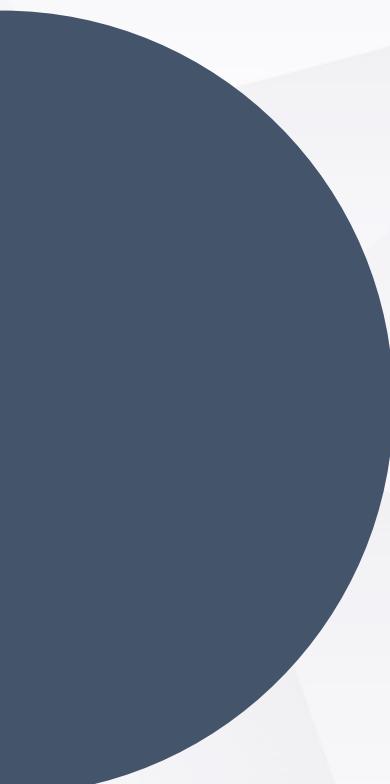


Compliance System of the Carbon Market and Enterprise Carbon compliance Management

November 2019



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- 1 Compliance System Established by the Carbon Market
 - 2 CCER Offset Mechanism
 - 3 Enterprise compliance and Carbon Management

Compliance System Established by the Carbon Market

Contents

I. What is Compliance

II. compliance in the pilot carbon market

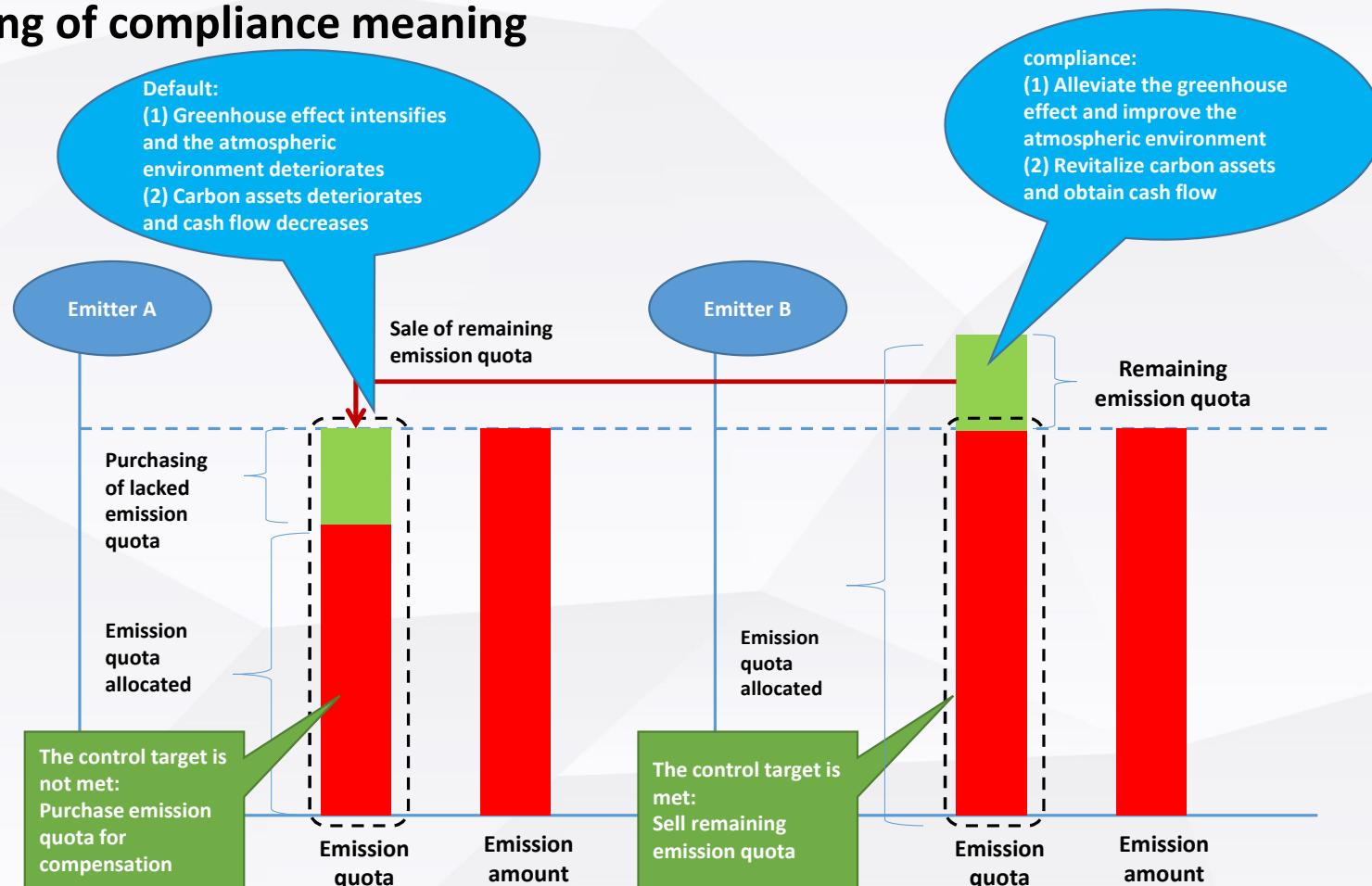
III. compliance rules established by the national carbon market

I. What is Compliance

- Compliance means the review of the emission control companies based on a third-party review institution, comparing their actual CO₂ **emission amount** with the **quota** they have got, and those enterprises with a surplus of quota can sell the quota for profit or use them for the next year. Enterprises with excessive emissions shall buy quota or offsets on the market, and submit an emission quota or offset that are **not less than their emissions verified and confirmed in the previous year** in accordance with the requirements of the competent authority of carbon emissions trading.

I. What is Compliance

➤ The meaning of compliance meaning



I. What is Compliance

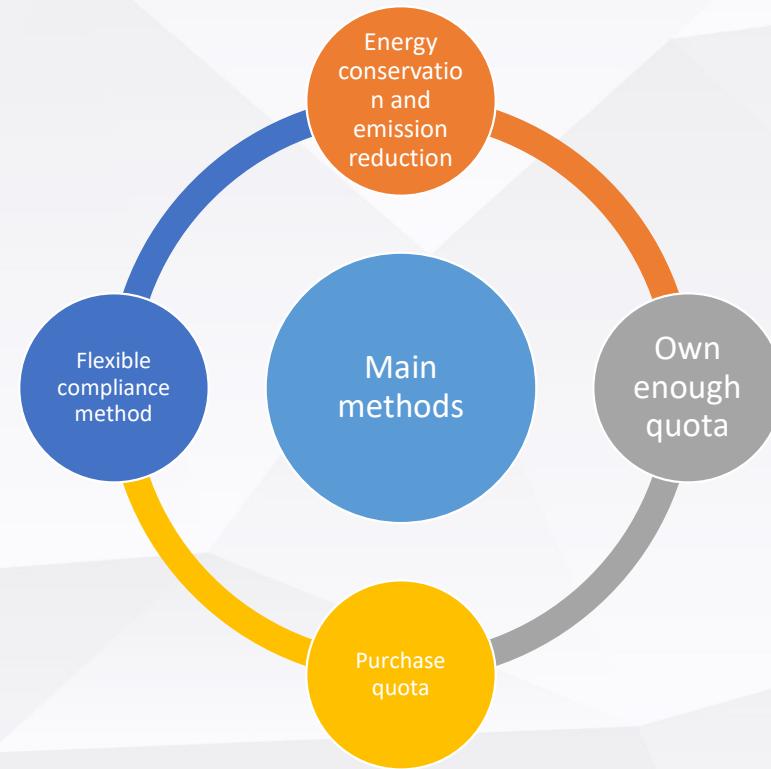
➤ Carbon market compliance requirements



I. What is Compliance

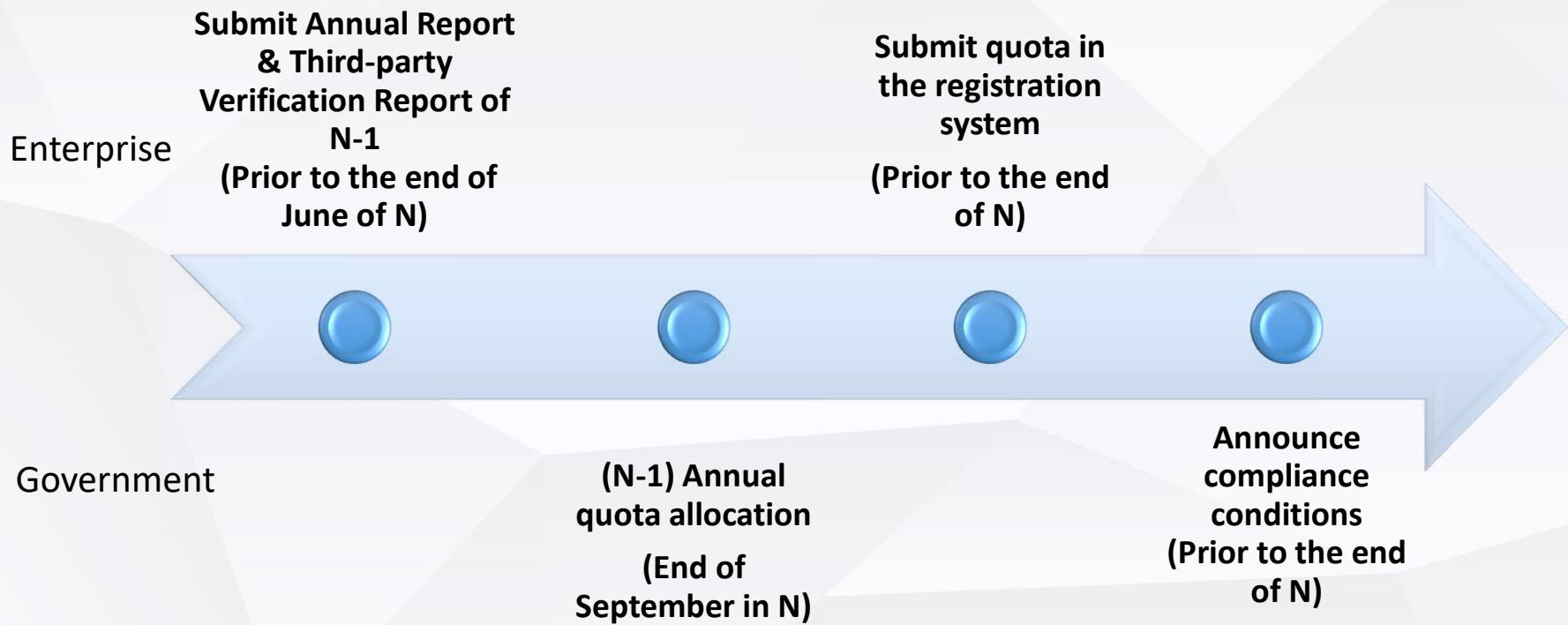
➤ **Compliance target**

- By emission reduction or by purchasing quotas on the market, to meet the quota target set by the competent government authority, and to save the cost of compliance as much as possible.



II. Compliance in the pilot carbon market

➤ Timetable



II. Compliance in the pilot carbon market

- Experience in the pilot period: adopt a comprehensive approach combining economic and administrative measures

Location	compliance time	Economic penalty	Administrative penalty
Beijing	Prior to June 30 every year	3-5 times the average market price	
Shanghai	Prior to June 30 every year	A fine of more than RMB50,000 and less than RMB100,000	Credit record; disqualified for application of energy-saving funds, energy-saving evaluation, etc.
Tianjin	On May 31 every year		Limited to corrections within a time limit, disqualified for priority financing services and related support policies within three years
Guangdong	On June 20 every year	The quota that has not been paid in full will be deducted from the quota of the next year, and a fine of RMB50,000 will be imposed.	Link it to the integrity system, and expose default information; new projects cannot pass the final approval
Hubei	On the last working day of June every year	A fine of over 1 time and less than 3 times market average price, no more than RMB150,000	Add the enterprises to the blacklist, report to state-owned assets supervision and administration institutions in the case of state-owned enterprises, and include them to the performance evaluation system
Shenzhen	On June 30 every year	A fine of the excess emission multiplied by three times the average price of the quota in the carbon emission trading market in six consecutive months before the month of compliance	Credit exposure, financial restrictions, performance evaluation, legal accountability, etc.
Chongqing	On June 20 every year	A fine of 3 times the monthly average price of the quota	Public report of violations; disqualified for application of financial subsidy funds and participation in evaluation activities; performance assessment and evaluation system of state-owned enterprises

II. Compliance in the pilot carbon market

➤ **compliance practices in the pilot carbon market**

- Policies and actions: various measures to promote compliance
- compliance work
- (Symposium, guidance, rectification)
- Media supervision:
- Offset mechanism
- (CCER, carbon sink of the Beijing Forestry Administration, PHCER)
- Market auction of quota
- compliance punishment

III. Compliance rules established by the national carbon market

➤ Obligation requirements

The National Development and Reform Commission issued the *Interim Measures for the Administration of Carbon Emission Rights Trading* in December 2014

- Article 25 The key emission units shall formulate an emission monitoring plan and report it to the provincial competent carbon trading authorities of in the province, autonomous region, or municipality directly under the Central Government directly for filing in accordance with the requirements of national standards or the guidelines for enterprise greenhouse gas emission accounting and reporting issued by the competent authority of carbon trading of the State Council.
- The key emission units shall strictly implement the monitoring activities in accordance with the recorded monitoring plan. If a major change occurs to the monitoring plan, the application for change shall be submitted to the provincial carbon trading authorities in the province, autonomous region, or municipality directly under the Central Government in a timely manner.

III. Compliance rules established by the national carbon market

➤ Obligation requirements (continued 1)

The National Development and Reform Commission issued the *Interim Measures for the Administration of Carbon Emission Rights Trading* in December 2014

- Article 26 The key emission units shall **prepare their greenhouse gas emission reports for the previous year** in accordance with national standards or the guidelines for the accounting and reporting of enterprise greenhouse gas emission issued by the State Council 's competent carbon trading authorities, and the recorded emission monitoring plan. After verifying and issuing the verification report, the verification institution shall **submit the emission report and verification report** to the provincial competent carbon trading authorities of the province, autonomous region, or municipality directly under the Central Government within the prescribed time.

III. Compliance rules established by the national carbon market

➤ Obligation requirements (continued 2)

The National Development and Reform Commission issued the *Interim Measures for the Administration of Carbon Emission Rights Trading* in December 2014

- Article 31 The key emission units shall submit to the provincial competent carbon trading authorities of the provinces, autonomous regions, and municipalities under the Central Government where they are located annually the emission quota of not less than the emission confirmed in the previous year, and fulfill the quota clearing obligations of the previous year.
- Article 32 key emission units may use Chinese certified emission reduction (CCER) to offset part of their confirmed carbon emissions in accordance with relevant regulations.

III. Compliance rules established by the national carbon market

- **Regulatory authority: provincial authorities should attach great importance to this**
 - **Article 37** The carbon emissions trading is subject to the supervision and administration of provincial carbon trading authorities in the following aspects:
 - (1) Reporting of emission reports and verification reports of key emission units within the jurisdiction;
 - (2) Clearance of quotas of key emission units within the jurisdiction;
 - (3) The transactions between key emission units and other market participants in the jurisdiction.

III. Compliance rules established by the national carbon market

➤ **Administrative penalties are mainly adopted at current stage**

- Article 40 Reporting obligations of key emission units: Provincial competent carbon trading authorities shall order corrections within a time limit, and those who fail to make corrections within the time limit shall be subject to administrative penalties according to law.
- (1) Making false reports, omit anything or refusing to fulfill the obligation of emission reporting;
- (2) Failure to submit verification reports as prescribed.
- If corrections are not made within the time limit, the provincial competent carbon trading authorities shall designate a verification institution to measure its emissions, and use the emissions as the basis for fulfilling its quota clearing obligations.
- Article 41 If key emission units fail to perform their quota clearing obligations on time: provincial competent carbon trading authorities shall order them to perform their quota clearing obligations; if the quota clearing obligation has not been performed within the time limit, administrative penalties shall be imposed by provincial competent carbon trading authorities of the provinces, autonomous regions and municipalities under the Central Government in which they are located according to law.

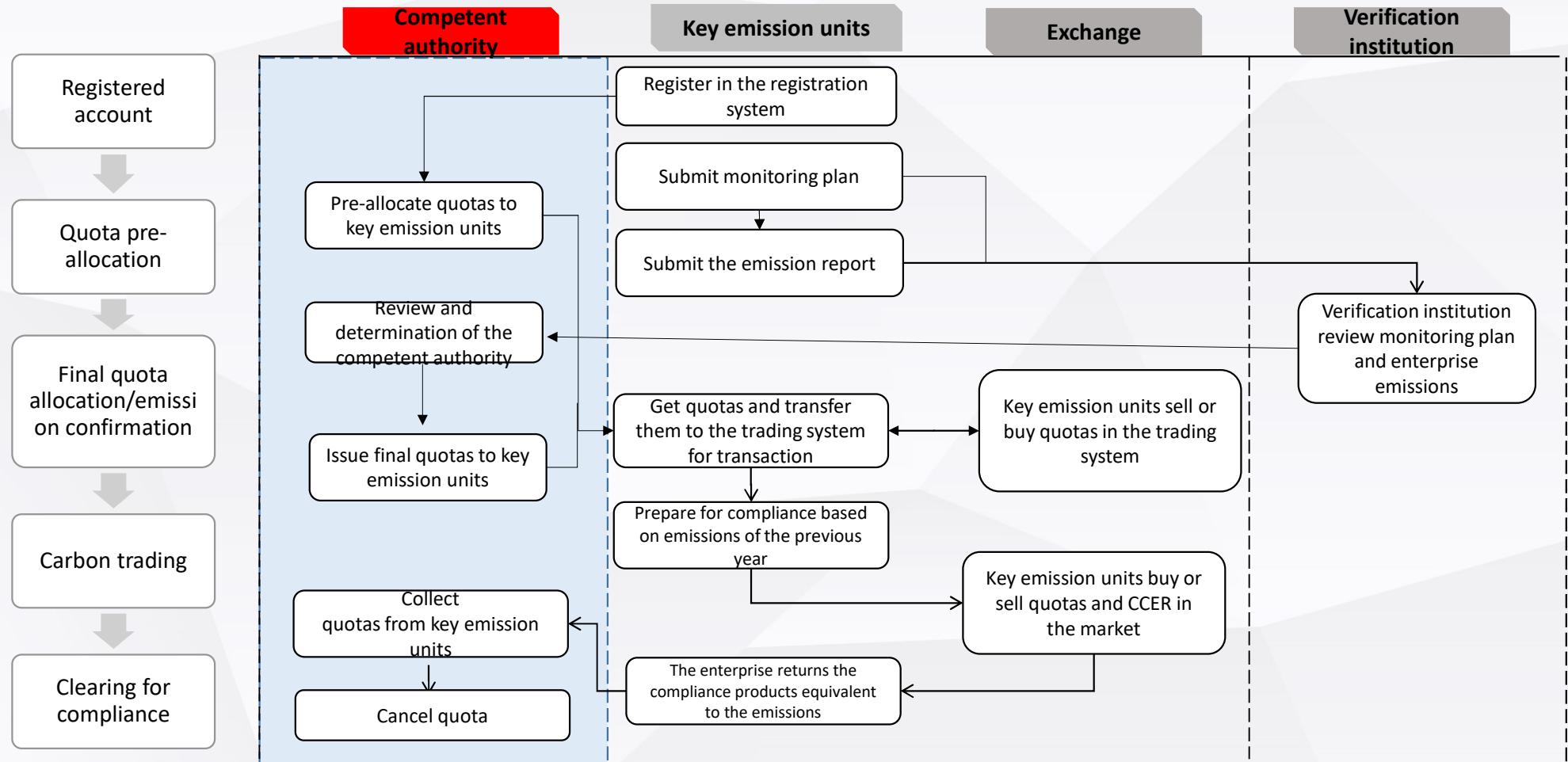
III. Compliance rules established by the national carbon market

➤ Establish a credit management system

- **Article 38** The State Council's competent carbon trading authorities and provincial competent carbon trading authorities shall establish **credit records** of related behaviors of key emission units, verification agencies, trading institutions, and other enterprises and personnel in their participation in carbon emission trading and incorporate such record into relevant **credit management system**.
- **Article 39** The competent carbon trading authorities of the State Council shall establish a “**blacklist**” for the institutions and personnel involved in carbon emission trading that have seriously unlawful and dishonest acts and expose it according to law.

Summary: Compliance procedures and notes

➤ compliance procedures



CCER Offset Mechanism

Contents

I. CCER offset mechanism principles and policies

II. Local practices and cases of CCER offset

III. How to offset by CCER

I. CCER offset mechanism principles and policies

- **What is CCER?**

The China Certified Emission Reduction (CCER) is an emission reduction certificate obtained by enterprises through the implementation of projects to reduce greenhouse gas emissions, which is filed and registered by the competent authorities.

- **What can CCER do?**

CCER can be used to replace carbon quotas for compliance in the carbon market, but there are certain requirements in terms of quantity and project types for use. At present, the relevant requirements of each pilot carbon market are different.

- **What is the relationship between CCER and quotas?**

Quota is a kind of emission right and belongs to the mandatory emission reduction market; CCER is the emission reduction amount and belongs to the voluntary emission reduction market.

The CCER offset mechanism is a supplementary mechanism for the carbon market.

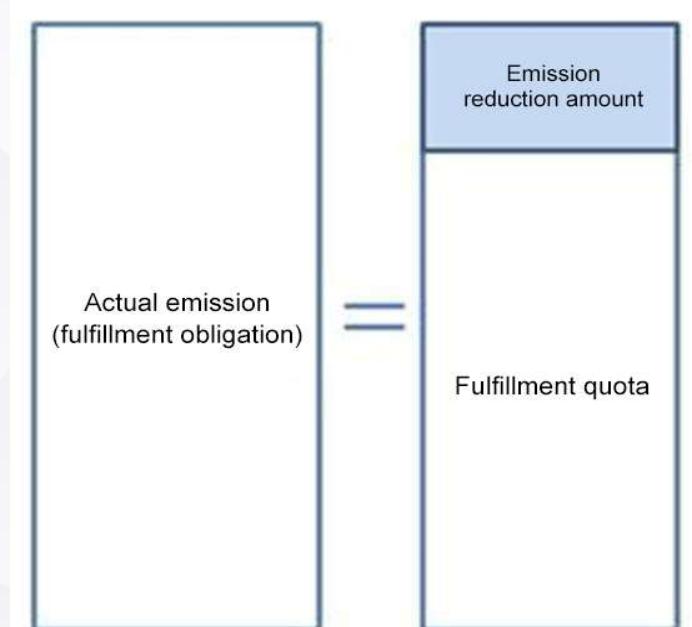
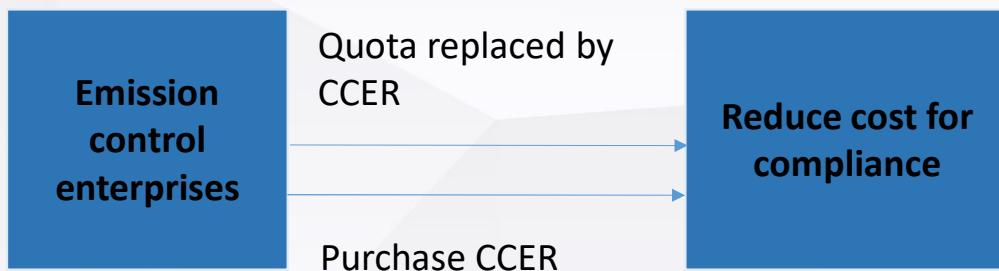
- **Why to offset with CCER?**

To promote the voluntary reduction of greenhouse gas emissions; promote the development of renewable energy and poverty alleviation; provide flexible compliance methods to help key emission units reduce compliance costs.

I. CCER offset mechanism principles and policies

➤ Offset mechanism principles

- CCER and quotas are all used for compliance of emissions control enterprises
- CCER price is lower than the quota price in the market
- There are upper limits and conditions for compliance with CCER



I. CCER Offset Mechanism Principles and Policies

➤ Progress of validation of projects and emission reductions

Progress

- As of March 2017, a total of 2,871 voluntary emission reduction projects have been publicized after review and determination and 1,315 projects have been validated. Cumulative recorded emission reduction of more than 77 million tons have been registered.

Project area

- The filed projects are mainly concentrated in the fields of wind power, photovoltaics, biomass utilization, hydropower, etc.

Trading conditions

- From January 2015 to August 2019, the cumulative turnover of CCER was nearly 200 million tons, and the cumulative turnover exceeded RMB 1.5 billion. The CCER price of different types of projects vary greatly.

I. CCER Offset Mechanism Principles and Policies

➤ Policies related to CCER offset

- *Interim Measures for the Administration of Carbon Emission Rights Trading* (December 2014)

Key emission units may use [CCER](#) to offset part of their confirmed carbon emissions in accordance with relevant regulations.

- *Construction Plan for National Carbon Emission Rights Trading Market* (Power Generation Industry) (December 2017)

Incorporate [CCER](#) into the national carbon market as soon as possible.

The initial trading products in the national carbon emission trading market are spot quota products. When the conditions are right, [CCER](#) and other trading products that comply with the trading rules will be added.

II. Local practices and cases of CCER offset

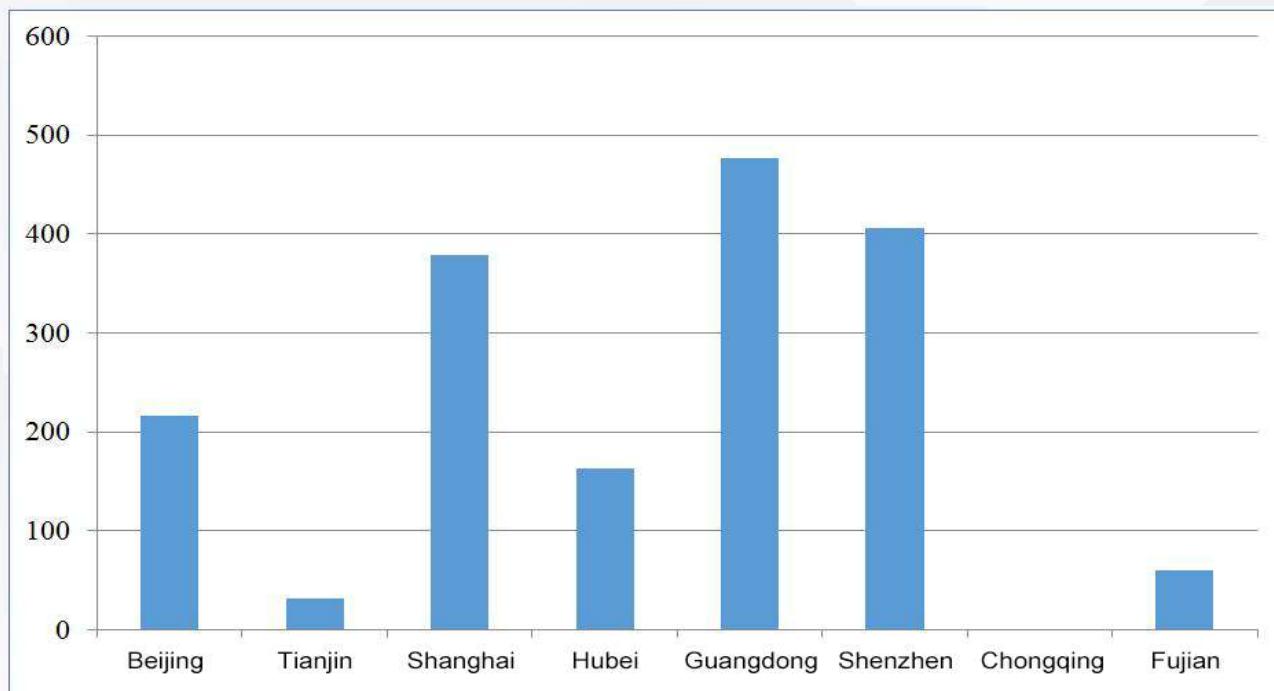
➤ The local carbon market has stipulated the use ratio, source region, year, project type, etc. for the use of CCER to offset for compliance, which are adjusted over time.

Pilot	Use ratio	Regional restriction	Time, type restrictions
Shenzhen	Not exceeding 10% of the quota	✓	✓
Shanghai	Not exceeding 1% of the quota amount	No	✓
Beijing	Not more than 5% of the quota approved and issued that year	✓	✓
Guangdong	Not exceeding 10% of annual emissions	✓	✓
Tianjin	Not exceeding 10% of annual emissions	✓	✓
Hubei	Not more than 10% of the annual initially allocated quota	✓	✓
Chongqing	Not more than 8% of the emission determined after review	No	✓

II. Local practices and cases of CCER offset

➤ CCER usage in the pilot carbon market

- As of December 2018, more than 17 million tons of CCER have been used for carbon emission right offset for compliance in local carbon markets.



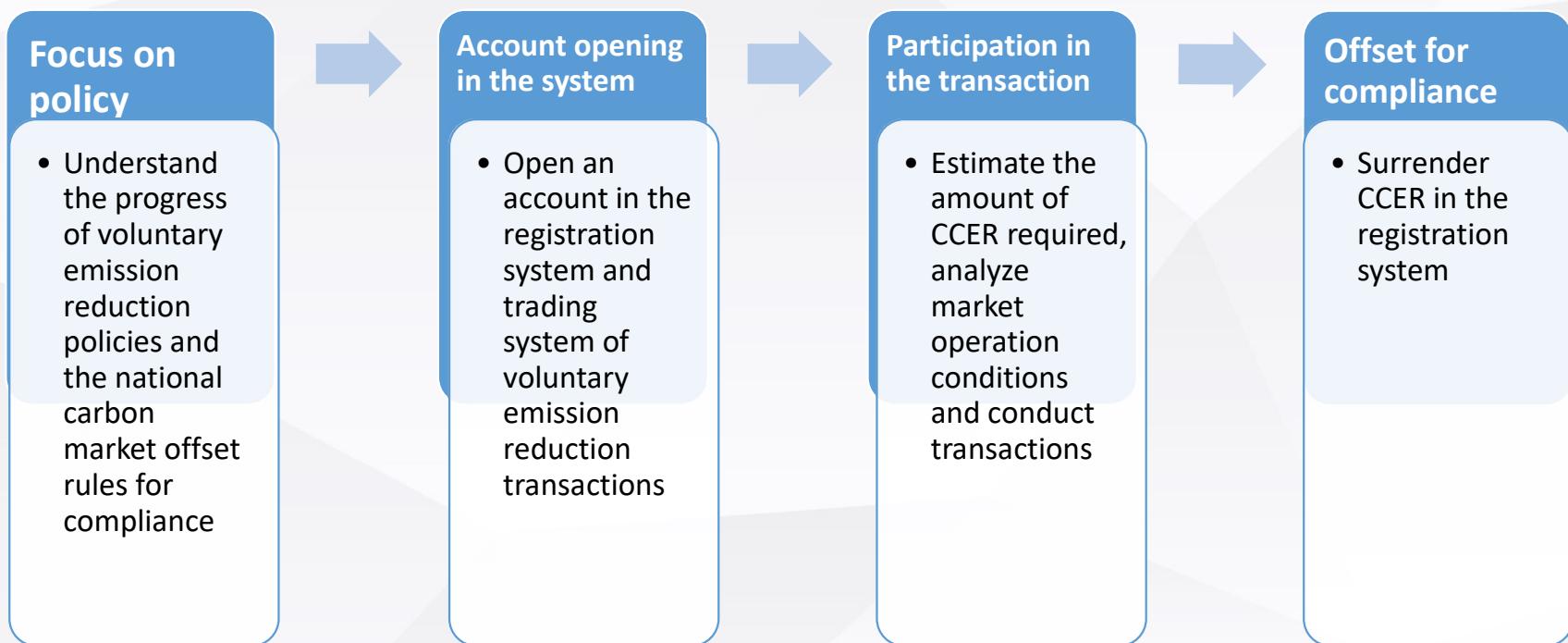
CCER offset for compliance by region (as of December 2018, unit: 10k tons)

II. Local practices and cases of CCER offset

➤ Conditions for CCER offset for compliance

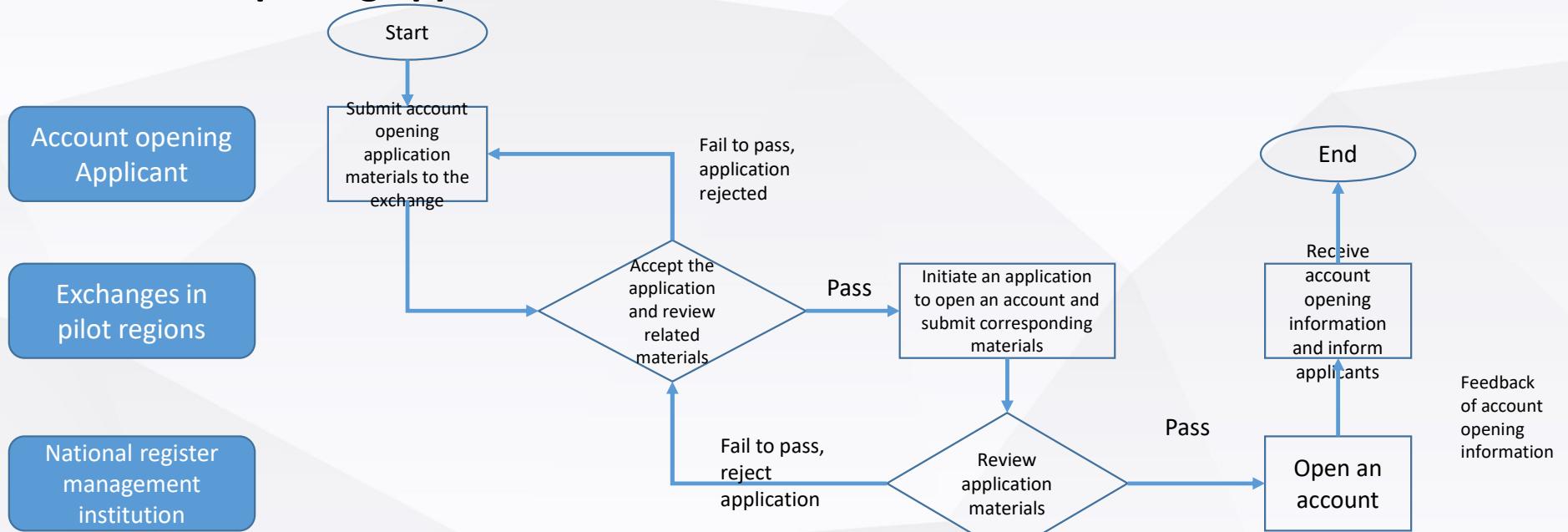
- Taking a pilot carbon trading exchange as an example, as of July 2018, emission control companies used approximately 2.1 million tons of CCER to offset carbon emission rights for compliance.
- Case: After issuance of free quota in 2018, an enterprise still lacked a quota of about 10,000 tons. Suppose the market price of quota is about RMB50/ton, and the market price of CCER is about RMB10/ton.
 - For purchase of a 10,000-ton quota for compliance, you need to spend RMB500,000;
 - For purchase of CCER of the same quantity, you only need to spend RMB100,000 when meeting the offsetting rules for compliance, saving RMB400,000 and greatly reducing the cost of compliance.

III. How to offset by CCER



III. How to offset by CCER

➤ Account opening application



- First, open an account in both the **national voluntary emission reduction and emission right trading registration system** and **trading system** through the **local pilot exchange**.
- During the account opening process, the exchange will first conduct a round of data review. After passing the review of the exchange, the materials will be handed over to the national register management institution for review, and an account can be opened only after such review is passed.

III. How to offset by CCER

➤ Participation in the transaction

Estimate the amount of CCER required, and analyze the market operation situation before conducting transactions

The CCER trading rules of each pilot exchange are different, and CCER transactions are carried out based on specific conditions.

Take the Beijing pilot exchange for carbon trading as an example:

The amount of CCER required by Beijing's emission control companies is purchased on the platform of China Beijing Environmental Exchange. The purchase methods are divided into online and offline agreements.

- Online: purchase directly.
- Offline: the execution of offline CCER transfer agreement is needed.

III. How to offset by CCER

➤ Offset for compliance

Submit CCER in the registration system to complete the compliance

- The CCER offset rules are different for each pilot exchange. CCER compliance is carried out according to specific conditions. **Taking the Beijing exchange for pilot carbon trading as an example:**

The amount of CCER purchased from the market is transferred to the national CCER account and cancelled



Submit relevant information to Beijing Municipal Bureau of Ecology and Environment



Approved by Beijing Municipal Bureau of Ecology and Environment



Beijing Municipal Bureau of Ecology and Environment transfers the CCER to the account registered in Beijing



Enterprise clearing for compliance

Notes

- Pay attention to relevant policies and notices in a timely manner
- Choose reasonably the account opening time, and prepare complete application materials
- CCER used for offset need to meet the offset rules of the national carbon market
- Surrender CCER in the registration system in time to complete the compliance as scheduled

Enterprise compliance and Carbon Management

Contents

I. Compliance procedures and notes

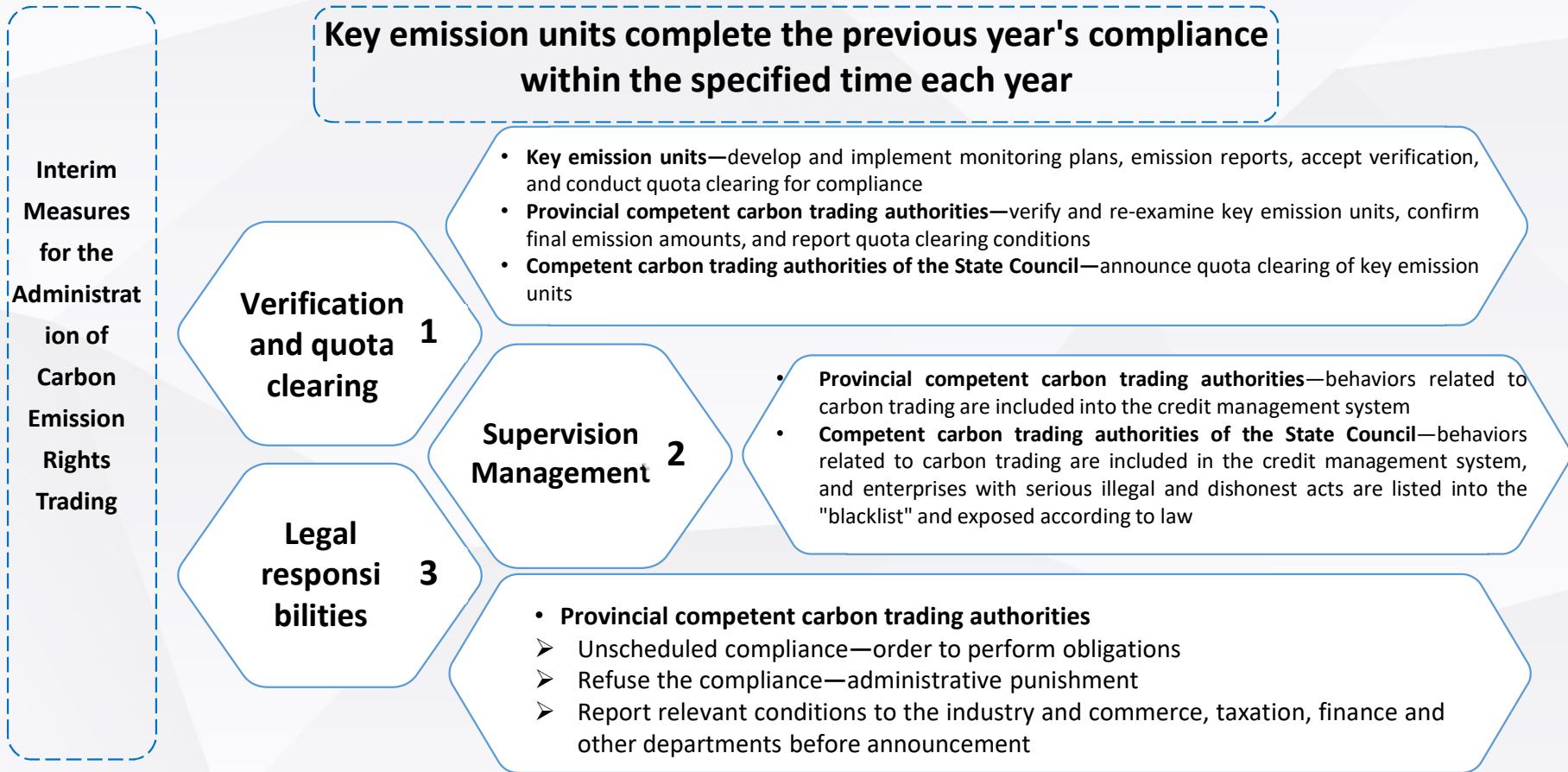
II. Management content of carbon emission compliance

III. Cases of enterprises responding to carbon emission compliance

IV. Summary

I. Compliance procedures and notes

➤ Legal basis



I. Compliance procedures and notes

➤ Work requirements

■ Necessity:

- Compliance is the most basic national requirement for companies that are under control
- Completing compliance on time, reducing compliance costs, and strictly controlling risks are the basic starting points for enterprise compliance management

■ Work requirements:

Data management

Lean management of the entire process of monitoring, reporting and verification, to provide a data basis for compliance

Account management

Determine the account opening representative of registration and trading accounts and open accounts

compliance plan

Formulate compliance plan, formulate budget plan, apply for new/adjusted quota

Transaction management

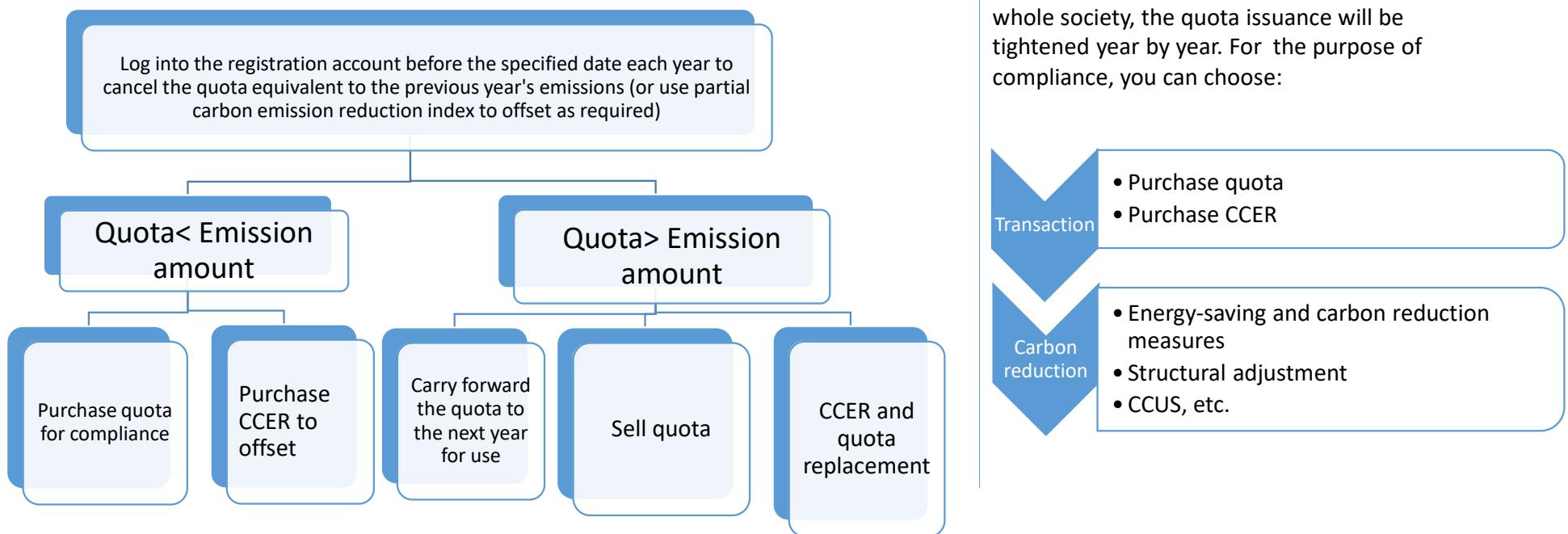
Purchase quota/CCER to ensure a relatively low price

Clearing for compliance

Ensure that the compliance is completed before the time point prescribed by national regulations

I. Compliance procedures and notes

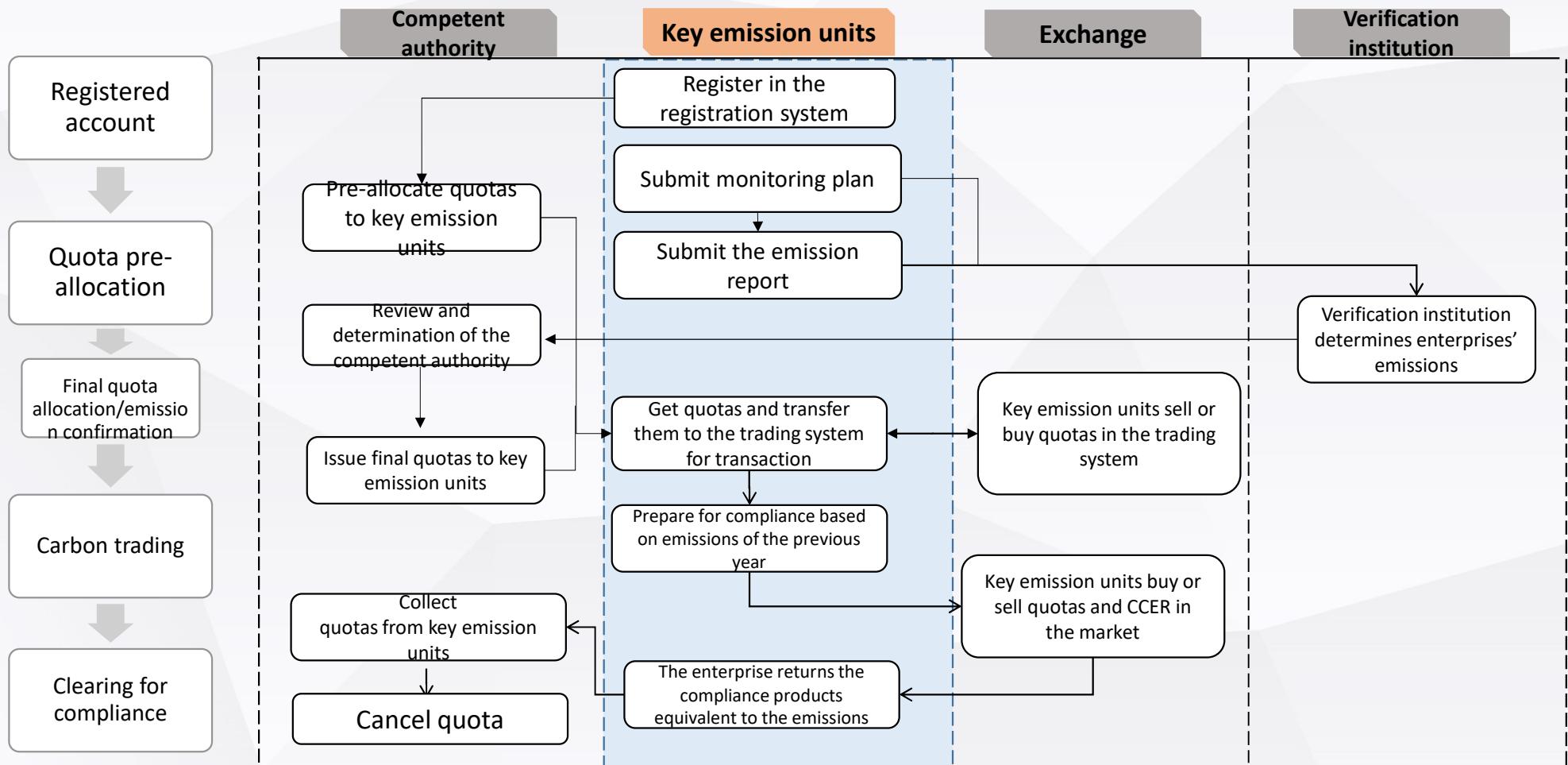
➤ Fundamental principles



- Quota: refers to the index obtained according to law by units and individuals involved in trading of carbon emission rights, which can be used for trading and deduction of greenhouse gas emissions of key emission units. One unit quota represents the right of key emission units holding such quota to emit one ton CO₂e greenhouse gases into the atmosphere.

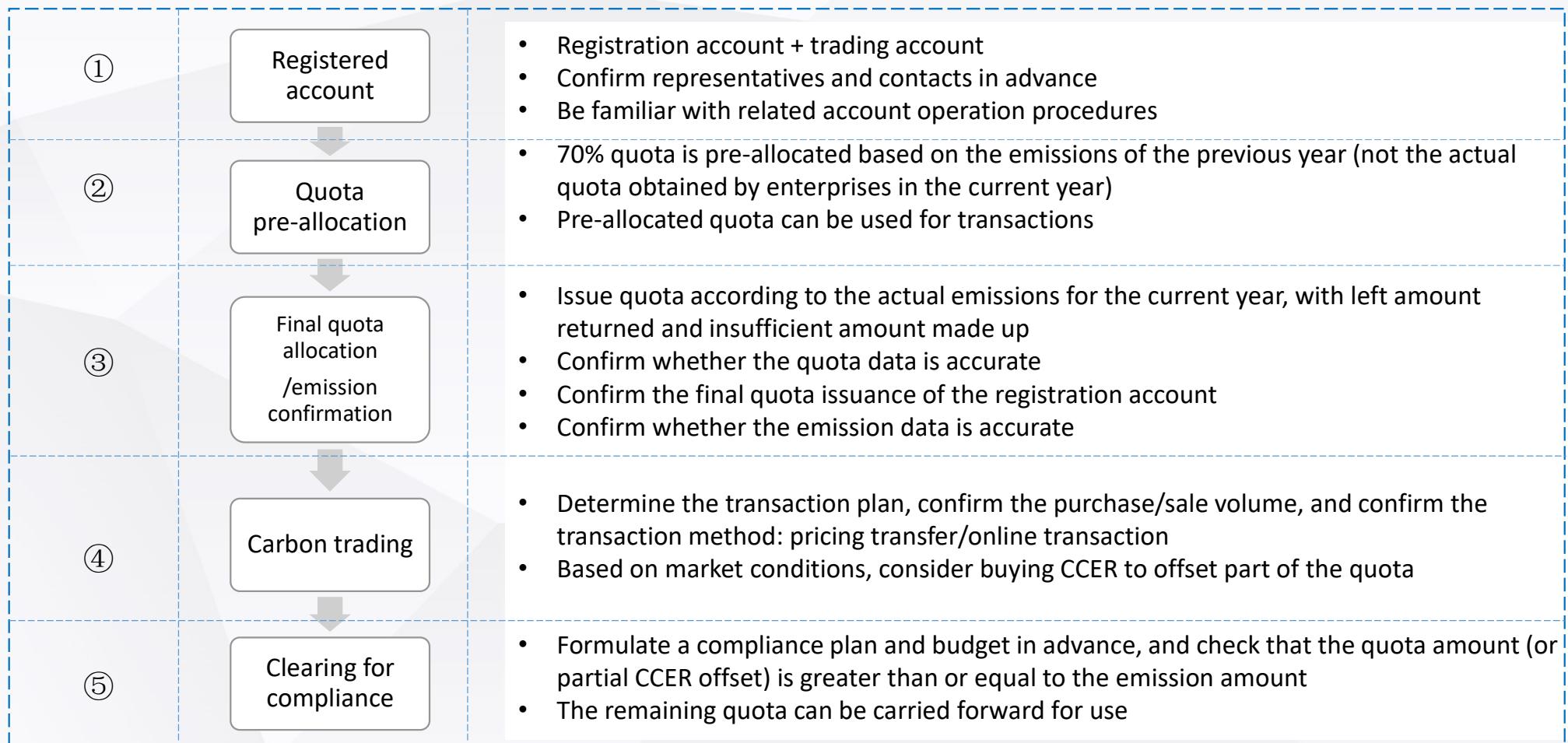
I. Compliance procedures and notes

➤ compliance procedures



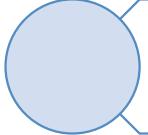
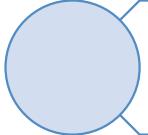
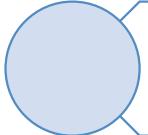
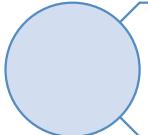
I. Compliance procedures and notes

➤ Notes



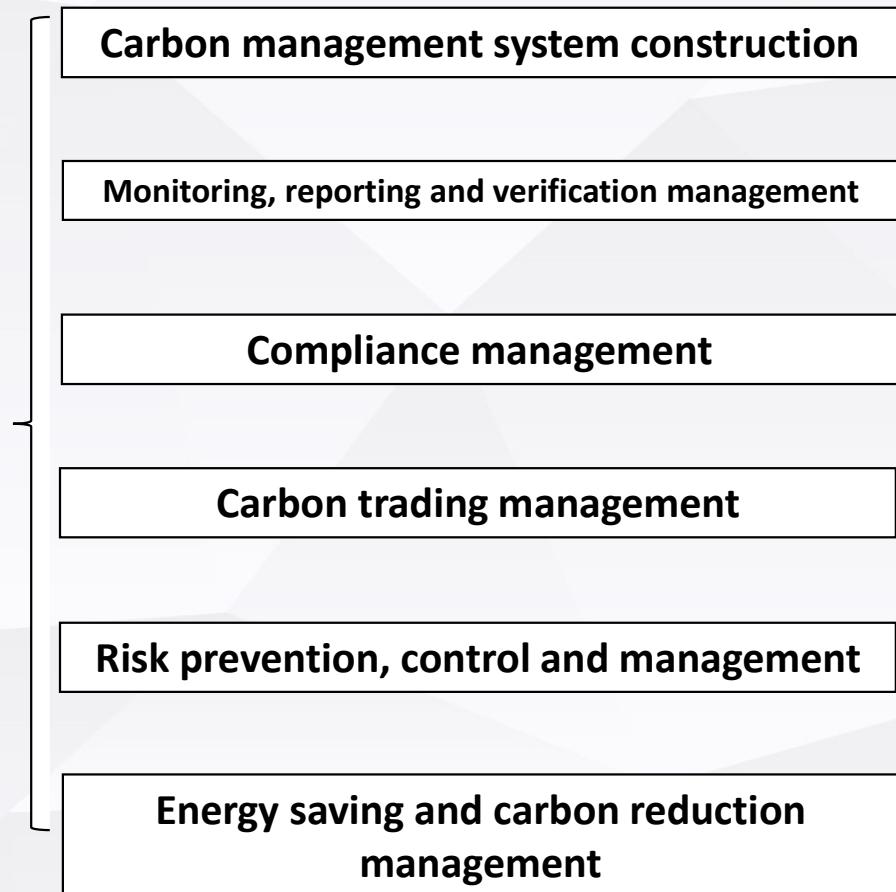
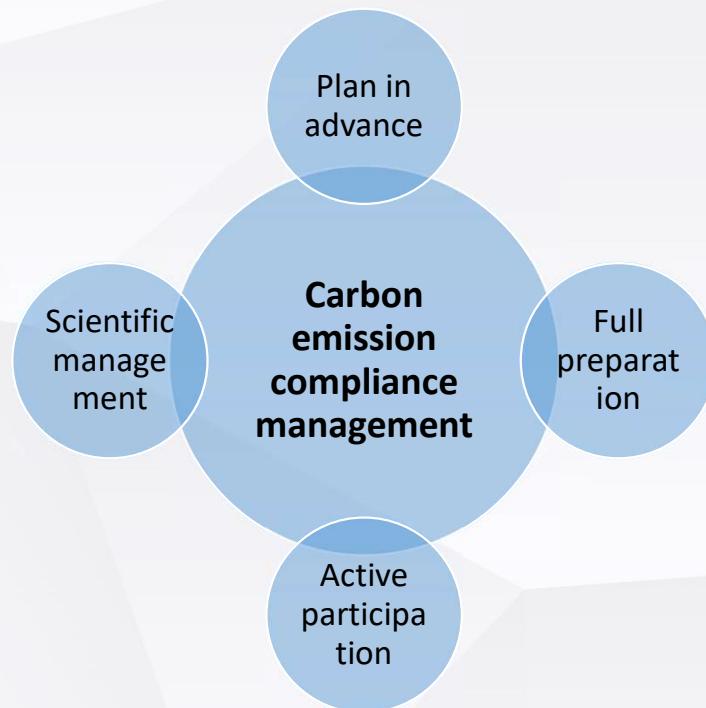
I. Compliance procedures and notes

➤ **compliance management recommendations**

-  Ensure that the compliance is completed prior to the prescribed time to avoid administrative penalties
-  Make full use of the CCER offset mechanism to reduce compliance costs
-  Simplify the fund approval process and make the compliance budget in advance
-  Formulate a compliance plan in advance to ensure the best trading opportunity
-  Keep up with policy requirements, accurately predict newly added/adjusted quotas

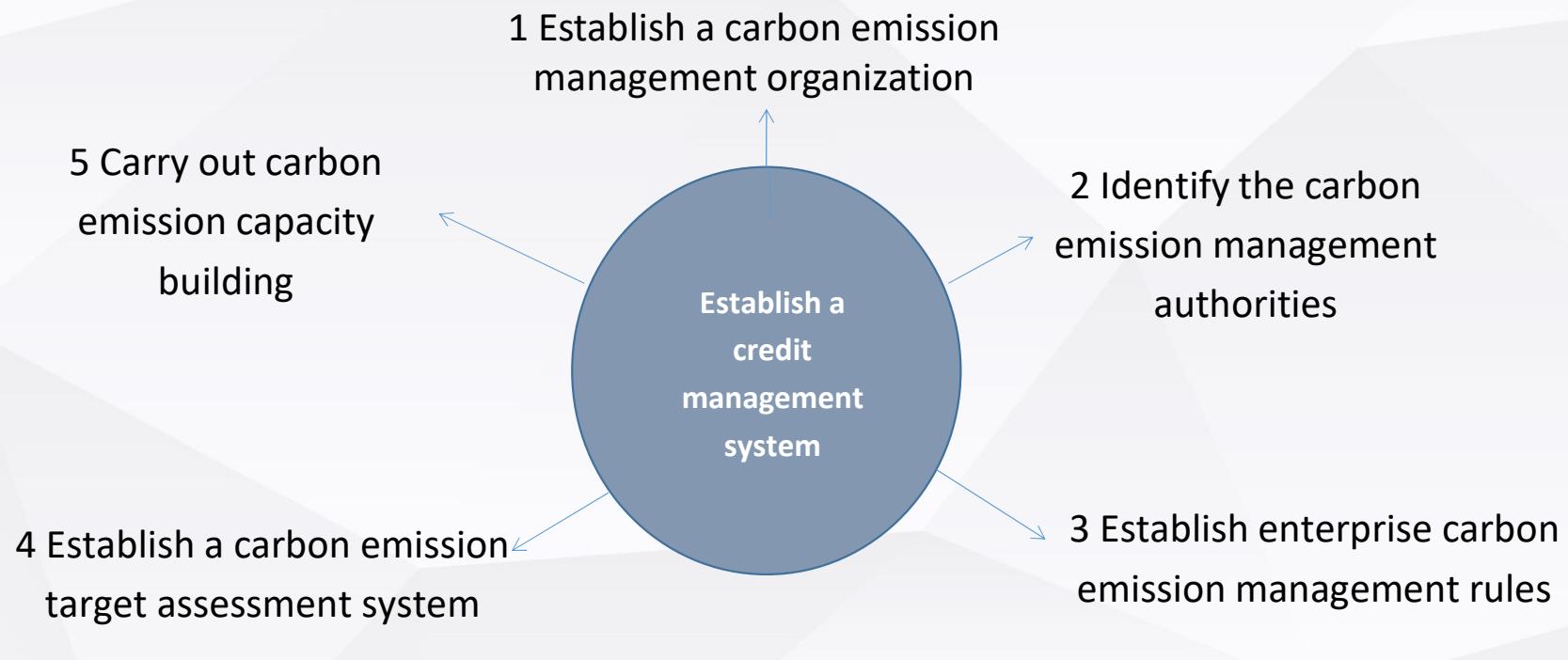
II. Management content of carbon emission compliance

➤ Management content



II. Management content of carbon emission compliance

- **Carbon management system construction--strengthen the whole process management of carbon emissions**

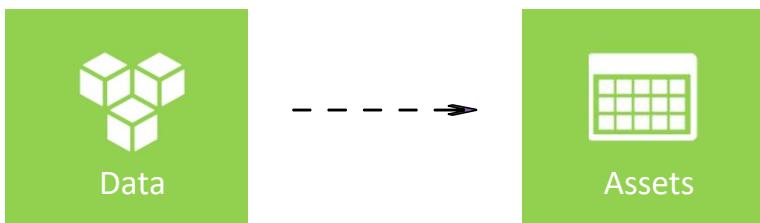


A suitable carbon management system can yield twice the result with half the effort

II. Management content of carbon emission compliance

➤ Monitoring, reporting and verification management: the basis for transactions and compliance

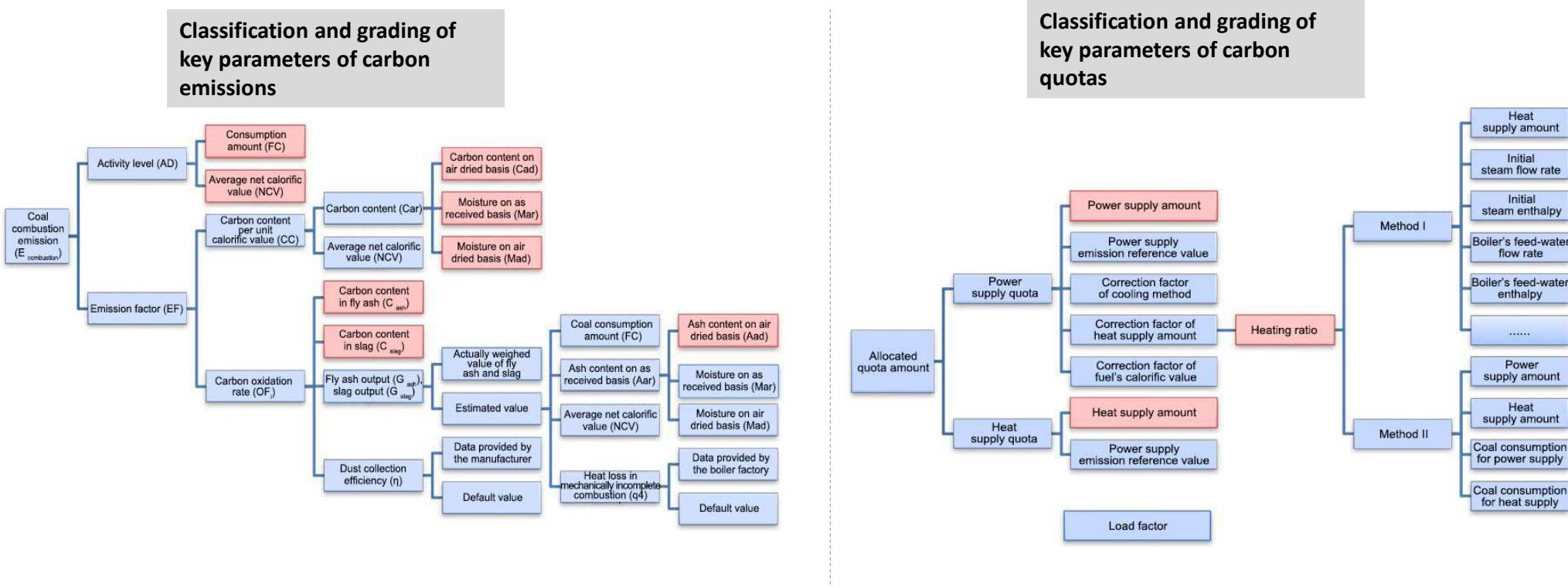
■ Comprehensive and accurate understanding of carbon emission data is the basis for enterprises to adjust their positions flexibly and effectively manage and trade carbon emission rights indexes, which is mainly realized through the a greenhouse gas emission data management mechanism featuring [measurability, reportability and verifiability](#) (referred to as "MRV").



- Strengthen the carbon emission data accounting ability and accurately judge the emission conditions;
- Follow the requirements of the competent authorities and carry out actual measurement of key parameters;
- Strengthen the capability to analyze historical, current, and future data, to identify the space for data optimization;
- Strengthen quota position forecasting and early warning capabilities to provide a basis for decision-making with regard to compliance.

II. Management content of carbon emission compliance

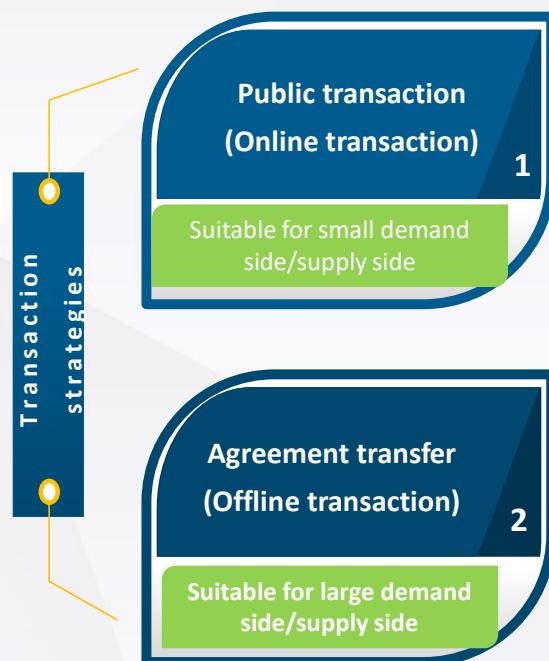
- Monitoring, reporting and verification management--Identification of key parameters of carbon emissions and carbon quotas in the power generation industry



Carry out graded decomposition of carbon emission and carbon quota parameters, determine the key influential parameters through sensitivity analysis, identify insufficient monitoring and space for optimization.

II. Management content of carbon emission compliance

➤ Carbon trading management--flexible management to adapt to the timeliness of carbon market prices



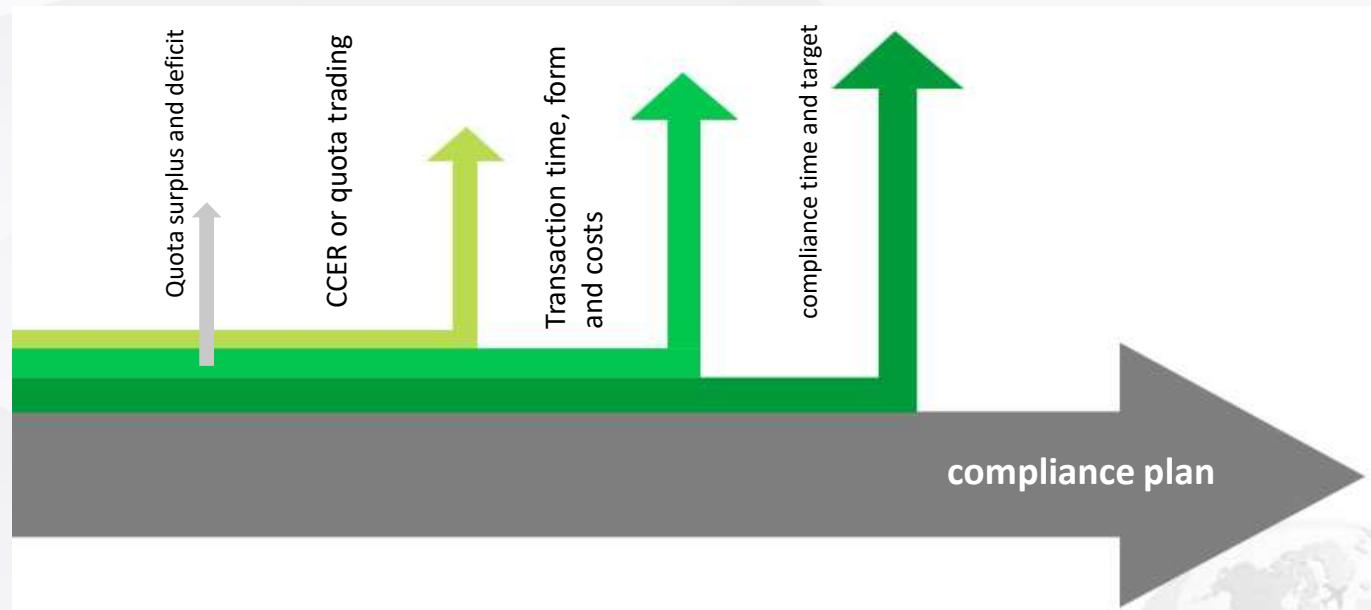
Transaction method	Public transaction	Agreement transfer
Features	<ul style="list-style-type: none">•Simple chain•Higher price•Inactive initial transaction•Obey the market price•Difficult to sell larger quantities at one time, increasing time cost and workload	<ul style="list-style-type: none">•Relatively low price•Pre-matched buyers/sellers•One-off mass sale/purchase becomes possible

Choose the appropriate trading method based on position and market conditions

- The core of carbon trading management is carbon trading capital management, carbon trading plan approval, and carbon trading operations. Its management goal is to strengthen supervision and risk prevention and control while ensuring a certain degree of flexibility in the carbon trading process and realize low-cost compliance.

II. Management content of carbon emission compliance

- **compliance management--formulate compliance plans and budget plans in advance**



The benefit of developing a compliance plan in advance is that the budget and approval process can be initiated in advance

II. Management content of carbon emission compliance

➤ Risk prevention and management--avoid risks and establish a risk control system

■ Policy risk

- ◆ Total quantity control
- ◆ Quota allocation plan
- ◆ Offset mechanism
- ◆ Penalty

■ Market risk

- ◆ Price fluctuation
- ◆ Gap (absolute or relative)
- ◆ Spot and derivatives (validity period)
- ◆ CCER supply
- ◆ Investment institutions, individuals
- ◆ Enterprise management behavior



■ Methods to avoid risks

- ◆ Establish/Seek a dedicated trading team
- ◆ Get familiar with rules and operating procedures
- ◆ Strengthen policy tracking and interpretation
- ◆ Timely and accurately judge the market information
- ◆ Formulate risk identification system and response system

II. Management content of carbon emission compliance

- **Energy-saving and carbon-reducing management--guiding energy-saving and carbon-reduction decisions and compliance approach management**

■ Necessity:

- The ultimate goal of carbon emission control is to achieve emission reduction
- Carbon reduction will become one of the important influencing factors for energy-saving business decisions

■ Work content

- Calculating the cost of corporate carbon emissions
- Assess the impact of carbon emissions on decisions on energy-saving measures
- **Working methods**
- Evaluate the impact of energy-saving and carbon-reduction measures on carbon emissions before, during and after the implementation of an enterprise's energy-saving plan
- Calculate the carbon emission cost, to provide basis for an enterprise's decisions on an energy-saving and carbon-reduction measures and compliance approach formulation

III. Cases of enterprises responding to carbon emission compliance

➤ Case 1 (unscheduled compliance)

For enterprises that fail to complete the compliance, in addition to fines, the competent authorities will also control the dishonest companies from various aspects such as loans, subsidies, and approval of new projects. This will also be confronted with other corresponding losses. On July 3, 2014, a listed company failed to complete its compliance work in 2013 in the pilot carbon market in Beijing. People's Daily published news in which the company is subjected to punishment. On July 4, 2014, the company's stock fell by 1.07%.



III. Cases of enterprises responding to carbon emission compliance

➤ Case 2 (neglect)

2014

□ Attitude:

- The first batch of emission control companies did not attach much attention to compliance;
- "The law does not blame the public, and enterprises gather together with a wait-and-see attitude."

□ System:

- Each enterprise conducted the management work itself and reported to the group;
- The group was slow in decision and failed to approve and reply in time.

□ Cost:

- Purchase quotas before compliance hastily;
- 12 enterprises had a quota deficit of 1,153,400 tons in 2014, and **paid a total of more than RMB30 million** for compliance.

Passive

VS

2015

□ Measures:

- Establish the Department of Climate Protection, strengthen policy research and enhance carbon asset management capabilities;
- Local competent authorities were recommended to adopt a benchmarking method to allocate quotas in their industries;
- Took measures such as fuel substitution to reduce carbon intensity;
- Implemented a sound market trading strategy and conducted market transactions actively;
- **Earned a profit of RMB12 million.**

Active

Different responses brought about distinct results

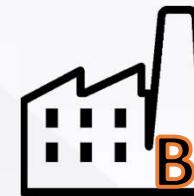
III. Cases of enterprises responding to carbon emission compliance

➤ Case 3 (Different trading decisions)

Pilot enterprises A, B



A gap of
180,000
tons



A gap of
180,000
tons

VS

■ Enterprise A's compliance procedures:

- Prejudged quota positions at the beginning of the year, and the quota gap was about 200,000 tons;
- Developed a compliance plan in advance and applied for a budget;
- Initiated the approval process before the government verification, and purchased quota of 200,000 tons in the price of RMB17/ton;
- After verification, it was determined that the actual gap was 180,000 tons;
- The remaining 20,000 tons' quota was sold at RMB35/ton before the compliance period, and the compliance was completed on time.

■ Enterprise A's compliance cost:

$$20 \times 17 - 35 \times 2 = \text{RMB}2.7 \text{ million}$$

■ Enterprise B's compliance process:

Quota positions were not measured before verification;

- After government verification, it was found that the quota gap was 180,000 tons;
- Applied for fund budget temporarily and launched the approval process, which lasted for up to one month;
- The quota was purchased at the price of RMB35/ton by the end of the compliance period, missing the best trading opportunity;
- Hastily completed the compliance.

■ Enterprise B's compliance cost:

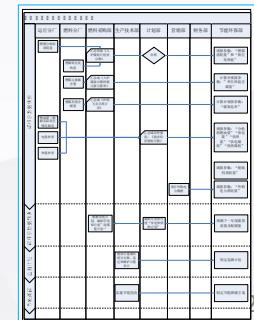
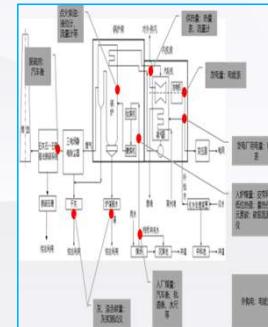
$$35 \times 18 = \text{RMB}6.3 \text{ million}$$

III. Cases of enterprises responding to carbon emission compliance

➤ Case 4 (Multidimensional management of the power plant)

Adopt multi-dimensional management mode, advance the decision-making time for compliance, and do a good job in compliance

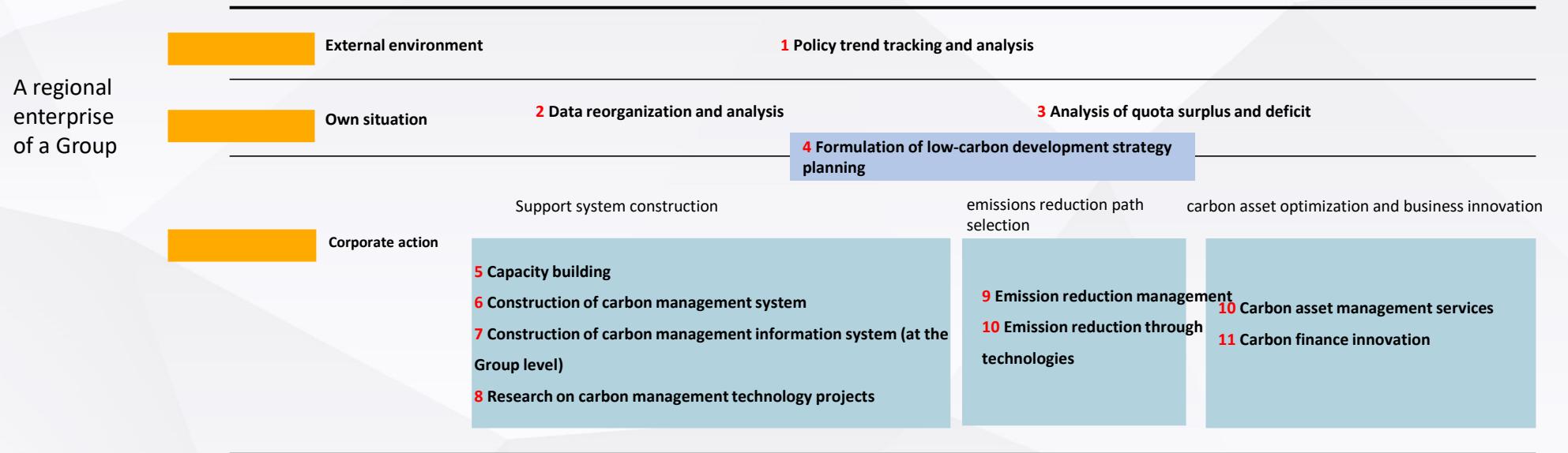
Standardization of system construction	Standardization of management	Normalization of capacity building	Lean data management	Information circulation and sharing
<ul style="list-style-type: none">• Organizational chart• Management measures• Work flow chart• Monitoring spotted map• Procedural documents	<ul style="list-style-type: none">• Data management manual• Standards for responses to verification	<ul style="list-style-type: none">• Regular training• Newsletter• Policy interpretation	<ul style="list-style-type: none">• Historical data review• Current data tracking• Future data forecasting• Benchmarking data management	<ul style="list-style-type: none">• Strengthen the communication with government authorities• Strengthen the communication with industry associations



III. Cases of enterprises responding to carbon emission compliance

➤ Case 5 (Group multi-dimensional management)

Make arrangement in advance with active participation, seizing the initiative in carbon market practices



- ◆ The research results of the scientific and technological project of *Carbon Management and Carbon Asset Operation Mechanism* won the second prize of the group's scientific and technological progress award
- ◆ Formulate a compliance approach and build a carbon index management action plan through the analysis of the units' history and future annual emission characteristics, to maximize the benefits of the enterprise.
- ◆ *Research on the Impact of National Carbon Market on the Production and Operation Mode of Power Generation Enterprises and Countermeasures* was appraised by China Electricity Council as an "international leading achievement"
- Through monitoring, reporting and verification of the thermal power unit's key parameter analysis, energy saving and carbon reduction achievement evaluation, researches on optimization of production and operation for carbon management and control, formulate compliance strategies under scenarios with different pressures and "13th Five-Year" carbon reduction path planning to provide management and control strategies for enterprises.

IV. Summary

- (I) Track policy requirements in a timely manner and conduct compliance as scheduled
- (II) Optimize the data management processes to ensure quality
- (III) Formulate a compliance plan in advance to control costs
- (IV) Strictly control the compliance risks and respond quickly

Please feel free to exchange different opinions.



Thanks!

————— T H A N K S —————