Design features of Hubei ETS pilot in China’s context

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Background of Hubei ETS

- The sole ETS pilot from Central China
- High GDP Growth rate (10.1% in 2013)
- High investment growth rate (81.79% of GDP in 2013)
- Heavy & Chemical industry structure
- Large difference among regions
- Hubei in China like the epitome of China in the world
- Hubei ETS succeeds, China ETS succeeds
GDP growth rate of Hubei in 2013

GDP growth rate

Year | GDP Growth Rate
--- | ---
2005 | 17.00%
2006 | 15.60%
2007 | 22.50%
2008 | 21.45%
2009 | 14.40%
2010 | 22.00%
2011 | 13.80%
2012 | 11.30%
2013 | 10.10%
Industry growth rate of Hubei in 2013:

- Primary industry: 4.70%
- Secondary industry: 11.30%
- Tertiary industry: 10.00%
Industry distribution and difference among regions in Hubei

- Yellow area: secondary industry is more than 70%
- Blue area: secondary industry is more than 60%
- Deep green area: secondary industry is more than 50%
- Aqua area: secondary industry is more than 40%
- Pink area: tertiary industry is larger than secondary industry but the secondary industry is still more than 40%,
CO$_2$ Emissions and Change Rate in Hubei (2006 – 2010)

<table>
<thead>
<tr>
<th>Year</th>
<th>Total CO2 Emissions (10,000 CO2e)</th>
<th>Change Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>24,098.03</td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>26,348.98</td>
<td>9.34%</td>
</tr>
<tr>
<td>2008</td>
<td>27,468.52</td>
<td>4.25%</td>
</tr>
<tr>
<td>2009</td>
<td>29,506.81</td>
<td>7.42%</td>
</tr>
<tr>
<td>2010</td>
<td>35,479.44</td>
<td>20.24%</td>
</tr>
</tbody>
</table>
Carbon Productivity Change Rate (2006 – 2010)

Unit: 100 million RMB/10000 tons

Carbon Productivity (million Yuan/10,000 tons)

2006: 0.32
2007: 0.35
2008: 0.41
2009: 0.44
2010: 0.45
What’s the design features of Hubei ETS?

What’s the significance of Hubei ETS for China’s ETS?
Feature 1:
Try to balance the growth space and the emission reduction in CAP

◆ Middle growth rate + low carbon scenario
(11% in 12\textsuperscript{th} FYP and 10% in 13\textsuperscript{th} FYP)

◆ 2014-2015 whole province emission:
  ◆ 7.31 and 7.93 (100 million ton CO\textsubscript{2})
  ◆ 3.24 and 3.54 (100 million ton CO\textsubscript{2}) covered by ETS
  ◆ 44.32\% and 44.64\%
Feature 2: Rigid CAP and Flexible structure

◆ Rigid CAP
  ◆ Incumbents emission if fixed on the 97% of 2010

◆ Flexible structure
  ◆ Existing firm (fixed)
  ◆ New entrants (Flexible)
  ◆ Government reserve (Flexible)
Feature 3: Focus on the major enterprises

- **60,000** ton of standard coal equivalent based on any year of 2009-2011
- 138 enterprises covered by Hubei ETS
- The third largest ETS in the world
Feature 4:
Diversification of Covered sectors and differentiation of MAC

- Different industry sectors
- Different regions
- Different MAC
Top Ten CO₂ Emission Industries in 2011 in Hubei (Units: 10,000 tons)

- Power and Heat
- Chemicals
- Cement and Glass
- Steel
- Automobile
- Aluminium
- Food Manufacturing
- Food Processing
- Paper and Pulp
- Medicine
Covered Industries and Its Emission Proportion

Number of Enterprises

- Cement and Glass: 43
- Chemicals: 37
- Power and Heat: 27
- Steel and Aluminium: 19
- Food: 8
- Petroleum: 6
- Automobile: 6
- Medicine: 3
- Chemical Fiber: 2
- Paper and Pulp: 2

2010 emission proportion of covered enterprises

2011 emission proportion of covered enterprises
Marginal abatement cost and potential

Marginal abatement cost (unit: 10 thousand Yuan)
Feature 5: strict offset mechanism

◆ 10% CCER to offset
 ◆ Come from Hubei
 ◆ Outside the emission boundary

◆ CCER to trade
 ◆ Come from whole China
Feature 6: Initial Carbon Verification

- Covered enterprises verification one by one
- Confirm emission boundary
- Confirm emission data
- Training and wash brain
Feature 7: Price mechanism

◆ Demand and supply decide basically
  ◆ Institute and individual investors can trade

◆ Price discovery mechanism
  ◆ 3% allowance auction

◆ Price stability mechanism
  ◆ Open market operation by government reserve
  ◆ Post-adjust the structure and amount of the reserve allowance
Feature 8: High cost of default

- Double deduction
  - The allocation of allowance in next year will be double deducted based on the balance between the implementation and actual emission

- Half allocation
  - The allocation of allowance just be half for enterprises to provide false data or impede MRV
Thank You