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It is about “Conscience Keeping on Energy Matters”



**TOWARDS ENERGY
INDEPENDENCE**

TOWARDS ENERGY INDEPENDENCE

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From the Editor...

Winning Energy Independence

As India celebrates the 63rd Independence Day of the nation, the country is yet to gain freedom from the shackles of energy constraints.



When India won independence in 1947, the country's power generating capacity was a mere 1362 MW. Today, the installed power generation capacity is around 162,000 MW. This may seem to be an impressive growth in power generation but the reality is that over one third of the country's population is yet to get electricity. And those who are fortunate to have electricity connections are not sure of uninterrupted power supply.

Electricity consumption has been growing at a rate of 8 to 10 per cent per year and the demand is forecasted to increase to 400,000 MW by 2030. With a range of challenging infrastructural and capital constraints facing the power sector, how to fulfil this huge power requirement?

To answer it in simple terms - there are two ways in which the country can meet the rapidly escalating power demand. One is to expand the power generation capacities and the other is to make prudent use of available energy sources for the present and future.

In order to expand power generation in the country, the government has initiated several proactive steps to open the power sector for private players. Some of these steps are: Constitution of Independent State Electricity Regulatory Commissions in the states; Providing income tax holiday for a block of 10 years in the first 15 years of operation and waiver of capital goods' import duties on mega power projects; and 100 per cent FDI for generation and transmission of electric energy. However, even with all these initiatives in place, building a thermal power plant in India may still take 5-6 years if one goes by past experiences.

There are other options to pursue the goal of increasing power supply. Mother Nature provides the most overwhelming supply of energy in the form of sun's rays and powerful winds - absolutely free! India is among the top five countries in renewable energy capacity. Renewables have become an integral part of India's growth strategy and their share of total electric capacity is more than twice that of the U.S. Solar energy is fast becoming competitive and holds a great potential for India. Since the 1990s, the government continues to actively promote renewable energy and this policy will help to supplement energy supply in the country.

What are the short-term projects that can bring faster results?

Making efficient use of available energy resources is a sure way to hasten the country's journey to energy independence.

Consider the existing power plants. Power station auxiliaries consume a significant amount of power (between 8 and 14 per cent) and therefore, even a 1-2 per cent reduction through energy efficiency measures implies substantial savings.

Reducing transmission and distribution losses through a series of reforms in utilities can help to save more of wasted energy.

Global experiences confirm that Demand Side Management (DSM) can reduce electricity consumption. A few utilities in states such as Maharashtra and Delhi already have the institutional capacity and desire to implement DSM, but for most others, there is a need to enhance knowledge and capacity.

The efficiency achievements in Indian industry in recent years seem impressive, but sporadic. Significant opportunity exists to scale up best practices in major industries across the country.

Investments in a smart electric grid and energy efficient homes, offices, and appliances will reduce our overall energy consumption as a nation.

Energy independence is an achievable goal requiring sustained political will. It may take another twenty or even thirty years to win energy independence. The precise time to win doesn't matter so much as long as we take much-needed actions quickly. In many ways, winning energy independence is similar to how the country won political independence – through grit, strategic planning, determination, and sustained efforts by its committed people.

The time to act is now. It is indeed a might challenge for the government and the people. Our grand children will thank us for our actions.

Happy Independence Day!

Energetically,

S.Subramanian

How Concentrated Solar Power Can Meet India's Future Power Needs

By Darshan Goswami, M.S., P.E.

Introduction

Solar energy is an enormous resource that is readily available in all countries throughout the world, and all the space above the earth. Long ago scientists calculated that an hour's worth of sunlight bathing the planet held far more energy than humans worldwide could consume in a year. India should accelerate the use of all forms of Renewable Energy (photovoltaic, thermal solar, solar lamps, solar pumps, wind power, biomass, biogas, and hydro), and more proactively promote Energy Efficiency. In this article, I will only focus on the use of Concentrated Solar Power (CSP) technology to meet India's future energy needs.



The Sun: Goldmine of green energy

Concentrated solar power plants have been used in California, USA since the 1980s. More recently, Pacific Gas & Electric has signed contracts to buy 500 megawatts of solar thermal power from two solar companies. First, NextEra Energy Resources will sell 250 megawatts of CSP generated power from the Genesis Solar Energy Project to be located in Riverside, California. Second, Abengoa's Mojave Solar project will supply the remaining 250 megawatts from a plant located in San Bernardino County, California. Subject to California Public Utility Commission approval of the power purchase agreements, construction of these solar energy generating plants is expected to start in 2010 with operations planned to begin in 2013. Both these solar thermal power projects will contribute to meeting California's aggressive Renewable Portfolio Standard, which calls for moving away from fossil fuels to renewable energy sources that avoid pollution and greenhouse gas emissions.

In addition to California, the sunny state of Arizona, USA has become home to the world's largest Solar Plant. Solana (which means “a sunny place” in Spanish) solar power generating station is scheduled to begin operation in 2012, harnessing Arizona’s most abundant renewable energy resource - the sun. This plant (located 70 miles southwest of Phoenix) has a projected capacity of 280 megawatts, and will make use of Abengoa Solar's CSP technology.



Courtesy: Proposed Solana Generating Station Project (concentrating solar power project) in Arizona

Worldwide, Germany and Spain are leaders in solar power generation with 4,000 megawatts and 600 megawatts of installed capacity respectively. A recently formed consortium of 12 companies, known as the Desertec Industrial Initiative (DDI), plans to spend 400 billion Euros (\$557 billion) to extract solar energy from the Sahara desert. The DDI aims to deliver solar power to Europe as early as 2015 and eventually provide 15% of Europe's electricity by 2050 or earlier via power lines stretching across the desert and under the Mediterranean Sea.

The vast Rajasthan Desert is very similar to the Sahara desert in Africa, and has the potential to become the largest solar power plant in India. Due to high levels of available sunlight, CSP plants in Rajasthan could begin satisfying most of India’s energy needs in just few years. India’s potential benefits from solar power are as numerous as the sands of Rajasthan desert, and include reduced dependence on fossil fuels and a cleaner environment. These benefits can be realized by installing renewable energy technologies, such as CSP, to protect the environment while diversifying energy resources and helping to lower prices.

Solar power can also reduce strain on the electric grid on hot summer afternoons, when air conditioners are running, by generating electricity where it is used. India has optimal conditions to use CSP to harness solar energy from the Rajasthan Desert. However, to take advantage of this innovative technology, potential CSP plant sites must be identified and deployment accelerated. Specifically India needs to heavily subsidize Solar and Wind Power projects just like Japan, Germany and other European nations are doing. The use of renewable energy has great potential to create more jobs in India especially in the rural areas.

How the Technology Works

CSP plants generate electricity from sunlight by focusing solar energy, collected by an array(s) of sun-tracking mirrors called heliostats, onto a central receiver. Liquid salt (a mixture of sodium nitrate and potassium nitrate) is circulated through tubes in the receiver, absorbing the heat energy gathered from the sun. The heated salt is then routed to an insulated tank where it can be stored with minimal energy losses. To generate electricity, the hot molten salt is routed through heat exchangers and a steam generation system. The steam is then used to produce electricity in a conventional steam turbine. After exiting the steam generation system, the now cool salt mixture is circulated back to the “cold” thermal storage tank, and the cycle is repeated.



Courtesy Abengoa: A Utility-scale concentrated solar power (CSP) plant

While CSP technology is not new, it offers one of the most promising utility-scale, and sustainable technology options for meeting India's energy needs from renewable energy resources. But a large scale initiative (like Europe's DDI) is needed to make it more cost effective. Moreover, the Rajasthan desert has the potential to produce solar power at a cost low enough to be competitive with fossil and nuclear power.

Conclusion

Solar power is an enormous readily available source of energy. It can be used everywhere, and can, in principal, satisfy most of India's energy demand from a renewable, safe and clean resource. Concentrating solar collectors are very efficient and can completely replace the electricity traditionally produced by fossil fuel power plants. CSP plants in the 30 MW to 200 MW range are now operating successfully in locations from California to Europe. Nearly every day now, new CSP plants are being planned for construction. Today's CSP plants supply the heat needed to generate electricity at a cost equivalent to \$50 - \$60 per barrel of oil. This cost is expected to be slashed by 50% to below \$25 - \$30 per barrel in the next 10 years.

India should begin creating a mainstream solar energy market with the goal of making solar power cost-competitive with fossil fuel-generated electricity. One step toward achieving this goal would be to start a nationwide solar initiative of building 10 million solar roofs within ten years. It has often been said that it is not a question of if, but when solar power becomes cost-competitive with traditional electricity sources. With the right programs and policies today, India can have a great deal of control over how rapidly solar power becomes cost-competitive. And, by getting in on the ground floor of this new technology, India can also create millions of jobs in renewable energy.

India needs a plan with the same spirit, boldness and the imagination of the Apollo Program that put astronauts on the Moon. The technology is well established and available. All that is needed now to make this concept a reality is political commitment and appropriate investments and funding to harness this renewable solar energy resource.

I expect that the new US Administration will strongly prioritize the use of solar thermal energy as a solution to the climate and energy crisis. This should create additional incentive for countries such as India, who have optimal conditions for CSP plants, to take similar actions.

India's solar energy holds great promise. India must accelerate its investment in Renewable Energy resources, specifically solar and wind energy. The U.S.-India Energy Dialogue, which facilitates discussions on renewable energy and energy efficiency, can be a very useful tool to spark investments in solar energy. This can lay the foundation for an energy independent future - one in which the Government of India takes advantage of the vast amounts of energy available from the Rajasthan Desert sun (instead of oil from the Arab nations) to power its future energy needs.

In addition, solar energy would not only create millions of jobs, but also sustain India's positive economic growth, help lift its massive population out of poverty and combat climate change.

The views and opinions expressed in this article are solely those of the writer and are not intended to represent the views or policies of the United States Department of Energy. The article was not prepared as part of the writer's official duties or using any Government resources at the United States Department of Energy.

About the Author:

Darshan Goswami has over 35 years of experience in the energy field. He is working for United States Department of Energy (DOE) as a Project Manager in Pittsburgh, PA, USA. He retired as Chief of Energy Forecasting and Renewable Energy from the United States Department of Agriculture (USDA) in Washington, DC. Earlier, he worked for 30 years at Duquesne Light Company, an electric utility company in Pittsburgh, PA, USA. He is a registered Professional Electrical Engineer with a passion and commitment to promote, develop and deploy Renewable Energy Resources and the Hydrogen Economy.

A Quotable Quote

This may sound too good to be true, but the U.S. has a renewable-energy resource that is perfectly clean, remarkably cheap, surprisingly abundant and immediately available. It has astounding potential to reduce the carbon emissions that threaten our planet, the dependence on foreign oil that threatens our security and the energy costs that threaten our wallets. Unlike coal and petroleum, it doesn't pollute; unlike solar and wind, it doesn't depend on the weather; unlike ethanol, it doesn't accelerate deforestation or inflate food prices; unlike nuclear plants, it doesn't raise uncomfortable questions about meltdowns or terrorist attacks or radioactive-waste storage, and it doesn't take a decade to build. It isn't what-if like hydrogen, clean coal and tidal power; it's already proven to be workable, scalable and cost-effective. And we don't need to import it. This miracle juice goes by the distinctly boring name of energy efficiency, and it's often ignored in the hubbub over alternative fuels, the nuclear renaissance, T. Boone Pickens and the green-tech economy. Clearly, it needs an agent. But it's a simple concept: wasting less energy.

- Michael Grunwald, "[Wasting Our Watts](#)," Time, 12 Jan 09

Towards Energy Independence

By Puneet Kumar Sharma

Independence is a condition of a nation, country, or state in which its residents and population, exercise self-government, and usually sovereignty, over its territory. Independence is the most important, valuable and beautiful ornament which no living organism, whether one is human being, animal, or bird wishes to lose. Independence is a requirement for leading one's own life. How can one make decisions if every action he or she takes has to be filtered through other people first? Without independence, one can't be the captain of his or her life. We wish to live freely, without any boundaries, limitations etc. In the path of progress, we cannot afford any parameter to limit or restrict us. There are still a lot of parameters which restrict or limit the rate of our progress; one of the most important examples is Energy.

What is Energy Independence? If we apply our thoughts, energy independence is an agenda whereby India would eventually, through shifts in its energy policy and technology development, approach self-sufficiency in its energy needs by producing close to the amount of energy that it consumes. Energy deficiency is still haunting INDIA, famously known as "Sone Ki Chidiya". Since independence, India has shown a record growth in various spheres such as communication, research, nuclear, education, empowerment of women and the list goes on. Mobile towers, internet lines and television poles stretch from one end of the country to the other. Yet underneath these growing technological networks, much of India's rickety infrastructure is in desperate need of attention. India's power grid is frightfully overburdened, especially in densely populated urban areas.

After 63 years of independence, we are still struggling for achieving the target "Energy for all". There is still a large part of India left in dark. With the prevailing crisis of electricity we are not able to feed the rural consumer for more than eight hours of electricity. Also, we are not able to provide electricity to even the urban house hold despite the fact that the most of the urban population is prepared to pay for the electricity. Thousands of villages are yet not electrified.

The definition of electrification has been changed from time to time which indicates the steps being taken by government of India towards electrification.

Examples of the definition:

Prior to October 1997: “A Village should be classified as electrified if electricity is being used within its revenue area for any purpose whatsoever.”

After October 1997: “A village will be deemed to be electrified if the electricity is used in the inhabited locality, within the revenue boundary of the village for any purpose whatsoever.”

In 2004-05, there is a new definition of village electrification that has come into effect from 17th February 2004. As per the new definition, a village would be declared as electrified, if

1. Basic infrastructure such as Distribution Transformer and Distribution lines are provided in the inhabited locality as well as the Dalit Basti/ hamlet where it exists.
2. Electricity is provided to public places like Schools, Panchayat Office, Health Centers, Dispensaries, Community centers etc.
3. The number of households electrified should be at least 10% of the total number of households in the village.

For India’s growing energy demands, we are dependent on fossil fuels which are depleting at a much faster rate and generating electricity from these is leading to continuous degradation of environment. India has 17% of world’s population but only 0.8% of world’s known oil and natural gas resources. So, inference can be drawn that Energy Independence has to be achieved through renewable sources of energy, nuclear power and bio-fuels. Government of India has come up with a numerous plans of making India Energy Independent. Some of the public sector undertakings such as Engineers India Limited have collaborated with various foreign companies for Solar power, Nuclear power projects.

There are many examples which show that we are moving towards Energy Independence. One such example is of Nagaland state government who has commissioned new power projects in the state. These are: 75 MW Hydel Project at Doyang and 24MW Hydel Project at Likhimro. With this, the power availability in the state is expected to improve, making the supply of adequate power to industry possible. However, according to the Association of Power Engineers of Nagaland (APEN), the state must also have new distribution lines, transformers and more employees. In short, along with capacity additions there should be increased manpower for manning the new assets.

In Punjab also, there are many power projects such as thermal power plants, Dual Bio-mass power plant, Awan Photovoltaic Solar Power Plant near Amritsar etc and the list goes on in other states of country too.

So, looking at the current scenario, energy awareness among individuals (for which IAEMP is also contributing a lot) and the exercises being done by Government, the time is not far when we all will say that India is now Energy Independent.

References:

1. <http://www.power-technology.com/projects/awanphotovoltaicsola/>
 2. <http://www.neepco.gov.in/doyang.html>
 3. <http://www.indiaenergyforum.org/milestones.php>
 4. <http://www.electricityinindia.com/>
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A Prayer by Thomas John Carlisle

Help us to harness
the wind,
the water,
the sun,
and all the ready
and renewable
sources of power.

Teach us to conserve,
preserve,
use wisely
the blessed treasures
of our wealth-stored earth.

Help us to share
your bounty,
not waste it,
or pervert it
into peril
for our children
or our neighbors
in other nations.

You, who are life
and energy
and blessing,
teach us to revere
and respect
your tender world.

Three Years of “MISSION-2022”

By Sunil Sood

What is “Mission-2022”?

Three years ago, on the eve of Independence Day 14th August 2007, ‘Mission-2022’ was launched in Bangalore by the Indian Association of Energy Management Professionals (IAEMP). The mission of IAEMP is to achieve India’s Energy Independence by the year 2022, the Platinum Jubilee year of our political independence. The mission was given the code name – ‘Mission-2022’. The mission starting year was kept as 2007, which was incidentally the 60th anniversary year of our political independence.

To realize its dream of Energy Independent India, a vision document on “How India Can Achieve Energy Independence by 2022” was prepared. The Vision Document is a comprehensive document, which includes recommendations of “Integrated Energy Policy-2006,” Renewable Energy Policy Statement-2005’, and Suggestions of our former President Dr. APJ Abdul Kalam. It also includes many new suggestions given by IAEMP members. Further, the document also attempts to learn lessons from the past 30 years of developments in energy sector. The document has also given a time bound action plan as to what needs to be done to achieve ‘Energy Independence’ by the year 2022. The Vision Document has 10 Chapters and interesting articles and newspaper clippings.



A photograph at the launch of IAEMP’s Vision Document on “How India can Achieve Energy Independence by 2022”

The release of the document got excellent coverage from the local as well as national media. The copies of the document were sent to all those who matter in the energy sector. It was the first occasion that such a document was prepared without any financial assistance from any government agency or foreign funding sources. It was appreciated by every one for its approach and practical 'Action Plan' (See table-1) within the frame work of existing laws and polices.

Table-1

I. ACTION PLAN FOR ENERGY EFFICIENCY
ACTIONS AS SUGGESTED BY IAEMP
Setting-up of 'Energy Commission'
Formation of 'Ministry of Energy Efficiency & Renewable Energy'
Points related to other ministries
Active support for implementation of Electricity Act, 2003
Incorporating energy efficiency at design stage by following National Building Code-2005
Promotion of "green buildings" with incentives
Development of CDM projects
Formation of energy protection force
Human resources development
Introduction of small energy saving schemes
Amendments in EC Act-2001
ACTIONS AS PER EC ACT-2001
Establishment of energy conservation fund
Establishment of appellate tribunal
Appointment of adjudicating officers
Activating state designated agencies
Notification of all designated consumers
Accreditation of energy auditors
Notification for appointment of energy managers
Accreditation of labs for testing and certification
S & I programme
Information dissemination
Educational curriculum
International co-operation programmes
Energy Conservation Building Code
Training, R & D, pilot projects, demonstration projects
Norms for processes and energy consumption standards.
ACTIONS AS PER INTEGRATED ENERGY POLICY-2006
INCREASING EFFICIENCY OF COAL-BASED POWER PLANTS
Technology acquisition for fuel conversion efficiency improvement
Fixing of certified fuel conversion efficiency
SHIFTING FREIGHT TRAFFIC TO RAILWAYS
Construction of dedicated freight corridors.
Dismantling of CONCOR monopoly.
Promotion of Urban Transport
Promotion of fuel efficient vehicles
Implementing time of day tariff
Facilitating grid interconnection for co-generators
Improving efficiency of municipal water pumping
Two time zones for daylight savings

ADOPTION OF LEAST COST PLANNING POLICY APPROACH
Electricity Sector
Oil Sector
ANNUALISED LIFE CYCLE BASED PROCUREMENT
ENCOURAGEMENT TO ESCOs
Payment Security Mechanism
Alternate Business Modes
Tax Benefits as producers of 'Negawatts'
Institutional framework for independent monitoring and evaluation.
II. ACTION PLAN FOR RENEWABLE ENERGY
ACTIONS AS PER NEW AND RENEWABLE ENERGY POLICY STATEMENT-2005
ALTERNATE FUELS(HYDROGEN,BIO,SYNTHETIC)
Production
Storage
Distribution
Delivery
Appliances
Green Initiative for Future Transport(GIFT)
Green Initiative for Power Generation(GIP)
IC Engine –Electric Hybrid Vehicles
NRE Systems/Devices for Rural Areas
NRE Systems/Devices for Industrial, Commercial and Urban Applications
Distributed Energy Systems
Energy Recovery
SPV Materials, cells, Modules, Systems
Resource Survey, Assessment and Mapping
ACTIONS AS PER INTEGRATED ENERGY POLICY-2006
MINI HYRDO
Survey of Potential Sites
Tradable Tax Rebate Certificates
WIND POWER
BIO-DIESEL
Tax Benefits
Minimum Support Price
ETHANOL
Minimum Purchase Price
Tax Exemption
Environmental Premium through TTC
FUELWOOD PLANTATION
Co-operatives for Tree Plantations
Land on Lease to Co-operatives
BIO GAS PLANTS
SOLAR THERMAL
Water Heating
Power Plants
III. ACTION PLAN FOR COAL SECTOR
ACTIONS AS PER INTEGRATED ENERGY POLICY-2006
Allocation of coal blocks
Amendment of coal mines (nationalisation) act, 1973
In-situ coal gasification
Coal bed methane
Detailed survey of coal bearing areas
Leasing of isolate coal deposits

IV. ACTION PLAN FOR POWER SECTOR
ACTIONS AS PER INTEGRATED ENERGY POLICY-2006
Restructuring of APR
GIS mapping of network & feeders
Separation of feeders for agricultural pumps
Incentive to SEBs/staff for reduction in losses
Open access regime
Introduction of ABT
Upgradation of SLCs
Reduction in cost of power generation
V. ACTION PLAN FOR OIL & GAS
ACTIONS AS SUGGESTED BY DR. KALAM
Bio-diesel
ACTIONS AS PER INTEGRATED ENERGY POLICY-2006
Incremental oil recovery technology
Leasing of isolated oil fields to private sector
VI. ACTION PLAN FOR HYDRO-ENERGY
ACTIONS AS PER INTEGRATED ENERGY POLICY-2006
Development of storage schemes
VII. ACTION PLAN FOR NUCLEAR ENERGY
ACTIONS AS SUGGESTED BY DR KALAM
Development of Thorium reactors
Nuclear fusion research
ACTIONS AS PER INTEGRATED ENERGY POLICY-2006
Development of Thorium Cycle
VIII. ACTION PLAN FOR ENERGY R & D
ACTIONS AS SUGGESTED BY DR KALAM
Development of high-efficiency CNT based photovoltaic cells.
Nano Technologies
ACTIONS AS PER INTEGRATED ENERGY POLICY-2006
Establishment of national energy funds
Launching of Technology Missions

What do we mean by “Energy Independence?”

The phrase “Energy Independence” has many connotations; it is often confused with Energy Security. Energy security is the simpler concept and means that a nation has at its command entirely from indigenous sources all the energy its citizens require for carrying out their defense, governmental, industrial, and domestic activities. No foreign nation or government can interfere with it in any manner in the availability of that energy supply.

Energy Independence involves the concept of the ability to operate on an approximate self-reliance basis, but with not enough reduction to affect the mainstream of economic activity.

It does not preclude relying to a moderate degree on foreign sources. But the status of independence would obviously reduce to a major degree the likelihood of the withdrawal of such foreign supply.

Almost everyone agrees that achieving Energy Independence is quite possible in India despite present dismal scenario.

For us “Energy Independence” means:

- Energy Modesty i.e. minimum possible use of energy in our day to day life.
- Energy Efficiency- Using energy of appropriate quality at highest possible efficiency
- Use of only viable renewable energy technologies.
- Development and reliance on local sources.
- Equal weightage for conservation efforts and Production of goods and services for calculation of Gross Domestic Products.
- Total self-reliance to meet energy needs for our basic defense, governmental, industrial and domestic activities

We do not say that dependence on foreign supplies should be totally eliminated. However, the imported energy should be allowed only for net foreign exchange earning activities.

The Progress on the Action Plan

The Vision Document was a voluntary effort by IAEMP and the Action Plan had suggested some start and finish dates to achieve the ‘Energy Independence’ by the year 2022. 3 years period has lapsed since then and in this period several actions have been taken by the government agencies including launch of 8 Missions on Climate Change.

IAEMP on its own has taken some of the initiative which we feel will go a long way in achieving the mission. Some of these initiatives include:

1. Launch of “The Urja Watch” in July 2008
2. Launch of Home Energy Management Programme in October,2009
3. Starting of a monthly newsletter ‘HEM News’
4. Starting of Training Centre and Library at Bangalore, Bhopal and other Centres.

The last 3 years have been the years of progress as well as consolidation and I am sure that we are on our way to realize our dream to make our country energy independent by the 15th August, 2022 when we all will be celebrating Platinum Jubilee of our political independence.

Yes, it is possible! Believe me.

Upcoming Events

Renewable Energy Finance Forum (REFF)
London

September 20-21, 2010

The two-day event will unite investors with project developers and senior executives from across the renewable energy and technology sectors, to provide delegates with cutting-edge insight as well as networking opportunities.

<http://www.reeep.org>

India Energy 2010, Mumbai

October 7-9, 2010

<http://www.indiaenergy.net>

Geothermal Energy Expo 2010 Conference and Expo
Sacramento, CA

October 24-27, 2010

www.geothermalenergy2010.com

Delhi International Renewable Energy Conference (DIREC)
New Delhi

October 27-29, 2010

<http://www.direc2010.gov.in>

Power India 2010, Mumbai

October 27-30, 2010

<http://www.indiapowershow.com>

Smart Energy India, New Delhi

November 23-25, 2010

<http://www.spintelligent-events.com/mindia2010/en/index.php>

INDIA ELECTRICITY 2010, New Delhi

December 9-11, 2010

www.indiaelectricity.in

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
- ❖ 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
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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