

Climate Change and Technology Needs of Developing Countries

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Major Achievements in India

- Reva Electric car by Mahindra, Wind power technologies by Indian company Suzelon etc.
- Lot of innovations by Indian companies including PSUs in collaboration with developed Nations
- The number of carbon credits issued for emission reduction projects in India is set to triple to 246 million by December 2012 from 72 million in November 2009, according to a CRISIL Research study.
- **National Aluminium Company Limited (NALCO)**, the Navratna PSU, under the Union Ministry of Mines, Govt. of India, has become the first PSU in the country by implementing a pilot-cum-demonstration project on Carbon Sequestration in its captive power plant at Angul.

Corporate initiatives and investments

- State-owned Gujarat Alkalies and Chemicals Limited (**GACL**) has entered into an agreement with a Germany-based specialty chemicals maker, Evonik Industries for setting up a multi-million Hydrogen Peroxide and Propylene Oxide (HPPO) project at Dahej in Gujarat. This project would be based on an innovative, environment friendly HPPO technology.
- Overseas Private Investment Corporation (OPIC), an agency of the US Government, has signed an agreement with **Azure Power** to fund its 15 MW solar photovoltaic (PV) project in Gujarat. The investment in the US\$ 40 million project will be led by OPIC.
- The world's first facility to manufacture carbon foam batteries will be set up at Bavla near Ahmedabad. **Firefly Energy India** is planning to build a plant to produce carbon foam batteries at an investment of US\$ 28 million.

- State Bank of India (**SBI**), the country's largest lender, has become a signatory investor in the Carbon Disclosure Project (CDP), a collaboration of over 550 global institutional investors with assets under management of US\$ 71 trillion.
- Switzerland-based Satarem AG has signed an agreement for joint venture with **SA India**, erstwhile promoters of Crocodile brand in India, to enter the waste management and renewable energy business along with consultancy services for cement manufacturers in the country.
- State-run power company **NTPC** has set up a joint venture with the Asian Development Bank and Japan's Kyuden International Corporation to develop renewable energy projects with a capacity of 500 MW over the next three years.

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- Hyderabad based **Premier Solar** has signed a contract for import of 200,000 thin film modules — which can provide for generation of 20 MW — from German manufacturer Schott Solar. Of these, Premier would receive 10 MW worth modules in August 2011, with the rest to be taken in 2012.
 - Wind turbine manufacturer **KENERSYS**, a part of the Kalyani Group, has set up a new facility at Baramati near Pune with an investment of US\$ 11.18 million. The new plant will manufacture large multi-megawatt turbines, with 2 MW rated power. The company will manufacture 250 turbines every year, with a total power generation capacity of 500 MW.
 - IFC has announced corporate equity financing up to US\$15 million to Andhra Pradesh-based Shalivahana Green Energy Limited (**SGEL**), a privately owned entity producing power based on biomass, to fund the latter's pipeline projects.



Clean Energy and Technology

- Recently, **Cerebra Integrated Technologies** has announced the launch of India's largest e-waste recycling facility in Bangalore. With this, Cerebra has begun the first phase of its e-waste management initiative that is separation of metals, non-metals, and processing (crushing) of PCB in the Mobile Shredder. Cerebra plans to send the crushed PCBs to Singapore for further processing and raw material extraction.
- The **Bureau of Energy Efficiency (BEE)** is looking to create a demand for energy efficient, products, goods and services awareness. The Bureau has set up an energy efficiency financing platform (EEFP), which aims at ensuring availability of finance at reasonable rates for energy efficiency project implementation and its expansion.
- Finnish clean technology companies, which have joined forces within a common CleanTech Finland brand, see significant opportunities for Indian companies to help the country achieve its target of producing 38 per cent of energy through renewable sources by 2020.



Some questions addressed in the discussion :

- Are patents a significant barrier to access to ESTs for firms in poor countries? If they are not barriers now, might they be in the future?
- What are the implications of carving out a differentiated intellectual property regime for global innovation and diffusion of ESTs?
- Are there important lessons from the prior global debate on a set of public-health exceptions to patent scope and eligibility? Would limitations or enhancements of patent protection offer more benefits in this regard?
- What forms would such policies take? Are there better approaches to innovation and diffusion that lie outside the realm of patent rules and limitations?
- What are the possible funding resources which can be used for development of ESTs



What Does TRIPS and UNFCC Say?

- Means for ensuring international technology transfer (ITT) to developing economies has become a central issue in global negotiations over climate change from the beginning of the UNFCC(1992) itself
- Reference may also be made to the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) at the WTO which clearly talks about the importance of Tech transfer

What Can be Done to Ensure Tech transfer and spurring innovations?

- Patents are not impediments however abuse is when patents taken on ESTs are not worked in the territory of the country where these have been granted. Thus public is not able to use it.
- Some propose tinkering with the patent system in an effort either to raise innovation incentives, reduce the costs of access, or both.
- CL is one best answer whereby the patents on ESTS must be worked in the territory of the Country which means that they should be available at affordable price and meets demands of the public
- Countries make changes in the laws to oblige patentee to either manufacture that patented innovation in the country by itself or by licensing to local companies which would ensure tech transfer
- UMs may be granted to protect a useful modification or adaptation over breakthrough technologies
- Expediting patent examinations in ESTs and to employ differentiated fee structures upon initial examination and renewal periods for purposes of incentivizing more investment and technology transfer
- Section 146 of Indian patent act should be put to stricter enforcement
- Developing Nations must come together and create a fund by using small share of tax payers money which can be used collectively for producing ESTs. This fund can also be used by Developing Nations for purchasing patents
- There are a number of means of financing such funds. Most sustainable and least distorting would be the use of carbon-tax revenues
- Override patents in case it cannot be worked out upon reading the specifications