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Environment

Green Investment: Opportunity Knocks

With more emissions reduction opportunities available, foreign investors may wish to invest in Clean Development Mechanism projects in China

by Filip Moerman, Janet Weller, and Zheng Zhou

As debates rage about the impact of climate change and the merits of strategies to mitigate that impact, the global carbon market—designed to help countries and private companies meet their emissions-reduction goals by trading carbon-emission permits—is booming. According to the market research firm Point Carbon, the value of the global carbon market doubled from 2006 to 2007 to reach €40 billion (about $63.5 billion). Furthermore, in just the first half of 2008, the global carbon market generated almost as much money (€38 billion, about $60.3 billion) as it did in all of 2007.

With a June 2008 Netherlands Environmental Assessment Agency report stating that China has replaced the United States as the world's largest emitter of greenhouse gases (GHGs), many investors may be attracted to China's expanding opportunities for investment in GHG-reduction projects, known as Clean Development Mechanism (CDM) projects. The CDM was designed to reduce compliance costs, engage developing countries that are not otherwise obliged under the Kyoto Protocol to reduce GHG emissions, and encourage technology transfers from industrialized countries to developing countries. Companies interested in investing in CDM projects in China should understand the CDM framework and the legal and practical considerations for such investment.

Quick Glance

- US companies can participate in Clean Development Mechanism (CDM) projects in China through their subsidiaries in countries that have ratified the Kyoto Protocol.
- China prefers CDM projects that include renewable energy and energy efficiency improvements, as well as projects that transfer technology to China.
- Like all projects, CDM projects come with risks that investors should thoroughly investigate before making a commitment.

CDM basics

International efforts to reduce GHG emissions are currently organized under the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol. The Kyoto Protocol commits countries in the protocol's Annex B—mostly industrialized nations—to capping their domestic GHG emissions below the agreed baseline levels by the end of 2012. The protocol permits these countries to meet their commitments through a variety of flexible mechanisms. One such mechanism, the CDM, allows an Annex B country to invest in a GHG-reduction project in a non-Annex B country and gain credit for the emissions reduction achieved in the host country.

Countries that have not ratified the Kyoto Protocol, such as the United States, are ineligible to partner directly with China to generate carbon credits, officially known as certified emission reductions (CERs). But this exclusion does not extend to US multinational corporations that operate in jurisdictions with binding Kyoto GHG-reduction commitments. On the contrary, such corporations must comply with the host jurisdictions' caps, and compliance is possible through CDM projects.

The China market

Because of its heavy coal consumption and strong desire to improve energy efficiency, China holds vast market potential as a source of CERs. In fact, China accounted for about 61 percent of the market share of total CERs supplied to industrialized countries between 2002 and 2006 and expanded its market share to 73 percent in 2007, according to the World Bank. At the beginning of August 2008, China expected to generate an average of 113.6 million CERs per year from its 250 registered CDM projects, according to China's CDM statistics. New project applications in China continue to soar. At the end of May 2008, China had approved a total of 1,388 CDM projects since 2005, of which about two-thirds were approved after May 2007. The most active buyers in the Chinese market are carbon funds and Europe-based multinational corporations. A majority of the projects approved in China have been in "priority sectors" as defined in China's Measures for Operation and Management of CDM Projects in China (the CDM Measures), such as renewable energy, energy efficiency improvement, and methane recovery and utilization.

The structure and process for CDM project approval

The Kyoto Protocol requires CDM projects to be approved by the host country's designated national authority and registered by the CDM Executive Board, an international body established by the Conference of the Parties to the Kyoto Protocol in 2001 that supervises CDM projects. A country's designated national authority approves and helps monitor the projects within that country. The CDM Executive Board oversees the administration of CDM and CDM-related activities. A CDM project must register with the executive board to receive credit for the emissions reduction achieved.

The typical CDM project cycle, from conception to final fruition, includes the following stages:

- **Negotiation and project design document** Project participants, including a project developer from an Annex B country and a project owner from a non-Annex B host country, negotiate the project and prepare a project design document. In the document, the project participants define the project, estimate the emissions reduction to be achieved, and establish a monitoring plan. Project participants must then submit the document to the host country's designated national authority for approval.
- **Validation** If the designated national authority approves the project, a designated operational entity—an entity with expertise in related fields accredited by the CDM Executive Board—will, at the request of the project participants, independently review the project design document and check it against CDM requirements (see **Table**). If the designated operational entity determines the project is valid, it submits the registration request to the executive board.
- **Registration** The CDM Executive Board registers the project after receiving the registration request from the designated operational entity. Registration signals that the executive board formally accepts the CDM project. (A project is deemed registered eight weeks after the CDM Executive Board receives the request for registration, unless a party to the proposed project or three members of the executive board request review.)
- **Implementation** Once the project is registered, participants can implement the project, subject to monitoring by the designated national authority and the designated operational entity.
- **Verification and certification** After participants complete the project, the designated operational entity verifies the actual emissions reduction achieved and issues a verification report followed by a certification report.
- **Issuance of CERs** The CDM Executive Board issues CERs representing the verified emissions reduction

into its account in the CDM Registry 15 days after the submission of the certification report (unless review is requested by a party to the proposed project or three members of the executive board). The CDM Registry, run by the UNFCCC secretariat, issues CDM credits and holds them for non-Annex B countries permanently and for Annex B countries until the credits are distributed to their respective national registries. The CERs in the CDM Executive Board's account are then allocated as requested to the accounts of the project participants.

The CERs so issued are for compliance purposes only and cannot be sold. They are tradable only after they are transferred to the national registry of each Annex B country. The transfer of CERs from the CDM Registry to a national registry occurs through the International Transaction Log, which began operations in November 2007. The log's completion greatly enhanced the liquidity of CERs and may provide powerful incentives for greater investments in CDM projects. In addition, the EU Emissions Trading Scheme allows CERs to be converted into carbon allowances tradable within the scheme. CERs can also be traded in secondary markets, such as voluntary climate exchanges.

China's CDM Measures and legal requirements

China ratified the Kyoto Protocol in 2002 and in 2005 issued the CDM Measures, which establish the current procedures for CDM project administration, application, and approval (see **Box**).

A foreign CDM project developer interested in carrying out a CDM project in China should be aware of legal requirements under the CDM Measures and should carefully evaluate the risks of potential projects. First, the project owner, or local host, must be a wholly Chinese-owned or -controlled enterprise. Second, CDM projects should facilitate the transfer of environmentally sound technologies into China. Because PRC regulators favor CDM investments in certain priority project areas—namely energy efficiency improvement, new and renewable energy development, and methane recovery and utilization—CDM projects outside these areas will likely face financial disincentives and difficulty obtaining approval.

Under the CDM Measures, the PRC government owns a share of the CERs generated through CDM projects in China and is entitled to a corresponding portion of the sales revenues of such CERs. Not all projects are treated equally, however. For projects in priority areas, the government's share is only 2 percent. In contrast, the government's share is highest for hydrofluorocarbon and perfluorocarbon projects—65 percent—and is set at 35 percent for nitrous oxide projects.

Designated Operational Entities

- British Standards Institution
- Bureau Veritas Certification Holding SA
- Colombian Institute for Technical Standards and Certification
- Deloitte Tohmatsu Evaluation and Certification Organization Co., Ltd.
- Det Norske Veritas Certification AS
- JACO CDM, Ltd.
- Japan Consulting Institute
- Japan Quality Assurance Organization
- Korea Energy Management Corp.
- Korea Foundation for Quality
- KPMG Sustainability BV
- Lloyd's Register Quality Assurance Ltd.
- PricewaterhouseCoopers South Africa
- SGS United Kingdom Ltd.
- Spanish Association for Standardization and Certification
- TÜV NORD CERT GmbH
- TÜV Rheinland Japan Ltd.
- TÜV SÜD Industrie Service GmbH

Note: Companies are listed alphabetically and are current as of August 12, 2008; the designated operational entities are accredited for certain sectors.
Source: The UN Framework Convention on Climate Change Clean Development Mechanism website (**http://cdm.unfccc.int**)

Other legal challenges and risks

In addition to the legal requirements of the CDM Measures, foreign (especially US) investors will likely encounter many more legal and practical challenges.

Extra work for non-ratifying parties

As a non-ratifying party of the Kyoto Protocol, the United States—and by extension its corporations—are ineligible to participate in CDM activities in partnership with a Chinese project owner. This challenge is not insurmountable, however. US investors may invest through subsidiaries in Annex B jurisdictions. Alternatively, they may take advantage of the 2001 Marrakesh Accords to the Kyoto Protocol, which permit unilateral CDM projects. Such projects include GHG-reduction projects initiated and implemented solely by a developing country, without the involvement of an Annex B partner. Under this scenario, a US investor may enter into a contract to buy the resulting CERs from the Chinese enterprise that undertakes the unilateral CDM project. The CDM Measures mention the possibility of a unilateral CDM project, stating that if no foreign buyer is determined by the time a project is submitted for approval, the project development document must indicate that the CERs generated will be transferred to China's national account in the CDM Registry and may be transferred out later with National Development and Reform Commission authorization. Presumably, US investors could buy such CERs. It should be noted that, in practice, PRC regulators do not favor unilateral projects because they do not transfer technology to China.

Delivery risk

An investor in a CDM project must also consider the risk that a project may fail to deliver the expected amount of CERs. There are multiple sources of such risk. On the macro-policy level, methodological changes required by the CDM Executive Board can change the projected amount of CERs delivered. Likewise, inaccurate monitoring and verification of reductions, delay or failure in the registration process, and an error in the International Transaction Log can also result in reduced CER delivery. On the project level, new technologies may be unreliable, causing projects to perform below expectations.

Credit risks

For projects carried out in China, the credit risks of project owners, most of which are small or medium-sized enterprises with no credit rating, should not be overlooked. Investors must diligently investigate potential credit risks before and during the course of a CDM project.

Many risks can be managed or avoided with careful planning, well-crafted contractual provisions, or consideration of alternatives. For example, rather than buying CERs directly from a project owner, a buyer may purchase bank-guaranteed CERs to achieve the same objectives, thereby shifting delivery risk to the bank, or buy in the secondary market, where delivery risks are largely borne by the sellers.

Opportunities abound for forward-thinking, diligent investors

Given the PRC government's recent acknowledgement of climate change concerns, investors should track and assess expanding opportunities for environmental and financial gains by investing in CDM activities in China. Though companies should regularly evaluate opportunities to benefit from CDM projects in China, they should also recognize that these investments carry a fair amount of risk and uncertainty given the general regulatory and investment environment in China. Any investor interested in such projects is well advised to thoroughly investigate any potential project opportunity and proceed carefully, with clear legal documentation and full consideration of alternatives that can help mitigate the risks.

The Administration and Approval of CDM Projects in China

Three national authorities administer China's Clean Development Mechanism (CDM) regime. The National Coordination Committee on Climate Change—an interagency group comprised of representatives from 15 government agencies—is the highest authority (see **Table**). The committee coordinates China's climate change policies, provides direction for CDM-related policies, and approves members of the National CDM Project Board. Under the leadership of the committee, the National CDM Project Board, which consists of seven governmental agencies and is co-chaired by the

Members of the PRC National Coordination Committee on Climate Change

- China Meteorological Administration
- Chinese Academy of Sciences
- Civil Aviation Administration of China
- Ministry of Agriculture

National Development and Reform Commission (NDRC) and Ministry of Science and Technology (MOST), reviews CDM project proposals, recommends projects for approval, and reports to the committee on CDM project implementation. NDRC also serves as the designated national authority of China and oversees CDM projects in the country. NDRC receives CDM project proposals, conducts preliminary screening of the proposals, approves CDM projects (jointly with MOST and the Ministry of Foreign Affairs) in accordance with recommendations made by the National CDM Project Board, and issues official designated national authority approval for CDM projects on behalf of the PRC government.

- Ministry of Environmental Protection
- Ministry of Finance
- Ministry of Foreign Affairs
- Ministry of Housing and Urban-Rural Development
- Ministry of Science and Technology
- Ministry of Transport
- Ministry of Water Resources
- National Development and Reform Commission
- State Forestry Administration
- State Oceanic Administration

Note: Members are listed alphabetically.
Source: China's Clean Development Mechanism website (**http://cdm.ccchina.gov.cn**)

According to the CDM Measures, a CDM project owner (the PRC host entity) must submit an application for a proposed CDM project activity, including a project design document and a financial plan, to NDRC. NDRC engages external experts to evaluate the proposal and submit a report to the National CDM Project Board for its review and recommendation. This step may take up to 30 days. After its review, the National CDM Project Board informs NDRC of the eligible projects, and NDRC (jointly with MOST and the Ministry of Foreign Affairs) issues an official approval. NDRC generally must respond within 20 days of receipt of an application (excluding the expert review time) but may get a 10-day extension with the approval of agency heads. The CDM project approval process should not take more than two months in China.

After receiving NDRC's approval, a project owner in China can proceed to designated operational entity validation and, if validated, CDM Executive Board registration. Once a project is registered, the project owner must report the CDM Executive Board's registration decision to NDRC within 10 days.

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Further Reading

- **A Market Solution**
- **Cleantech Boom... or Bust?**
- **Who's Cleaning Up This Mess?**
- **The Clean Development Mechanism in China**
- **China Data: Environmental Report Card**

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