

PR CHINA

1 CDM investment climate index: regional comparison

CDM investment climate index (CDM ICI), Asia - January 2010 (excerpt)

Rank	Country	CDM ICI (max. 100 points)	Regional classification
1	Malaysia	90.9	Very good climate
2	Korea (Republic)	90.1	Very good climate
3	PR China	83.8	Good climate
4	Thailand	83.2	Good climate
5	India	81.6	Good climate
....
64	Afghanistan.	7.1	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 China. The reason for the less favourable assessment in comparison with the first rankings is the institutional environment (taxation, maximum foreign stake in project ownership of 49%). The general framework for private investments is, however, rated better than in Malaysia and South Korea.

2 General climate for foreign investments

General economic statistics 2009	
Population:	approx. 1.33 billion inhabitants
Nominal GDP:	US\$ 4,900 billion (estimate)
Per capita GDP:	US\$ 3,700 (estimate)
GDP growth (real):	+8.7% (forecast 2010: +9.6%)
Consumer prices:	-0.7%
Goods exports:	US\$ 1,201.7 billion
Goods imports:	US\$ 1,005.6 billion
Foreign direct investments:	US\$ 90.0 billion
Foreign debt (end of 2009):	US\$ 470 billion (gross)
Currency reserves (end of 2009):	US\$ 2,399 billion
Exchange rates (as at 30 April 2010):	EUR 1 = RMB 9.02; US\$ 1 = RMB 6.81
Country credit rating acc. to Institutional Investor (September 2009)	75.4 out of 100 points (Rank 33 of 178, -2.4 points on previous year)
Corruption Perceptions Index 2009 (Transparency International):	3.6 out of 10 points (Rank 79 of 180; 10 = free of perceived corruption)

Locational advantages:

Favourable macroeconomic framework (comparatively high real GDP growth, high investment activity), large consumer market, increasing number of free trade agreements with other states

Locational disadvantages:

Heavy government influence in large parts of the economy, pronounced bureaucracy and intransparent administration, little legal certainty and insufficient protection of intellectual property, adverse market environment due to language and culture

3 Specific climate for CDM projects

3.1 Ongoing CDM projects in the country

The PR China makes large use of its extensive scope under CDM. Out of altogether 2,185 emission abatement projects registered at the beginning of May with the CDM Executive board (EB; responsible UN body for the international approval of CDM projects), 829 were located in China. With a project stake of almost 38%, the country leads the world, some way beyond India in second place (23%). Also measured in terms of Certified Emission Reductions (CERs) expected from registered activities, PR China dominates global supply. Just over 60% of expected annual average CERs from these measures will originate from the People's Republic to 2012. Moreover, about a dozen programmatic CDM measures (pCDM, also Programmes of Activities - PoAs) from China are in the process of validation.

CDM projects registered by the CDM Executive Board in PR China (as at April 2010)

Project category	Number of projects	Estimated annual emission reductions to 2012 (1,000 t CO₂e)
Renewable energies	620	70,151
..Biomass/Biogas	17	2,800
..Hydropower	398	43,329
..Windpower	202	23,910
..Solar cooking	3	112
Energy efficiency	80	17,614
..Cement industry	38	4,021
..Others	42	13,593
Other	120	125,912
..Industrial gases (HFC ₂₃ and N ₂ O)	37	86,583
..Fuel switch	19	20,525
..Landfill gas	29	4,471
..Mine gas	26	13,819
..Methane gas avoidance (waste water and manure)	7	465
..Reforestation	2	49
Total	820	213,677

CO₂e = carbon dioxide equivalent

Source: UNFCCC, UNEP Risø Centre

Well over half of China's current expected CER supply stems from projects for decomposing the gas HFC₂₃, which is harmful to the climate, and hydropower and windpower projects. Scope for implementing HFC₂₃ projects is now very restricted in China, however.

At national level, China's Designated National Authority (DNA) had already approved 2,496 projects by 14 April 2010. The first PoAs are still awaiting DNA approval. Due to the timeframe set by the Kyoto Protocol, the number of projects submitted for approval shot up in 2007 and 2008, followed by a certain lull in 2009, which is likely to continue in 2010 due to the uncertainty about a possible successor arrangement for the Kyoto Protocol after 2012.

Projects approved by the Chinese DNA (as at 14 April 2010)

Project category	Number of projects	Share of project number (in %)	Estimated annual emission reductions (1,000 t CO ₂ e)	Share in estimated annual emission reductions (in %)
Renewable energies	1,745	69.9	217.6	46.7
Improvement of energy efficiency	465	18.6	77.0	16.5
Methane extraction and use	164	6.6	50.9	10.9
Substitute fuels	42	1.7	21.8	4.7
Decomposition of N ₂ O	25	1.0	24.6	5.3
Decomposition of HFC ₂₃	11	0.4	66.8	14.3
Electricity generation from refuse incineration	7	0.3	2.1	0.5
Reforestation	5	0.2	0.1	0.02
Miscellaneous	32	1.3	5.1	1.1
Total	2,496	100.0	466	100.0

Note: Detailed project information is available at the website: cdm.ccchina.gov.cn/english.

Source: NDRC/Department of Climate Change

The number of Project Idea Notes (PINs) and Project Design Documents (PDDs) for CDM projects in China is almost impossible to estimate. Generally, there has been a further improvement in the quality of PIN and PDD preparation. Some misgivings persist as to the reliability of data and economic and financial viability. A large part of project developments takes place in renewable energies, energy efficiency and methane extraction and use, to which the government attaches priority. Numerous state-owned enterprises are engaged in the first two sectors in particular. In energy-efficiency, there is still a large need for new or appropriate project methodologies. This also holds for PoAs.

Experts still see CDM opportunities in the avoidance or use of mine and landfill gas. At a concentration of over 30%, firedamp methane must now be used in any case to comply with environmental protection regulations. In all likelihood, then, relevant CDM measures will only be possible at lower concentrations. There is also potential for methane avoidance and use in sludge treatment. Hardly any projects have been started so far, however, due in part to methodological difficulties. Biomass and biogas measures in livestock farming have met with

keener interest among project developers recently. The CER yield per project is, however, relatively small as a rule.

About 80% of CERs generated in China have so far been purchased by Europeans. Besides the relevant carbon funds, some private enterprises are engaged as direct purchasers on the market, including large Japanese industrial companies and European energy suppliers. Numerous certificate traders and CER buyers are now involved in developing their own projects in China. The primary buyers from Germany are the power supplier RWE, which has also invested in its own CDM projects in China, and the KfW Carbon Fund.

Altogether, about a dozen exchanges have been established for trading emission certificates in China. The largest by far are the ones in Beijing, Shanghai and Tianjin. Besides two local partners, the Chicago Climate Exchange holds a stake of 22% in the latter.

3.2 Quality of Designated National Authority (DNA)

CDM projects in China are implemented on the basis of the Measures for Operation and Management of Clean Development Mechanism Projects in China of 12 October 2005 (available at <http://cdm.ccchina.gov.cn/english>). The National Development and Reform Commission (NDRC) was appointed as DNA. Within 50 to 60 days as a rule, this takes the formal decision on approving or rejecting project applications based on the conclusions of the National CDM Board, which is co-chaired by NDRC and the Ministry of Science & Technology (MOST).

By issuing a letter of no-objection, the DNA can certify in advance that the Chinese government has no basic objections to a project. It is partly required by foreign CER buyers and financiers or also prospective investment partners as a condition for their continued engagement in the respective projects. Applying for a letter of no-objection is optional and it has no influence on project approval by the DNA.

NDRC has come to be regarded as a strict, efficient and reliable approval authority. It only issues a Letter of Approval (LoA) as required for international registration if the project is feasible and meets national requirements. By specifying minimum prices for CERs, NDRC also helps stabilise the international certificates market. Another consequence, however, is that in phases when CERs already issued are traded on the exchanges at a more favourable price project developers from China find hardly any buyers for the anticipated certificates. In 2009/2010, the minimum price is reported to have been between EUR 8 (hydropower) and EUR 10.5 (windpower), depending on the respective project. Cooperation with local partners can facilitate dealings with NDRC.

3.3 Local consultants, validators and verifiers

Competition has grown much keener on China's CDM consultancy and project development market over the last few years. Participants include universities and research institutes, regional CDM service centres and all-Chinese, joint venture or international consulting and project development firms. In the opinion of experts, the market seems to have adjusted somewhat in response to the impacts of the financial crisis and unpredictable risks after 2012. According to industry insiders, about 30 to 40 larger project developers and consultancy firms are currently in operation. Up to 2010, 72 consulting institutions and project developers

registered at the Department of Climate Change at NDRC. The list of names can be found on the website.

With international and national support, almost 30 CDM service and competence centres have now been established in almost all provinces. These centres, which now largely operate for profit, cooperate closely with the government, have contacts with local industry and contribute their CDM know-how to project identification and development.

Prospective project owners are coveted in China, but they remain reluctant to invest. International consulting firms and project developers operate more successfully if they themselves bear at least a part of the project development costs. Paying developers, consultants and brokers a success fee for subsequent CER sale, has, however, been prohibited by NDRC. They are only entitled to charge a commercial consultancy fee of no more than RMB 1 million.

NDRC provides a list of the 18 Designated Operational Entities (DOEs) working in China. DNV and TÜV Süd account for 75% of the projects in the national CDM pipeline. TÜV Rheinland is also engaged locally. Owing to the large number of projects, there is a DOE bottleneck on the Chinese CDM market, despite the authorisation of the first two local DOEs, the China Environmental United Certification Centre (CEC) and the China Quality Certification Centre (CQC).

3.4 Local legal requirements for CDM projects and taxation aspects

The legal framework for CDM projects in the PR China is set out by the above-cited Measures for Operation and Management of Clean Mechanism Projects in China. Project owners are confined to enterprises under sole Chinese ownership or joint ventures where the (aggregate) foreign investment stake may not exceed 49%. This is also unlikely to change in future, despite international criticism. Since 1 December 2009, the Supplementary Notes on the Implementation of Projects under the Clean Development Mechanism (CDM) by Hong Kong Enterprises on the Mainland provide for equal treatment of Hong Kong and Chinese enterprises in the implementation of CDM projects.

Also regulated is the share of CER revenue that the project owners have to pay to the Chinese government, depending on CDM project category. For projects in sectors accorded priority by the Chinese government (energy efficiency, renewable energies and methane avoidance and use), 2% of CER earnings are taxed. The rate is also a mere 2% for afforestation measures. The levy on N₂O projects, in contrast, is 30% and 65% for HFC and PFC projects. In a circular dated 23 March 2009, the Ministry of Finance and the national tax authorities announced that payments due to the government are tax-deductible. Projects already approved by the DNA before 12 October 2005 are exempt from any duties.

These duties are channelled into the China CDM Fund under the purview of the Ministry of Finance, which is used for granting preferential loans to owners of CDM projects for implementation, but also for financing capacity building measures in the CDM sector. Regardless of the specific CDM regulations, all projects are subject to the investment provisions in the respective sectors.

3.5 CDM partnership agreements (Memorandum of Understanding)

The PR China has concluded numerous bilateral CDM agreements and is also supported by different partner countries in specific projects. CDM and the post-Kyoto framework remain discussion topics in Sino-German strategic environmental dialogue between the Federal Ministry of the Environment, Nature Conservation and Reactor Safety (BMU) and the Chinese Ministry of the Environment Protection.

The CDM network in the Delegation Office of German Industry and Commerce financed by the BMU serves as a contact point for German enterprises. It will also be dealing more with PoAs in future. The Delegation Office in Beijing is carrying out a project together with another five partners, for example, to introduce new CO₂ market instruments (such as PoAs or Voluntary Emission Reductions - VER) for financing measures to raise energy efficiency in buildings. On behalf of BMU, KfW also offers support in developing programmatic CDM measures under the auspices of the PoA Support Centre Germany. This initiative is also open to Chinese enterprises. Further information on this is available on the KfW Carbon Fund webpage (www.kfw-foerderbank.de/EN_Home/KfW_Carbon_Fund/index.jsp).

3.6 Opportunities for CDM projects in the energy sector

China's energy needs will increase considerably in step with strong economic growth. After the USA, the country is the second largest energy consumer in the world. Improving energy efficiency and securing future energy supply are priority goals of the Chinese government, which is pursuing ambitious plans to expand renewable energies. Its share in the primary energy mix is to be raised to 15% by 2020 and in electricity generation to 30%, although administrative and institutional obstacles still remain. Furthermore, as a national target, China pledged at the Copenhagen Climate Change Conference in December 2009 to reduce CO₂ intensity per GDP unit by 40% to 45% on the 2005 base year by 2020.

Energy and environmental data

	PR China	Asia ¹⁾	OECD
Primary energy supply (Mtoe, 2008) ²⁾	2,003		
of which from renewable energy sources	approx. 12%		
Electricity consumption (TWh 2008)	3,467		
of which from renewable energy sources	approx. 16% ³⁾		
CO ₂ emissions from fuel combustion (Mt, 2007)	6,071		
Electricity consumption/capita (kWh/capita, 2007)	2,346	705	8,477
CO ₂ /Primary energy supply (t of CO ₂ /toe, 2007)	3.08	2.11	2.37
CO ₂ per capita (t of CO ₂ per capita 2007)	4.58	1.35	10.97
CO ₂ /GDP (kg of CO ₂ /US\$, purchase power parity 2000; 2007)	0.60	0.35	0.40

1) Excluding PR China; 2) Energy traded commercially; 3) Largely large-scale hydropower; the share of windpower and solar energy in electricity generation is still less than 1%

Sources: IEA, BP Statistical Review, Germany Trade & Invest

In the view of German experts, there are promising projects for biomass use because price subsidies are granted for the purchase of electricity from biomass. In hydropower and windpower projects, CDM compatibility needs close appraisal, as underlined by the rejection of numerous projects by the EB in 2009/2010. For windpower, feed-in compensation graduated among four regions applies as of July 2009. Some experts also expect feed-in rates or subsidies in future for solar energy and biogas. The prospects for energy-efficiency measures under CDM are diminishing (power and heat generation, for example) in energy-intensive industries, such as steel, cement, aluminium and chemicals. Due to the higher energy-efficiency standards of the government, it will be more difficult to provide evidence of project additionality. Fuel switching remains an interesting option.

Baseline data on the China's electric power sector in Chinese is available at the DNA website.

3.7 Development of the VER market

The market for VERs has developed in China as an alternative niche with no central coordination. As a rule, VERs are generated by projects that are already underway but are not yet registered at the EB or by projects that do not meet all CDM requirements. Both at Chinese level and internationally, the VER market is attested large development scope. At the beginning of the year, a large Chinese paper company bought VERs (Voluntary Carbon Standard) for the first time, where the contract was concluded on international terms and conditions. Shortly before the Copenhagen climate summit in December 2009, the Beijing Climate Exchange published a Chinese VER standard, the Panda Standard. International VER buyers have so far been reticent about the quality and fungibility of VERs certified to this standard.

3.8 Finance facilities for CDM projects

Maturity-matched local finance for long-term projects by private enterprises is difficult to obtain in China. In an effort to counter the economic crisis, Chinese banks provided an enormous amount of credit for domestic investments in 2009, which still supplies a lot of liquidity on the capital market. Banks are far more reluctant to provide capital since the beginning of 2010, though. While state-owned enterprises nevertheless still have good access to lending, it is increasingly difficult for private investors to obtain local finance. Furthermore, Chinese banks generally only provide loans with a one-year term, which have, however, usually been extended to date.

The Deutsche Investitions- und Entwicklungsgesellschaft mbH (DEG) has been engaged in China since 1985 and has so far financed 94 projects for an investment volume of about EUR 600 million. It offers long-term project finance on commercial terms (including long-term loans, mezzanine finance, equity contributions and guarantees) and is therefore one of the few institutions in the country that provides long-term finance for the private sector. After initially cofinancing new investments by German enterprises in particular, DEG also assists Chinese private enterprises as of 2002. In renewable energies, it financed one of the first private windparks and the construction and operation of three run-of-water power stations. Drawing on CDM know-how available from the KCC network, DEG seeks ways to account for CER proceeds in project calculations.

Via the quarterly competition developPPP.de of the Federal Ministry for Economic Cooperation and Development (BMZ), DEG can cofinance pre-investment or support measures with special developmental impacts with up to EUR 200,000.

In connection with certificates purchases, the KfW Carbon Fund can prefinance funds for pre-project measures (for example, preparing PDDs, validation), make advance payments for certificates or provide the financier banks with its CER purchase contracts as part of collateral.

4 Recap

The PR China will continue to dominate the CDM market. The government is aware of this role and continues to set minimum prices for CERs, despite large market fluctuations. A clear framework has so far facilitated the development of China's CDM market. This will also remain a major concern in the post-Kyoto period after 2012. In future also, only enterprises with a national majority interest are likely to be permitted as project owners, which will impede technology transfer. Foreign interest in China's CDM market will therefore continue to concentrate on consultancy, the supply of technology or plant and machinery and certificates purchasing.

The project pipeline in China remains very extensive. Validation bottlenecks are still likely over the medium term. In some project segments, compliance with additionality will probably be assessed more critically by the EB in future. CER project losses are greater in China than in India. China's role can be expected to grow after 2012 (post-Kyoto). Some experts consider the emergence of a national emissions trading system as a possibility. They also see potential for the national VER market. It remains to be seen how the VER segment takes shape and how far foreign enterprises will be able to participate.

5 Advice/Service

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