

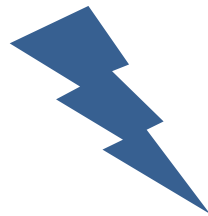
*A newsletter of*

**Indian Association of Energy Management Professionals**

# **The Urja Watch**

October-November 2010, Vol. III/Issue 25

*It is about “Conscience Keeping on Energy Matters”*



**ENERGY INNOVATIONS**

**The Urja Watch**  
**October–November 2010 Vol. III/Issue 25**

**ENERGY INNOVATIONS**

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## From the Editor...

# Advancing Our Energy Future



Global climate change is increasingly recognized as both the most dangerous and the most intractable of all of energy's environmental impacts. A successful energy strategy is one that pursues multiple efforts in making the best use of available energy sources with least environmental impacts. Moving away from oil to natural gas is already happening so also the expanding of biofuels in the transportation sector.

The current trend in efficient energy management is a greater collaboration between energy-consuming hardware such as lighting, HVAC, pumps and software to monitor and control energy usage. Facilities are better managed and controlled through front-end software integrated with automation systems. Energy reporting software provides diagnostic information on energy usages. Combining device connectivity hardware and software offers smart energy management solutions.

Consider our electricity distribution networks –most of them operate in much the same way that they have operated for decades. Such networks have to be designed and built to cope with peak loads. One way of softening peak demand is through consumer engagement and differential pricing. Deploying sensors, communications and computer-based equipment, innovative Smart Grid technology provides a framework for intelligently managing this demand.

Renewable energy is all the rage now and innovations are expanding in this sector. Unlike the solar photovoltaic panels, solar-thermal technology effectively uses the sun's heat through a system of mirrors to produce steam that drives turbines. Using this innovative technology, a large solar-thermal power plant is proposed to be built in Southern California to generate as much as 2,800 Megawatts of electricity.

Advocates of renewable energy say that the projects utilizing solar, wind and biomass resources could create thousands of jobs in addition to providing much-needed energy. A step in the right direction seems to be the National Solar Mission's aim to have 20,000 megawatts of grid-connected solar energy by 2022. This initiative will certainly help utilities and manufacturers expand their knowledge of solar technology.

Stored energy is part of daily life: batteries power cell phones and laptops, for example. But the challenge really lies on storing energy in a large scale. Efforts are continuing on building grid-scale storage technologies. Possibilities include pumped hydroelectric energy; flywheels; and even super large batteries.

There are many such options to enhance energy supply and efficiency. India will do much better to pursue a broad portfolio of improved energy-supply and end-use options. Innovations in both technology and policy are urgently needed but not they are not happening at the required pace. Some of the measures that are worth considering include:

- Planning, design and implementation of new utility DSM programs.
- Innovative and practical approaches to development of energy agencies and energy tariffs.
- Fostering collaborations and partnerships to exploit energy efficiency opportunities.
- Creating innovative promotions to attract consumers for energy-efficient products and services.

This is a unique time in India's history. The economy is booming and the growth potential is very high. It offers both the greatest promise and the most difficult challenges to building new markets based on intelligent use of energy. Continuing energy-related work in the business as usual mode may leave a major part of India's population in the dark without electricity for many more years to come.

Let the innovations work for a future that will provide more energy and light – of the efficient kind- to benefit the people of India. In doing so, the nation could also reduce greenhouse gas emissions and contribute to a greener globe.

Energetically,

S.Subramanian

## Letters to the Editor

Dear Sir,

I read with great interest the articles written by several authors, including Mr. Goswami. Since you all seem very knowledgeable in the renewable energy arena, I would also suggest highlight/emphasize various means to conserve energy for the public at large.

I work for the Department of Defense as a program manager, mostly for constructing new facilities, or renovating them. Here are some thoughts to conserve energy - some are already known, some are emerging:

- Use energy efficient lights - T8 bulbs, compact fluorescent light (CFL)
- Use variable frequency drives on motors for heating and air conditioning systems
- Keep room temperature 78 deg. or warmer in summer during cooling season
- Install energy efficient windows
- Design more energy efficient houses by installing enough insulation in the walls and ceiling.
- Install blinds/shades in the windows, and enough overhang to reflect Sun
- Use recyclable/renewable construction materials
- Turn -off lights when not needed. Every bit helps
- Install programmable thermostats in homes
- Turn -off computers when not in use
- Green roofs getting popular in some places, but too early to call them success
- LED lights are being discussed - not yet widely used

These are some of my thoughts!

Sunder Bhatla, PE  
Program Manager  
Patterson Field Team, U.S.A

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Shakespeare said..

*"In the times of crisis I was not hurt by the harsh words of my enemies, but by the silence of my friends."*

## High Power Solar Stadium

The following photos show the newly constructed stadium in Taiwan - the world's largest solar powered stadium.



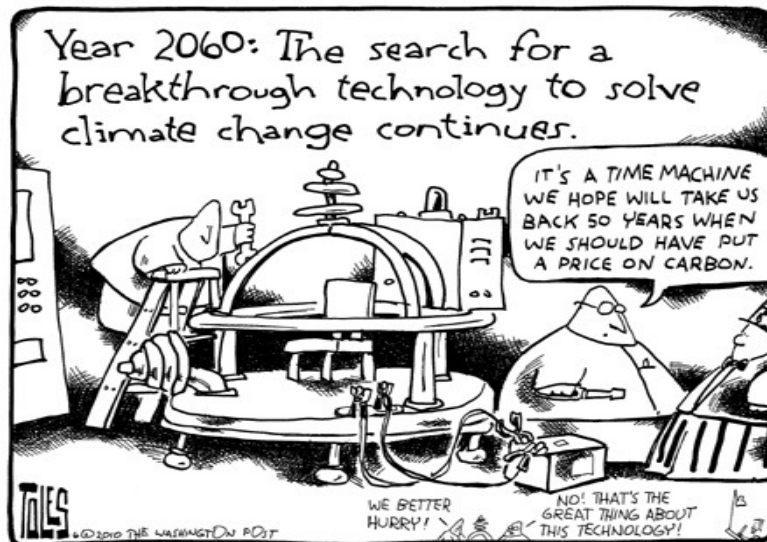


This unique high power solar stadium has been innovatively designed by Toyo Ito. It is equipped to generate 100% of its electricity needs using solar photovoltaic technology.

The Stadium roof contains 8,884 solar panels and could generate 1.14 gigawatt hours of electricity every year, enough to power up to 80% of the surrounding neighborhood. The stadium can hold 55,000 people and is ready for the upcoming World Games. It took \$150 million to finish the stadium.

*News contributed by Darshan Goswami*

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# **Energy Innovation-A New Beginning**

By Puneet Kumar Sharma

The word 'Innovation' means "to bring in something new." Innovation doesn't mean to change the world to make an impact. Incremental innovations add value especially, if they are continuous. Innovators can hold a situation in chaos for long periods of time without having to reach a resolution. They won't give up as they have a long-term commitment to their dream. Innovators introduce depth into the thinking process, unifying concepts that often appear to be opposed, solving problems which appear impossible.

Continuous innovation can occur largely if and only if we broaden our vision of what our organizations can accomplish for our country and lead our enterprises toward it. Organizational leaders should appreciate the role of innovation in achieving their goals and consciously manage their concerns, value systems and atmospheres to support it. Innovation cuts across a broad range of activities, institutions and time spans. If any part of the pipeline is broken or constricted, the flow of benefits is slowed. This, ultimately leads to lower productivity and lowered standards of living. In this sense, the cost of capital is crucial not only at the early stages of research and product development but also at the later stages when high-technology products are installed in production processes, in both manufacturing and service industries, as new tools to improve worker effectiveness.

Need is the mother of innovation/invention and when the need is mixed with passion then a much stronger driving force is generated for innovations. In today's scenario, innovation in the energy sector is the need of the hour. But if the same is worked out with passion, the results are much superior.

Innovations come with interest. Global warming and Climate change have instilled and inspired the whole world for creating and finding out numerous novel ways of energy saving, reducing carbon footprints etc. After the need, now it is the opportunity and passion which has joined the race of innovation in the energy sector. Even this has led to the improved and new definitions of Green Technology. Green Technology encompasses a continuously evolving group of methods or materials, from techniques for generating energy to non-toxic cleaning products. It is that innovation which reduces waste by changing patterns of production and consumption.



It is also defined as environmental healing technology, which reduces environmental damages created by the products and technologies for peoples' conveniences.

Most of the businesses may not be very excited to “go green” by reducing emissions since their motto is to make money, not to save the planet. The global strategy should be to help businesses do both. Renewable energy has emerged as one such niche areas to make such environmental innovation a reality. The approach here is to gradually replace the traditional fossil fuel regime and move towards a more greener and eco-friendly regime.

Government has also started making and executing policies in favor of the innovators to encourage them. State level policies for the development of renewable energy options have received differing responses from the renewable power developers, particularly private manufacturers. There is a general perception among the investors that while some states are favorable to the investment in the renewable energy, others do not find it so attractive. In states like Karnataka, Tamil Nadu, Maharashtra, Punjab, West Bengal Rajasthan, Gujarat, state level incentive structures provided by state policies for the promotion of the renewable based energy attracted number of private investors into the sector.

In Maharashtra, the state Non-conventional Energy Policy provides many incentives like no electricity duty for the first 10 years from the date of commissioning of the projects, no entry fee and octroi etc. Government land on the basis of availability is provided on long term lease of 30 years at the market price.

India has taken several key steps in this direction and electricity sector is found to be an area having tremendous potential for such innovations. The current arrangement for renewable energy generation in India is contributing around 5000 MW of nation's power needs constituting around 4.5 percent of the nation's total installed generating capacity. Realizing the future importance of the renewable energy in the country's energy basket, Government of India envisages that by 2012 the renewable source would contribute around 10,000 MW, which will support about 10 percent of the entire capacity additions (Ministry of Power, 2008).

Realizing the potential of solar energy, Prime Minister of India unveiled a National Climate Change Action Plan in June 2008. The plan will be implemented through eight missions with main focus on solar energy in the total energy mix of the country.

One of the good examples indicating the implementation of innovative ideas is: India's First Solar Powered Flyover that has been inaugurated on 2 October 2010. Chief Minister of Andhra Pradesh, K Rosaiah inaugurated the Hi-Tech City Flyover in Hyderabad. The energy efficient Sodium Oxide (SOX) lamps installed on the flyover are charged by Solar Power.

At the end I want to say, "It is not the beginning, and not the end of beginning. It is the start of beginning for energy innovation."

*References:*

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2. [www.dime-eu.org](http://www.dime-eu.org)
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### **UPDATE ON VOLUNTEER REPORTERS**

The Urja Watch welcomes volunteer reporter Puneet Kumar Sharma from New Delhi.

Mr. Sharma is a Certified Energy Auditor with Degrees in Chemical engineering. He is currently working with Engineers India Ltd., in New Delhi. He can be reached at 995845510. We hope to hear more energy-related news from Mr. Sharma.



Napoleon said:

"The world suffers a lot. Not because of the violence of bad people, but because of the silence of good people!"

Ross Perot said:

"The activist is not the man who says the river is dirty. The activist is the man who cleans up the river."

## Upcoming Events

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**Smart Energy India, New Delhi**

**November 23-25, 2010**

[www.spintelligent-events.com/mindia2010/en/index.php](http://www.spintelligent-events.com/mindia2010/en/index.php)

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**Solar Canada 2010 Toronto, Ontario, Canada** **December 6-7, 2010**

E Mail: [info@cansia.ca](mailto:info@cansia.ca)

[www.cansia.ca](http://www.cansia.ca)

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**INDIA ELECTRICITY 2010, New Delhi**

**December 9-11, 2010**

[www.indiaelectricity.in](http://www.indiaelectricity.in)

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**2nd IEEE International Conference on Sustainable Energy  
Technologies**

**Kandy, Sri Lanka**

**December 6-9, 2010**

[www.ieee-icset.org](http://www.ieee-icset.org)

Contact name: Yung C. Liang

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**2011 International Conference on Environmental Science and  
Development (ICESD 2011)**

**Mumbai, India**

**January 7-9, 2011**

[www.icesd.org](http://www.icesd.org)

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**India Solar Energy Summit** **New Delhi, India** **February 17-18, 2011**

E Mail: [alans@noppen.com.cn](mailto:alans@noppen.com.cn)

[www.indiasolarenergysummit.com](http://www.indiasolarenergysummit.com)

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## Share your experience

Do you have an area of expertise in energy management? Have you solved a difficult problem or have an interesting case study? Do you want to share a joke with others? Or just have a word of appreciation for this issue. Share your knowledge with others and promote yourself through **The Urja Watch**.

You may also tell us about upcoming energy-related events in your area. Be sure to mention the title of the event, organizers, dates, venue, city, and contact information to get more details of the event.

Please note the following points while making your submissions:

- ❖ Articles must be original, in electronic version, 500 words or less. If you are using material from external sources, please acknowledge them.
- ❖ Please include contact information (full name, title/organization, phone numbers, and email ID) with your submission.
- ❖ Articles should be in MS word, single spaced, with easily readable font, preferably Arial size 12. Photos should be of high resolution.
- ❖ Please e-mail your submissions to The Editor, “The Urja Watch” at [tellsubi@gmail.com](mailto:tellsubi@gmail.com)
- ❖ There are no deadlines for submissions. You may submit articles anytime.
- ❖ We reserve the right to edit, rewrite or reject any article.

## We Need Your Feedback Too!

Please write your views and suggestions to the editor at: [tellsubi@gmail.com](mailto:tellsubi@gmail.com)  
Letters must include the writer’s name, address, phone and email ID.

We appreciate your feedback and thank you for your support.

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