Key point

- China is the world’s largest carbon dioxide emitter and Clean Development Mechanism host. Although still in the initial stage, the Chinese Government is setting up a carbon trade system to achieve its mitigation targets cost-effectively.

There was a problem...

Along with its increased energy consumption, the greenhouse gas emissions in China have attracted tremendous concern from the world community. The total amount of carbon dioxide emissions in China increased by 9.1 per cent from its 2008 levels and exceeds 7 billion tonnes today, making China the world’s largest greenhouse gas emitter.1

At the same time, China has become the largest Clean Development Mechanism host and maintained its overall dominance with a 72 per cent share of the market in 2009, even under the influence of an economic downturn (figure 1). China’s contribution created a carbon market of US$2 billion accumulatively and helped to reduce its carbon dioxide emissions.2

Figure 1: The market share of Clean Development Mechanism projects in 2009


Voluntarily confronting the largest sources of emissions
China’s carbon trade

What was done?

In March 2011, China released its Twelfth Five-Year Plan for National Economic and Social Development (2011-2015), which formally stated that China is planning to set up a carbon trade market, step by step, over the next five years.3

China will introduce a carbon trade system that helps to:

- Secure the economic growth while controlling carbon dioxide emissions
- Achieve the national mitigation target cost-effectively.

Setting national targets

For the carbon trade market, a national target was set in the Twelfth Five-Year Plan. Additionally, a set of national targets related to the carbon trade were established for both the short and long terms and could be a compelling force or catalyst for the Chinese carbon trade market (table 1).

Table 1: The national targets related to carbon trade in China


Encouraging Clean Development Mechanism projects

The National Coordination Committee on Climate Change supervises the Clean Development Mechanism trading, nearly representing the entire carbon trade in China now (figure 2).4


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Table 1: The national targets related to carbon trade in China

<table>
<thead>
<tr>
<th>Name</th>
<th>Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Short-term</strong></td>
<td></td>
</tr>
<tr>
<td>Twelfth Five-Year Plan on National Economic and Social Development(2011–2015)</td>
<td>Steadily set up the carbon trade market and accelerate the implementing of pilot projects of low-carbon cities.</td>
</tr>
<tr>
<td>Twelfth Five-Year Plan on National Economic and Social Development(2011–2015)</td>
<td>Reduce the energy intensity (energy consumption per unit GDP) by 16 per cent in 2011–2015.</td>
</tr>
<tr>
<td>Twelfth Five-Year Plan on National Economic and Social Development(2011–2015)</td>
<td>At least 11.4 per cent of primary consumption to come from non-fossil fuel by 2015.</td>
</tr>
<tr>
<td><strong>Long-term</strong></td>
<td></td>
</tr>
<tr>
<td>Mitigation target</td>
<td>Reduce the carbon intensity(carbon dioxide emission per unit GDP) by 40–45 per cent of 2005 levels by 2020</td>
</tr>
<tr>
<td>Renewable energy target</td>
<td>At least 15 per cent of the primary consumption will come from non-fossil fuel by 2020</td>
</tr>
</tbody>
</table>


Encouraging Clean Development Mechanism projects

The National Coordination Committee on Climate Change supervises the Clean Development Mechanism trading, nearly representing the entire carbon trade in China now (figure 2).4

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There are four priority fields for Clean Development Mechanism projects, ranging from renewable energy and energy efficiency to alternatives of methane and fuels. These fields were favoured in the application of domestic projects (Table 2).

**Table 2: The preference fields of Clean Development Mechanism projects in China**

<table>
<thead>
<tr>
<th>Fields</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>New and renewable energy</td>
<td>Wind power, hydro power, biomass and solar PV stations</td>
</tr>
<tr>
<td>Energy efficiency</td>
<td>Power generation from waste gas and heat</td>
</tr>
<tr>
<td>Alternatives of CH₄</td>
<td>Coal bed methane</td>
</tr>
<tr>
<td>Alternatives of fuel</td>
<td>Natural gas</td>
</tr>
</tbody>
</table>


**Financing**

A national Clean Development Mechanism fund was established to dole out grants that support policy research, academic activities, international cooperation and education activities on climate change as well as green investments, including equity investments, loans and financing guarantees.²

**Setting up national carbon exchange centres**

Three voluntary environmental exchange centres were established in Beijing, Tianjin and Shanghai in 2008 through private sector collaborations, with approval from the municipal governments. These are pilots for testing the use of domestic emission trading as a tool to support the climate change mitigation strategy (Table 3).
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### Table 3: The three primary carbon exchange centres in China

<table>
<thead>
<tr>
<th>Name</th>
<th>Founding date</th>
<th>Description</th>
</tr>
</thead>
</table>
| China Beijing Environmental Exchange (CBEEX) | 5 August 2008 | • The China Beijing Environmental Exchange provides a market platform for trading various environmental commodities.  
• The CBEEX also facilitates CDM transactions and is generating market demand for voluntary emissions reduction. |
| Tianjin Climate Exchange (TCX) | 26 September 2008 | • The Tianjin Climate Exchange is China’s first integrated exchange for the trading of environmental financial instruments.  
• Its focus is similar to the CBEEX but it also promotes energy efficiency through intensity-based emissions trading, particularly for heating suppliers.  
• The first sale was in February 2010. After the pilot phase, the Tianjin plan may be extended to cover all public, commercial and residential buildings and their heating suppliers. |
| Shanghai Environment Energy Exchange (SEEE) | 5 August 2008 | • The Shanghai Environment Energy Exchange provides a platform for trading asset rights, creditors’ rights, stock rights and intellectual property rights, focusing on the environment and energy.  
• It is exploring a new market mechanism aligned with the requirements of the Clean Development Mechanism.  
• The exchange is intended to reduce transaction costs and bring more transparency to certified emissions reduction pricing. |


### Creating the voluntary emissions reduction market

As a non-Annex I country of the Kyoto Protocol, China has no mandatory emission reduction obligation, which means that the voluntary emissions reduction market might be important to establish a strong demand for the domestic carbon market.

For the voluntary reduction market, the China Beijing Environmental Exchange is developing a “Panda Standard” for domestic greenhouse gas offset assets in the agriculture and forestry sectors, with social co-benefits (figure 3).6

According to the Panda Standard website, “The China Beijing Environment Exchange (CBEEX) and Blue Next founded the Panda Standard as the first Chinese domestic voluntary carbon standard, designed to provide transparency and credibility in the nascent Chinese carbon market” and to advance the Government’s poverty alleviation objectives by encouraging investments in the rural economy. The Panda Standard supports the Government’s commitment to reduce the greenhouse gas emissions intensity of its economy, help develop national capacity in domestic voluntary carbon markets, and promote agriculture, forestry and other land use greenhouse gas offset projects “with significant poverty alleviation benefit.”7

The Panda Standard version 1.0 was launched at the Conference of Parties 15 in Copenhagen in December 2009. It describes the overall organization of the Panda Standard Association and the core procedures of its project certification scheme, which aim at providing transparency and credibility in the Chinese carbon market.

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7 ibid.
Results

According to World Bank data, China has become the world’s largest Clean Development Mechanism host since 2005, with a market share of more than 50 per cent (figure 4).

By the end of July 2011, China had approved 3,154 Clean Development Mechanism projects, mainly in new energy and renewable energy, energy conservation and energy efficiency. Among them, 1,560 projects successfully registered with the United Nations Clean Development Mechanism Executive Board, accounting for 45.7 per cent of the total registered projects. The certified emission reductions issued was about 328 million tons of carbon dioxide equivalent, nearly 63.84 per cent of the world’s total issued emissions reductions. 

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