Decision Making and Policy Choice in China ETS

TANG JIN
SINO CARBON, LTD

May 8-9, 2014
Mexico City, México
Contents

1. Backgrounds
2. General Approach
3. Elements of Pilots System
4. Expectations
1. Backgrounds

(1) International Environment

Pressure of international climate negotiations
-- China, largest emitter currently & main source of emissions growth in future

Joining formulation of international climate constructing regulation, Gaining discourse right of low carbon development

-- CO₂ emissions (Tt)
  CHN, 7.95
  MEX, 0.43
  EU, 3.54
  US, 5.29

-- CO₂ / capita (t)
  CHN, 5.92
  MEX, 3.96
  EU, 7.04
  US, 16.94
1. Backgrounds

(2) Domestic Environment

- Transforming development pattern, shifting development model into low carbon
- Ensuring energy security, reducing fossil energy consumption
- Preserving ecological environment, relieving pressure of haze governance
1. Backgrounds

(3) Binding Indicators of Emission Reductions

2015 CO₂ emissions per unit of GDP by 17% compared to 2010, and carried out decomposition for the provinces;

2020 CO₂ emissions per unit of GDP by 40% -45% compared to 2005

• strengthening top level design of low carbon development;
• accelerating the research of low carbon development macro strategy;
• proposing 2030 and 2050 low carbon roadmap;
• study of determining emissions peak.
1. Backgrounds

(4) Possible choice of emission reduction policies

- Command & Control
- Carbon Tax
- Carbon Market
1. Backgrounds

(5) Carbon Trading written into the Official Plan

Oct.2010，The State Council on Decision to Speed up Cultivating and Developing Strategic Emerging Industries.

12th FYP and 12th FYP of Controlling Greenhouse Gas Emissions.

May 2013, the Views on 2013 to Deepen Economic Reform Priority Work.

2. General Approach
(1) Parallel Approach

**Bottom Up**
- *Carbon Emission Trading Pilot Programmes* in 2 provinces and 5 municipalities
- Accumulating experiences and to lay foundation for the national carbon market

**Top Down**
- Voluntary Trading on Emission Reductions (CCER)
- National Registry System
- MRV Guidelines of Key Sectors
- National Carbon Market (Partnership for Market Readiness, PMR)
2. General Approach

(2) Basic Framework of the Construction of ETS

Basic Framework of the Construction of ETS

- Coverage
- Cap Setting
- Allowance Allocation
- MRV
- Compliance Mechanism

Supporting Tools
- Registry System
- Reporting System
- Trading platform

Relevant Institutions
- Competent Authority
- Regulatory Body
- Financing Institutions

Regulatory Mechanisms
- Pricing Control
- Allowance Banking
- Offset Mechanisms

Laws and Regulations
3. Elements of Pilots System

(1) Overview

- **Chongqing**
  - Population: 31.0 m
  - GDP: 1.15 trillion
  - Energy Consumption: 79.5 Mtce

- **Beijing**
  - Population: 19.6 m
  - GDP: 1.78 trillion
  - Energy Consumption: 69.9 Mtce

- **Tianjin**
  - Population: 14.1 m
  - GDP: 1.29 trillion
  - Energy Consumption: 76.0 Mtce

- **Hubei**
  - Population: 59.8 m
  - GDP: 1.78 trillion
  - Energy Consumption: 123.3 Mtce

- **Shenzhen**
  - Population: 10.5 m
  - GDP: 1.30 trillion
  - Energy Consumption: 54.3 Mtce

- **Shanghai**
  - Population: 23.8 m
  - GDP: 2 trillion
  - Energy Consumption: 112.7 Mtce

- **Guangdong**
  - Population: 105.1 m
  - GDP: 5.7 trillion
  - Energy Consumption: 241.3 Mtce
3. Elements of Pilots System

(2) Allowance Volume

- Total volume of allowances in 1st compliance period of 6 Pilots is about 1.124 billion tons
- Rank 2nd worldwide, behind EU ETS
3. Elements of Pilots System

(3) Legislation

- Local Congress
- Local government
- Shanghai
- Guangdong
- Shenzhen
- Hubei
## 3. Elements of Pilots System

**(4) Coverage**

<table>
<thead>
<tr>
<th>Pilots</th>
<th>Covered sectors</th>
<th>Threshold (tons)</th>
<th>Covered entities</th>
<th>Percentage of covered emission, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shenzhen</td>
<td>Industrial sectors (Power, Manufacturing, etc); Buildings</td>
<td>3,000</td>
<td>635</td>
<td>54</td>
</tr>
<tr>
<td>Shanghai</td>
<td>Industrial sectors (Steel, Chemical, Petrochemical, Power, etc); Non-industrial sectors (Airlines, Airports, Ports, Hotels, etc)</td>
<td>20,000</td>
<td>191</td>
<td>57</td>
</tr>
<tr>
<td>Beijing</td>
<td>Power, Heat supply, Cement, Petrochemical, other industrial sectors, Service</td>
<td>10,000 or 5,000 tce</td>
<td>490</td>
<td>49</td>
</tr>
<tr>
<td>Guangdong</td>
<td>Power, Cement, Petrochemical, Steel</td>
<td>10,000</td>
<td>242</td>
<td>50</td>
</tr>
<tr>
<td>Tianjin</td>
<td>Power, Heat supply, Chemical, Petrochemical, Steel, Oil and gas production</td>
<td>20,000</td>
<td>114</td>
<td>60</td>
</tr>
<tr>
<td>Hubei</td>
<td>Power, Steel, Petrochemical, Cement, Auto production, Nonferrous metal, Glass, Paper, etc</td>
<td>60,000 tce (Comprehensive Energy Consumption)</td>
<td>138</td>
<td>35</td>
</tr>
</tbody>
</table>
4. Expectations

- Market is just in infant stage
- Challenging for a fast growing economy
- Learning by Doing Process
- Legal stringency and compliance force need to be strengthened
- Institutional capacity needs to be further enhanced
Cap setting and allocation in China ETS

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SINO CARBON, LTD

May 8-9, 2014
Mexico City, México
Difficulties of cap setting and allocation in China ETS

- Emission growth fast
- Lack of data in the initial phase
- Special system of the power sector: fixed price, planned generation.
Things considered when setting caps in China ETS pilots

- local targets of carbon intensity in the five-year plan
- expected economic growth
- the coverage of ETS
- other relevant policies
## Caps of China ETS pilots

<table>
<thead>
<tr>
<th>Pilot ETS</th>
<th>Caps</th>
<th>Fixed cap?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2013</td>
<td>2014</td>
</tr>
<tr>
<td><strong>Shenzhen</strong></td>
<td>33 Mt</td>
<td>34Mt</td>
</tr>
<tr>
<td><strong>Shanghai</strong></td>
<td>unpublished</td>
<td>unpublished</td>
</tr>
<tr>
<td><strong>Beijing</strong></td>
<td>unpublished</td>
<td>TBD</td>
</tr>
<tr>
<td><strong>Guangdong</strong></td>
<td>388 Mt</td>
<td>TBD</td>
</tr>
<tr>
<td><strong>Tianjin</strong></td>
<td>unpublished</td>
<td>TBD</td>
</tr>
<tr>
<td><strong>Hubei</strong></td>
<td>-</td>
<td>324 Mt</td>
</tr>
</tbody>
</table>
## Overview of allocation in China ETS pilots

<table>
<thead>
<tr>
<th>Pilot ETS</th>
<th>Free Allocation</th>
<th>Reserve</th>
<th>Auction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shenzhen</td>
<td>Benchmark</td>
<td>2%</td>
<td>More than 3%</td>
</tr>
<tr>
<td>Shanghai</td>
<td>Benchmark: power, aviation, airport and port; Grandfathering: others</td>
<td>No reserve</td>
<td>No Auction</td>
</tr>
<tr>
<td>Beijing</td>
<td>Benchmark: new entrants (30 benchmarks) Grandfathering: existing facilities</td>
<td>Not published</td>
<td>5% (draft)</td>
</tr>
<tr>
<td>Guangdong</td>
<td>Benchmark: power, steel (long process), cement(clinker production and cement grinding); Grandfathering: CHP, petrochemical, steel(short process), cement(mining and other grinding)</td>
<td>2013: 35Mt (9%)</td>
<td>3% in 2013 and 2014; 10% in 2015.</td>
</tr>
<tr>
<td>Tianjin</td>
<td>Benchmark: power, heat supply; Grandfathering: others</td>
<td>Not published</td>
<td>Not mentioned</td>
</tr>
<tr>
<td>Hubei</td>
<td>Benchmark: power; Grandfathering: others</td>
<td>Less than 10%</td>
<td>2.4%</td>
</tr>
</tbody>
</table>
Features of allocation in China ETS pilots

- Mostly free allocation

<table>
<thead>
<tr>
<th>Allocation in China ETS</th>
<th>Grandfathering</th>
<th>Benchmarking</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>based on the historical emissions</td>
<td>based on sectoral advanced intensity levels</td>
</tr>
<tr>
<td></td>
<td>based on the historical emission intensities</td>
<td>historical intensity $\times$ actual activities</td>
</tr>
<tr>
<td></td>
<td>benchmark $\times$ historical / actual activities</td>
<td></td>
</tr>
</tbody>
</table>
Features of allocation in China ETS pilots

- Pre-allocation and *ex-post* adjustment(except Guangdong)
  - To cope with the uncertainty of economy/emission growth
  - For power sector in China (strictly regulated).
  - Final allocation are determined by actual activities, and carbon intensity based on either benchmark or historical intensity.
  - The allocation is adjusted after the verification.

<table>
<thead>
<tr>
<th>Pilot ETS</th>
<th>Sectors with <em>ex-post</em> adjustment allocation</th>
<th>Allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shenzhen</td>
<td>All sectors</td>
<td>Benchmark $\times$ actual activities</td>
</tr>
<tr>
<td>Shanghai</td>
<td>Power, aviation, airport and port</td>
<td>Benchmark $\times$ actual activities</td>
</tr>
<tr>
<td>Beijing &amp; Tianjin</td>
<td>Power and heat supply</td>
<td>historical average carbon intensity $\times$ actual power &amp; heat supply</td>
</tr>
<tr>
<td>Hubei</td>
<td>Power</td>
<td>historical average emissions $\times$ 50% + benchmark $\times$ (actual electricity generation - historical electricity generation) $\times$ 50%</td>
</tr>
</tbody>
</table>
Special designs of allocation in different China ETS pilots

• Shanghai

- Reward early action, converted from verified energy saving programmes, such as EMC, from 2006 to 2011.
- Adjust intensity benchmark with the performance curve for power plant
- Use designed value such as capacity, load rate and production time to determine the allowances for new entrants
Special designs of allocation in different China ETS pilots

• Shenzhen:
  - Use production value, namely industrial added value as activities of the sectors except power generation, water supply and gas supply.

• Beijing and Tianjin:
  - Use historical intensity, instead of benchmark, to determine the allowances of the power and heat supply sector.
  - Use benchmarks and actual activities to determine the allowances for new entrants.
Special designs of allocation in different China ETS pilots

• Guangdong:
  ➢ The covered entities need to purchase a certain percentage allowance (3% from 2013 to 2014, and 10% for 2015) before gaining free allowance.

• Hubei:
  ➢ Combine grandfathering and benchmarking to determine the allowances of power sectors.
Challenges of cap setting and allocation in China ETS pilots

• Potential carbon leakage between different regions

• Difficulty in verification of activity data, especially production value

• Transition from different allocation designs of the pilot ETS to unified national ETS in the future
MRV, Data & Registry

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SINO CARBON, LTD

May 8-9, 2014
Mexico City, México
Content

• MRV design features
  – MRV Overview in China
  – Pilot Scheme
  – National MRG

• Data & Registry design features
  – Establishing process
  – Designing framework
  – Innovative design
1. 1 MRV Overview in China

- Existing MRV programs in China
  - Enterprise level
    - ETS Pilots
      - 5 cities: Beijing, Shanghai, Shenzhen, Tianjin, Chongqing
      - 2 provinces: Guangdong, Hubei
    - National MRG
      - Released for 10 sectors
      - 8 sectors ongoing
  - Project level
    - CDM
    - CCER
1.2 MRV in Pilots - Coverage

**Gas Type**

- CO$_2$
- CH$_4$
- N$_2$O
- HFC
- PFC
- SF$_6$

**Organizational boundary**

- Legal Person
- Boundary per ISO standard *

* Operational control/shareholding
## 1.2 MRV in Pilots - Coverage

<table>
<thead>
<tr>
<th>Emission Source</th>
<th>Direct emission</th>
<th>Common</th>
<th>Exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combustion</td>
<td></td>
<td>All</td>
<td></td>
</tr>
<tr>
<td>Process</td>
<td></td>
<td>All</td>
<td></td>
</tr>
<tr>
<td>Waste treatment</td>
<td></td>
<td></td>
<td>National, TJ, SH, SZ, HB</td>
</tr>
<tr>
<td>Mobile source</td>
<td></td>
<td></td>
<td>BJ, GD</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Indirect emission</th>
<th>Common</th>
<th>Exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity</td>
<td>All</td>
<td>BJ</td>
</tr>
<tr>
<td>Heat</td>
<td></td>
<td>BJ</td>
</tr>
</tbody>
</table>
### 1.2 MRV in Pilots - Coverage

#### Threshold

<table>
<thead>
<tr>
<th>Pilots</th>
<th>ETS</th>
<th>Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Carbon emission, t</td>
<td>Other</td>
</tr>
<tr>
<td>Beijing</td>
<td>10,000</td>
<td>5,000 tce</td>
</tr>
<tr>
<td>Shenzhen</td>
<td>3,000</td>
<td>10,000 m² building</td>
</tr>
<tr>
<td>Shanghai</td>
<td>Industry: 20,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other: 10,000</td>
<td></td>
</tr>
<tr>
<td>Guangdong</td>
<td>20,000</td>
<td></td>
</tr>
<tr>
<td>Chongqing</td>
<td>20,000</td>
<td></td>
</tr>
<tr>
<td>Tianjin</td>
<td>20,000</td>
<td></td>
</tr>
<tr>
<td>Hubei</td>
<td>60,000 tce</td>
<td></td>
</tr>
</tbody>
</table>
1.2 MRV in pilots - Quantification

Methodology choice

• Calculation-based methodology
  – *Standard method* for normal sector
  – *Mass balance method* for complex sector and production process

• Measurement-based methodology
  – Only in some pilots
  – Require additional proof of reasonable uncertainty
### 1.2 MRV in pilots - Quantification

#### Data Acquisition Requirement

<table>
<thead>
<tr>
<th>General requirement</th>
<th>Tier approach (Shenzhen)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Activity data</strong></td>
<td><strong>Similar to the EU ETS</strong></td>
</tr>
<tr>
<td>- Derived from energy or material consumption</td>
<td><strong>Set out data tiers</strong></td>
</tr>
<tr>
<td><strong>Emission factor</strong></td>
<td><strong>Prioritize higher level</strong></td>
</tr>
<tr>
<td>- Measure (mandatory for some sector)</td>
<td><strong>Provide reasons to apply lower level</strong></td>
</tr>
<tr>
<td>- Default</td>
<td></td>
</tr>
<tr>
<td><strong>Indirect emission data</strong></td>
<td></td>
</tr>
<tr>
<td>- Activity data: Invoice/receipt</td>
<td></td>
</tr>
<tr>
<td>- Emission factor: default</td>
<td></td>
</tr>
</tbody>
</table>
1.2 MRV in pilots - Verification

- Verified by: Third Party Verifiers
- Funded by: DRC

<table>
<thead>
<tr>
<th>Pilots</th>
<th>Number of verifiers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beijing</td>
<td>15</td>
</tr>
<tr>
<td>Tianjin</td>
<td>4</td>
</tr>
<tr>
<td>Shanghai</td>
<td>10</td>
</tr>
<tr>
<td>Guangdong</td>
<td>5</td>
</tr>
<tr>
<td>Shenzhen</td>
<td>18</td>
</tr>
</tbody>
</table>
1.3 National MRG- Boundary

- Accounting boundary
  - Legal Person
  - All emission sources in relation to production activity (Direct emission and Indirect emission)
  - Covered 6 emissions (CO2, CH4, N2O, HFCs, PFCs, SF6)
  - Accounting methodology easy to use, high applicability
1.3 National MRG- Power

### MRG for power sector

**Accounting scope**
- Power generation and Power T&D

**Emission source**
- Power generation: fossil combustion, desulfurization, electricity consumption
- Power Grid: maintenance and recycle of SF6-used equipment, lost in T&D

**Gas type**
- CO$_2$ and SF$_6$

**Methodology**
- Calculation-based
1.4 Lessons Learned

Detail design and precise interpretation of provision on Boundary

Choose right methodology for the sectors based on complexity of production process and product structure

Uncertainty of CEMS could be an issue, as well as calibration and maintenance

SMEs lack of capacity for acquiring accounting parameters, e.g. CPE, NCV, OX
2. DATA & REGISTRY
2. Progress of Registry Development

**Pilots**
- Registries of 6 pilots up and running
- Chongqing still in development

**National Registry**
- Ready for CCER registration
- Allowance registration in preparation
2.1 Process for Building Registry

Need
- Framework
- External relations
- Interface spec.

Business volume
- System performance

Security
- Level of protection

Operational Preparation
- Budget and timeframe
- Technology choice
- Network
- Hardware
2.2 Design consideration of National ETS Registry

Account structure
- Single user account VS. Multiple user account
- Level of permission
- Role of different user

Rules for transferring carbon unit
- Transfer with/without confirmation

Types of carbon unit
- Allowance/Credits
2.3 Linkage with Trading platform

- Trading account
- Registry system
- Exchange Deliver Account
- Trading system
- Banking system

Linkage:
- Data exchange
- Transfer instruction
- Information inquiry
- Results of information inquiry
- Transfer results
- Transfer
2.4 Special issues

Relation between Pilots and National Scheme in terms of Offset Mechanism

- Independent CCER registries
- Synchronization when Transferring CCER
Use of Offsets in China ETS

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May 8-9, 2014
Mexico City, México
Pilots’ Offsetting Rules

All pilots recognize **CCER (China Certified Emission Reduction)** as eligible offsetting credit

<table>
<thead>
<tr>
<th>Pilots</th>
<th>Compliance Percentage</th>
<th>Local Restriction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shenzhen</td>
<td>10%</td>
<td>-</td>
</tr>
<tr>
<td>Shanghai</td>
<td>5%</td>
<td>-</td>
</tr>
<tr>
<td>Beijing</td>
<td>5%</td>
<td>≥50%</td>
</tr>
<tr>
<td>Guangdong</td>
<td>10%</td>
<td>≥70%</td>
</tr>
<tr>
<td>Tianjin</td>
<td>10%</td>
<td>-</td>
</tr>
<tr>
<td>Hubei</td>
<td>10%</td>
<td>100%</td>
</tr>
<tr>
<td>Chongqing</td>
<td>8% (draft)</td>
<td>-</td>
</tr>
<tr>
<td>Elements</td>
<td>Contents</td>
<td></td>
</tr>
<tr>
<td>----------------------------------</td>
<td>--------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Administrative Measures</td>
<td><strong>Interim Measures for Managing Greenhouse Gas Voluntary Emission Reduction Trading</strong></td>
<td></td>
</tr>
<tr>
<td>Project Submission Templates</td>
<td><strong>Application documents for GHG voluntary emissions reduction projects &amp; certified emission reduction</strong></td>
<td></td>
</tr>
<tr>
<td>Validation and Verification Rules</td>
<td><strong>Guidelines on Validation and Verification of Greenhouse Gas Voluntary Emissions Reduction Projects</strong></td>
<td></td>
</tr>
<tr>
<td>Trading Platforms</td>
<td><strong>Carbon exchanges in 7 pilots</strong></td>
<td></td>
</tr>
</tbody>
</table>
| Third Parties                    | • **CQC**  
• **CEPREI**  
• **CEC**                                                         |
| Methodologies                    | 178 methodologies,  
• 173 from CDM methodologies, 5 new methodologies  
• Regular Program: 96, Small Program: 78, Forestry: 4 |
| Info-Platform                    | **China Certified Emission Reduction Exchange Info-Platform**             |
| Projects Submission              | 23 projects have submitted, and discussed by the Board.                  |
| Projects Registration            | 1st batch of 2 projects were registered.                                 |
Eligibility Criteria

• Projects constructed *after Feb. 16, 2005*,

① New projects developed applying methodologies approved by NDRC

② Projects approved as CDM projects by NDRC but not registered at CDM Executive Board

③ Projects approved as CDM projects by NDRC and emissions reduction generated before registration at CDM Executive Board

④ Projects registered at CDM Executive Board, but CER issuance not happened
Project Development Cycle

- Project Evaluation
  - Owner and Developer

- Project Design
  - Owner and Developer

- Validation
  - Validation Entity

- Project Registration
  - CCER Project

- Project Implementation and Monitoring
  - Owner

- Verification
  - Verifier

- CCER Issue
  - CCER
Projects under Validation (As of 2014/04/30)

- total 162 projects under validation, with total Expected Annual Emission Reductions of \(33,195,656 \text{ tCO}_2\text{e}\)
- 99 projects have been registered at UN CDM EB,
- 79 pre-CDMs
Supporting for both future National ETS and voluntary emissions reduction trading

Cooperation projects between NDRC and UNDP

Implantation Agency: Tsinghua University, SCII, NCSC

Progress

April 2013, completing design of technical aspects
July 2013, completing IT technical design
March 2014, hardware bidding
June 2014, planned date of launch
Potential Issues of Use of Offsets

- Due to NDRC’s cautious approach, registration of CCER projects is in a slow progress
- CCER has not issue as yet, hard to catch up with the pilots 1\textsuperscript{st} compliance
- NDRC are negotiating with CDM EB to avoid double accounting of registered CDM projects
- Short time between planned date of launching registry system and 1\textsuperscript{st} compliance period, may affect CCER trading
Carbon Allowance Auction in China ETS

TANG JIN
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May 8-9, 2014
Mexico City, México
## Auction Situation

<table>
<thead>
<tr>
<th>Pilot</th>
<th>Implementing</th>
<th>Coming Soon</th>
<th>Mentioned but no details</th>
<th>No Auction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shenzhen</td>
<td></td>
<td>√</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shanghai</td>
<td></td>
<td></td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>Beijing</td>
<td></td>
<td>√</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guangdong</td>
<td>√</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tianjin</td>
<td></td>
<td></td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>Hubei</td>
<td>√</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Auction Difference

<table>
<thead>
<tr>
<th>Pilot</th>
<th>Auction Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guangdong</td>
<td>3% allowance for mandatory auction + Part of government reserve allowance</td>
</tr>
<tr>
<td>Hubei, Shenzhen and Beijing</td>
<td>Part of government reserve allowance</td>
</tr>
</tbody>
</table>
Use of Revenues

• Shenzhen will establish a fund to
  --stabilize market price
  --support capacity building

• No further information in Guangdong, Beijing and Hubei.
Guangdong has 6 auctions, sold 9.76 Mt for 585.63 million RMB. All settlement prices were 60 CNY.
Auctioning at Hubei Market

<table>
<thead>
<tr>
<th>Date</th>
<th>Year of Allowances</th>
<th>Auction (Mt)</th>
<th>Clearing Price (CNY/t)</th>
<th>Base Price of (CNY/t)</th>
<th>Revenue of Auction (M CNY)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014/3/31</td>
<td>2013</td>
<td>2.00</td>
<td>20</td>
<td>20</td>
<td>40</td>
</tr>
</tbody>
</table>
Experience

• Guangdong
  – 1/4 covered entities, especially small emitters didn’t buy allowance yet

• Hubei
  – The institutional investors won most allowance in the auction
Institutional Arrangement in China ETS

TANG JIN
SINO CARBON, LTD
Institutional Arrangement in China

National Development Reform Commission (NDRC)

Local DRC

Other Relevant Government Departments

Research Institutions
Supporting Agencies
Exchange
Third party Verification Agencies
NDRC

• Design and Implementation of the National ETS
  ➢ Set GHG reduction targets for China
  ➢ Design road map for national ETS
  ➢ Manage, Register and Issue CCER projects
  ➢ Formulate national MRV guidelines for key industries

• Designate the seven pilot ETS
Local DRC

- **Design and Implementation of Pilot ETS.**
  - Overall policy design.
  - Organize MRV related activities.
  - Manage reporting and registry system.
  - Manage compliance activities.
  - Monitor market activities.

- Following orders from NDRC, prepare for national ETS
Other relevant departments

- Legislation—Local Congress
- Management Rules—Municipal government
- Financial Support—Local Financial Bureau
- Urge & Penalty—Department for Energy Saving (Beijing & Shanghai)
Research Institutions

• Assist the government to design ETS scheme
• Review the whole scheme
• Propose improvement suggestions

Supporting Agencies

• Manage registry and reporting system
Exchange

- Design policy for pilot ETS
- Design trading rules
- Manage auctions and daily trades
- Manage exchange system
Third Party Verification Agencies

• Verifies emission data
• Assist local DRC to manage covered entities
• Composed of certification company, consultant company and research institute
Enabling trading and business preparation in China ETS

TANG JIN

SINO CARBON, LTD

May 8-9, 2014
Mexico City, México
Carbon Price in China

Price (CNY)

- Shenzhen
- Beijing
- Shanghai
- Tianjin
- Guangdong
- Hubei
Accumulated Trading Value

- As of April 30, 2014, the total trading volume of 6 pilots is 3,116,778 t, and the total value is 99.75 million CNY.
## Various Participants

<table>
<thead>
<tr>
<th></th>
<th>Covered Entities</th>
<th>Institutional Investor</th>
<th>Individual Investor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shenzhen</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>Shanghai</td>
<td>√</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beijing</td>
<td>√</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>Guangdong</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>Tianjin</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>Hubei</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
</tbody>
</table>
## Trading Products

<table>
<thead>
<tr>
<th></th>
<th>2013 Allowance</th>
<th>CCER</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shenzhen</td>
<td>SZA</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>Shanghai</td>
<td>SHEA 13</td>
<td>√</td>
<td>SHEA14, SHEA15</td>
</tr>
<tr>
<td>Beijing</td>
<td>BEA</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>Guangdong</td>
<td>GDEA</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>Tianjin</td>
<td>TJEA</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>Hubei</td>
<td>HBEA</td>
<td>√</td>
<td></td>
</tr>
</tbody>
</table>

No future or option. Companies cannot hedge risk.
# Trading Manners

<table>
<thead>
<tr>
<th></th>
<th>Open Outcry</th>
<th>Agreement Transfer (OTC)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Corresponding Click</td>
<td>Automatic Matching</td>
</tr>
<tr>
<td>Shenzhen</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>Shanghai</td>
<td></td>
<td>√</td>
</tr>
<tr>
<td>Beijing</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>Guangdong</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>Tianjin</td>
<td></td>
<td>√</td>
</tr>
<tr>
<td>Hubei</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

All transactions, including agreement transfer, have to be accomplished in the exchange.
## Transaction Fee

<table>
<thead>
<tr>
<th>Region</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shenzhen</td>
<td>Open outcry: 0.6% from both sides;</td>
</tr>
<tr>
<td></td>
<td>Online bidding: 5% from both sides;</td>
</tr>
<tr>
<td></td>
<td>Commission: 0.3% from investors under agency members</td>
</tr>
<tr>
<td>Shanghai</td>
<td>0.08% from both sides</td>
</tr>
<tr>
<td>Beijing</td>
<td>Open outcry: 0.75% from both sides</td>
</tr>
<tr>
<td></td>
<td>Agreement Transfer: 0.5% from both sides</td>
</tr>
<tr>
<td>Guangdong</td>
<td>0.5% from both sides</td>
</tr>
<tr>
<td>Tianjin</td>
<td>0.7% from both sides</td>
</tr>
<tr>
<td>Hubei</td>
<td>Open outcry: 0.5% from both sides;</td>
</tr>
<tr>
<td></td>
<td>Online bidding: 4% from both sides;</td>
</tr>
</tbody>
</table>
# Daily Price Limit

<table>
<thead>
<tr>
<th>City</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shenzhen</td>
<td>10%</td>
</tr>
<tr>
<td>Shanghai</td>
<td>30%</td>
</tr>
<tr>
<td>Beijing</td>
<td>None</td>
</tr>
<tr>
<td>Guangdong</td>
<td>10%</td>
</tr>
<tr>
<td>Tianjin</td>
<td>10%</td>
</tr>
<tr>
<td>Hubei</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td>30% (More than 10,000 tons)</td>
</tr>
</tbody>
</table>
Special Trading Rules

• Hubei

➢ The government put government reserve allowance on auction and allow institutional investors to bid. Covered entities didn’t bid because of 100% free allocation. Finally institutional investors won 2 million tons.

➢ After compliance, the authority cancels free-allocated surplus allowances each year.
Special Trading Rules

- Beijing

- The government will **purchase** allowance from the market if price drops down to a certain price;
- The government will **auction** government reserve allowance if price climbs to a certain price;
- The government will **issue** more allowance if price climbs to an extremely high price;
Special Allocation Rules

• Guangdong

- 3% allowance from mandatory auction
- New entrants have to purchase 100%
Thank you!

For more information, please contact:
Tang Jin

✉️ tangjin@sino-carbon.cn