



CDM in India, Challenges and Success

by

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India's Position in The Global Carbon Market

- India has consolidated its leadership position in terms of Host Country Approved CDM projects.
- By November-2006, a total 448 projects have got DNA approval. This is more than all other host countries combined.
- The estimated CER volume reaches 304 million.
- India is also the global leader in terms of registered projects with a total of 133 Indian projects (as of 12th December 2006).
- CERs have already been issued for 100 projects.



India`s Success

- The Indian market share in terms of transaction volume which only reached 3% in 2005 has increased to 15% in the first 9 months of 2006.
- India has also set a milestone with the publication of centralized baseline data for the electricity sector. These data, which are destined for use under the methodologies for renewable electricity for the grid as well as energy efficiency improvement, are the result of a one-year effort by the Central Electricity Authority which was supported by GTZ's CDM IGEN programme. The data were presented at a workshop in early October and can be downloaded from <http://www.cea.nic.in/planning/c%20and%20e/Government%20of%20India%20website.htm>
- Indian state regulators. The state of Karnataka no longer levy a tax of 70%, Gujarat is collecting 25%. On the other hand, Uttar Pradesh allows the coverage of PDD preparation costs through tariffs if CDM registration is not achieved.
- Under the CDM IGEN programme, two methodologies for refurbishment of thermal power plants and the construction of greenfield supercritical coal-fired power plants are being developed and will be submitted in the next months for Meth approval .

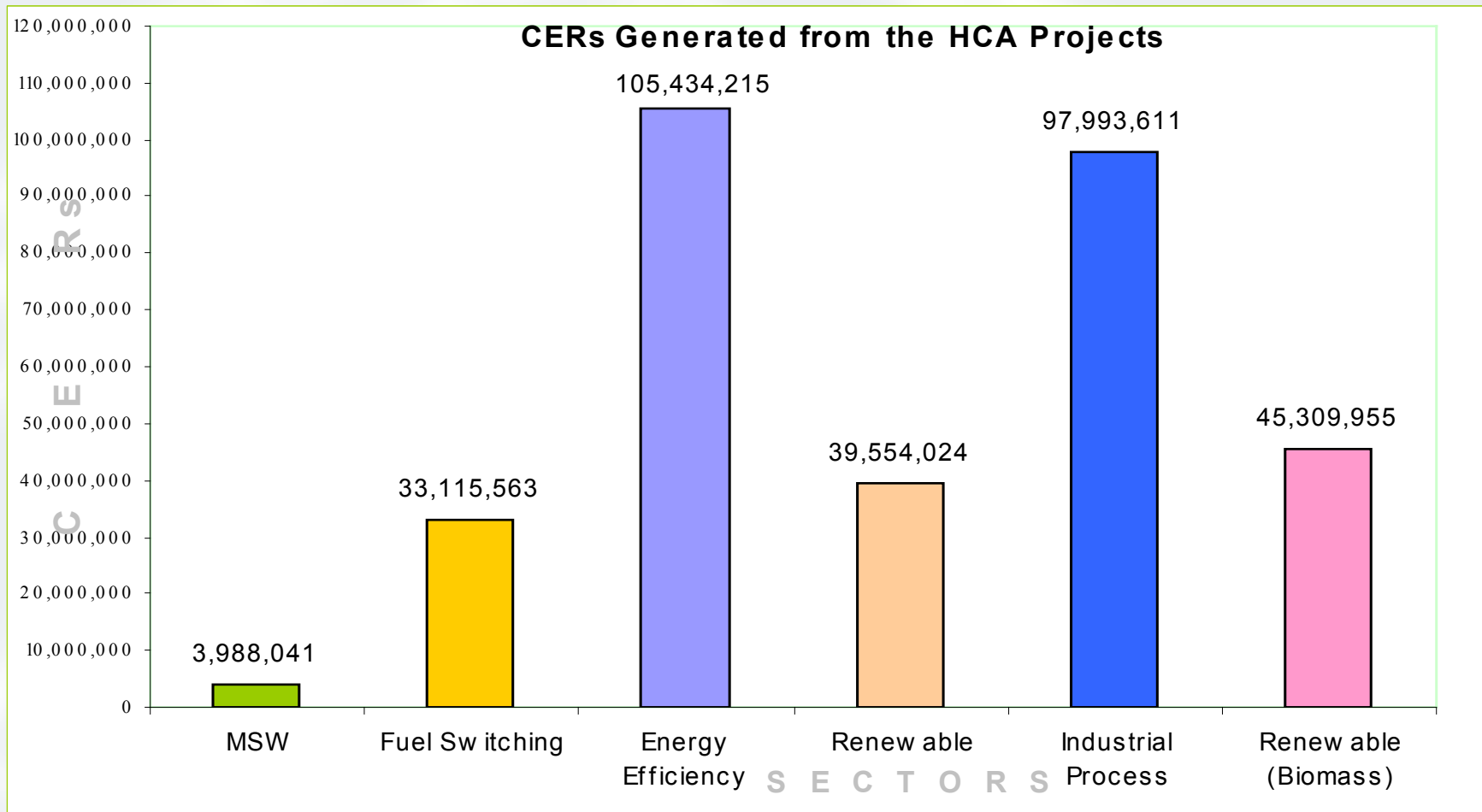


Global Status CDM Today

- Registered projects: 457
- Expecting 592 million CERs by 2012
- Host countries: 34
- Buyer countries: 13
- Issued CERs: 325,395,408
- CER price: 5-6 Euro for medium-risk forwards, 8-10 Euro for low-risk forwards, ~11 Euro for registered projects , 12-13 Euro for issued CERs



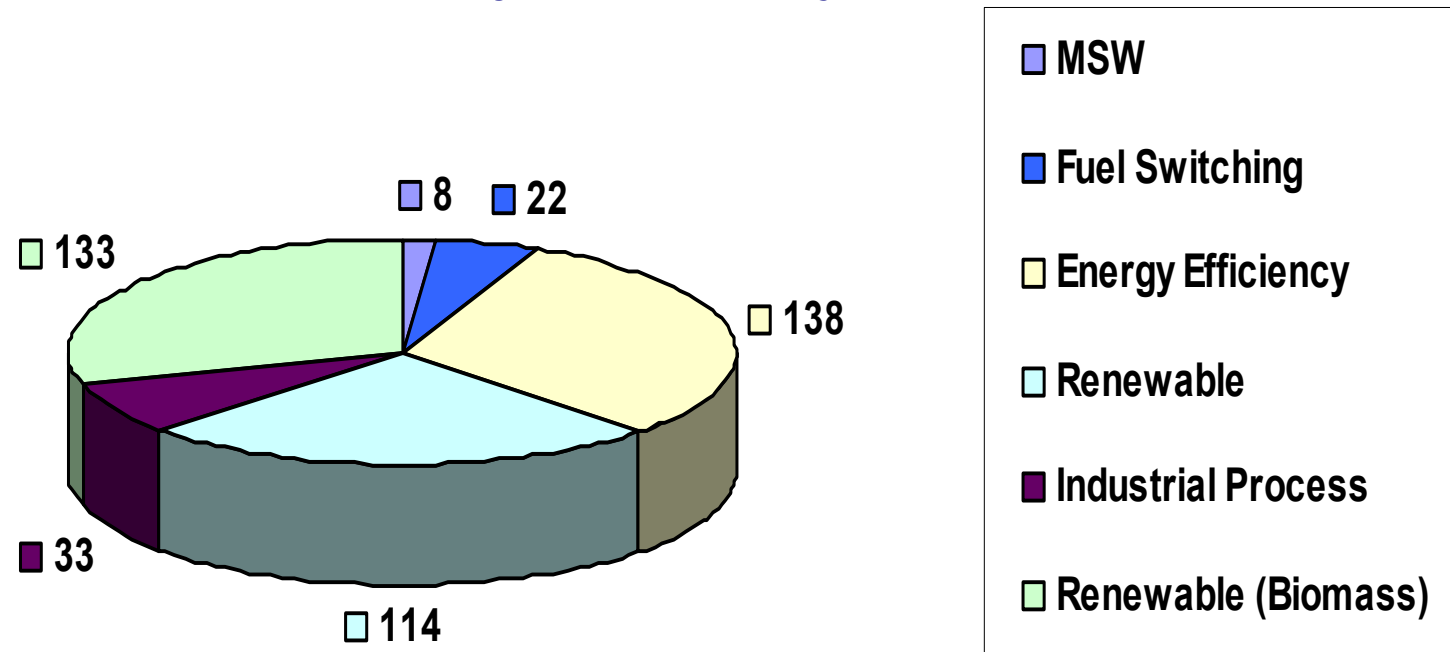
CERs Generated from the HCA Projects as on 12th December -2006





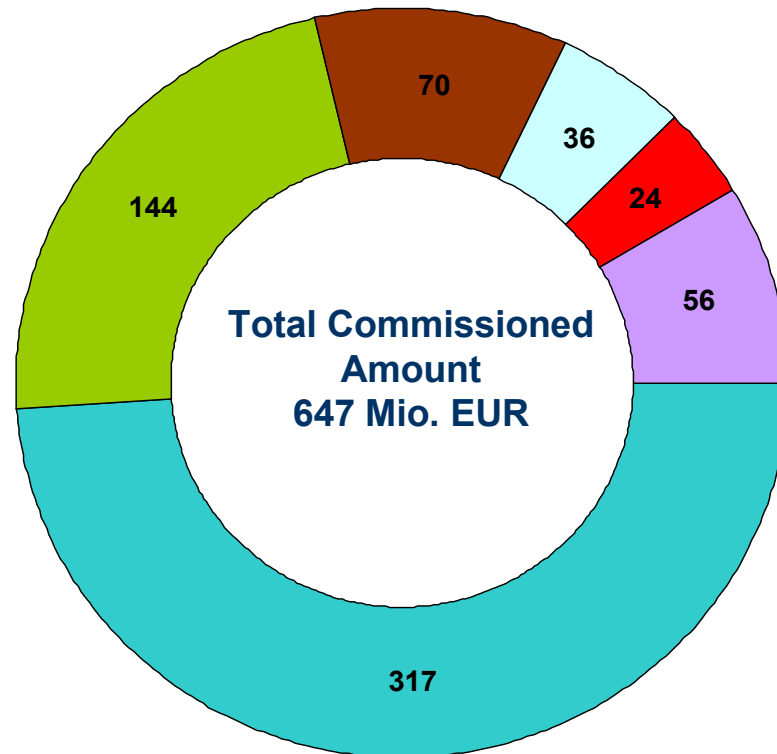
Host Country Approved Project as on 12th December-2006

Host Country Approved Projects





Overview: TC grants committed to the Indian Government 1958 to 2005



- Economic Reform
- Environment Green
- Environment Brown
- Health
- Energy
- Other

Begin of Indo-German Technical Cooperation 1958
Prototype and Teaching Workshop, Okhla





CDM Capacity Building in India and Role of GTZ CDM-India

- The Indian DNA is proud to have been titled “the most active DNA amongst all host countries” (*Source: Point carbon*). It has been working in close association with multilateral and bilateral agencies for capacity building.
- The “GTZ CDM-India” was established under the Indo-German Energy Programme (IGEN). in October 2003, through an agreement between German Technical Cooperation (GTZ) and the Bureau of Energy Efficiency, BEE, (Ministry of Power), Government of India,
- It has established a technical cell in the National CDM Authority for cooperating with Government of India for capacity building on CDM project development in various sectors.
- The Federal Ministry for Economic Cooperation and Development, BMZ, of the Government of Germany has provided 1.5 Million € in support of GTZ-CDM India
- GTZ CDM-India has emerged in last three years as one of the main CDM Knowledge Management Centre in India. It is a neutral entity working to develop the Carbon Market in India. It has a dedicated team of national and international experts which provide technical support.



GTZ CDM-India: Achievements So Far

- Successfully completed four CDM Capacity building missions, 21 workshops in seven industrial sectors (Power, Cement, Iron and Steel, Pulp and Paper Industries, Petrochemicals, Renewable Energy), creating awareness amongst more than **2000** potential project developers.
- Developed **10** PDDs and trained more than **80** PDD consultants since beginning 2004.
- Supported “30 TPD biodiesel project in Andhra Pradesh”, where German companies provide technology transfer and foreign direct investment. The company has recently issued public shares worth 3 million Euros.
- Developed and maintaining the website of Indian National CDM Authority <http://cdm.nic.in>
- Cooperation is provided to the Indian DNA for facilitating HC approval to eligible CDM projects and capacity building of Indian CDM Project developers.



CDM Capacity building for RIL, Mumbai & India's 1st Gold Standard Project

- Public-Private Partnership with India's largest Petrochemical Industry- Reliance Industries Limited (Turn over: Euro 167 Billion) for providing technical cooperation for Energy Efficiency and CDM.
- CDM-India provided technical support to Reliance for '**in house capacity building**' on CDM to identify and develop high quality CDM projects which resulted in **7 projects** (**3** Registered and **4** projects submitted for approval), more than **50** engineers trained on CDM in house and **three engineers** trained **internationally** for efficient working of the CDM Cell in Reliance DAKC, Mumbai.
- CDM India extended support to the Federal Government of Germany to identify a Gold Standard CDM Project in India- "**Application of solar heat in cooking and other applications**" to abet Bonn Renewable Energy 2004 Conference Emissions. The Project is already registered.
- Developed a standard Emission Reduction Sellers Agreement which will be made available to all project proponents on the website.



Indian CDM Projects- Summary

No: of HCA Projects	448
No: of Registered Projects	127
No: of Projects Requested for Registered	23
Projects under Validation Stage*	49
Total CERs issued	325,395,408
Total CERs Issued from total 41 Indian Projects	12,229,216

* CD4CDM



China CDM Projects- Summary

No: of Registered Projects	35
No: of Projects Requested for Registered	2
Projects under Validation Stage*	33
Total CERs issued	7,625,557
Total CERs Issued from total 4 Chinese Projects	1,077,731

* CD4CDM



Baseline Database for Indian Power Sector

- Development and release of an official CO₂ database for Indian Power Sector. Based on these station-level data, disaggregated data for all thermal power stations and aggregate emission factors for the five power grid regions were calculated in accordance with the latest methodological guidance from the CDM Executive Board.
- The objective of the database is to facilitate the consistent and accurate quantification of CO₂ emission baselines by CDM project developers in the Indian power sector.
- The Indian Power Sector has tremendous potential in particular in thermal power sector. Power generation based on higher efficiency technologies such as supercritical technology, Integrated Gasification Combined Cycle and Renovation and Modernisation of old thermal power plants, co-generation plants along with renewable energy sources are some of potential candidates for CDM in the power sector.
- Energy efficiency and conservation projects also present themselves as eligible CDM projects, as these would also result in energy savings and displace associated CO₂ emissions which otherwise would be produced by grid-connected power stations.



Baseline Data

- To establish the baseline database, the Central Electricity Authority, has collected the data on generation, fuel consumption and fuel parameters from all grid connected power stations in the country, comprising about 340 stations and 1300 generating units.
- The database covers emission factors for each of the five regional grids. Northern, Eastern, Western, Southern, and North-Eastern are treated separately as required per CDM methodologies.
- Inter-regional and cross-border electricity transfers have been suitably accounted for while calculating the baseline. The database currently covers the data for five fiscal years 2000-01 to 2004-05.
- A user guide has also been prepared to enable project developers to use these baseline emission data effectively for CDM benefits.
- The data base and programmed Excel spreadsheet is available for the public at Websites at www.cea.nic.in, www.cdmindia.com and comments are invited cdmcea@yahoo.co.in.



Conclusions

- The draft results of the emission factor calculations for all regional grids are given in the database, for FY 2000-01 to FY 2004-05. The emission factors for FY 2004-05 computed according to CDM baseline methodology ACM0002 (Version 06) are reproduced in the table below:

	Average	Simple OM	BM	CM
North	0.72	0.98	0.53	0.75
East	1.05	1.18	0.90	1.04
South	0.78	1.00	0.71	0.85
West	0.92	1.01	0.77	0.89
North-East	0.46	0.81	0.10	0.45
India	0.84	1.02	0.70	0.86

- o Average is the average emission factor from all stations in the grid.
- o OM is the average emission factor from all stations excluding the low cost/must run sources.
- o BM is the average emission factors of the 20% (by net generation) most recent capacity additions in the grid.
- o CM is the average of the OM and BM.

- Draft weighted average emission factor, simple operating margin (OM), build margin (BM) and combined margin (CM) of all Indian regional grids for FY 2000-05 (inter-regional and cross-border electricity transfers included).



New Initiatives

- Started compilation of national database for baseline elements for other highly energy intensive Industrial sectors i.e. **Iron & Steel**, Aluminium & Pulp and Paper.
- Prepare new baseline and monitoring methodology for the National Thermal Power Corporation (NTPC) for renovation and modernization of a coal-fired power plant as well as supercritical Thermal Power Plant.
- Northkaranpura Supercritical TPP, PDD is submitted for HCA & Methodology approval .Bhadarpur R&M PDD also ready & will be submitted for HCA in November meeting
- Supporting Govt of India in giving inputs for preparation of definition of programmatic CDM to include public institutions from becoming programme coordinators as well as include projects that are due to mandatory policies, the possibility to have an in-depth discussion in EB to improve the decision.



CDM Potential in Madhya Pradesh

- Potential Sectors / Projects:
 - Iron & Steel (Waste Heat Recovery in Sponge Iron)
 - Cement (Energy Efficiency)
 - Power Projects (T&D Loss Electricity Generation)
 - Renewable Energy (Biomass)
 - Energy from Municipal Waste



Thank you

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