



Construction begins on India's largest Solar CDM Project

The foundation of country's **first** Grid-connected **Photovoltaic Solar Power Plant of 2.0 MW capacity** has been laid in West Bengal's Burdwan District. The Project is by the West Bengal Green Energy Development Corporation (WBGEDCL), in association with DPSC Ltd who has agreed to purchase the power from the largest Solar Project in India.

The Rs 40.0 Crore (appx. US\$ 10.0 million) Project will begin generating power of upto **3.0 million units per annum** from

December 2008 and will be located on DPSC property. The project is entitled for carbon credits, according to WBGEDCL.

Since the cost to generate each unit is approximately Rs 15.0, DPSC will buy the power at Rs 5.0 per unit, while the Ministry of New and Renewable Energy will fund



the remainder as an incentive to this project.

The Indian Government plans to install 50.0 MW of Solar Power Plants across the Country by 2010.

After CERs, get ready for REC trading

With the rising demand for power and the depleting energy resources for power generation, **Renewable Energy Certificates (REC)** are set to bring about a paradigm shift in the way the renewable based electricity would be promoted in future.

This was amongst the main points deliberated at a Workshop organized by The Energy and Resources Institute (TERI) under the aegis of its ongoing project of designing a Renewable Energy Certificate (REC) System for India. The exercise, sponsored by Strategic Programme Fund of the Foreign & Commonwealth Office (FCO), British Government, is being carried out in partnership with the Maharashtra Electricity Regulatory Commission (MERC).

The Stakeholder Workshop on "Tradable Renewable Energy Certificates for Maharashtra" in association with the Renewable Energy and Energy Efficiency Partnership (REEEP), deliberated that RECs, a market-based instrument to promote renewable energy and facilitate Renewable Energy Portfolio Obligations (RPO), can make the renewable electricity market stable and predictable by maximizing the benefits of

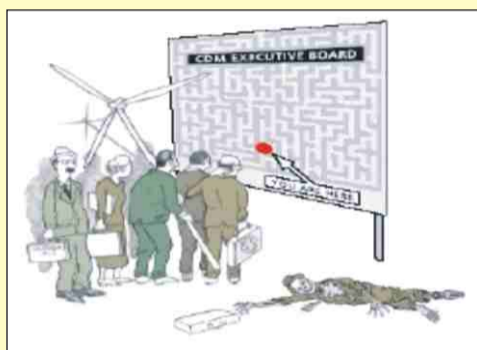
renewable generation while reducing costs. Besides, introduction of tradable REC could provide an additional source of revenue to the RES based power generators. Apart from this, perhaps these could also be used by those states, which do not have substantial RE resources, to meet their RPO.

Mr Spencer Mahony, First Secretary, Trade & Investment, British Deputy High Commission (Mumbai) during his special address, emphasized the need for increasing the use of renewable energy as a source of power worldwide. He said, "There are many reasons for focusing on renewable energy; (some of which are) diversified supply, increased energy security and reduction of emissions". In the UK, the existing scheme of Renewable Obligations (RO) deems electricity suppliers of UK to source a certain percentage of energy from renewable sources. The suppliers who cannot meet the obligations are allowed to buy renewable certificates of equivalent value to meet their obligation quotas and hence help in increasing the proportion of renewable energy in overall energy mix in the country.

Dr. Pramod Deo, Chairman of MERC pointed out that due to the uneven distribution of

renewable energy potential in the country, certain states are generating high percentage of electricity from renewable sources while others are not procuring even a minimum percentage; resulting in uneven tariff burden on consumers across the country. In his opinion, a REC system could help offset, to a certain extent, this anomaly.

Regarding public perception of renewable energy, Mr. V. Subramanian, Secretary, Ministry of New & Renewable Energy (MNRE), Government of India in his inaugural address, highlighted the fact that majority of consumers are not aware that a certain percentage of their consumption today comes from renewable energy sources. He also pointed out that India has relatively high percentage of power generation capacity in renewable sources (about 7.8 % of total installed capacity), with 95% of investment coming from private sector, compared to the thermal power sector - something that is not well known. He also felt that the system of RECs would be effectively enforced if penalties imposed were high so as to deter people from defaulting, and thereby giving RE power purchase a boost.



2 more Indian Carbon Credits Projects rejected on grounds of additionality

The UN CDM Executive Board has rejected two Indian projects on grounds of additionality. The rejected project by Hindustan Paper was expected to generate 25,664 CERs per year. The project by H&R Johnson was expected to generate 11,741 CERs per year.

The EB could not register the following project activities:

(i) "Optimization of steam consumption in the process by installation of free flow falling film finisher evaporator and retrofit to the chemical recovery boiler in **Cachar Paper Mill of Hindustan Paper Corporation Limited**" (1475) submitted for registration by the DOE (DNV) because the project participant and DOE failed to substantiate the additionality of the project activity, in particular the serious consideration of the CDM in the decision to proceed with the project activity.

(ii) "Hot air generation using renewable biomass fuel for spray drying application at **H & R Johnson (India) Ltd, Kunigal**" (1545) submitted for registration by the DOE (TÜV-SÜD) because the project participant and DOE failed to substantiate the additionality of the project activity, in particular that benefits of the CDM were a necessary element of the original decision to invest in the project activity.

Adobe becomes largest tech sector purchaser of green power

Bullfrog Power, a Canadian provider of 100 per cent green electricity, has announced that Adobe Systems Incorporated has agreed to purchase more than 3,000 MWh per year of clean, renewable electricity for its Ottawa office. This makes Adobe the largest tech sector purchaser of green power on the bullfrog-powered Green Index, said the company.

"We are continually striving and looking for innovative ways to reduce our environmental impact," said Randy Knox III, senior director of Global Facilities and Real Estate at Adobe. "Investing in green power is one of many ways Adobe is helping to reduce emissions and ultimately our carbon footprint," he added.

Adobe is currently the only organization in the world to have four LEED- EB Platinum Certified Buildings - its 3 nos. Headquarters' Towers in San Jose, California, and its San Francisco Office. Adobe's San Francisco Office, built in 1904-05, is the oldest building in the world to achieve LEED-EB certification at the Platinum level. LEED is North America's most reputable green building rating protocol. LEED credits are awarded for meeting requirements in several key categories, including sustainable sites, water

efficiency, energy and atmosphere, materials and resources, indoor environmental quality and innovation and design.

This green purchase will reduce Adobe's electricity-related emissions footprint, which will help to combat climate change and tackle the more immediate and local issue of Ontario smog. Adobe will reduce its one-year emissions footprint by approximately 660 tonnes of CO2 (the primary gas that causes climate change), 1,960 kilograms of SO2 (major contributor to smog) and 845 Kg of NO (major contributor to smog).

"Besides, as the effects of global warming are felt people will get more serious..."





2 PR Agencies using Offsets to turn Carbon Neutral

Environics Communication, a full-service North American Public Relations Firm with offices in Canada & the United States, has achieved carbon neutral status. Since first committing to become carbon neutral in January 2008, Environics worked with the Pembina Institute, Canada, and followed a strict protocol to plan and execute its climate change strategy. The firm met the target earlier this month and plans to continue to reduce its carbon footprint each year.

Environics Communications first created an inventory of Environics' GHG (greenhouse gas) emissions from the operations of all four offices. The baseline

was set for 2007, as the data was the most complete. Factors evaluated included staff commutes, business travel, office paper usage and heating and electricity consumption. The finalized inventory was then analyzed by the Pembina Institute to determine the full amount of CO(2) emissions generated by Environics, as well as to identify opportunities for reduction measures to further decrease the company's carbon footprint.

The Montreal office of Environics purchased offsets for its operations from Planet air. In total, Environics purchased 239 metric tonnes of CO(2) equivalent to neutralize the full amount of their 2007 GHG emissions. All offsets purchased are certified Gold Standard, and will go toward supporting renewable energy, energy efficiency and sustainable development projects.

Boulder, Colorado-based Sterling-Rice Group, a brand-building and marketing communications firm, is another agency which has purchased 339,300 kWh of renewable energy credits (RECs) generated by wind farms across America. It has also made a company-wide commitment to offset its emissions produced from business travel. Sterling-Rice Group's REC and carbon-offset purchase from Boulder, Colorado-based Renewable Choice Energy will offset all of the company's electricity use.

"Our decision to commit to and invest in clean, renewable wind energy and to offset our company's carbon emissions is well-aligned with our core belief in sustainability and in being good stewards of the environment," says Rick Sterling, president and founding partner of Sterling-Rice Group.

Army to promote use of Renewable Energy among Forces

The Minister of State for Defence Shri MM Pallam Raju has stressed the need for use of biodiesel and non-conventional energy sources in the Armed Forces.

Presiding over a meeting of the three services and the DRDO on 'Promotion of Alternative Energy Sources in the Armed Forces' in New Delhi on June 27, 2008, Shri Pallam Raju emphasized that in view of the spiralling cost



of fossil fuels and the huge consumption of oil fuels by the Armed Forces to secure the national interests, it was high time that the 3 Services adopted the use of Bio-diesel.

He called upon the

DRDO to find out the suitability of blending bio-diesel with conventional fuel and to study its performance, without compromising the needs of the Forces, in extreme hot and cold climates.

The DRDO already has a running programme with the Army on developing a composite Biodiesel model for the Army. Various laboratories including CSIR, Universities and Industrial Houses are collaborating in the programme. The DRDO's Defence Agricultural Research Laboratory (DARL), is the Nodal Agency for the DRDO-Army Bio-Diesel Programme. Dr. Zakwan Ahmed who is the Director of DARL, said that over 3.64 lakh saplings of the high-yielding Jatropha has been planted on 300 hectares of land at Military Farms in Secunderabad, Mhow and Ahmednagar.

Dr. Shashi Bala Singh, Director, Field Research Laboratory (FRL), Leh revealed that during tests, it was found that 20 % blended Winter

Grade Diesel does not freeze up to -17oC and that 5 % blended and 10 % blended diesel worked efficiently at -17oC. Dr. C Dhamejani, Director, Vehicle Research & Development Establishment (VRDE), Ahmednagar said the laboratory has carried out performance trials of Bio-diesel on vehicles for a cumulative 4000 kms.

Dr. M Jayapragasam of the Coimbatore based Bio-fuel Research and Development Centre (BRDC), however pointed out the limitations that the Jatropha cultivation is possible only in the southern parts of the country as the plant's flowering and fruiting does not take place below 18oC and the crop is dormant below this temperature, gaining normalcy back in ambient warmer temperature.

Representatives of the 3 Services said that use of Non-conventional Energy Sources including Solar-powered Street Lights and Water Heaters, Wind Mills, Micro-Hydel Projects of 1 KW capacity and use of CFL lights is being promoted in Cantonments.



PM releases National Action Plan on Climate Change



Prime Minister Dr. Manmohan Singh released India's National Action Plan on Climate Change, in a brief ceremony in New Delhi on 30th June 2008.

The National Action Plan has been prepared under the guidance and direction of the Prime Minister's Council on Climate Change.



The Prime Minister said that the release of the National Action Plan reflected the importance the Government attaches to mobilizing national energies to meet the challenge of climate change.

The National Action Plan focuses attention on 8 priorities of National Missions.

These are:

- Solar Energy
- Enhanced Energy Efficiency
- Sustainable Habitat
- Conserving Water
- Sustaining the Himalayan Ecosystem
- A "Green India"
- Sustainable agriculture
- Strategic Knowledge Platform for Climate Change

The National Mission of Solar Energy, occupies a pre-eminent place, whose success, the Prime Minister said, has the potential of transforming the face of India.

The Prime Minister emphasized the global dimension of the challenge of climate change, which demands a global and cooperative

effort on the basis of the principle of equity. India, he said, was ready to play its role as a responsible member of the international community and to make its own contribution. He added that "India believed that every citizen of this planet should have an equal share of the planetary atmospheric space and therefore, long-term convergence of per capita GHG emissions was the only equitable basis for a global agreement to tackle climate change."

In this context, the Prime Minister reaffirmed India's pledge that as it pursued sustainable development, its per capita GHG emissions would not exceed the per capita GHG emissions of developed countries, despite its developmental imperatives. The Prime Minister clarified that the National Action Plan would evolve and change in the light of changing circumstances and therefore invited broader interaction with civil society as a means to further improve the various elements of the Plan.



DOE's to have fixed timelines: UNFCCC Chair

Earlier it took 3 months to get my projects validated, now there is a 1 year delay for my new projects," said Kishore Kavadia, Advisor - Sustainability, Ambuja Cements Ltd. He has helped Ambuja Cements design their PDDs and address issues relating to Validation and Certification of Projects.

It was this and other delay issues in the CDM process, which has made Mr. Rajesh Kumar Sethi, Chair, CDM Executive Board, look for ways to streamline the process.

RK Sethi said that the CDM EB is expected to announce a proposal, in the upcoming EB 41 meeting, for fixed timelines for DOEs completing the critical Validation and Verification phases of potential CDM projects.

"In the next round of the EB meeting, we will discuss fixing timelines with DOEs. The timelines for each phase of the project will be frozen.

This is to ensure that the project proponent is not kept waiting," he said at the recent Frost & Sullivan Executive Mind Xchange Conference in Mumbai.

Last month, a **World Bank Report highlighted that some 2,000 projects are still waiting to be accredited, and many are facing a two-year delay.** Bottlenecks included a shortage of qualified "Verifiers".

Market participants suggest that even China is looking to get 4-5 firms accredited as CDM DOEs soon. "We have, as the Indian DNA, been requesting CDM Consultants to become DOEs and represent India. We would welcome such DOE's. Even some good CDM Consultants, with offices in India, work internationally as DOEs," said Mr. R.K Sethi.

Country	Number of Projects	Number of DOEs
India	1,200	15
China	800	10
Other	200	5



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Technologies Private Limited.
The Green Energy Service Company
Chennai, India



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Group Photo of all the participants during the Round Table discussion on 'Climate Change and Energy', hosted by Mr. Mike Conner, British Deputy High Commissioner at the Conference Hall at the Deputy British High Commission in Chennai, on the 8th July 2008.



Participants at the Round Table discussion (seen clockwise are) : Ms. M. Jayanthi, Head of Division, Land Use Section, Tamilnadu State Planning Commission, Dr. Ramachandran, Director, Centre for Climate Change & Adaptation, Anna University, Mr. S.Rajha Gopalan, CEO, RENCO, Mr. Fergus Auld, First Secretary, Climate Change and Energy, BHC, New Delhi and Mr. Creon Butler, Deputy High Commissioner to India, New Delhi.

Developed countries to cut emissions by 25-40% below 1990 levels by 2020: G5

Leaders of the G5 countries, which include Brazil, China, India, Mexico and South Africa, have called for 25-40% emissions reductions below 1990 levels by 2020 by developed countries.

In their joint declaration in Japan, they urged the international community to address the challenge of climate change through long term cooperative action in accordance with the United Nations Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol, especially the principle of common but differentiated responsibilities and respective capabilities.

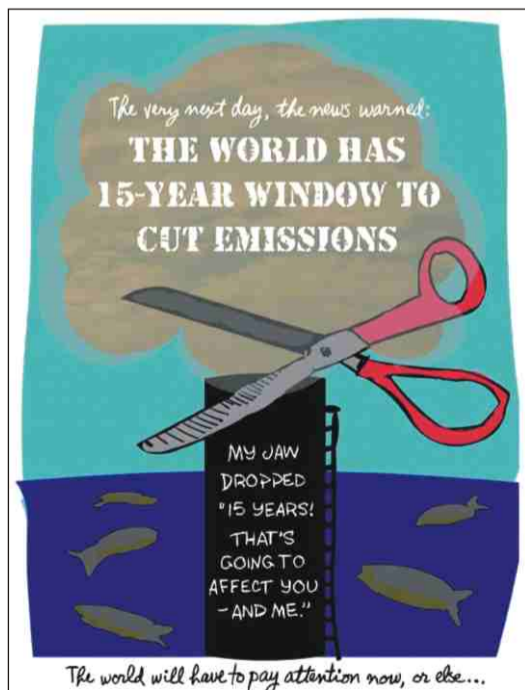
The G5 called for developed countries to take the lead in achieving ambitious and absolute greenhouse gas emissions reductions in accordance with their quantified emission targets under the Kyoto Protocol after 2012, of at least 25-40 per cent range for emissions reductions below 1990 levels by 2020, and, by 2050, by between 80 and 95 per cent below those levels, with comparability of efforts among them.

The G5 stressed that they were committed to undertaking nationally appropriate mitigation and adaptation actions which also support sustainable development.

"New and innovative financial mechanisms must mobilize additional resources beyond the flexibility mechanisms of the Kyoto Protocol and other instruments of the carbon market, without diverting national or multilateral and ODA resources from the imperatives of development and poverty alleviation," they said.

Developed countries should commit clearly to significant additional financing to support both mitigation and adaptation in developing countries.

"We recognize the need for further financing options to complement, not substitute, the financial arrangements under the Kyoto Protocol. In this regard, we welcome for further exploration, inter alia, the proposal by China for setting a climate financing goal for all developed countries, such as 0.5% of GDP (in addition to ODA) for climate action in developing countries, as well as the Mexican initiative for a World Climate Change Fund," said the G5 in a statement.





Additionality problem? Maybe 1CER for every 2 tonnes reduced: Study

The following are excerpts from the JIKO Policy Paper 1/2008, From Clean Development Mechanism to Sectoral Crediting Approaches Way Forward or Wrong Turn? by Wolfgang Sterk

One crucial feature of the CDM is that it generates new certificates (based on GHG emission reductions or biomass carbon sequestration) which are added to the overall GHG “budget” established by the Kyoto Protocol for industrialised countries.

The CDM Executive Board has over the years significantly strengthened the regulatory basis for additionality testing as well as its own capacity to assess project. In 2006, it established a Registration and Issuance Team, which assesses the documentation of each request for registration. Moreover, in 2007 the UNFCCC secretariat started to assess each project in addition to the RIT. The Executive Board is currently working on a Validation and Verification Manual (VVM) to further improve its guidance on how validators should assess projects.



RENCO's President & CEO Mr. S. Rajha Gopalan in discussion with the Secretary, Chemical Industries Association Mr. P.K.N. Panicker and Dr. Mohunta, Committee Member, along with RENCO's Operations Director Mr. B. Vijayakumar (his back to the camera) during the recent “Seminar on CDM Benefits for Chemical Industries” organised by the Chemical Industries Association in Chennai.

However, the difficulty is not only the implementation of the additionality concept but there are also fundamental problems. The baseline-and-credit approach measures projects based on assumptions about what would have happened in the future under “business as usual” conditions, which is by definition hypothetical. In essence, it is not logically possible to prove a negative, i.e. that something would not have happened without the CDM.

The only exceptions are project types such as HFC projects where the CDM provides the only revenue stream and is therefore the only reason to undertake a project. Moreover, external validators are always at an information disadvantage against project developers, and indicators used to determine additionality such as the IRR can be easily manipulated by modifying project assumptions such as the discount rate and capacity factor.

One possibility to address the additionality problem would be to discount CERs, i.e. not to issue one CER per tonne of emissions reduced but for example one CER for every two tonnes reduced. The problem with this approach is that it would hurt the truly additional projects, which actually do depend on the CER revenue to become viable. By contrast, non-additional projects would only have their windfall profits reduced and could still be brought forward. Discounting is therefore a possibility to address the additionality problem at the aggregate level for the mechanism as a whole: if one estimates that x% of all CERs are not additional, one could discount CERs by that percentage. But discounting is not an instrument to screen out individual non penetration rates or benchmarks where this is possible, e.g. in terms of kilogrammes of emissions per tonne of product produced. The criteria could be set below BAU levels to cancel out non-additional reductions from activities that would have taken place anyway, with or without the CDM - additional projects.

Another option is to shift the methodologies for baseline development and additionality testing from bottom up to top-down approaches based on objective criteria such as technology.



Patni announces setup of Rs 1.75 billion Green BPO Centre



Patni Computer Systems has announced the launch of its first Green IT-BPO knowledge centre. The state-of-the-art environment-friendly facility, set up with an investment of Rs 1.75 billion, complements the organization's green initiatives around efficient utilization and conservation of energy, water and natural resources.

Developed on Green Architecture, the centre is spread over 5 acres and has a seating capacity of over 3,500. The Patni Knowledge Centre, is designed and constructed as per the guidelines of LEED (Leadership in Energy and Environmental Design) India green building rating system for new constructions.

The centre is currently getting certified and is being jointly audited by the Indian Green Building Council (IGBC) and US Green Building Council (USGBC).

Highlights of green features include climate responsive architecture, over 50% green area, 75% of which receives natural daylight, 95% of the occupants will have access to the view outside, zero discharge; 100% recycling of sewage, drip water irrigation and solar water heating, interior materials with low volatile organic compound emissions, healthy air quality with CO2 sensors for adding fresh air on demand and maximum use of eco-friendly recyclable material.

Europe's largest biogas plant inaugurated

Bavarian Minister President Günther Beckstein has inaugurated Europe's largest and most advanced biomethane plant. Located in Schwandorf in the Upper Palatinate (Oberpfalz) region of Germany, the facility is rated for a biogas output of approximately 10 megawatts.

The biogas produced by the plant is fed into the existing natural gas grid following refinement to natural gas standards.

According to the Bavarian Minister President, the construction of Europe's largest renewables-based biomethane plant impressively demonstrates the advances which can be

attained in the biogas area. Built by Schmack Biogas in cooperation with

E.ON Climate&Renewables and E.ON Bayern, this technologically advanced plant refines biogas to natural gas quality, which allows it to be fed into the natural gas grid.

The plant processes approximately 80,000 tons of maize, grass and other catch crops per year. Using state-of-the-art equipment, this quantity is sufficient to produce approximately 16 million cubic metres of biogas, enough to supply some 5,000 households with energy. The materials come from more than 100 farms in the Schwandorf region.



Dr. Frank Mastiaux, Managing Director of E.ON Climate&Renewables, explained in his inauguration speech: 'If used in a cogeneration plant, the biomethane produced in Schwandorf could reduce greenhouse gas emissions by 65%.'



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Carbon Credits (Ccs), Renewable Energy Certificates (RECs) & NOW Energy Saving Certificates (ESCs) !



When oil price is sky rocketing, the bottom line of many industries in India is getting thinner by the day, especially of the processing industries.

During the last 5 decades, manufacturing industries in India

flourished, despite the licensed raj and thanks to political patronage !

Consequently, they did not pay much attention to the real cost of energy in the manufacturing process. Then came the Energy Conservation Act 2001, which forced high energy users to look into energy efficiency measures as mandatory and this triggered them to conduct Energy Audits on an annual basis with the help of Approved Energy Auditors. Though many Energy Audit Reports highlighted and recommended practical measures to save energy, many of these Reports ended up collecting dust in the shelves of MDs / CEOs for want of adequate capital to fund these measures.

The end result is the cost of production keeps rising, eroding the margins previously enjoyed by industries and drastically challenging the landscape of process industries from generating profits from their core products (viz. sugar, cement, steel, fertilizer, ceramics, etc) and forcing them to look at other ways to generate additional revenues such as through co-generation to continue as a viable business enterprise.

To their luck, the Kyoto Protocol which came into effect on 16th February 2003 provided a short term relief through the generation of Carbon Credits (CCs) under the Clean Development Mechanism (CDM) and many Sugar Mills who established Co-generation projects earned substantial windfall profits from the sale of Carbon Credits.

However, this windfall profits did not last long, since their "Additionally Component" became a question mark to the CDM Executive Board. This change of fortune has come as a rude shock, especially to the Sugar Mills and hence they are now looking at ways and means to reduce their energy cost 24 X 7!

As if the Gods have heard their prayers, the Govt. of India released on the 30th June 2008 the country's "National Action Plan on Climate Change (NAPCC)", wherein conservation of energy is set to become a more profitable exercise ! The NAPCC mandates setting up of energy benchmarks for each sector and allows trade in Energy Saving Certificates (ESCs). This is expected to kick-start a domestic trade in ESCs, just as the world trade in Carbon Emission Certificates (viz. ERUs, EUAs, CERs, VERs)

Further, it seeks to create a market-based mechanism, through which industrial units which use more energy than mandated would be able to buy Energy Saving Certificates (ESCs) from other industries consuming less energy and thereby reward them for better performance on the energy front.

The ESCs are aimed at encouraging industries to excel on the energy use and save the country of power to the tune of 10,000 MW by the end of 2012.

Industries above a particular annual energy consumption level in 9 Sectors, including power generation, iron and steel and cement have already been designated as high energy users.

Once this list is ready, each Sector is likely to be allocated a bench mark target of energy consumption. But since energy efficiency levels vary greatly even within a particular sector, the Government may resort to separate targets for different levels of players in each sector.

So units at the most inefficient end may have a different target than the best in the sector and these targets may be revised upwards over a fixed number of years. Those who surpass their targets will be given Energy Saving Certificates (ESCs), which can be sold in an open market or they could off-set these extra savings over the next round of energy efficiency targets that the Government notifies from time to time.

This is exactly the logic followed by the international Carbon Credits (CCs) trade. But the Energy Savings Certificates (ESCs) trade will be restricted only to the domestic market in India.

In addition, by certifying only industries in the high energy users' category above a certain size and energy consumption level are brought under energy efficiency sectors, the Government ensures that labour-intensive small & medium scale units are kept out of this ambit.

By introducing innovative financial instruments such as CCs, RECs & ESCs, the Government of India is aiming at a Greener India with the least cost option !

*S. Rajha Gopalan
President & CEO, Renco Technologies*

Renco Technologies Private Ltd. was established in Chennai in July 2001 and has Associate offices in Vienna, London & New York.

Renco offers a "One Stop Centre Service" for **Green Energy Projects** in India, comprising of Technology Transfer / Joint Venture, providing Carbon Transaction Advisory Services, arranging Equity & Project Finance and offering ESCO Business Model for Energy Efficiency Projects.



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