Status of China’s regional trading programs

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Background

- **GDP:**
  - 40 thousand billion RMB in 2010

- **GDP per capita**
  - 5,000 USD
  - Middle income level
Background

• China’s economic structure
  – During industrialization phase

![Graph showing economic structure from 1978 to 2010](chart.png)
Background

- China’s population and urbanization
  - Population: 1.35 billion
  - Urbanization: 50%
Background

- Energy consumption 3.25 billion tce in 2010
- Decoupling of economic growth and energy consumption during the 11th FYP
Background

• Policy context, objectives and envisioned role for new market instruments
  – China set the target to reduce its CO2 emissions per unit of GDP by 40–45 percent by 2020 compared with the 2005 level.
  – A binding target of reducing the CO2 emissions per unit of GDP by 17% during the 12th Five-Year Plan period was established.
  – China initiated low carbon pilot projects in five provinces and eight cities.
  – The National People’s Congress approved Outline of the 12th Five-Year Plan, which clearly mentions that China will establish statistical and verification systems for GHG emissions and gradually establish a carbon emissions trading system.
Background

• Overview of China’s GHG emission
  – According to China’s National Program on Climate Change, China’s total GHG emissions in 2004 were 6.1 billion tons of CO2 equivalents.
  – After removing the amount of carbon sink, the net emission of GHG in China in 2004 was 5.6 billion tons of CO2e.
  – China is still at a lower stage of development with a huge population.
Background

• Interest in carbon market
  
  – Emissions trading could help achieve the objective of controlling GHG emissions at lower costs.
  
  – The Government of China will, according to the requirements of the Outline of the 12th Five-Year Plan, gradually establish a market system for carbon emissions trading to promote the achievement of its carbon intensity reduction objective.
  
  – The National Development and Reform Commission (NDRC), is prompting with great efforts the establishment of a carbon market.
    
    • To promote trading of voluntary credits generated on a project-by-project basis
    
    • To organize relative provinces and municipalities to introduce emissions trading systems.
    
    • Try to establish a unified national system in 2015.
Background

- Key relevant initiatives
  - Strengthening local capacity to compile local greenhouse gas inventories
    - NDRC has published guidelines for compilation of provincial greenhouse gas inventories, and initiated the work on the compilation of local greenhouse gas inventories.
  - Plans to organize research on guidelines for emission accounting for key sectors
    - NDRC is now organizing research on the methodology for emission accounting for key sectors, and will publish guidelines for emissions calculation.
Pilot project at local level

- Why these regions?
  - Level of economic development
    - Relatively development
    - Strong economic power
  - Large carbon emission volume
  - Potential market volume
    - Large cap
    - Many market players
    - Trading volume
# Pilot project at local level

## Key index of pilot project provinces

<table>
<thead>
<tr>
<th>Province</th>
<th>GDP per capita (RMB)</th>
<th>Rank</th>
<th>Energy intensity (tce/10,000 RMB)</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beijing</td>
<td>71935</td>
<td>1</td>
<td>0.582</td>
<td>1</td>
</tr>
<tr>
<td>Tianjin</td>
<td>71012</td>
<td>2</td>
<td>0.826</td>
<td>7</td>
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<tr>
<td>Shanghai</td>
<td>65334</td>
<td>3</td>
<td>0.712</td>
<td>3</td>
</tr>
<tr>
<td>Chongqing</td>
<td>27472</td>
<td>14</td>
<td>1.127</td>
<td>14</td>
</tr>
<tr>
<td>Guangdong</td>
<td>44070</td>
<td>6</td>
<td>0.664</td>
<td>2</td>
</tr>
<tr>
<td>Hubei</td>
<td>27876</td>
<td>12</td>
<td>1.183</td>
<td>20</td>
</tr>
</tbody>
</table>
Pilot project at local level

<table>
<thead>
<tr>
<th>Regions</th>
<th>Targets in 12th FYP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beijing</td>
<td>18%</td>
</tr>
<tr>
<td>Tianjin</td>
<td>19%</td>
</tr>
<tr>
<td>Shanghai</td>
<td>19%</td>
</tr>
<tr>
<td>Hubei</td>
<td>17%</td>
</tr>
<tr>
<td>Guangdong</td>
<td>17%</td>
</tr>
<tr>
<td>Chongqing</td>
<td>19.50%</td>
</tr>
<tr>
<td>Shenzhen</td>
<td>(19.50%)</td>
</tr>
</tbody>
</table>

→ **CO2 emission share: 18.64%**

→ **GDP share: 25.66%**
Pilot project at local level

Overall layout roadmap of China’s ETS
Pilot project at local level

- Beijing– published “Proposal on the regulatory framework for the pilot emission trading scheme”
  - Trade subject: enterprises with stationary source emission
  - GHGs included: CO$_2$
  - Trade system: under construction, prior to local exchange
Pilot project at local level

• Cap
  – Account CO2 emission cap according to the target of carbon per unit of GDP decrease during 2011 to 2015

• Allocation
  – Free allowance of 2013 will be allocated according to average annual emission of 2009-2011
  – Little allowance will be auctioned by government in the future
  – Enterprises should submit allowance annually. Allowance can’t be borrowed and will be cleared by the end of 2015.
Pilot project at local level

- Sector selection

- Abatement potential
- Reduction cost
- Sector competitiveness
- MRV infrastructure
Pilot project at local level

• MRV
  – Reporting system for enterprises entered into mandatory carbon market.
  – To publish “GHG accounting guideline” for various sectors
  – Appointed public and private energy service companies (ENSCos) to take on the responsibilities for the monitoring and auditing of the energy consumption in the city
  – Report GHG inventory at enterprise level including accounting methodology and monitor method adopted.
    • The report should be verified by the 3rd party.
## Pilot project at local level

<table>
<thead>
<tr>
<th></th>
<th>2020 GHG emission</th>
<th>Industries covered</th>
<th>Allocation</th>
<th>Register system</th>
<th>MRV</th>
<th>Regulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beijing</td>
<td>GHG inventory, model forecast</td>
<td>≥ 10,000 ton CO2e</td>
<td>Average emission of 2009-2011</td>
<td>Draft</td>
<td>Energy consumption report</td>
<td>Published</td>
</tr>
<tr>
<td>Tianjin</td>
<td>Forecast</td>
<td>Industries with high energy consumption</td>
<td></td>
<td>Draft</td>
<td>Database of emission factors</td>
<td>Draft under discussion</td>
</tr>
<tr>
<td>Shanghai</td>
<td>GHG inventory, model forecast</td>
<td>≥20,000 ton in industry sector; ≥10,000 in service sectors</td>
<td>2009~2011 history emission</td>
<td>Framework established</td>
<td>Report system according to sectors</td>
<td>Published</td>
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<tr>
<td>Hubei</td>
<td>2020 GHG emission report</td>
<td>≥60,000 ton</td>
<td>Under discuss</td>
<td>Research report</td>
<td>Draft “MRV regulation”</td>
<td>Draft incentive regulation</td>
</tr>
<tr>
<td>Guangdong</td>
<td>2015 GHG emission forecast (tech + economic structure)</td>
<td>Industries with high energy consumption</td>
<td>New entrance and existing</td>
<td></td>
<td>National key energy consumption enterprises investigation</td>
<td>Draft</td>
</tr>
<tr>
<td>Chongqing</td>
<td>Accounting report</td>
<td>Enterprises with annual emission beyond 20,000 ton CO2</td>
<td></td>
<td>Under design</td>
<td>Draft technical report</td>
<td>Draft under discussion</td>
</tr>
</tbody>
</table>
Challenges and Problems

- Lack of legislation
  - Except for Shenzhen
- Impact to industries, especially to power industries
- Allocation
  - Rule of fair and transparent to be achieved
  - Allocation to new entrance
- Cross-regional trade
- Unified emission trading system be established
Thanks for your attention!

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