

EMISSIONS MARKETS: OVERVIEW OF THE CARBON MARKET AND THE CASE OF CHINA

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EXECUTIVE SUMMARY

The rising concentration of carbon dioxide in the atmosphere is a by-product of the ever-increasing human population and economic activity. Unfortunately, it is also at the root of our current global warming problems.

The Kyoto protocol aims at reducing carbon emissions in the atmosphere. Although the USA did not ratify the Kyoto Protocol, some American states are putting in place incentive schemes on the model of what the European Union – mainly – has been implementing for a couple of years.

Through specific United Nations mechanisms, companies in virtually all countries in the world can enter the system and get financed by selling the emission rights resulting from “green” projects they implement.

Giant emerging economies such as the BRICs (Brasil, Russia, India, China) represent a huge carbon-saving potential for the world and China is already the first provider of such projects.

1. INTRODUCTION

This phenomenon is called “global warming” and the gases collectively responsible for it are referred to as “greenhouse gases” (GHG)

The concentration of carbon dioxide (CO₂) in the atmosphere is today at a high level never reached on Earth before, at least as far as current scientific methods are able to date it (hundreds of thousands of years back). The excessive concentration of carbon dioxide and of other gases is considered to create a greenhouse effect, allowing more solar power to reach the Earth and causing *in fine* an overall increase of the temperature in the atmosphere and on the surface of our planet. This phenomenon is called “global warming” and the gases collectively responsible for it are referred to as “greenhouse gases” (GHG).

There is much discussion among scientists to what extent carbon dioxide (or simply carbon) is responsible for the effective climate change we are experiencing. However, it is widely believed that the level of carbon dioxide in the atmosphere was 250 parts per million (ppm) before the Industrial Revolution, at the end of the 18th century and would exceed 550 ppm by 2050 if nothing is done to cut on carbon emissions. The recently published Stern Review provides exhaustive information on the topic.

Carbon emissions and greenhouse gases emissions are caused by 5 major sources:

- Transportation (car, air)
- Heavy industries (metals, chemicals)
- Power generation (electricity production from coal and oil)
- Oil and gas industry
- Deforestation.

These human activities produce considerable amounts of carbon, with a significant impact on the natural carbon cycle:

- Animals, humans and their activities release carbon dioxide
- Plants and trees destroy carbon dioxide through photosynthesis
- When there is too much carbon produced and when deforestation takes place, the balance disappears and carbon concentration in the atmosphere soars.

You can reduce the global emissions by cutting down emissions locally

The good news is that carbon dioxide like other GHG spreads evenly in the atmosphere: you can reduce the global emissions by cutting down emissions locally. This principle is at the very heart of the Kyoto Protocol.

2. THE KYOTO PROTOCOL

Governments around the world are concerned with the necessity to support the development of “carbon-neutral” economic activities. The Kyoto Protocol represents the first major international initiative in this sense.

2.1. Principles

The protocol has mandatory targets on greenhouse-gas emissions for the world's leading economies which have accepted it.

The Protocol's major feature is that it has mandatory targets on greenhouse-gas emissions for the world's leading economies which have accepted it. These targets range from -8 per cent to +10 per cent of the countries' individual 1990 emissions levels "with a view to reducing their overall emissions of such gases by at least 5 per cent below existing 1990 levels in the commitment period 2008 to 2012." In almost all cases – even those set at +10 per cent of 1990 levels – the limits call for significant reductions in currently projected emissions.

Overall 5 per cent target for developed countries

Commitments under the Protocol vary from nation to nation. The overall 5 per cent target for developed countries is to be met through cuts (from 1990 levels) of 8 per cent in the European Union (EU 15), Switzerland, and most Central and East European states; 6 per cent in Canada; 7 per cent in the United States (although the US has since withdrawn its support for the Protocol); and 6 per cent in Hungary, Japan, and Poland. New Zealand, Russia, and Ukraine are to stabilize their emissions, while Norway may increase emissions by up to 1 per cent, Australia by up to 8 per cent (subsequently withdrew its support for the Protocol), and Iceland by 10 per cent. The EU has made its own internal agreement to meet its 8 per cent target by distributing different rates to its member states. These targets range from a 28 per cent reduction by Luxembourg and 21 per cent cuts by Denmark and Germany to a 25 per cent increase by Greece and a 27 per cent increase by Portugal.

EU internal agreement to meet its 8 per cent target

The agreement offers flexibility in how countries may meet their targets

To compensate for the sting of "binding targets," as they are called, the agreement offers flexibility in how countries may meet their targets. For example, they may partially compensate for their emissions by increasing "sinks" – forests, which remove carbon dioxide from the atmosphere. That may be accomplished either on their own territories or in other countries. Or they may pay for foreign projects that result in greenhouse-gas cuts. Several mechanisms have been set up for this purpose, such as emission trading, clean development mechanism and joint implementation (see details hereunder).

The Kyoto Protocol is a complicated agreement that has been slow in coming. Even after the agreement was approved in 1997, further negotiations were

deemed necessary to hammer out instructions on how to operate it. These rules, adopted in 2001, are called the "Marrakech Accords".

2.2. Participants

3 kinds of participants

Broadly speaking, the Kyoto Protocol involves 3 kinds of participants:

- Countries
- Directly concerned companies
- Indirectly concerned companies

List of participating countries, with their targets (excluding later signing countries such as China and countries which withdrew from the Protocol: Australia, USA)

Country	Target (CO2 levels 1990, evolution over 2008/2012)
EU-15, Bulgaria, Czech Republic, Estonia, Latvia, Liechtenstein, Lithuania, Monaco, Romania, Slovakia, Slovenia, Switzerland	-8%
Canada, Hungary, Japan, Poland	-6%
Croatia	-5%
New Zealand, Russian Federation, Ukraine	0%
Norway	+1%
Iceland	+10%

On this basis, each country gives an allowance for carbon dioxide emissions to the following industries, deemed to be responsible for most carbon emissions:

- Power and heat generation
- Minerals
- Metals
- Oil
- Gas.

Annex I Parties have the right to buy and sell carbon allowances

Hence, the second category of participants is companies operating in these fields in the above-mentioned countries. They are referred to as Annex I Parties. They have the duty to buy rights to emit carbon dioxide for each ton of carbon they will produce over their assigned quota. Conversely, they have the right to sell any amount of allowance they have not used during the year.

Non-Annex I Parties

The third category of participants is companies from other countries, developing projects which help reduce the global amount of GHG emissions. Through specific United Nations mechanisms, these companies can claim their carbon rights and sell them on the market.

2.3. Key provisions of the Kyoto Protocol

Party's assigned amount

The maximum amount of emissions (measured as the equivalent in carbon dioxide) that an Annex I Party may emit over the commitment period in order to comply with its emissions target is known as a Party's assigned amount. Annex I Parties may offset their emissions by increasing the amount of greenhouse gases removed from the atmosphere by so-called carbon "sinks" in the land use, land-use change and forestry (LULUCF) sector. However, only certain activities in this sector are eligible. These are afforestation, reforestation and deforestation and forest management, cropland management, grazing land management and revegetation. Greenhouse gases removed from the atmosphere through eligible sink activities generate credits known as removal units (RMUs).

Sink activities generate Removal Units (RMUs)

Three mechanisms

The Protocol also establishes three innovative "mechanisms":

- Joint implementation
- Clean development mechanism
- Emissions trading.

They are designed to help Annex I Parties meet their targets

These are designed to help Annex I Parties cut the cost of meeting their emissions targets by taking advantage of opportunities to reduce emissions or increase GHG removals that cost less in developing countries than at home. However, Annex I Parties must provide evidence that their use of the mechanisms is "supplemental to domestic action", which must constitute "a significant element" of their efforts in meeting their commitments.

Between Annex I Parties

JI (Joint Implementation): an Annex I Party may implement a project that reduces emissions (e.g. an energy efficiency scheme) or increases removals by sinks (e.g. a reforestation project) in the territory of another Annex I Party, and count the resulting emission reduction units (ERUs) against its own target.

Involves Annex I and Non-Annex I Parties

CDM (Clean Development Mechanism): Annex I Parties may implement projects in non-Annex I Parties that reduce emissions and use the resulting certified emission reductions (CERs) to help meet their own targets. The CDM also aims to help non-Annex I Parties achieve sustainable development and contribute to the ultimate objective of the Convention. In particular, CDM allows companies from emerging countries to benefit from the system, when they implement projects achieving a cut in or an avoidance of carbon emissions.

Between Annex I Parties

ET (Emissions Trading): Annex 1 Party may transfer some of the emissions under its assigned amount (AAUs) to another Annex 1 Party that finds it more difficult to meet its targets. It may also transfer CERs, ERUs or RMUs that it

has acquired through the CDM, JI or sink activities.

Emissions trading provides the possibility for Annex 1 Parties to acquire units from other Annex 1 Parties and use them to meet their emissions targets under the Kyoto Protocol.

2.4. After 2008

The targets will cover emissions of the six main greenhouse gases, namely

- Carbon dioxide (CO₂);
- Methane (CH₄);
- Nitrous oxide (N₂O);
- Hydrofluorocarbons (HFCs);
- Perfluorocarbons (PFCs); and
- Sulphur hexafluoride (SF₆)

2.5. After 2012

Future mandatory targets are expected to be established for "commitment periods" after 2012. These are to be negotiated well in advance of the periods concerned.

3. BUYING AND SELLING EMISSION RIGHTS

3.1. Core principles

Making emissions rights tradable lies at the heart of the Kyoto Protocol. It means that emitting a tonne of carbon dioxide has a price. Like on any market, this price is set by demand and supply:

Like on any market, the price is set by demand and supply

- The supply corresponds to the amount of carbon dioxide which is not emitted, thanks to "green" projects implemented by participating companies;
- The demand corresponds to the amount of carbon dioxide emitted beyond the allowances resulting from the targets set for Annex I parties.

Whereas the level of supply is completely free (virtually each company implementing green projects can claim emission rights), the level of demand is a consequence of political decisions made by participating countries, setting up more or less ambitious targets for cuts in emissions.

The level of demand depends on political decisions

3.2. Exchanges

Europe's market framework is called EU ETS

Under such arrangements, emission rights represent a commodity, exactly like copper, gold, oil, etc. As such, organised markets emerged over the last years. In Europe, the market framework is called EU ETS and works as follows. Other markets in the world exist (Australia's New South Wales, Chicago's CCX in the USA).

Companies can trade carbon allowances

Since 1 January 2005, some 12,000 large industrial plants in the EU have been able to buy and sell permits to release carbon dioxide into the atmosphere. The so-called Emissions Trading Scheme (ETS) enables companies exceeding individual CO₂ emissions targets to buy allowances from 'greener' ones. Investments in cleaner technologies can then be turned into profits while helping the EU meet its Kyoto commitments on climate change. This unique system has earned the EU the reputation of global leader in fighting climate change but has come under fire from some business circles, who criticise the EU for "going it alone" on the international scene and hampering industry's competitiveness.

But the system is still young and fragmented

In the EU market, the system is still young and fragmented, for there are currently six exchange platforms, which represent about half of traded EUA volumes. Among those, the European Climate Exchange (ECX) claims that it has captured 70-80% of the market share over other platforms. Italy and Poland are preparing exchanges that are likely to be operational soon. There is an increasing number of small brokers that begin operating on the EU ETS. While banks in the UK are required to trade only on regulated exchanges, the most prominent big bulge investment banks, hedge funds and other financial institutions are very active on exchanges where they account for a large share of trading volumes. Banks often represent industrial participants and small obligated installations, many of whom do not have direct experience of trading. Some investment banks also speculate and act as primary brokers for hedge funds.

There is an increasing number of small brokers that have begun operating on the EU ETS

Some exchanges also trade other commodities, e.g. power (European Energy Exchange, Powernext, NordPool for instance) and several are preparing for CERs trade, e.g. ECX has established a relationship with the European Carbon Fund and Climex with the Asia Carbon Fund.

3.3. Statistics

They show the preminence of the EU ETS system over the other schemes in place. Note the drop in carbon price in April 2006.

	2004 Volume (MtCO ₂)	2005 Volume (MtCO ₂)	2005 Value (MUS\$)	1 st Q06 Volume (MtCO ₂)	1 st Q06 Value (MUS\$)
EU ETS ¹⁶	8.49	322.01	8,220.16	202.51	6,552.24
NSW	5.02	6.11	57.16	5.51	86.55
CCX	2.24	1.45	2.83	1.25	2.71
UK ETS	0.53	0.30	1.31	na	na
TOTAL	16.28	329.87	8,281.46	209.26	6,641.50

Volumes transacted and corresponding values on the main carbon allowances markets.

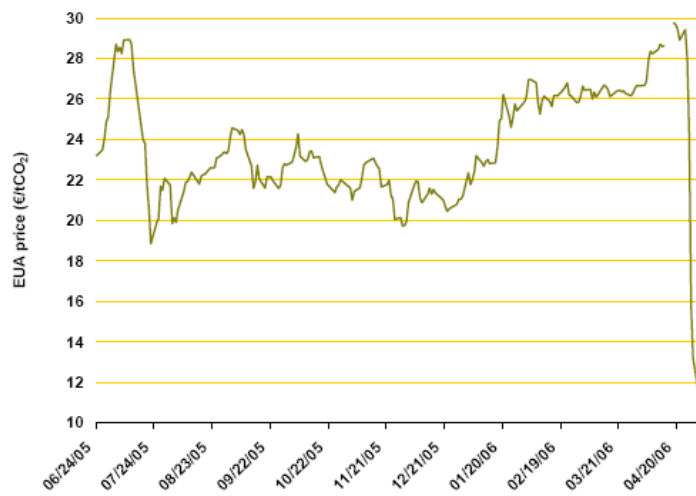


Figure 1: EUAs Spot Market (Daily Closing Price, PowerNext) from start of operation 05) to 5 May 06.

The April 2006 crisis

Forecasts of the overall market's 2005 position came under question as reports of the first verified annual emissions reports reached the market in late April 2006. It was publicly reported that the Czech Republic, Estonia, France, the Netherlands, Spain and the Walloon region of Belgium had made announcements showing their position was longer or less short than expected: Czech Republic longer by 9 MtCO₂ had an overall surplus of 14 MtCO₂; Estonia long by 4 MtCO₂; France, believed to be short by 9 MtCO₂ and actually long by 20 MtCO₂; the Netherlands, believed to be short by 3 MtCO₂ and actually long by 6 MtCO₂; Spain finally short by 11 MtCO₂ (not by 18 MtCO₂ 2 as expected) and Wallonia long by 4 MtCO₂. On the whole, the surplus from these regions adds up to 50 MtCO₂ (which is in the range of the shortfall that had been expected in the market for 2005). Overnight, market expectations were reversed, revised from a 50 MtCO₂ market to an eventually long market for 2005. This information led to a sharp decline in EUA prices and significantly higher volumes were traded in the last three working days of April.

Today's price still lies in the region of EUR 10-12

Today, the price of a ton of CO₂ still lies in the region of EUR 10-12.

3.4. Projects from non Annex I Parties

Clean Development Mechanism

Emission rights are recognised by a United Nations procedure (see hereunder), under the Clean Development Mechanism. Typically, these emission rights are bought at a discount to market price. Following tables show the volumes of CDM projects and the corresponding price range.

	2004		2005		1stQ06	
	Volume (MtCO ₂ e)	Value (MUS\$)	Volume (MtCO ₂ e)	Value (MUS\$)	Volume (MtCO ₂ e)	Value (MUS\$)
Compliance	107.07	543.59	368.30	2,665.31	79.12	906.1
<i>of which</i>						
CDM	97.00	485.01	346.15	2,544.30	75.61	886.8
JI	9.10	54.19	17.78	82.41	3.29	19.2
other	0.96	4.39	4.37	38.59	-	-
Voluntary and retail markets	2.92	5.57	6.05	43.03	0.08	0.5
TOTAL	109.99	549.16	374.34	2,708.34	79.19	906.6

M = million

Table 3: Volumes transacted and corresponding values for project-based transaction

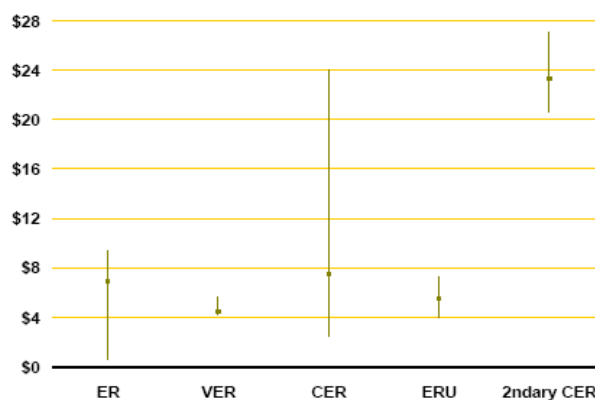


Figure 5: Observed prices for project-based transactions January 2005 to 1stQ06 (tCO₂e)

4. CLEAN DEVELOPMENT MECHANISM: THE UNITED NATIONS PROCEDURE

Submission of a standardised application form

Very few projects are rejected

Companies in emerging countries implementing projects achieving cuts in or avoidance of carbon emissions can claim emission rights via a specific with the United Nations Framework Convention on Climate Change (UNFCCC). The procedure involves the submission of a standardised application form. Specialised consultancies help companies to prepare the application. The project must be clearly identified; very few projects are rejected (4 out of 375 registered on the UNFCCC database). Once the emission rights are recognised, they can be sold to a buyer, either an Annex I Party or any trader or intermediary active on the organised exchanges.

The calculation rule is adapted to each project

The amount of emission rights is defined by the cut in or the avoidance of carbon emissions. The calculation rule is adapted to each project. For instance, setting up a windfarm in a region where 90% of the electricity comes from “dirty” coal-fired power plants will generate more emission rights than setting up the same windfarm in a region where 90% of the electricity comes from “clean” hydropower plants.

See www.unfccc.org for more information.

5. CLEAN DEVELOPMENT MECHANISM IN CHINA

5.1. Legal framework

Since 2004, China has seen a surge in CDM activity

Since the Government of China passed the Interim Regulations for CDM in June 2004, and with the entry into force of the Kyoto Protocol and on-going support from donor countries in capacity building measures, China has seen a surge in CDM activity. China is already the top destination for global foreign direct investment and has huge potential for mitigating greenhouse gases in all sectors.

The priority areas for CDM projects in China: energy efficiency improvement, development and utilization of new and renewable energy, and methane recovery and utilization.

The Chinese law on renewable energy (2006) : in 2020, 15% of power generation should be from renewable sources.

The law on renewable energy in China has taken effect in January 2006. Its long-term target is that in 2020, 15% of power generation should be from renewable resources. The Chinese government encourages grid-connected power generation from renewable sources. CDM is a good way to create a

financial incentive to Chinese companies active in this sector. Actually, China is already today the first provider of projects to the UNFCCC.

5.2. Authorities

National Development and Reform Commission (NDRC)

Contact: Gao Guangsheng, Director General, Office of National Coordination Committee for Climate Change, NDRC

Email: gaogs2002@sdpc.gov.cn or lily@ccchina.gov.cn

National CDM Board

Review and approval CDM application submitted by the project owner

Board Members:

National Development and Reform Commission (NDRC, Co-Chair), Ministry of Science and Technology (MOST, Co-Chair), Ministry of Foreign Affairs (MoFA, Vice Chair), State Environmental Protection Administration (SEPA), China Meteorological Administration (CMA), Ministry of Finance (MoF), Ministry of Agriculture (MoA)

See Annex 2 for more information about doing CDM projects in China.

5.3. Examples of CDM projects already ongoing

The UNFCCC database (open access via Internet) shows numerous examples in the field of power generation, mainly hydropower and wind energy. The detailed application form for each project can be downloaded from the UNFCCC website.

Kanfeng 15MW hydropower station project, Min County, Dingxi City Prefecture, Gansu Province, owned by Gansu Gongjiaotou Kanfeng Hydropower Development Co Ltd (see Annex 3 for details).

Yuzaikou Small Hydropower Station is a SPH (small hydroelectric project) which will provide 66,000 MWh of electricity in a year in Hunan Province by Ruching County Yuzaikou Hydropower Limited.

Xiaogushan Hydropower Project is a run of river hydroproject located in the Sunan Yugu Autonomous County of Zhangye City, Gansu Province that will create an output of 388 gigawatt hours per year. It is realised by Xiaogushan Hydropower Co Ltd.

9.6 MW Xiaohe Small Hydropower Project, located on Daxia River in Gansu Province, owned by Gansu Xiahu Hengfa Hydropower Co Ltd.

Erlongshan Hydropower project in Gansu province is expected to supply annually 165,270 MWh of electricity and will be connected to the NorhtWest Power Grid of China. It is owned and realised by Gansu Zhangye Erlongshan Hydropower Co Ltd.

The proposed Huitengxile Windfarm Project is located within the Inner-Mongolia Autonomous Region of the People's Republic of China. The project is expected to generate approximately 59.19 GWh per year which will be sold into the Inner Mongolian Western Grid. The Project Owner is the Inner Mongolia Long Yuan Wind Power Development Co. Ltd.

The Zhangbei Manjing Windfarm Project is located near Manjing village, in the west of Zhangbei county, Hebei Province and it is expected to generate approximately 108GWh per year. The project proponent is Beijing Guotou Energy Conservation Company (BJGT).

The Ningxia Helanshan Wind-farm Project, Ningxia Autonomous Region, consists of the construction and operation of a wind-farm is constructed at Qingtongxia of Ningxia and near the Inner Mongolia border. At full capacity, the wind-farm is projected to generate 246.18GWh electricity annually. The project results of Ningxia Electric Power Group Co., Ltd.

Guangdong Nan'ao Huaneng 45.05 MW Wind Power Project is sited in the east of Nan'ao Island, Shantou City, Guangdong Province in southern China, providing a total installed capacity of 45.05 MW. The project owner is Huaneng New Energy Industrial Co.Ltd.

Jilin Taobei Huaneng 49.3MW Wind Power Project is sited within the Qinshan Grass Farm of Taobei District, Baicheng City of Jilin Province. The project owner is Huaneng New Energy Industrial Co.Ltd.

Ningxia Tianjing Shenzhou 30.6MW Wind-farm Project is located at Qingtongxia of Ningxia and near the Inner Mongolia border. The project owner is Ningxia Tianjing Shenzhou Wind Power Ltd.

The Fujian Zhangpu Liuaao 30.6 MW Wind Power Project is located in Liuaao town, Zhangpu County in Fujian Province. Datang Zhangzhou Wind Power Co., Ltd is the investor, constructor, operator, and owner of the project.

Jilin Tongyu Huaneng 100.5MW Wind Power Project is sited within the Tongyu county, Baicheng city, Jilin province in the Northeastern China. The project

owner is Huaneng New Energy Industrial Co. Ltd (the “HNEIC”), a subsidiary company solely owned by Huaneng Group Company.

Jilin Changling Wind Farm Phase I Project is a grid connected renewable energy project developed by SinoHydro Corporation. the proposed project is estimated to deliver 99676 tonnes CO2 emission reduction annually.

The objective of Liaoning Kangping 24.65MW Wind Farm Project is located in Kangping County, Shenyang City, Liaoning Province. The project owner is Liaoning Kangping Jinshan Wind Power Ltd.

The 30 MW Tuoli Wind-Farm Project is located within Tuoli Town of Urumqi County, under the jurisdiction of the Urumqi city, capital of Xinjiang Uygur Autonomous Region of the P.R.C. The owner is Beijing Guotou Energy Conservation Co.

Saihanba East 45.05 MW Windfarm Project is located to the Northwest of Chifeng City. The project proponent is Datang Chifeng Saihanba Wind Power Co., Ltd.

ANNEX 1: China's law on renewable energy

I. General Provisions

Article 1 This measure is formulated in accordance with the provisions of the United Nations Framework Convention on Climate Change (hereinafter referred to as the Convention) and its Kyoto Protocol (hereinafter referred to as the Protocol) ratified and approved by China respectively, and the relevant decisions adopted by the Conference of the Parties, with a view to strengthening the effective management of Clean Development Mechanism (hereinafter referred to as CDM) projects by the Chinese Government, protecting China's rights and interests, and ensuring the proper operation of CDM project activities.

Article 2 According to the Protocol, CDM is a project-based mechanism under which developed country Parties cooperate with developing country Parties in order to meet part of the GHG emission reduction obligations of the developed country Parties. The purpose of this mechanism is to assist developing country Parties in achieving sustainable development and in contributing to the realization of the ultimate objective of the Convention as well as to assist developed country Parties in achieving compliance with their quantified GHG emission limitation and reduction commitments. The core of the CDM is to allow developed country Parties, in cooperation with developing country Parties, to acquire j°certified emission reductions (hereinafter referred to as CERs) generated by the projects implemented in developing countries.

Article 3 CDM project to be implemented in China shall be approved by relevant departments under the State Council.

Article 4 The priority areas for CDM projects in China are energy efficiency improvement, development and utilization of new and renewable energy, and methane recovery and utilization.

Article 5 In accordance with the relevant decisions of the Conference of the Parties, the implementation of CDM projects shall ensure transparency, high efficiency and accountability.

II. Permission Requirements

Article 6 CDM project activities shall be consistent with China's laws and regulations, sustainable development strategies and policies, and the overall requirements for national economic and social development planning.

Article 7 The implementation of CDM project activities shall conform to the requirements of the Convention, the Protocol and relevant decisions by the Conference of the Parties.

Article 8 The implementation of CDM project activities shall not introduce any new obligation for China other than those under the Convention and the Protocol.

Article 9 Funding for CDM projects from the developed country Parties shall be additional to their current official development assistance and their financial obligations under the Convention.

Article 10 CDM project activities should promote the transfer of environmentally sound technology to China.

Article 11 Chinese funded or Chinese-holding enterprises within the territory of China are eligible to conduct CDM projects with foreign partners.

Article 12 CDM project owner shall submit to the Designated National CDM Authority the following documents: CDM project design document, certificate of enterprise status, general information of the project, and a description of the project financing.

III. Institutional Arrangement for Project Management and Implementation

Article 13 National CDM Board (hereinafter referred to as the Board) is hereby established under the National Climate Change Coordination Committee (hereinafter referred to as the Committee), and a CDM project management institute will be established under the Board.

Article 14 The Committee is responsible for the review and coordination of important CDM policies. More specifically, it has the following responsibilities:

1. To review national CDM policies, rules and standards;
2. To approve members of the Board; and
3. To review other issues deemed necessary.

Article 15 National Development and Reform Commission (NDRC) and Ministry of Science and Technology (MOST) serve as co-chairs of, and Ministry of Foreign Affairs (MFA) serves as the vice chair of, the Board. Other Board members are State Environmental Protection Administration, China Meteorological Administration, Ministry of Finance, and Ministry of Agriculture.

The Board has the following responsibilities:

1. To review CDM project activities mainly from the following aspects:

- (1) Participation qualification;
- (2) Project design document;
- (3) Baseline methodology and emission reductions;
- (4) Price of CERs;
- (5) Terms relating to funding and technology transfer;
- (6) Crediting period;
- (7) Monitoring plan; and
- (8) Expected sustainable development effectiveness.

2. If no foreign buyer is determined by the time a project is submitted for approval, and in result the price information requested in the above term 1 (4) is not available, it must be indicated in the project design document that the emission reductions generated by the project will be transferred into China's national account in the CDM registry and can only be transferred out with the authorization of China's Designated National Authority for CDM.

3. To report to the Committee on the overall progress of CDM project activities, issues emerged, and further recommendations; and

4. To make recommendations on the amendments to this measures.

Article 16 NDRC is China's Designated National Authority for CDM, with the following responsibilities:

1. To accept CDM project application;
2. To approve CDM project activities jointly with MOST and MFA, on the basis of the conclusion made by the Board;
3. To issue written approval letter on behalf of the Government of China;
4. To supervise the implementation of CDM project activities;
5. To establish the CDM project management institute referred to in Article 13 above, in consultation with other departments; and
6. To deal with other relevant issues.

Article 17 Project owner, which refers to the Chinese funded or Chinese-holding enterprises, shall:

1. Undertake CDM project negotiations with foreign partners;
2. Be responsible for construction of the project and report periodically to NDRC on the progress;
3. Implement the CDM project activity, develop and implement project

monitoring plan to ensure that the emission reductions are real, measurable, long-term and additional, and subject itself to the supervision of NDRC;

4. Contract designated operational entities to validate the proposed project activity and to verify emission reductions of the project activity; provide necessary information and monitoring record, and submit the information to NDRC for record purpose; and protect state and business confidential information in accordance with relevant laws and regulations;
5. Report to NDRC on CERs issued;
6. Assist NDRC and the Board in investigating relevant issues and respond to the inquiries; and
7. Undertake other necessary obligations.

IV. Project Procedures

Article 18 Procedures for the application and approval of CDM projects:

1. Project owner, or together with its foreign partner, submits to NDRC project application, and documents as required by Article 12 above. Relevant departments and local governments may facilitate such project application;
2. NDRC entrusts relevant organizations for expert review of the applied project, which shall be concluded within 30 days;
3. NDRC submits those project applications reviewed by the experts to the Board;
4. NDRC approves, jointly with MOST and MFA, projects based on the conclusion made by the Board, and issues approval letter accordingly;
5. NDRC will make a decision on project application within 20 days (excluding the expert review time) as of the date of accepting the application. The time limit for decision-making may be extended to 30 days, with the approval of the Chair or the Vice-chair of NDRC, if a decision could not be made within 20 days. The project applicant should be informed of such a decision and its reasons.
6. Project owner invites designated operational entity to validate the project for registration; and
7. Project owner shall report to NDRC on the approval decision by the CDM Executive Board within 10 days as of the date of receiving the notice from the Executive Board.

Article 19 Existing other relevant rules and procedures for the approval of construction projects shall apply to CDM projects.

Article 20 Procedures for the project implementation, monitoring and verification:

1. Project owner is responsible for presenting NDRC and designated operational entity project implementation and monitoring reports;
2. NDRC is authorized to supervise the implementation of the project to ensure the quality of the activity;
3. Contracted designated operational entity verifies the emission reductions of the project activity and submits certification report to the CDM Executive Board, which will then issue CERs for the projects and inform its decision to the project participants; and
4. NDRC or other organizations entrusted by NDRC will put the CERs issued by the CDM Executive Board in file and record.

V. Other Provisions

Article 21 Developed country Parties mentioned above refer to Parties included in Annex I of the Convention.

Article 22 CDM Executive Board mentioned above refers to the board as defined in Article 12 of the Protocol for the purpose of supervising CDM.

Article 23 Operational entity mentioned above refers to the entity as defined in Article 12 of the Protocol for the purpose of validation as well as verification and certification of CDM project activities.

Article 24 Whereas emission reduction resource is owned by the Government of China and the emission reductions generated by specific CDM project belong to the project owner, revenue from the transfer of CERs shall be owned jointly by the Government of China and the project owner, with the allocation ratio defined as below:

- the Government of China takes 65% CER transfer benefit from HFC and PFC projects;
- the Government of China takes 30% CER transfer benefit from N2O project;
- the Government of China takes 2% CER transfer benefit from CDM projects in priority areas defined in Article 4 and forestation projects.

The revenue collected from CER transfer benefits of CDM projects will be used in supporting activities on climate change. The detailed regulations on collecting and using of the revenue will be formulated by Ministry of Finance jointly with NDRC and other relevant departments.

The Article does not apply to the projects already approved by the Government of China before 12 October 2005.

Article 25 NDRC, in consultation with MOST and MFA, is responsible for the interpretation of this measures.

Article 26 This Measure takes effect as of 12 October 2005. The Interim Measures for Operation and Management of Clean Development Mechanism Projects In China taking effects on 30 June 2004 will be abolished thereafter.

ANNEX 2: Frequently asked questions on CDM in China

(Source: www.cdm.ccchina.gov.cn)

1. What is the legal basis for developing and implementing CDM projects in China?

The Conference of Parties to the Convention has made relevant decisions with regard to the rules and procedures of CDM. As a Party to the UNFCCC, China has approved the Kyoto Protocol in August 2002. In order to participate in the CDM cooperation, Chinese government has appointed the National Development and Reform Commission as the DNA for CDM, and launched official CDM policy titled Interim Measures for Operation and Management of Clean Development Mechanism Project in China. Therefore, both international and domestic rules and procedures need to be followed in developing and implementing CDM projects in China.

2. Who is eligible for submitting CDM project proposal and what documents are needed for submission?

According to the Interim Measures for Operation and Management of Clean Development Mechanism Project in China, the project owners, or together with their foreign partners, can submit CDM project proposals.

3. What projects could be qualified CDM projects?

There are some general requirements for the projects, including:

- Be consistent with Chinese laws and regulations, sustainable development strategies and policies, and the overall requirements for national economic and social development planning;
- Conform to the requirements of the Climate Change Convention, the Kyoto Protocol and relevant decisions by the Conference of the Parties;
- Not introduce any new obligation for China other than those under the Convention and the Protocol.
- Promote the transfer of environmentally sound technology to China;
- Funding for CDM projects from the developed countries shall be additional to their current official development assistance and their financial obligations under the Convention.

4. Who will accept the applications of CDM project proposal?

The National Development and Reform Commission, as the DNA for CDM in China, will accept the application for CDM projects.

5. Who will approve the CDM projects?

For the approval of CDM projects, the Chinese has established a National

CDM Board. The Board, consisting of seven relevant governmental agencies, will be responsible for reviewing and approving CDM projects.

6. Who will issue the approval letter on behalf of the Chinese Government?

The National Development and Reform Commission, as Chinese DNA, will issue the approval letter on behalf of the Government, based on the decision made by the National CDM Board. The approval process will be finalized within 60 days, including the time required for expert review.

7. What is the role of Experts Review?

Once receiving applications for CDM project, the NDRC will invite experts to provide technical comments on the project proposals, including both CDM experts and technical experts in the area of the proposed projects. The comments made by the review experts will be submitted to the National CDM Board for its reference when making approval decisions.

8. Is the validation by DOE necessary before a project owner put forward its projects proposal?

It is possible that the project owner submits project proposal before the proposed project is validated by a DOE.

9. What are the steps for the project approval cycle?

Steps for obtaining CDM project approval will include:

Step 1: The project owner or developer prepares the necessary documents, including the PDD;

Step 2: Project owner submits required documents to NDRC

Step 3: independent experts invited by NDRC review the Documents and provide their comments to NDRC

Step 4: The National CDM Board will review the application documents and makes its decision accordingly

Step 5: NDRC will approve or reject the application in accordance with the decision made by the National CDM Board, and issue the approval letter on behalf of the Chinese Government to the applicant.

ANNEX 3: Example of hydropower project in China eligible to the CDM

The Kanfeng 15MW Hydropower Station Project will involve the construction of a run-of-river hydropower station at the main stream of the Tao River in Min County, Dingxi City Prefecture of Gansu Province. The main objective is to contribute to the sustainability of power generation of the Gansu Grid.

The project will lead to estimated annual emission reductions of approximately 51, 770 tons CO₂ equivalent, representing a yearly additional income of EUR 500,000 to 600,000 at current market prices.

The project owner is Gansu Gongjiaotou Kanfeng Hydropower Development Co., Ltd. This limited liability company is dedicated to the development and construction of hydropower and the management of power stations. It is a joint investment by Gansu Industrial Communication Investment Company and several private investors.

The project sponsor is a Japanese company, Kansai Electric Power Co., Inc. This company is a private electric power company. Its annual electric power sales amounts to 140 TWh. It has about 13 millions customers. Annual turnover: 20 billion US\$.

ANNEX 4: Jargon buster

AAUs : Assigned Amounts Units
ACF : Asia Carbon Fund
CCA : Climate Change Agreements
CCL : Climate Change Levy
CC&S : Carbon Capture and Storage
CCX : Chicago Climate Exchange (another market for carbon credits)
CDM : Clean Development Mechanism
CERs : Certified Emissions Reductions
CERs : Carbon Regulatory Risk (sellers)
ECF : European Carbon Fund
ECX : European Climate Exchange
EEX : European Energy Exchange
EMN : Evolution Market Natsource
ERPA : Emission Reduction Purchase Agreement
ERUs : Emission Reduction Units
EUAs : European Union Allowances / Nb : 1 allowance = 1 tonne of CO₂
EU ETS : European Union Emissions Trading Scheme, cf. UK ETS
GHG : Greenhouse Gas
GWP : Global Warning Potential
IETA : International Emissions Trading Association
ITL : International Transaction Log
JI : Joint Implementation
KPP : Kyoto Protocol Parties
LFG : Land Fill Gas
LULUCF : Land Use and Land Use Change Forestry
MP : Methodology Panel
NAP : National Allocation Plan (only for EU)
NSW : New South Wales (the carbon credits market in Australia)
PDD : Project Design Documents
RGGI : Regional Greenhouse Gas Initiative (market in USA)
RMUs : ReMoval Units (such as land use)
VERs : Verified Emission Reductions (buyers)