India

December 2006

1. CDM investment climate index: regional comparison

CDM investment climate index (CDM ICI), Asia November 2006 (excerpt)

Rank	Country	CDM ICI (max. 100 pts)	Regional classification
1	Korea (Rep.)	89.9	Good climate
2	India	84.5	Good climate
3	Philippines	74.7	Satisfactory climate
4	PR China	74.3	Satisfactory climate
5	Indonesia	73.8	Satisfactory climate
...	...	...	...
61	Afghanistan	7.2	Unsatisfactory climate

Source: DEG - Deutsche Investitions - und Entwicklungsgesellschaft mbH
(For calculation method see www.kyoto-coaching-cologne.net)

The CDM ICI measures the investment climate for CDM projects. It can range between 100 points (highest) and 0 points (lowest). Altogether, the climate is rated as 'good' in India, putting the country at Rank 2 in Asia, behind the Republic of Korea. As the institutional setup for CDM projects is assessed as distinctly superior (in part fewer local requirements for CDM projects, more registered projects), India's total number of points exceeds that for the Philippines, the PR China or Indonesia, for example.

2. General climate for foreign investments

General economic data , fiscal year 2005/06 (1 April – 31 March)	
Population (2006):	Approx. 1.1 billion
Nominal GDP:	US$ 772 billion
Per capita GDP:	US$ 705
Real GDP growth:	+8.5% (2004/05: +8.0%)
Consumer prices:	+4.0% (2004/05: +3.9%)
Goods exports:	US$ 102.7 billion
Goods imports:	US$ 142.4 billion
Foreign direct investments:	US$ 5.5 billion
Foreign debts (October 2005):	US$ 121.8 billion (net)
Currency reserves (October 2005):	US$ 145.1 billion
Exchange rates (1 November 2006):	US$ 1 = 44.9 INR, EUR 1 = INR 57.1
Country credit rating by Institutional Investor (September 2006):	57.1 out of 100 points (Rank 58, + 0.5 points on previous year)
Corruption Perceptions Index 2006 (Transparency International):	3.3 out of 10 points (10 = free of perceived corruption)

Locational advantages:
Favourable macroeconomic climate (present real GDP growth of 8%), middle class numbering approx. 300 million people with a propensity to consume, ample supply of well-trained labour, booming service sector (especially IT and outsourcing industries) and a rapidly growing industrial base

Locational disadvantages:
Infrastructure deficits (energy, water supply, transport), heavy dependence on agriculture and weather conditions (monsoons), large role played by illicit economy, pronounced bureaucracy, relatively large government influence in broad sections of the economy

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Servicestelle des Bundesministeriums für Wirtschaft und Technologie

3. Specific climate for CDM projects

3.1 Ongoing CDM projects in the country

Along with the PR China and Brazil, India currently ranks as one of the largest suppliers of CDM credits worldwide. About 70% of the supply of certified emission reductions (CERs) stem from CDM projects in these three countries. India affords a variety of opportunities for CDM and its project range is very diverse, both in terms of technology type and scale.

As many as 122 of the 408 emission abatement projects registered by the CDM Executive Board (EB; the UN body responsible for approving CDM projects) up to mid-November 2006 are located in India. Measured by number of registered projects, the subcontinent thus ranks No. 1 worldwide, well ahead of Brazil (76), Mexico (54) and the PR China (32).

At about 12 million tonnes of CO_2e a year, India, however, just occupies position 3 for emission certificates anticipated from registered projects, behind the PR China (46 million) and Brazil (15 million). The reason for this is the large ratio of small and medium-sized CDM projects in India. Of the registered projects, 43 were classified as 'large-scale'. Two large HFC_{23} projects alone account for approx. 60% of anticipated CERs.

CDM projects registered by the CDM Executive Board in India as at 15 November 2006

Project category	**Number of projects**	**Expected annual CO_2e reductions up to 2012 (in 1,000 t)**
Renewable energies	**83**	**approx. 2,802**
Biomass/Biogas	51	approx. 1,810
Small hydropower	16	approx. 449
Solar energy	1	approx. 1
Windpower	15	approx. 542
Energy efficiency	**34**	**approx. 2,123**
Cement industry	9	approx. 869
Other	25	approx. 1,254
Other	**5**	**approx. 7,422**
Industrial gases (oxidation of HFC_{23})	2	approx. 7,227
Fuel switch	2	approx. 155
Landfill gas	1	approx. 40
Total	**122**	**approx. 12,348**

CO_2e = carbon dioxide equivalent
Source: UNFCCC website, UNEP Risø centre

By the end of November 2006, 439 projects had already been awarded host country approval (HCA) by the Indian Designated National Authority (DNA). According to the DNA, 30 to 40 new applications are submitted every month. However, the discussion on project quality has still not abated in 2006. Reportedly, project records do not always meet international standards. Many projects are likely to have difficulty in providing evidence for the 'additional' emission savings called for by the EB. The DNA is, however, of the opinion that the quality of proposals will improve in future.

The reason for this is the increasing readiness on the part of large enterprises to enter the CDM market. Press reports claim that several large state-owned enterprises (cited are the Oil and Natural Gas Corporation Ltd., the Steel Authority of India Ltd. as well as the Indian Oil Corporation) intend to start appraising large-scale CDM projects in the coming months. Furthermore, the DNA sees keener market interest from foreign enterprises. The bulk of projects continue to be implemented on a unilateral basis, that is, without a foreign stake.

Projects with Indian host country approval as at November 2006)*

Project category	Number of projects
Renewable energies	246
Energy efficiency	134
Industrial and other gases (HFC, PCF, methane)	29
Fuel switch	22
Solid waste treatment	8
Total	**439**

*) For detailed project information see website: www.cdmindia.nic.in.
Source: Ministry of Environment and Forests

Various large international buyers of CO_2 savings certificates are engaged in the country and are looking for suitable projects. Well-known buyers of emissions reductions from India include the World Bank Prototype Carbon Fund and institutions from the Netherlands, Austria, Finland and Sweden. The KfW Carbon Fund is also operational on the Indian CDM market and provides adaptable pricing models for the purchase of certified reductions (CERs). To date, KfW has concluded three purchase agreements in windpower, biomass and HFC_{23} in India. Another four related to small hydropower projects are close to signature.

After India had lost considerable ground in trading project-based emission reductions in 2005, which observers attribute to the excessive price demands of Indian sellers, the subcontinent has been able to raise its market stake again in 2006. According to a recent World Bank report, India's share in the volume of CDM transactions recorded worldwide rose in the first three quarters to 15% (2005: 3%). In the view of the World Bank, the reason is the strong project pipeline and a greater readiness by project operators to conclude supply contracts on 'fair' terms.

3.2 Mode of operation of designated national authority (DNA)

The National Clean Development Mechanism Authority (NCDMA) was founded in December 2003. It is made up of eight representatives of six ministries (environment, foreign affairs, finance, industry, power and non-conventional Energy Sources) and a member of the Planning Commission. It is chaired by the Ministry of Environment and Forests (MoEF), which also assigns the Member Secretary responsible for coordinating the NCDMA - Mr R.K. Sethi in November 2006. Mr Sethi was concurrently a member of the CDM EB.

The procedure for submitting the requisite project documents (project concept note and project design document) up to host country approval (HCA) is described in detail in English on the website, 'www.cdmindia.nic.in', where the requisite application forms can also be downloaded. The whole approval procedure is scheduled to take 60 days. The NCDMA members decide on the projects at their monthly meetings. If all the member's objections have been settled, the Member Secretary issues the HCA. Until now, the NCDMA has charged no fee for its activities.

Market players gauge the work of NCDMA to be speedy and effective. The number of new applications has, however, risen continuously over the last twelve months. To avoid a more protracted approval procedure in the medium to long term and maintain the quality of the authority's decisions, more personnel would be necessary.

3.3 Local consultants, validators and verifiers

Of the 122 projects registered by the EB up to mid-November 2006, 40 had been validated by DNV, 25 by SGS and 24 by TÜV Süd. Other Designated Operational Entities (DOEs) with extensive activities on the

Indian market are BVQI, TÜV Nord and TÜV Rheinland. According to a DOE representative, the prices for project validations in India are commensurate with international standards.

The growing number of national and foreign consultants providing services in preparing the requisite project documents has raised competition in the consulting sector even further. According to experts in the sector, there are also some dubious providers on the market whose consulting services may not be up to standard.

Larger providers, such as Ernst & Young or PricewaterhouseCoopers, are assisting a growing number of small and medium-sized CDM projects in direct competition with smaller consultants. Keener competition has also affected fee scales. The larger companies in particular have started to make remuneration directly contingent on success, i.e. on a HCA or project registration. Consulting firms that lack the same financial resources find this kind of arrangement more difficult.

The fees charged by the consulting firms for preparing a project design document (PDD) depend on project size and complexity and the methodology used. In July 2005 on a stand-alone basis, i.e. preparing PDDs without additional services, consultants questioned cited charges ranging from US$ 5,000 to US$ 15,000 for less sophisticated, smaller projects and up to US$ 40,000 to US$ 50,000 for large-scale projects requiring the development of new methodologies. If additional consulting services are needed (e.g. supplementary assistance in validation and registration or searching for prospective emission certificate buyers), a success fee is usually charged.

As of 2003 on behalf of the Federal Ministry for Economic Cooperation and Development (BMZ), the Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) advises Indian and German enterprises in identifying and developing CDM projects and in selling and purchasing certificates. The contact person in India is Ms Pamposh Bhat.

3.4 Local legal requirements for CDM projects and taxation aspects

The same legal provisions apply for foreign direct investments in CDM projects as for other projects in the relevant sector. Foreign direct investments and equity interests in the energy sector (except for nuclear power) are not subject to any restrictions. As a rule, the transactions are approved via the ‘automatic route’. Here, all the investor has to do is notify the Reserve Bank of India of the capital transfer within 30 days.

There are no uniform regulations on the taxation of CER income in India. While there is no national tax on CERs so far, some federal states have introduced additional taxes. Companies should therefore make enquiries at the competent authorities on current legislation in the respective federal state beforehand.

3.5 CDM partnership agreements (memorandum of understanding)

Under the auspices of the United Nations Climate Change Conference in Montreal in December 2005, India signed partnership agreements with Canada and Italy. Close CDM cooperation also takes place with other countries and institutions, including Germany (especially with KfW), the Netherlands, Japan, Austria and the Asian Development Bank.

3.6 Opportunities for CDM projects in the energy sector

The possibilities for CO_2 abatement measures in the Indian energy sector are considerable. To maintain the present annual GDP growth of 7% to 8%, esimates forecast that Indian power station capacity will need to be expanded by 100 GW in the next ten years.

Energy and environmental data

	India	Asia	OECD
Primary energy consumption (Mtoe, 2005)	387 1)		
of which from renewable energy sources	approx. 5%		
Electricity generation (TWh, 1 April 2005 - 31 March 2006)	617		
of which from renewable energy sources	approx. 17% 2)		
CO_2 emissions from fuel combustion (Mt, 2004)	1,103		
Electricity consumption/capita (kWh/capita, 2004)	457	617	8,204
CO_2/primary energy supply (t of CO_2/toe, 2004)	1.93	1.94	2.34
CO_2 per capita (t of CO_2 per capita 2004)	1.02	1.22	11.09
CO_2/GDP (kg of CO_2/US$ purchasing power parity 2000; 2004)	0.35	0.37	0.44

1) Only commercially traded energy (approx. 38% of primary energy supply is based on non-commercial sources, e.g. use of wood or dung); 2) Share of hydropower: 16.4%
Sources: BP Statistical Review of World Energy 2006, IEA, Central Electricity Authority

The energy efficiency of the available coal, gas and diesel power stations is still in need of considerable improvement. Moreover, due to the large importance of coal in energy supply, there are also opportunities for CO_2 reduction through so-called fuel switching. There are also many opportunities for smaller savings measures in industrial enterprises.

A lot of different CDM options are also available in renewable energies. Relevant capacities are scheduled to be expanded to over 10,000 MW by 2012 (March 2006: 6,191 MW). Windpower and bioenergy are of interest for CDM projects. In windpower installations, which are promoted in India at different levels, the subcontinent occupied fourth position worldwide at the end of 2005 with a total capacity of 4,430 MW (1,430 MW increase on 2004).

The emission baseline for CDM projects in the energy sector is favourable in India due to the large use of coal. Baseline data on the Indian electricity sector can be viewed at the website of the Central Electricity Authority (www.cea.nic.in).

3.7 Finance facilities for CDM projects

Local banks and overseas branches of foreign commercial banks offer a number of products to finance private investment projects. However, the use of emission certificates as supplements to project finance plays a subordinate role only. The banks in general do not bear the certification risk. In the estimation of market experts, there are still only a few, sound, financeable CDM projects. A major problem is that projects frequently lack the necessary equity.

The Deutsche Investitions - und Entwicklungsgesellschaft mbH (DEG) provides facilities for project finance in India on commercial terms (including long-term loans, mezzanine finance, equity contributions and guarantees). In 2005, DEG cofinanced a CDM project in India. The certificates are acquired by the World Bank (IFC) on behalf of the Dutch government. Moreover, DEG can provide pro rata cofinance for certain project activities with special developmental impacts under the PPP programme of the Federal Ministry for Economic Cooperation and Development (BMZ) with up to EUR 200,000.

4. Recap

The Indian CDM market has made further strides in the last twelve months. A growing number of Indian and foreign enterprises are aware of the business prospects available. The distribution of projects by scale has, however, changed little. Smaller projects still account for the bulk, but there are discernible initial signs of a gradual change here as well. Various large state-owned enterprises have announced their intention to engage in 'large scale' projects. According to observers, problems with financing measures have been alleviated somewhat.

Prospective CERs in energy sector projects alone are estimated by industry experts at several 100 million tonnes of CO_2e up to 2012. On the other hand, experience so far with the EB approvals practice would indicate that a large percentage will not come to fruition. A general obstacle for CDM projects in this sector are regulatory practices on the Indian power market.

A strongpoint of the Indian CDM market is the advanced institutional capacity. The NCDMA primarily sees itself as a public service provider and concentrates on a speedy appraisal of project sustainability. On top of this, many enterprises in the country are showing interest and there is a large pool of CDM consultants and developers.

5. Advice/Service

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