Gold in Green——
Great Potential for Sino-US Cooperation on Green Development from the Case of Tianjin Practice on Green Supply Chain

Tianjin Pilot Center of APEC Green Supply Chain Network
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Washington D.C
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1. China’s Green Actions Create Huge Market Demand
China Actively Participate in Environmental Protection and Climate Change Actions

The Paris Agreement
- Took effective on Nov. 4th, 2016
- Forged and signed by 193 nations
- Global average temperature increase below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5 °C there above

Montreal Protocol on Substances that Deplete the Ozone Layer
- Took effect on Jan. 1st 1989
- The Montreal Protocol was ratified by 197 countries
- 28th Meeting of the Parties of Montreal Protocol on Substances that Deplete the Ozone Layer, held in Kigali, Rwanda, reached a global agreement on phasing down the global climate-warming hydrofluorocarbon (HFC).

G20 summit in 2016 and endorsed the first comprehensive report on green finance
- Proposed to promote green finance voluntary principles, aims to guide governments, international organizations and the private sector to jointly push, improve and advance Sustainable Banking Network (SBN), Principles for Responsible Investment (PRI) as well as other voluntary principles in the green finance domain.
- Germany is to continue the topic of green finance on the G20 summit 2017
China Actively Participate in Environmental Protection and Climate Change Actions

APEC Leadership Embraces Green Development

2011 Leaders’ Declaration

• Receive an APEC-Wide 10% improvement in supply chain performance by 2015
• Develop an APEC List of Environmental Goods, and reduce the tariff rates to 5 percent or Less by 2015

2014 Leaders’ Declaration

• Establish the APEC Cooperation Network on Green Supply Chain.
• Endorse the establishment of the first pilot center of the Network
China Introduced a Series of Green Action Plan to Drive the Huge Market Demand — Pollution Prevention and Control

**Action Plan on Prevention and Control of Air Pollution——The “Air Ten”**
- Total investment over 1.84
- GDP to increase 2.04 trillion Yuan
- Employment to increase 2.9113 million
- Reduce chronic deaths total of 110,600 per year

**Action Plan on Water Pollution Control – The “Water Ten”**
- *The Action Plan on Water Pollution Control was issued in April 2015*
- Total investment over 2 trillion Yuan with 3 years
- GDP to increase 5.7 trillion Yuan
- Employment to increase 3.9 million
- Output in the environmental protection industry to increase 1.9 trillion Yuan

**Action Plan on Soil Environmental Protection – The “Soil Ten”**
- GDP to increase 2.7 trillion Yuan
- Employment to increase 2 million
- Output in the environmental industry to increase 450 billion Yuan
China Introduced a Series of Green Action Plan to Drive the Huge Market Demand — Combatting Climate Change

Intended Nationally Determined Contributions to Combat Climate Change

◆ 60%-65% reduction in CO₂ emissions per unit of GDP by 2020 compared with 2005
◆ Increase of non-fossil fuels in energy mix to 20% by 2030
◆ Peak of CO₂ emissions by 2030 or earlier
◆ Increase in carbon sink and forest reserve of 4.5 billion m² more by 2030 compared with 2005
China Introduced a Series of Green Action Plan to Drive the Huge Market Demand — Combatting Climate Change

To realize the target of the Intended Nationally Determined Contributions (INDC), China plans to invest 40.4 trillion Yuan from 2005 to 2030. The investment will not only be used to transform the development mode and people’s way of life, but also to develop energy conservation, environmental protection and new energy industries.
Market Mechanism is an Important Measure for China to Realize Green Transformation
Market Measures of China to Promote Green Transformation Includes:

- Facilitate Green Finance
- Promote Carbon Market Construction
- Green Supply Chain Management
- Government Green Procurement
- Carbon Tax
On Aug 31, 2016, China issued the Guidance on Building Green Financial System, bringing green finance into the outlook of state strategy.

China’s green bonds reached 157.13 billion yuan in 2016, offshore green bonds accounts for 11.08%, 1.67% and 9.41% are from London Stock Exchange and Luxembourg Stock Exchange.

### Accelerated Growth in Green Finance Market

<table>
<thead>
<tr>
<th>Products</th>
<th>Period</th>
<th>Scale</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green Credit</td>
<td>By the end of 2015</td>
<td>7.01 trillion yuan balance</td>
<td>Year-on-year rise: 16.4%</td>
</tr>
<tr>
<td>Green Index</td>
<td>October, 2015</td>
<td>16 CSI Environmental Protection index</td>
<td>2% of the whole A-share market index (about 800)</td>
</tr>
<tr>
<td>Green Funds</td>
<td>October, 2015</td>
<td>32 environmental protection funds</td>
<td></td>
</tr>
<tr>
<td>Green Bonds</td>
<td>2015~2016</td>
<td>161.87 billion yuan</td>
<td>2016: 157.13 billion yuan</td>
</tr>
</tbody>
</table>

![Distribution of listed sites](image)
Roadmap of National ETS

**2014-2016**

- Release National ETS Regulations
- Promote history data reporting and verification
- Implement allowance allocation

**NDRC**

- Organize capacity building
- Identify key enterprise list and organize history emission reporting and verification
- Allocate allowance based on national rule

**Local DRCs**

- Participate in capacity building
- Develop internal carbon emission accounting and reporting system
- Fulfill reporting obligation and cooperate on verification
- Non-covered enterprises could also get involved in carbon market through CCER trading

**Enterprise**

**2017-2019**

- Phase I:
  - Launch of National ETS implementation

- Annual allocate allowance
- Annual reporting, verification and compliance
- Involve in national ETS improvement and innovation based on local situation

**After 2019**

- Phase II:
  - Expand coverage
  - Improve ETS
  - Research linkage to international ETS

- Fulfill emission reporting and compliance obligation
- Improve carbon assets investment and management
- Voluntarily participate in carbon market trading and decrease emission reduction costs
- Involve in ETS improvement and innovation

TGCC
## Regulatory Authorities

<table>
<thead>
<tr>
<th>NDRC</th>
<th>Local DRCs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decide coverage scope and threshold</td>
<td>Coverage</td>
</tr>
<tr>
<td>Setting the ETS cap</td>
<td>The cap</td>
</tr>
<tr>
<td>Decide the national allocation plan and methodologies of allocation</td>
<td>Allocation</td>
</tr>
<tr>
<td>Establish methodologies and standards</td>
<td>MRV</td>
</tr>
<tr>
<td>Set compliance rules, including punitive measures</td>
<td>Compliance</td>
</tr>
<tr>
<td>Establish and manage the system</td>
<td>Registration System</td>
</tr>
<tr>
<td>Establish trading rules, specify the trading institution</td>
<td>Trading</td>
</tr>
</tbody>
</table>
Scope and Coverage

Threshold: annual energy consumption exceeds 10,000 tce, or approximately annual CO2 emissions exceeds 26,000 tons, in any year from 2013 to 2015

Compliance entities: enterprises

Covered Gases: CO2

Both direct and Indirect emissions are accounted

<table>
<thead>
<tr>
<th>Sector</th>
<th>Subsector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petrochemical</td>
<td>Crude processing Ethylene production</td>
</tr>
<tr>
<td>Chemical</td>
<td>Chemical raw material /Fertilizer/ Pesticide Production /Synthetic material</td>
</tr>
<tr>
<td>Building Material</td>
<td>Cement clinker production Plate glass production</td>
</tr>
<tr>
<td>Iron and Steel</td>
<td>Crude steel production/Steel rolling</td>
</tr>
<tr>
<td>Nonferrous Metal</td>
<td>Electrolytic aluminum Copper smelting</td>
</tr>
<tr>
<td>Paper making</td>
<td>Pulp production Paper making</td>
</tr>
<tr>
<td>Power</td>
<td>Generation Cogeneration Grid</td>
</tr>
<tr>
<td>Aviation</td>
<td>Passenger air transport Air cargo transport Airports</td>
</tr>
</tbody>
</table>
Actively Explore Green Supply Chain Mechanism

On March 17th, 2016, 13th Five-Year Plan for National Economic and Social Development of the People's Republic of China
– Accelerate the construction of the green supply chain industry system

On August 31st, 2016, the People's Bank of China and six other agencies jointly issued Guidelines for Establishing the Green Financial System
– Conduct the green supply chain management

On September 20th, 2016, the Ministry of Industry and Information Technology issued Notice of conducting the construction of green manufacturing system
– Green supply chain was one of the key point contents
Undertake Government Green Procurement

According to 2015 statistics
◆ Energy-saving products totaled 134.63 billion yuan, accounting for 71.5% of the same kind of products purchased.
◆ Environmental products totaled 136 billion yuan, accounting for 81.5% of the same kind of products purchased.

The government departments of China are actively conducting research on carbon taxing, in order to support carbon index pricing.
3 Tianjin Practice on Green Development
Tianjin City

Basic
- The 4th largest city of China
- A history of 610 years
- More than 15 million population
- GDP reached RMB1.65 trillion in 2015
- 137 kilometers southeast of Beijing.
- It takes only 30 minutes to Beijing by the high speed inter-city train.
- Area: 11.95 thousand square kilometers

Positioning
- Advanced Manufacturing Base;
- International Shipping Center;
- Financial Innovation Demonstration Area;
- Pilot Zone of Reform and Opening-up

Target System and Key Areas of Tianjin on Environmental Protection and Climate Change
Tianjin is still facing a great challenge of emission reduction

The National 13th Five-Year Work Plan for Controlling Greenhouse Gas Emissions: Tianjin needs to reduce 20.5% (41.3 million tons estimated).
## Key Areas and Targets

<table>
<thead>
<tr>
<th>Area</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>The transformation of green and low carbon industry</strong></td>
<td>Steel production, cement clinker production capacity, coal-fired units installed capacity were controlled under 20 million tons, 5 million tons and 14 million KWH respectively.</td>
</tr>
<tr>
<td><strong>Carbon emission in key industries</strong></td>
<td>The average coal consumption should be dropped to about 305 g standard coal per KWH.</td>
</tr>
</tbody>
</table>
| **Low carbon development for energy system** | The proportion of coal consumption can be dropped to below 45%.  
  The energy consumption can be increased to over a third of the total electricity consumption  
  Non-fossil energy capacity can be reached to above 2 million kw and the total amount of electricity produced by renewable energy is above 10% of the whole society of electricity. |
| **Green building**                         | All of Civil construction is applied by green building standards and 30% of them are 2star building or above.                                |
| **Low carbon traffic**                     | Public transportation can be increased to 60% and above 35% of public transportation is rail transit.                                     |
| **New energy traffic tools**               | 60% of newly added public buses use new energy and clean energy.                                                                       |
| **Low carbon lifestyle**                   | Actively advocate green mobility, walk in one km, take a bike in 3km, take public transportation in 5 km.                                |
| **Forest carbon sinks**                    | A total area of 1.7 million mu forest.                                                                                                  |
Tianjin Promotes Emissions Trading Markets Construction

Sulfur Dioxide(SO2) Emissions Trading

• The Work Plan to Develop Tianjin Emissions Trading Markets was issued on August 30th, 2011
  – According to the amount of pollutant emissions and the 12th five-year plan for emission reduction, Sulfur Dioxide(SO2) emissions trading was firstly started in Tianjin

Carbon Emissions Trading Market

• Interim Measures of Tianjin Municipality for Carbon Emissions Trading was issued in June, 2016

Emissions Trading Market

• Tianjin Climate Exchange (the first Climate Exchange in China) was established on September 25th, 2008
• The first voluntary carbon exchange was completed in February, 2010. Citigroup and Gazprom concluded the first pilot transaction, buying 1,500. Carbon Emissions Allowances
Green Supply Chain

- In 2013, China Council for International Cooperation on Environment and Development (CCICED) carried out green supply chain policy pilot program, with Tianjin being the pilot center. It is the first policy pilot program in 21 years since the establishment of CCICED.
- Tianjin government has released a series guidelines on Green Supply Chain:
  - Development Scheme of Tianjin Pilot Center
  - Interim Measures of Tianjin Green Supply Chain Management
  - Tianjin Green Supply Chain Work Guidelines
  - Measures of Tianjin Pilot Center on the Administration of Website and Registration Platform
  - Administrative Measures of Tianjin Government Procurement of Green Supply Chain
  - Measures of Tianjin Municipality on Green Building Material and Equipment Evaluation
- Established Tianjin Green supply chain Standard Technical Committee
- Green Supply Chain Standard issued for the first time in China
In June 2015, APEC Cooperation Network on Green Supply Chain (GSCNET) Tianjin Pilot Center Officially Launched
APEC Cooperation Network on Green Supply Chain

Official Website of APEC GSCNET

- [http://www.apecgsc.org](http://www.apecgsc.org)
- The website of APEC GSCNET was launched and will be added to the APEC website.

Official Website of APEC GSCNET Tianjin Pilot Center

- [http://cn.apecgsc.org](http://cn.apecgsc.org)
- Completed a website of Tianjin Pilot Center with nearly twenty million characters of data on green supply chain
The Green Procurement Tool (GPT) applies international evaluation methodology for product sustainability based on Life Cycle Assessment and develop a full set of economic, environmental and social indicators with corresponding solution recommendations, which will be represented via a user-friendly IT-based questionnaire (KPIs) & scorecard interface for use.

GPT aims to provide public and private buyers with an innovative supplier evaluation and management guidance, to achieve visualization of green supply chain management and risk reduction.

GPT is a localization of sustainable supply chain management tool widely utilized by Walmart.
Green bidding and purchasing platform (Twigreen)

- Functions: 20 core functions covering e-bidding, green evaluation, consultation…
- Customization and consolidation based on buyers green needs
- To achieve the goal of sustainable development, carbon reduction and resource conservation through green consultation and bid evaluation.
- A complete process of online bidding service
Tianjin Government Procurement Center

- Saved energy of 50 million KWH and reduced CO2 emissions of 170,000 metric tons by 2012
- Tianjin issue *Regulations of Tianjin Municipality for Green Supply Chain Government Procurement* and take the lead to promote procurement of green supply chain products
- Increase the proportion of preferred procurement and explore mandatory procurement

- Government Procurement Agreement
- Fixed-point procurement
- Purchase Order
- Bulk Procurement

*Actively Promote Government Green Procurement*
APEC Green Supply Chain Excellent Case Center

The first green supply chain excellent case center:

- Covering exhibition, experience and trading of green products and innovative technologies
- High visualization
- Predominant exhibition conditions
- Convenient traffic
- Large flow of people
In July 2016, the first APEC Green Supply Chain Excellent Case Center Launched in Tianjin.

Strategic Cooperation Memorandum was signed in Tianjin Free Trade Zone CBD with the first batch of cooperative organizations to jointly develop the APEC Green Supply Chain Excellent Case Center. The signing ceremony marked the overall startup of the Excellent Case Center construction.
Facilitate Green Finance

Build the green credit evaluation system of contract energy management

Carry Out Green Credit Evaluation in the Construction Industry

Released Green Supply Chain Index of Chinese Estate Companies

The world’s first green supply chain index research report of listed companies released on Oct. 24th 2016

- Three-level index evaluation model
- Green construction capacity, green supply chain management, environmental impact, resource conservation and carbon emission.
- Evaluated 132 real estate enterprises, and published *Green Supply Chain Index top 50*
Cooperation Expectations

1. Reply on green supply chain for Sino-US green finance cooperation promotion, including offshore green bond; co-establish green investment fund and advance supply chain finance cooperation; explore the cooperation in the offshore carbon market area.

2. Facilitate connectivity of green and low carbon data by website interlink and information sharing. Support Tianjin and Tianjin pilot center to join the Joint Declaration on Harnessing the Data Revolution for Climate Resilience.

3. Welcome industrial association and cities in the US to join APEC GSCNET, China and US to lead green supply chain development through Close collaboration

4. Welcome green supply chain related dialogue, workshop and visits of various types, identify green supply chain best practices from the US enterprises and promote them to the Asia-Pacific region.

THANK YOU

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