Climate & Development Knowledge Network

INSIDE STORIES on climate compatible development

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Key messages

- China was initially considered 'slow off the mark' in engaging with the Clean Development Mechanism (CDM).
- The Chinese Government took time to build capacity internally, engage senior ministries to take an active role, and elaborate clear approval processes.
- One of the most powerful Chinese ministries, the National Development and Reform Commission (NDRC), was appointed chair of the Designated National Authority (DNA).
- To build awareness of CDM, the Chinese Government worked with several donor-funded capacity-building initiatives and established provincial CDM Service Centres to identify opportunities and provide project assistance.
- China's approval processes included many first-of-their-kind controls to promote projects with a high level of local sustainable development benefits, and a minimum sale price for certified emission reductions (CERs).
- China currently dominates the CDM market, with almost half of all CDM projects hosted in China.
- Climate change action is becoming mainstream: carbon intensity reduction goals have been included in the most recent 5-year plan and a nationwide emissions trading scheme is also due to begin operating in 2015.

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Harnessing market mechanisms to promote sustainable development: Lessons from China

To help countries meet their targets for reducing greenhouse gas emissions, and to encourage the private sector and developing countries to contribute to emission-reduction efforts, negotiators of the 1997 Kyoto Protocol included three market-based mechanisms: Emissions Trading, Joint Implementation and the Clean Development Mechanism (CDM).

In 2001 the Marrakesh Accords contained the first guidelines on making the CDM operational. With both significant and growing greenhouse gas emissions, and many low-cost abatement options available, China was widely viewed as the country with the greatest potential to host CDM projects. However, during the early years of the CDM, it was Brazil and India that dominated, both in terms of the number of projects and the volume of potential emission reductions (see Figure 1).

It was only in January 2005 that the Chinese Designated National Authority (DNA) issued its first Host Nation Approval (HNA), and the first Chinese project was registered with the CDM Executive Board in June of that year. The Chinese DNA took time to engage senior ministries and put in place first-of-their-kind controls on eligible project types, such as taxation or revenue sharing from certain types of projects, and a minimum sale price for Certified Emission Reductions (CERs). Currently, Chinese projects dominate the CDM, as shown in Figure 1. In fact, the CDM has been so successful in China that it is sometimes labelled the 'China Development Mechanism'.

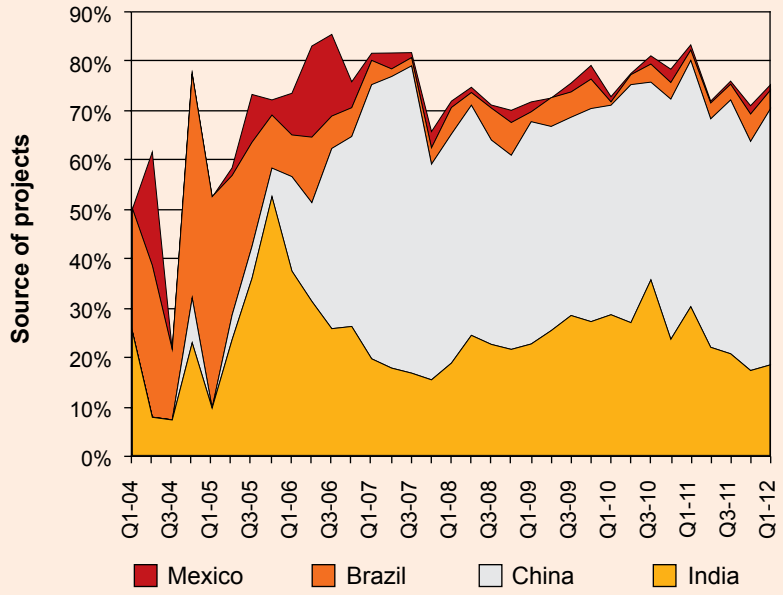
This case study reviews how much of that success in harnessing market mechanisms can be attributed to the approach taken, and the controls introduced, by the Chinese DNA. It examines lessons learned that may be relevant for other regions.

Coordinated capacity building

The Chinese Government approved the Kyoto Protocol in August 2002. Both the

CDKN helps developing countries to design and deliver climate compatible development. When decision-makers in government, business and civil society speak to us about their aims and needs, they often ask about 'best practice' in other countries or, indeed, mistakes to avoid. What are the leading innovations in integrating climate change planning with economic growth strategies and poverty reduction? What are the biggest challenges faced along the way: institutional, financial, political, technical? This paper is one of a series of policy briefs that explore the 'Inside stories on climate compatible development': briefing papers that aim to answer these questions.

Figure 1. All CDM projects in the UNFCCC pipeline by region, with projects in Brazil, China, India and Mexico shown as a percentage of the total number of projects, 2004–2012



Source: UNEP Risoe CDM/JI Pipeline Analysis and Database (2012). http://www.cdmpipeline.org/cdm-projects-region.htm

Chinese Government and international donors saw a significant need to increase China's capacity to initiate and implement CDM projects. From 2002 to 2006 China worked with a number of international and bilateral donors on many different CDM capacity building projects, such as the China CDM Study, funded by the World Bank, the Swiss Government and the German Agency for Technical Cooperation.[1]

The two lead agencies for formulating and implementing climate policy in China, the National Development and Reform Commission (NDRC) and the Ministry of Science and Technology (MOST), played a strong coordination role in ensuring there was minimal overlap between projects, and that each capacity building project focused on different needs at the national, local or project level. These agencies identified potential capacity needs and acted as gatekeepers for sign-off on donor-funded capacity building. This approach ensured that donor assistance was used in very specific areas and overlap was avoided, even if that meant turning down donor projects because they did not fit with the requirements of NDRC and MOST. For example, in 2001 the Dutch Government signed a memorandum of understanding with the NDRC to undertake capacity building in the iron, steel and chemical sectors, ultimately to identify projects that could offer CERs. However, reported differences of opinion on how the project should be implemented – and by whom – led to the project being abandoned entirely.[2]

The involvement of 'heavy-hitting' ministries in the development of the CDM was critical to its success.

A key to China's success was coordinating all international capacity building projects through gatekeeper agencies, which were not afraid to walk away from projects or negotiate strongly to achieve China's desired outcomes.

Active commitment from senior ministries

Countries that wish to engage in CDM projects must have ratified the Kyoto Protocol and appointed a DNA. As part of the required CDM validation process, the DNA of the country involved must provide the project participants with written host nation approval. In 1999 the Brazilian Government had already established its DNA and was issuing approval letters for potential CDM projects. However, the first approval letter for a Chinese project was not issued until January 2005. As of 9 April 2012, the Chinese DNA had approved 3,935 CDM projects.

China's domestic rules set out the hierarchy within the Chinese Government for dealing with climate change and CDM issues (see Table 1), and the CDM approval process within China.

One of the reasons CDM has been so successful in China is the involvement of 'heavy-hitting' ministries. Because climate change could have both

Table 1. National climate change and CDM authorities in China

Authorities	Members	Functions
National Coordination Committee on Climate Change (NCCCC)	Chaired by the NDRC and vice chaired by the MFA, MOST, SEPA and CMA; consists of other related government agencies	Policy-making and coordinating CDM-related issues
Office of the NCCCC	Hosted by the NDRC	Secretary of the NCCCC and NCB; organises the review of CDM application documents
National CDM Board	Co-chaired by the NDRC and MOST and vice chaired by the MFA; consists of the MOF, MOA, SEPA, and CMA	Reviews and assesses CDM projects
National Development and Reform Commission (NDRC)	Hosts the NCCCC office; serves as China's DNA	Receives CDM applications from project owners, issues a 'no objection letter' to the buyer, if needed, and issues the approval letter for the application
Ministry of Science and Technology (MOST)	Co-chair of the NCB	Circulates CDM approval documents
Ministry of Foreign Affairs (MFA)	Vice chair of the NCB	Circulates CDM approval documents

SEPA = State Environmental Protection Authority; CMA = China Meteorological Authority; MOA = Ministry of Agriculture; MOF = Ministry of Finance; MOST = Ministry of Science and Technology; MFA = Ministry of Foreign Affairs.

Source: IGES and CREIA (eds) (2005) *CDM Country Guide for China*. 1st Edition. Tokyo, Japan: Institute for Global Environmental Studies (IGES) and Chinese Renewable Energy Industries Association (CREIA). http://english.cbcsd.org.cn/dynamic/bringup/download/CDMcountryguideforchina.pdf

significant economic and social implications, the NDRC has taken the leading role in the development and implementation of all climate policy in China, including chairing the CDM DNA, with MOST providing technical support. The potential for inflows of 'hard' currencies (e.g. USD or euros) to both the country and project developers from CDM also meant that the Ministry of Finance was engaged early with CDM, particularly in the establishment of the CDM Fund from revenue sharing. The CDM Fund currently holds more than US$1 billion in funds and provides grants and loans to initiatives to improve energy efficiency and environmental protection in general.

In many other developing countries, the role of CDM DNA has been allocated to the environment ministry. While the area of climate change traditionally fits within that portfolio, these ministries are not usually power brokers within government. The fact that NDRC was appointed CDM DNA meant that CDM was taken seriously from the outset. This political commitment in turn meant provincial and local development and reform commissions (DRCs) also took it seriously. To build awareness of CDM in the regions, China also established 28 provincial CDM Service Centres to identify opportunities and provide assistance to project developers and government officials.

The NDRC not only plays the role of gatekeeper but also that of troubleshooter. For example, in late 2009 the CDM Executive Board rejected the registration requests of ten Chinese wind projects due to additional concerns about the tariffs awarded to these projects (i.e. whether the projects would have been developed anyway under a 'business as usual' scenario). This caused market-wide consternation and jeopardised hundreds of Chinese wind projects in the pipeline. The NDRC took direct action and assigned the Chinese-Danish Wind Energy Development Project Office and the China Renewable Energy Industry Association to jointly conduct 'The Research of China Wind Power Development and Electric Tariff' project. The aim of this research was to provide the Executive Board with a detailed explanation of the mechanism for Chinese wind power electricity tariff formation. NDRC officials also communicated directly with the Board. This direct intervention, coupled with similar efforts from project developers and international industry associations, eventually resulted in most of the rejected projects being resubmitted and subsequently registered.

Another external factor influencing policy evolution is the fact that Phase III of the EU Emissions Trading Scheme will not accept CERs from projects not registered by the end of 2012, unless they are located in a Least Developed Country. In response, the Chinese Government is actively developing its domestic emissions trading scheme. The scheme will be launched in pilot cities such as Beijing and Shanghai in early 2013. In these cities trading infrastructure is being developed, and major emitters covered by the scheme have already been allocated their emission allowances. The scheme will be a combination of allowance trading and project-based offsets. A national standard for project-based offsets is being developed, but in the meantime CDM methodologies

are the only recognised standard. Therefore many new projects are still moving ahead, even though they will not be able to sell CERs to the EU, but to a domestic market instead. The Chinese Government's goal is to have a nationwide trading scheme starting in 2015.

'Hands-on' process

The CDM measures contain detailed requirements for CDM project activities that are hosted by China. They stipulate that each potential CDM project shall adhere to the regular project approval process, in accordance with China's related laws, rules and regulations. In addition, potential CDM project activities are subject to a domestic project approval cycle to obtain official Chinese DNA approval.

The rules further stipulate that during implementation and monitoring of the CDM project activity: i) NDRC supervises the implementation of the CDM project activity to improve implementation quality; ii) the CDM project developer shall submit project implementation and monitoring reports; and iii) the NDRC records the CERs issued by the CDM. In the normal project approval process, provincial DRCs need to be kept informed of project progress and there are regular checks for projects.

Given the link between the NDRC and its provincial arms, it is also possible to ensure frequent updates and checks of CDM projects. For example, for CDM project approval the national office of the NDRC invites an official from the local office of the Planning Commission for comments about the project's contribution to sustainable development under local conditions and to verify the statements made in the Project Design Document (PDD) and application documents. This 'hands-on', cross-departmental approach enables the Government to monitor projects more closely and ensure that the desired local benefits are achieved.

Mainstreaming climate change and energy goals in development policy

The Chinese Government issues 5-year plans to coordinate national policy goals, and in recent years climate change and energy policy issues have begun to be incorporated into these plans. An energy intensity target (reduction by 20% over 5 years) was set in the Eleventh Five-Year Plan (2006–2010). Greater attention has been paid to climate change in the Twelfth Five-Year Plan (2011–2015). Targets that are congruent with commitments that China made at the United Nations Framework Convention on Climate Change (UNFCCC) Copenhagen and Cancun Conferences in 2009 and 2010, respectively, can be found in the Twelfth Five-Year Plan: the 5-year carbon intensity reduction goal is 17% and the 2015 non-fossil fuel goal is set to reach 11.4% of China's total energy mix.

These national targets are then further broken down into provincial and local targets. The performance of local officials and heads of state-owned enterprises (SOEs) is reviewed against these targets and the evaluation has significant bearing on promotion and future job prospects. Failure to perform can lead to dismissal or demotion in certain cases. Traditionally, performance criteria consisted mainly of economic growth targets. The recent inclusion of environmental and energy targets in the target responsibility system has been instrumental in motivating local government officials to act on climate change. For many provincial governments, CDM has been attractive primarily because it provides new sources of revenue to local projects (many of which are owned by SOEs), but also because it provides incentives for investment in renewable energy projects, and thus contributes to meeting climate-related targets set by the central government. There are, therefore, direct incentives for officials within provincial DRCs to ensure projects are implemented quickly and efficiently, and deliver desired local benefits.

Direct incentives for provincial officials ensure projects deliver desired local benefits.

First-of-their-kind restrictions on projects to promote Chinese objectives

Although the Chinese Government actively supports the CDM, China is unique amongst host countries in imposing a number of approaches that are effectively restrictions on CDM projects. These approaches include:

- a floor price for CERs
- a levy of between 2% and 65% on CER revenue
- a requirement that project entities must be under Chinese control
- a limit to the volume of CERs to be sold from an individual project.

A floor price for CERs

From the outset, the DNA imposed an unwritten floor price on the sale of CERs. The DNA requires the Emission Reduction Purchase Agreement to be submitted as part of the application for CDM approval. The floor price was enforced by refusing approval for projects where the purchase price was deemed to be too low. The floor price had been kept stable at 8 euros – or even higher for some project types, such as wind power – since 2008. In early 2012, however, the floor price was lowered to 7 euros, as a response to CERs' hitting record-low prices.

The floor price was officially introduced by the Government in 2005, to ensure a fair price for Chinese project owners: 'CER prices should amply reflect the incremental costs of the CDM project, including investment and operation/maintenance costs, PDD development, validation, registration, administration and adaptation levies, among others'.[3] The floor price also prevented 'cheap' Chinese CERs flooding the market and lowering prices globally, an outcome the Chinese Government was keen to prevent.

A levy of between 2% and 65% on CER revenue

The levy imposed on CER revenues allows the Government to share in the benefits of implementing CDM projects. It also provides resources for funding sustainable development initiatives. Projects with higher sustainable development benefits, such as renewable energy and energy efficiency projects, are subject to the lowest levy of 2%. Other project types, which tend to generate much larger volumes of CERs at relatively low production costs, have much higher levies applied; for example, 30% on nitrous oxide destruction projects from the adipic acid industry. A 65% levy is applied to hydrofluorocarbon destruction projects. Figure 2 shows the proportion of registered projects in China by project type. Over 90% of all projects are in priority sectors encouraged by the Chinese Government (i.e. renewable energy and energy efficiency projects, which have high local sustainable development benefits). Levies collected are transferred to the state-controlled CDM Fund.

Project entities must be under Chinese control

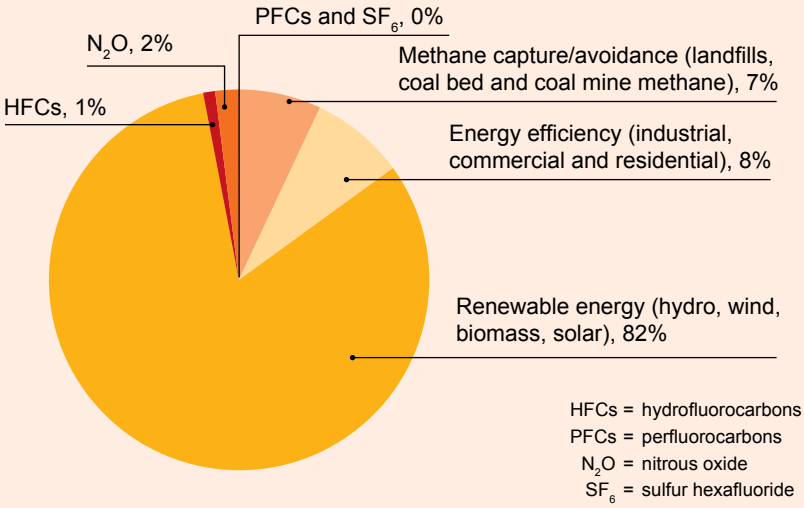
To be eligible to implement a CDM project, a project developer must be Chinese-controlled. In practice this means that a project entity must be either a Chinese domestic entity or a joint venture in which the foreign shareholding is no more than 49%.

Limit to the volume of CERs to be sold from an individual project

Chinese letters of approval specify the maximum volume of CERs, based on PDD estimates, which can be transferred from a project to a buyer. Although most projects tend to underperform in terms of PDD expectations, if a project does exceed this cap then the Chinese project developer requires additional approval, potentially subject to new restrictions, before selling CERs. This is an extension of the CER floor measure where the Chinese Government wanted to ensure that Chinese CERs were not being sold to buyers too cheaply.

These approaches were used in Chinese projects with the objective of protecting Chinese interests and promoting equitable sharing of the benefits obtained from selling CERs – and they seem to be working.

Figure 2. Number of registered projects in China by project type



Data source: UNEP Risoe CDM/JI Pipeline Analysis and Database (2012). http://www.cdmpipeline.org/cdm-projects-region.htm

Implications

To successfully harness new and/or complex market mechanisms like CDM, government officials should do the following:

- Coordinate all international capacity building projects through a powerful gatekeeper agency (or agencies) that is not afraid to walk away from projects or negotiate strongly to achieve the government's desired outcomes. The gatekeeper agency should play a strong coordination role to ensure minimal overlap between projects and that each capacity building project is focused on different needs at the national, local or entity level.
- Establish regional capacity building/service centres to identify potential opportunities and provide assistance to project developers and government officials on the ground.
- Involve 'heavy-hitting' ministries rather than the environment ministry, which is not usually a power broker within government.
- Incorporate regular project checks into the project approval cycle to monitor progress on an ongoing basis, not just at the approval stage. This approach enables the government to monitor projects throughout their lifetime and helps ensure that desired local sustainable development benefits are actually being achieved.
- Make use of targeted approaches that promote equity within the market or protect domestic interests, where appropriate.

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About CDKN

The Climate and Development Knowledge Network (CDKN) aims to help decision-makers in developing countries design and deliver climate compatible development. We do this by providing demand-led research and technical assistance, and channelling the best available knowledge on climate change and development to support policy processes at the country level.

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