % of renewable energy generation in the EU-27 for a total amount of around 2600 petajoules.

In order to avoid future competition for resources and land use between bioenergy, food production and wood, agricultural crop residues are expected to be a relevant source of bioenergy.

*Source: https://ec.europa.eu/jrc/en/research-topic/biofuels-and-bioenergy

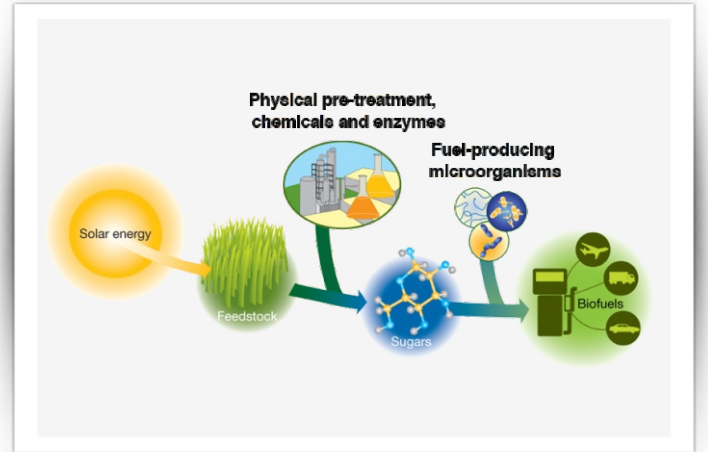


*Image Source: https://www.llnl.gov/news/jgi-fast-tracks-plant-biomass-biofuel-conversion

Article - 3 : The Berkeley-Darfur Stove

In the past few years, a number of health researchers have come to the same conclusion: that providing a safe, energy-efficient wood-burning cook stove to millions of people in the developing world can directly improve health (by reducing smoke inhalation), aid the environment (by reducing the amount of wood needed for fuel) and alleviate poverty (by reducing the amount of time needed to devote to gather wood every day).

Many projects have pursued this goal, but Potential Energy, a nonprofit dedicated to adapting and scaling technologies to help improve lives in the developing world, is the furthest along, having distributed more than 25,000 of their Berkeley-Darfur Stoves in Darfur and Ethiopia. Their stove's design achieves these aims with features such as a tapered wind collar, a small fire box opening, nonaligned air vents that reduce the amount of wind allowed to stoke or snuff the fire (which wastes fuel) and ridges that ensure the optimal distance between the fire and pot in terms of fuel efficiency.

The stove requires less than half the fuel of traditional cooking methods, decreasing women's exposure to violence while collecting firewood and their need to trade food rations for fuel.

**Source:https://www.smithsonianmag.com/science-nature/five-innovative-technologies-that-bring-energy-to-the-developing-world-49271677/*

**Image Source: http://gadgillab.berkeley.edu/*

Article - 4 : Gravity Light

Over 1.2 billion people globally have no access to electricity and millions more have an unreliable supply. Instead they use dangerous, polluting and expensive kerosene lamps for light. The fumes generated by burning kerosene in closed corners are a major health problem. Along with wood-burning stoves, the kerosene-burning lamps that provide light throughout the developing world have recently become a target for replacement for one of the same reasons: A seemingly simple solution is GravityLight, developed by the research initiative deciwatt.org.

To power the device, a user fills an included bag with about 20 pounds of rock or dirt, attaches it to the cord hanging down from the device and lifts it upward. The potential energy stored in that lifting motion is then gradually converted to electricity by the GravityLight, which slowly lets the bag downward over the course of about 30 minutes and powers a light or other electrical device during that time. It's currently priced at about $10, and because it requires no running costs, the development team estimates that the investment will be paid back in about 3 months, as compared to the cost of kerosene.

Why it is more beneficial because it takes just a few seconds to lift the weight that powers gravity light. Providing 20 minutes of light as it descends. It needs no batteries that mean it can be stored indefinitely and there's no need to charge in advance. It's ready whenever you need it and also the energy generated from the device is completely self sustained. GravityLight pays for itself within months of switching from a kerosene lamp.

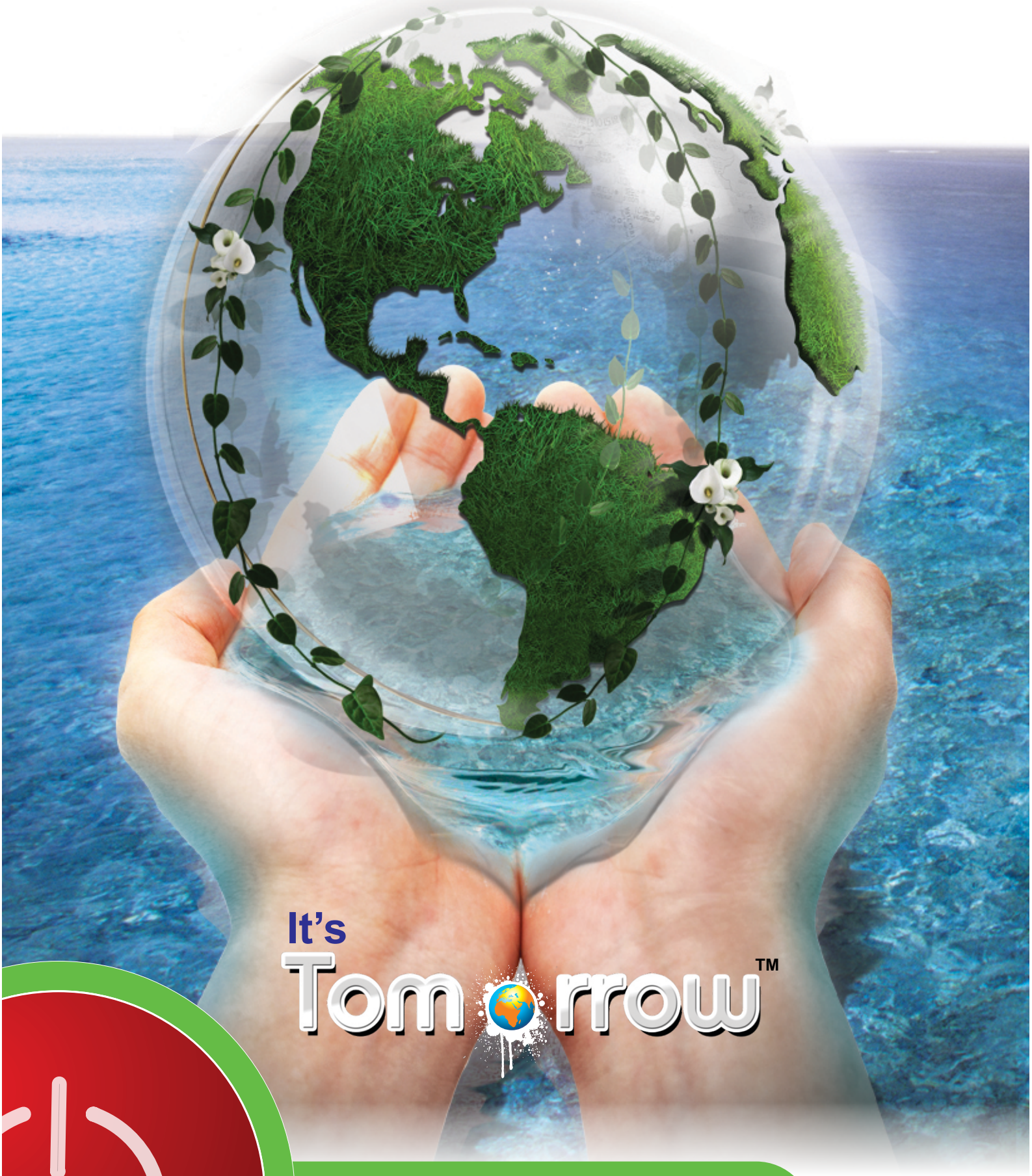
**Source: https://gravitylight.org/*

**Image Source: https://pctechmag.com/2015/06/gravitylight-the-low-cost-lamp-powered-by-sand-and-gravity/*

Conserve the Energy,

Save our Climate!

Conserve™ The Energy



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