

A monthly newsletter of
Indian Association of Energy Management Professionals

The Urja Watch

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It is about “Conscience Keeping on Energy Matters”



**FINANCING
ENERGY EFFICIENCY PROJECTS**

FINANCING ENERGY EFFICIENCY PROJECTS

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From the Editor...

Where Is The Money?

The Urja Watch is now two years old! Since launching in July 2008, the newsletter has published numerous original articles and many expert opinions on some of the critical energy-related issues.



I take this opportunity to record my sincere thanks to members of the editorial board, contributing authors, IAEMP's office bearers and members, and to all of you, dear readers, for your support and encouragement to this newsletter. Without your assistance and cooperation, it would have impossible to continue this publication.

In our previous issue, we provided information on many of the recent initiatives taken by the government to accelerate energy efficiency projects. However, the big question is – where is the money to implement energy efficiency projects? We are attempting to answer this question in this issue.

Traditional financing institutions such as banks are often reluctant to support energy efficiency project proposals as they perceive a higher degree of lending risk. Many of the branches of lending banks and institutions are not technically equipped to review energy-saving project investments and lack clear understanding of how energy efficiency can bring in profits.

India has nearly three million small and medium enterprises (SMEs) that constitute more than 80 % of the total number of industrial enterprises in the country, contributing nearly half of industrial production. The potential for energy efficiency investments in India is huge. An estimate from a 2008 study indicates the total investment potential for electricity efficiency alone to be over US\$6 billion. It is no surprise that many global organizations such as the World Bank, United Nations, and International development bodies offer financial assistance for energy efficiency projects. The money from these sources is generally disbursed through various implementing agencies in India. Some examples of the funding:

To provide assistance to SMEs, the World Bank has recently approved a major financing initiative to India for Energy Efficiency Projects (project ID: P100530). This project proposes funding of US\$ 2.25 million to the Bureau of Energy Efficiency (BEE) and US\$ 9.05 million to Small Industries Development Bank of India (SIDBI) from the Global Environment Facility. Details of this funding are available in World Bank Report No. 53342-IN that can be accessed through World Bank's website.

The Japan International Cooperation Agency (JICA) has extended a Line of Credit to Small Industries Development Bank of India (SIDBI) for financing Energy Saving projects in the Micro, Small and Medium Enterprises (MSMEs) Sector. JICA, one of the largest bilateral aid agencies, is providing the financial assistance through SIDBI, as well as through refinance to Banks, State Finance Corporations (SFCs) and Non Banking Financial Companies (NBFCs). You can get more details of JICA's scheme through the website <http://jica.org.in>.

BEE is the implementing Agency for GEF's 'Programmatic Framework for Energy Efficiency in India' in which World Bank & UNIDO are the GEF agencies working on Energy Efficiency in SME clusters.

Since many years, the U.S. Agency for International Development (USAID)/India has been working on energy sector regulatory reform and restructuring, clean technology commercialization, and greenhouse gas mitigation. USAID coordinates with many donors and has leveraged funding in many ways. In addition, USAID is supporting the development of the energy and environmental sectors by focusing on both energy supply and demand. USAID is providing Yes Bank with a 10-year, US\$ 20 million loan portfolio guarantee to increase financing of small-scale renewable energy, energy efficiency, and water conservation management projects by small and medium enterprises (SMEs).

A recent media report reveals that Europe's largest banking group HSBC has teamed with BEE to address financing energy service companies.

Leveraging multiple lines of credit from international sources, the Indian Renewable Energy Development Agency Limited (IREDA) finances a range of energy sectors including energy efficiency and conservation.

State and Central Governments also offer fiscal incentives such as 80% depreciation in the first year on specified energy efficiency equipment, concessional excise and customs duty on notified energy conservation equipment to promote energy efficiency. Some state governments also provide financial assistance for conducting energy audits.

There is money but it is in different pockets. In the past, I had leveraged some of it for implementing energy and environmental projects.

Do write to me your comments, suggestions and questions.

S.Subramanian

Letters to the Editor

Dear Mr. Subramanian,

Through this e-mail I want to give my feedback on “The Urja Watch” April-May 2010 Vol. III/issue 22.

This issue has got the most suitable title “Insights into National Energy Initiatives.”

I appreciate the comments made by Mr. Dalal on NMEEE and the complied questionnaire by Mr. Sunil Sood. These articles have presented a crystal clear picture of the progress of energy efficiency in the country. The articles are informative, and help increase awareness. The comments clarify the real meaning.

Thanks to them and to IAEMP for providing such an informative platform.

Warm regards

Puneet Diddi
New Delhi

By three methods we may learn wisdom:

First, by reflection, which is noblest;

Second, by imitation, which is easiest; and

Third, by experience, which is the bitterest.

- Confucius (551 BC – 479 BC)

The World Bank Financing India's Energy Efficiency Projects

Editor's Note: In response to an e-mail query, Erik Nora of The World Bank provided information on the project's appraisal document (PDF) "India - The Financing Energy Efficiency at MSMEs Project." This document has all the project information and is accessible through the following link:

http://www-wds.worldbank.org/external/default/main?pagePK=64193027&piPK=64187937&theSitePK=523679&menuPK=64187510&searchMenuPK=64187283&siteName=WDS&entityID=000020953_20100514150657

Abstract of this report:

The objective of the Financing Energy Efficiency at Micro Small and Medium Enterprises (MSMEs) Project for India is to increase demand for energy efficiency investments in target micro, small and medium enterprise clusters and to build their capacity to access commercial finance. There are four components to the project, the first component being activities to build capacity and awareness for energy efficiency (EE). This component will focus on increasing awareness of EE at the cluster and plant level on a large scale through the implementation of outreach and mobilization efforts, dissemination of information on successful projects and packaging potential investment proposals in EE for financing by local banks or other sources in five designated clusters. The second component is the activities to increase investment in EE. This component shall contribute to the growth of energy efficiency investments in the Indian MSMEs sector that are financed from local commercial financing sources through project development support and through deployment of performance linked grants for demonstration purposes. The third component is the knowledge management. The knowledge management effort will include the provision of resources and manpower for broad Global Environmental Facility (GEF) program evaluation and analysis of cross cutting energy efficiency issues with the goal of ensuring effective implementation and replication of not just this individual project, but of the Bureau of Energy Efficiency (BEE)'s entire GEF funded programmatic effort. Finally, the fourth component is the project management support.

Private Equity and Venture Capital Scenario In Clean Technologies in India

By Amit Gupta

While clean technology (cleantech) is still a niche segment in India, investors foresee tremendous growth opportunities. Seasoned investors have indicated that they believe cleantech will witness an investment boom similar to the IT industry in India, creating a leading investment opportunity.

Strong growth is further expected for cleantech markets and cleantech investing in India, especially in energy and water. Key drivers include the growth in demand for electricity and transportation fuels, spurred by the growing economy and the rise of the Indian middle class, the increasing scarcity of fresh water, the growing population, and the limited availability of natural resources.

The Indian cleantech venture capital market invests mainly in following cleantech segments:

1. **Agriculture:** Natural pesticides and herbicides, land management, technologies that support organic food and aquaculture.
2. **Air & Environment:** Cleanup/safety, emission control, monitoring and compliance, trading & offsets.
3. **Energy Efficiency:** Lighting, building materials, glass, other
4. **Energy Generation:** Wind, solar, hydro/marine, biofuels, geothermal
5. **Energy Infrastructure:** Management, transmission
6. **Energy Storage:** Fuel cells, advanced batteries, hybrid systems
7. **Manufacturing/Industrial:** Advanced packaging, monitoring
8. **Materials:** Nano, bio, chemical & other materials with cleantech applications
9. **Recycling & Waste:** Recycling, waste treatment
10. **Transportation:** Vehicles, logistics, structures, fuels
11. **Water & Wastewater:** Water treatment, water conservation, wastewater treatment

Energy Generation make up almost one-third of overall cleantech investment, with wind energy as the largest recipient of investment.

Global Cleantech Investment Scenario

As per Zephyr Research, Private equity and venture capital investment in the cleantech industry worldwide fell away in 2009 and as bidders struggled to secure financing, strong gains made in 2008 were almost reversed.

At USD 4,360 million, total deal value was well under half the USD 10,161 million recorded in 2008 and particularly disappointing when compared with the near-threefold annual increase from USD 3,522 million in 2007. Deal volume fell at a slower rate year-on-year, dropping by almost a fifth to 164 transactions.

China was comfortably 2009's number one target of cleantech M&A activity, with its total of USD 20,032 million standing almost four times that of its nearest rival, the US. China's result was more than double from that of 2008 but the most impressive year-on-year growth was recorded for companies registered in tax havens such as the British Virgin Islands and the Cayman Islands.

Cleantech firms in the U.S. were the most frequent deal targets in 2009, as had been the case in 2008. A total of 147 transactions were recorded for the US, representing 14 per cent of the year's 1,084 total and putting it ahead of China with 114 deals.

The US is undoubtedly one of the most important countries for cleantech investments though 2009 brought a decline; deal volume fell by almost a third year-on-year and value was down by over than a fifth.

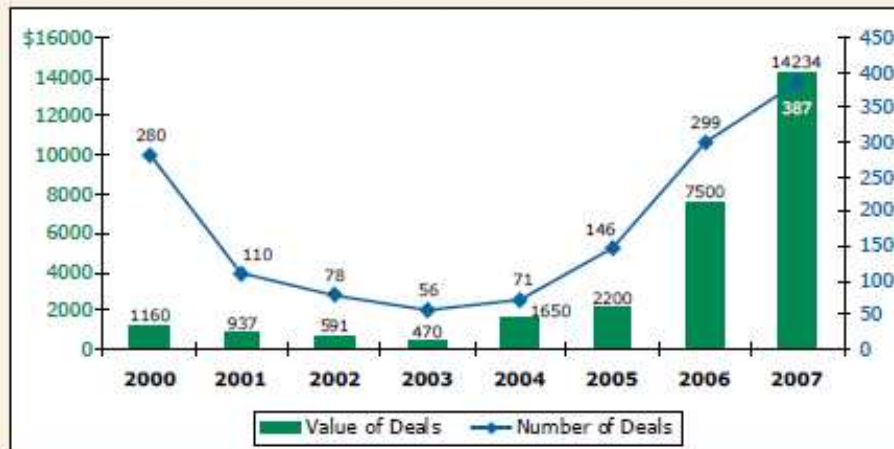
Indian Cleantech Investment Scenario

India has always been a major focus country for leading venture capitalists and private equity funds for cleantech investments among developing nations. Increased government attention and expected high returns on investments are further helping in fuelled demand for high value deals.

Following graph shows the value and volume of overall deals in 2007 (including cleantech). Key 2007 highlights include:

- 31% of all deals were between USD \$10 and 25 million
- Venture capital accounted for 25% of private equity deals (in volume terms) in 2007. Late stage deals accounted for 35% of all deals
- PE firms obtained exits on 65 companies, including 16 via IPOs

PE and VC Investments in India (USD \$million) Amount invested and Number of Deals



Source: TSJ Venture Intelligence

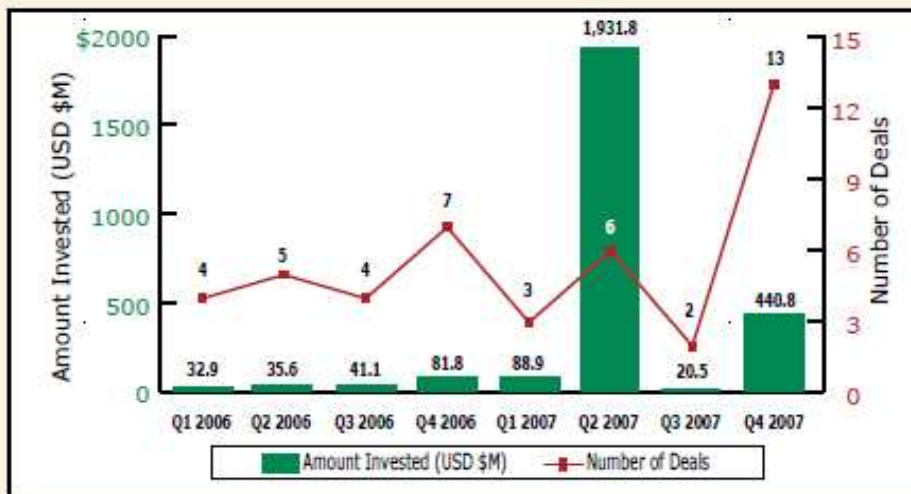
The distinction between ‘projects’ versus ‘start-ups’ is important to understand cleantech investing in India. Each category tends to attract a particular asset class. Private equity and public institutions generally invest in the project segment, while venture capital generally invests in start-ups.

Some other sources of capital available for cleantech companies in India include:

- Infrastructure funds
- Mezzanine capital
- Carbon finance
- Project developers
- Hedge funds
- Innovator entrepreneurs
- Public markets

The graph on the following page portrays quarter-wise money invested specifically in cleantech sector in 2006 and 2007 in India.

Total Cleantech Investments Amount Invested and Number of Deals*



* Amount invested may not correspond to number of deals as investment data for some of the deals was not available
 Source: Cleantech Group, LLC, www.cleantech.com

Top Five Disclosed Cleantech VC Investments by Size

Company	Region	Deal Size (USD M)	Industry Segment	Period	Investors
Moser Baer Photo Voltaic	North	100.0	Energy Generation	Q4 2007	GIC Special Investments, CDC Group, IDFC Private Equity
Vestas RRB	North	54.5	Energy Generation	Q4 2007	Merrill Lynch
ICSA	South	52.0	Manufacturing/Industrial	Q1 2007	Citigroup, Goldman Sachs
Auro Mira Energy	South	50.0	Energy Generation	Q4 2006	Baring Private Equity Partners (India) Ltd
Praj Industries	West	29.3	Materials	Q2 2006	Kleiner, Perkins, Caufield & Buyers, Khosla Ventures

Source: Cleantech Group, LLC, www.cleantech.com

Most Active VC Investors by Number of Deals

Investor	Number of Deals	Target Companies (Disclosed)
Acumen Fund	3	d.light design, Global Easy Water Products Limited, WaterHealth India
Draper Fisher Jurvetson	3	d.light design, Deeya Energy, Reva Electric Car Company Pvt. Ltd
Baring Private Equity Partners (India) Ltd	2	Auro Mira Energy
IDFC PE	2	Moser Baer Photo Voltaic, Doshion

Some other leading funds active in Indian cleantech scenario are:

Fund	Focus areas
Olympus Capital Asia Holdings	Renewable energy, energy efficiency
Climate Change Capital	Carbon credits
FE Clean Energy	Carbon credits and power generation
Aloe Private Equity	Recycling, waste management
IFC	Renewable energy, captive-power generation
BTS Investment Advisors	Power generation, renewable energy portfolio
Global Environment Fund	Energy-efficiency solutions, power generation
Green Ventures	Environment, renewable energy, carbon financing
CLSA Clean Resources Asia Growth Fund	Waste-water solutions, sustainable agriculture technologies
IDFC Private Equity	Captive power generation
Element Partners	Clean technologies

Source: VCCEdge

What does a Venture Capitalist look for?

Venture capitalists are higher risk investors and, in accepting these higher risks, all they desire is a higher return on their investment. The venture capitalist manages the risk/reward ratio by only investing in businesses that fit their investment criteria.

Different Venture Capitalists have differing operating approaches. These differences may relate to the location of the business, the size of the investment, the stage of the company, industry specialization, and structure of the investment and involvement of the venture capitalists in the company's activities. The entrepreneur should not be discouraged if one venture capitalist does not wish to proceed with an investment in the company. The rejection may not be a reflection of the quality of the business, but rather a matter of the business not fitting with the venture capitalist's particular investment criteria.

Venture capital is not suitable for all businesses, as a venture capitalist typically seeks:

1. Superior Businesses
2. Quality and Depth of Management
3. Corporate Governance and Structure: Venture capitalists are put off by complex corporate structures without a clear ownership and where personal and business assets are merged.
4. Appropriate Investment Structure
5. An Exit Plan

The Business Plan

Executive Summary

This is the most important section and is often best written last. It summarizes your business plan and is placed at the front of the document. It is vital to give this summary significant thought and time, as it may well determine the amount of consideration the venture capital investor will give to your detailed proposal.

It should be clearly written and powerfully persuasive, yet balance "sales talk" with realism in order to be convincing. It should be limited to no more than two pages and include the key elements of the business plan.

Background on the company

The product or service

Explain the company's product or service in plain English. This is especially important if the product or service is technically orientated. A non-specialist must be able to understand the plan. Emphasizes the product or services competitive edge or unique selling point.

Describe the stage of development of the products or service (seed, early stage, expansion). If relevant, explain what legal protection you have on the product, such as patents obtained, pending or required. Assess the impact of legal protection on the marketability of the product.

Market analysis

You need to convince the venture capital firm that there is a real commercial opportunity for the business and its products and services. Offer the reader a combination of clear description and analysis, including a realistic "SWOT" (strengths, weaknesses, opportunities and threats) analysis.

Define your market and explain in what industry sector your company operates.

- What is the size of the whole market?
- What are the prospects for this market?
- How developed is the market as a whole, i.e. developing, growing, mature, declining?
- How does your company fit within this market?
- Who are your competitors?
- For what proportion of the market do they account?
- What is their strategic positioning?
- What are their strengths and weaknesses?
- What are the barriers to new entrants?

Describe the distribution channels. Who are your customers? Comment on the price sensitivity of the market.

Marketing

Having defined the relevant market and its opportunities, it is necessary to address how the prospective business will exploit these opportunities. Outline your sales and distribution strategy.

- What is your planned sales force?
- What are your strategies for different markets?
- What distribution channels are you planning to use and how do these compare with your competitors'?
- Identify overseas market access issues and how these will be resolved.
- What is your pricing strategy?
- How does this compare with your competitors'?
- What are your advertising, public relations and promotion plans?

Business operations

The management team

Demonstrate that the company has the quality of management to be able to turn the business plan into reality. Include organization chart.

Financial projections

Consider using an external accountant to verify and act as "devil's advocate" for this part of the plan. Realistically assess sales, costs (fixed and variable), cash flow and working capital. Produce a pro-forma profit and loss statement and balance sheet. Ensure these are easy to update and adjust.

Assess your present and prospective future margins in detail, bearing in mind the potential impact of competition.

- What is the value attributed to the company's net tangible assets?
- What is the level of gearing (i.e. debt to shareholders' funds ratio)?
- How much debt is secured on what assets and what is the current value of those assets?
- What are the costs associated with the business?
- What are the sale prices or fee charging structures?
- What are you doing to ensure that you and your management keep within these or improve on these budgets?

Present different scenarios for the financial projections of sales, costs and cash flow for the short and long term.

Ask "what if?" questions to ensure that key factors and their impact on the financings required are carefully and realistically assessed. For example, what if sales decline by 20 per cent, or supplier costs increase by 30 per cent, or both? How does this affect the profit and cash flow projections?

Keep the plan feasible. Avoid being overly optimistic. Highlight challenges and show how they will be met.

Amount and use of finance required and exit opportunities

State how much finance is required by your business and from what sources (i.e. management, venture capital, banks and others) and explain the purpose for which it will be applied. Outline the capital structure and ownership before and after financing.

Consider how the venture capital investors will exit the investment and make a return. Possible exit strategies for the investors may include floating the company on a stock exchange or selling the company to a trade buyer.

Sources: *The article is a compilation of multiple publicly available reports from Cleantech group, ecell, Zephyr Research, Indian Venture Capital Association and other leading articles*

About the author:

Amit Gupta is an editorial board member of "The Urja Watch."

Financing Energy Efficiency

By Puneet Kumar Sharma

There is one basic principle we all know. Our ancestors knew this principle for centuries. This principle is even mentioned in our Vedas and Puranas also. In Vedas, Shiv Puran and other scriptures, it is clearly mentioned if one has to carry out Yagyas and other religious ceremonies, one needs money. So, Goddess Lakshmi was, and is worshipped to get money. In Punjab, there is a famous saying “Guru bina gat nahin, Shah bina pat nahin”. It means that without a teacher (Guru) one can't attain enlightenment and without a money lender (Shah) one can't proceed with investments.”

Question arises, why finance energy efficient projects? The answer is simple and straight. Energy-efficient upgrades typically save us money that can be used to pay for the cost of projects. For small, inexpensive projects, one should utilize internal funds to pay for the upgrade in order to keep the payback period low and return on investment high. For larger projects, securing financing from external sources might be the only way to pay for the upgrade. Strategic energy efficiency investments are our hedge against the certainty of higher utility bills that we cannot control.

For any constructive step, the practical first step, after planning and organizing the project, is to arrange for the principal fund required. Starting a new project is analogous to a chemical reaction, which needs a minimum amount of energy to occur i.e. Activation Energy which is analogous to minimum amount of money required to start the project in question. The main question arises from where to get that money from? The first source of fund that comes to one's mind is Bank. Bank lends money only if it evaluates the feasibility of project and after assessing the risks. It is very difficult to find a financial institution that will help.

In today's scenario when the need of energy efficient projects is at the peak, the banks require to employ people who understand energy efficiency techniques and are competent to evaluate the risks and feasibility regarding the project in question. From where should one get these people? One need not go anywhere else! There are thousands of BEE certified Energy Auditors/Managers in the Indian market, ready and fully loaded to meet the challenges in Energy Conservation Sector. If an organization feels the concerned staff is not competent, then the best solution is training. Professionals should be well trained, if one wants best results. If the banks or money lending organizations do not want to hire individuals, they can tie-up with energy efficiency firms.

This will help encouraging the implementation of energy efficiency projects as well as employment. Last but not the least, the basic purpose of a giant energy conservation agency i.e. Bureau of Energy Efficiency will be met, directly or indirectly.

A global financial organization like the World Bank has also started contributing to energy efficiency projects in India. It helps Small and Medium Enterprises to encourage the implementation of energy efficiency projects in India.

With such financing initiatives, the day is not far away, when we will be living in an Energy Efficient World with **clean and green** Mother Earth.

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/15350.15989/refflondon-2010.htm>

India Energy 2010, Mumbai

October 7-9, 2010

<http://www.indiaenergy.net/>

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>

A Bank Financing Scheme

BANK OF BARODA'S SCHEME

Scheme for Financing Energy Efficiency Projects

PURPOSE: Financing SMEs for acquisition of equipments, services and adopting measures for enhancement of energy efficiency/conservation of energy.

ELIGIBILITY: SME units financed by bank as also other units desirous of shifting their account to Bank of Baroda.

LIMIT: Upto 75% of the total project cost, subject to maximum of Rs. 1/- crore. (Minimum amount of loan Rs. 5/- Lakhs).

Project cost may include the following:

- * Cost of acquisition/modification/renovation of equipment/software.
- * Cost of alterations to existing machinery.
- * Cost of structural / layout changes.
- * Cost of energy audit/consultancy.
- * Preparation of Detailed Project Report (DPR).

RATE OF INTEREST: Bank's BPLR from time to time.

REPAYMENT: Maximum 5 years, including moratorium, if any.

SECURITY:

* For Sole Banking Accounts: Extension of first charge on all fixed assets.

* For Consortium/Multiple Banking Accounts: first charge on equipments acquired out of loan and collateral, if any, with the total security coverage being not less than 1.25.

Grant from IREDA:

- IRDEA, at present, gives a grant of Rs. 25,000/- for projects costing Rs. 1/- crore or below to meet partial cost of Energy Audit. This grant is available for the first 100 projects (SME Sectors only) approved by them.

(Source: <http://www.bankofbaroda.com/bbs/financeenergy.asp>)

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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