



Enterprise Carbon Emissions Data Management System and Its Application in Power Sector





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-  **02** Introduction to Carbon Emissions Data Management Platform
-  **03** Pioneers in Power Sector

1 Enterprise Carbon Management Strategy

Procedures for Enterprises to Participate in Carbon Market Operation



1 Enterprise Carbon Management Strategy

Two Attitudes toward Carbon Market

Slack

Not attaching importance to carbon market, Enterprise A missed the best opportunity to buy **quotas** and almost the **fulfillment** milestone, and finally bought them before the fulfillment deadline at higher-than-usual **carbon prices**, with overspends reaching nearly RMB500,000.

OR

Active

Enterprise B bought needed allowances at lower-than-usual carbon prices by purchasing **CCER, agreement transfer** and other transactions, saving nearly RMB500,000; meanwhile acquired RMB5 million in loans through innovative financial instrument **carbon emissions quota pledge loans**, for the purpose of its energy saving and carbon reduction.

1 Enterprise Carbon Management Strategy

Active Response: Solid Actions Both Inside and Outside

Outside

External shocks

1 Track and analyze policy trends

Inside

Own realities

2 Check/verify and analyze carbon emissions

4 Create low-carbon development strategy plan

3 Analyze quota surplus/deficit

Conduct

Corporate actions

Supporting systems building
5 Capacity building
6 Carbon management system building
7 Information support system

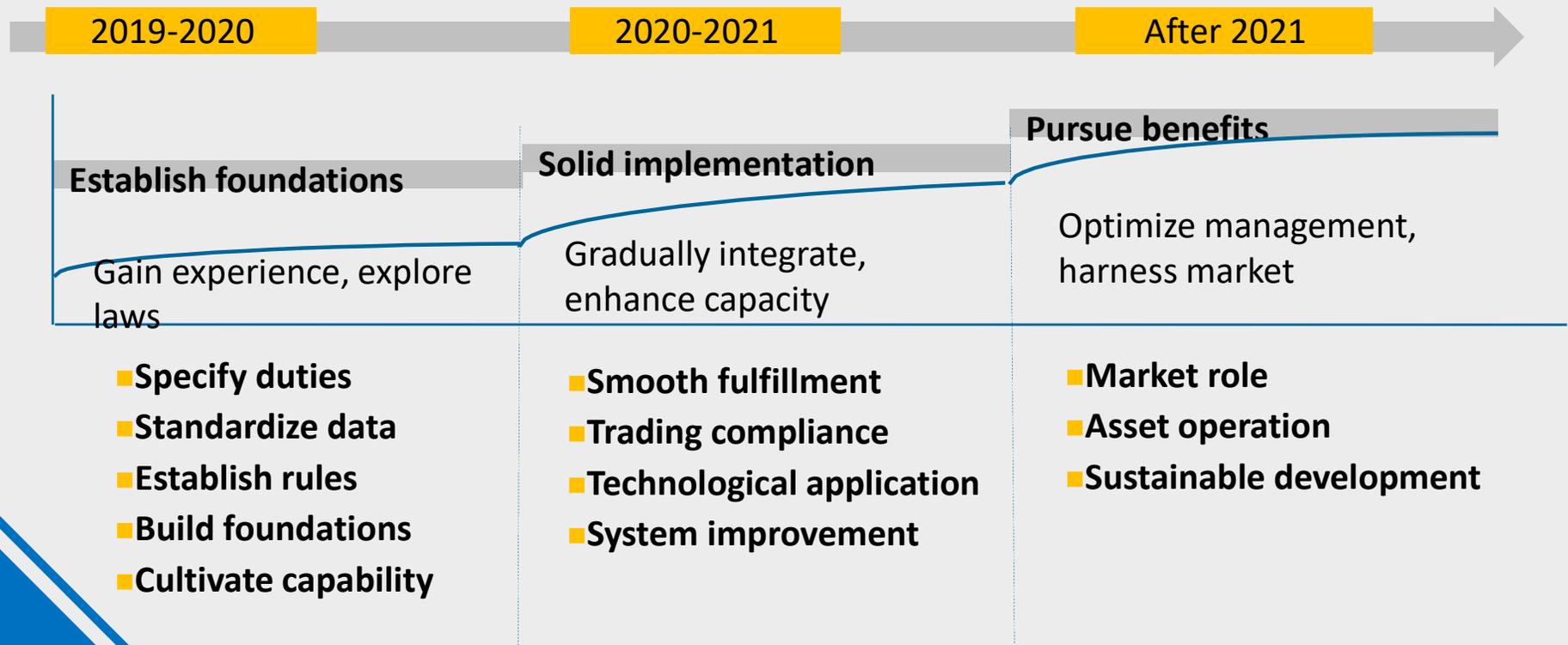
Emissions reduction path selection
8 Emissions reduction technology
9 CCER investment & development

Carbon asset management optimization
10 Carbon asset management

Fulfillment via low-cost path + Gains from carbon asset operation

1 Enterprise Carbon Management Strategy

Follow “Three-step” Strategy in National Carbon Market

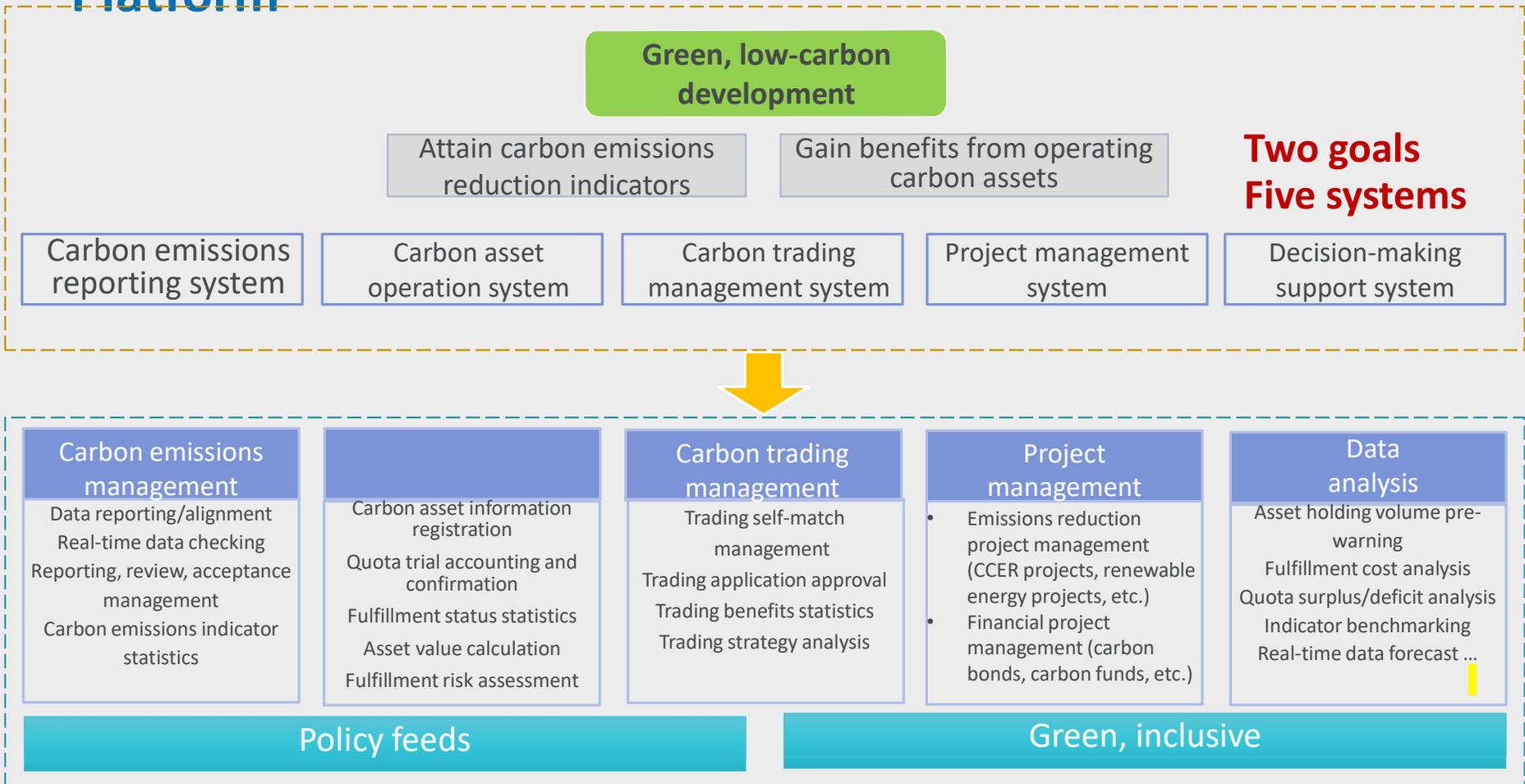




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2 Introduction to Carbon Emissions Data Management Platform



2 Introduction to Carbon Emissions Data Management Platform

Whole-process management assisting an enterprise in carbon emissions reporting

Data collection and reporting rules

Emission source information configuration

Monitoring plan

Data submission

Data review

Data external-reporting

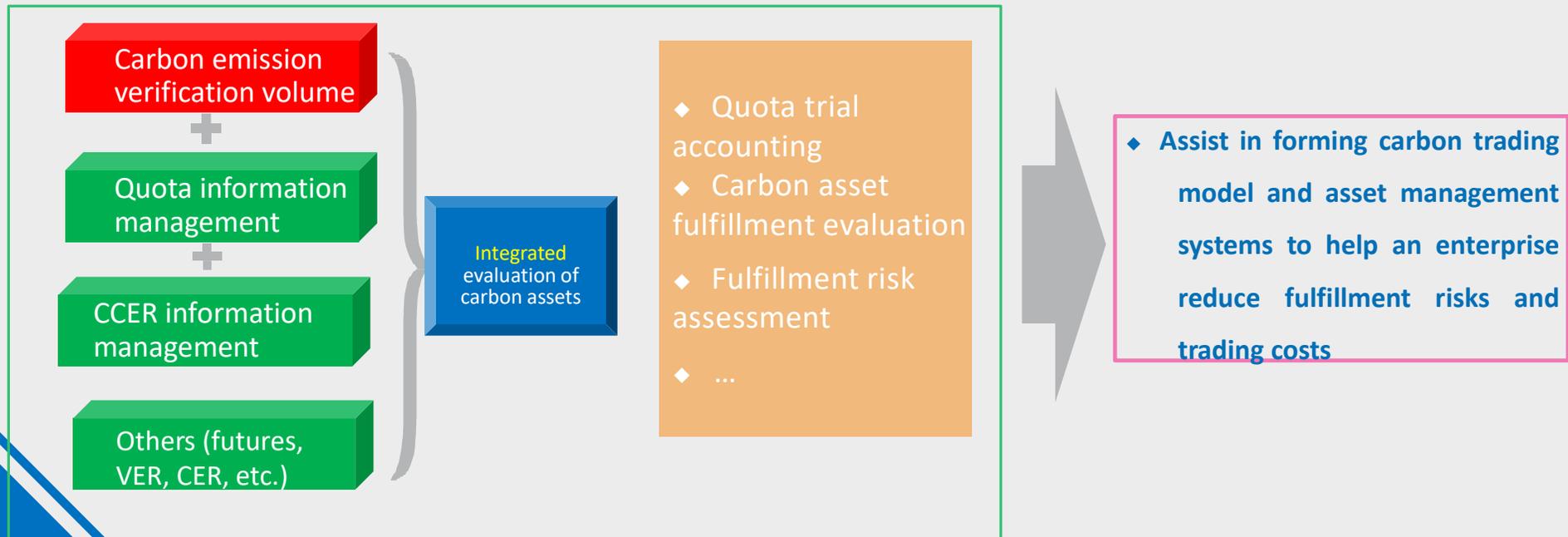
Carbon emissions management

- ◆ Create an enterprise's MRV processes and regulations
- ◆ Support carbon emissions reporting tasks required by competent authorities
- ◆ Accurately calculate carbon emissions to help confirm the quantity of quota issuance

2 Introduction to Carbon Emissions Data Management Platform

Counting, analysis and trading of enterprise carbon assets

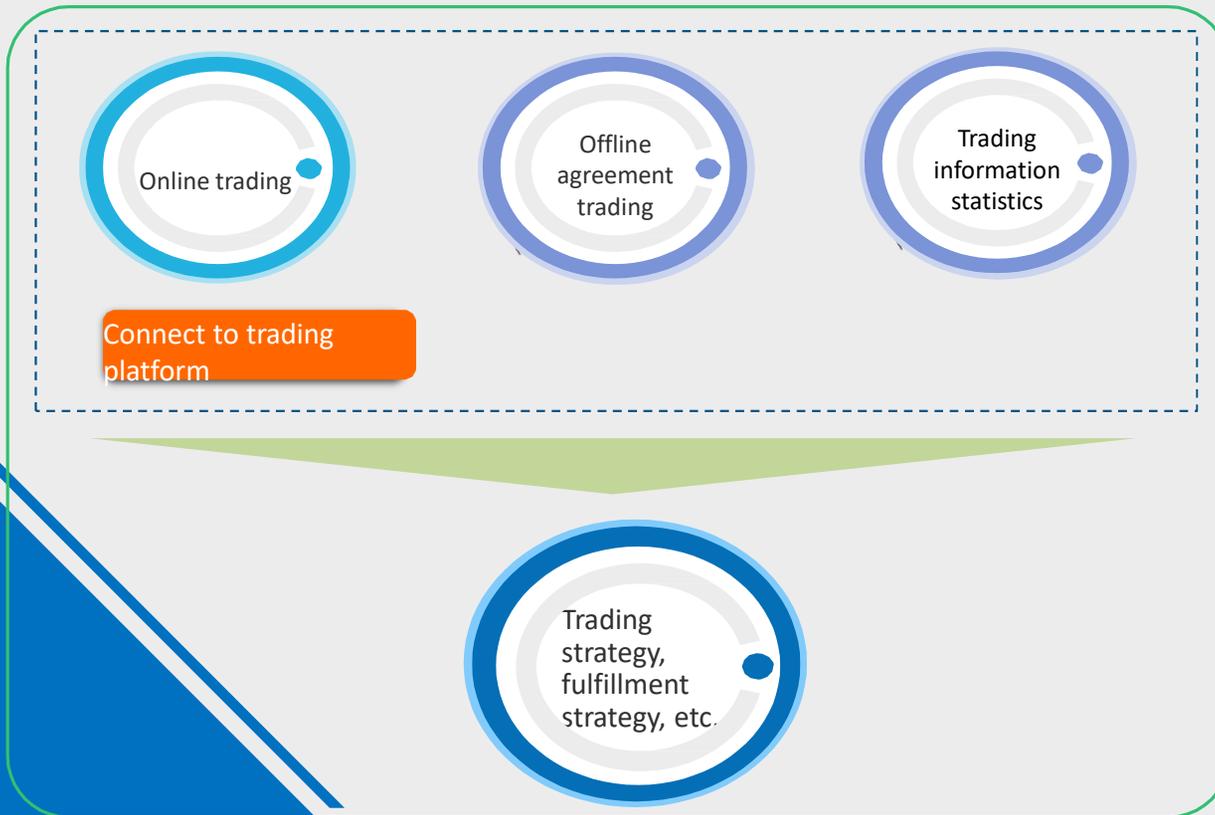
Carbon asset management



2 Introduction to Carbon Emissions Data Management Platform

Support an enterprise in building **trading and fulfillment strategies**

Carbon trading management



- ◆ Lay down fulfillment plan and set carbon asset allocation strategies through strategy analysis and price forecast **models** etc. in combination with asset holdings

2 Introduction to Carbon Emissions Data Management Platform

Coordinate management of emissions reduction projects and financial projects

Project management

Emissions reduction project management

CCER project

Green certificate project

Others

Financial project management

Carbon fund project

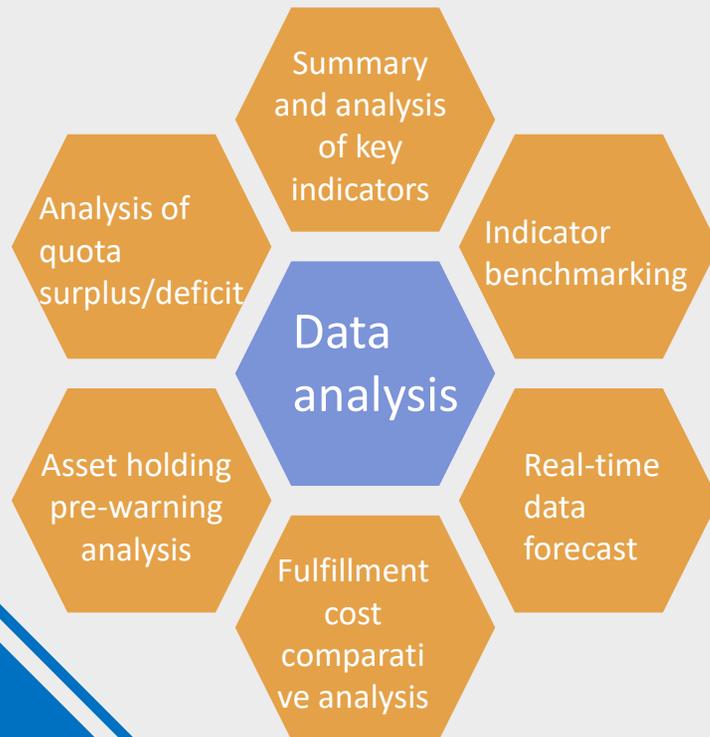
Carbon bond project

Others

◆ Plan energy saving and emissions reduction projects and financial projects coordinately, tap into emissions reduction potential, and seek asset appreciation, to prepare for future sustainable development

2 Introduction to Carbon Emissions Data Management Platform

Data analysis informs an enterprise' carbon management decisions



Data analysis and decision-making

- ◆ **Minimize fulfillment costs**
- ◆ **Maximize benefits from carbon asset operation**
- ◆ **Support an enterprise' strategic decisions concerning carbon management**

2 Introduction to Carbon Emissions Data Management Platform

Obtain services for policy feeds anytime

Policies and laws

Market developments

Custom news

News feeds

Information release

Policy feeds

- ◆ Bring all-around, in-depth, customizable policy notification, industry news and professional analysis
- ◆ Update real-time market developments to help quickly follow market dynamics and lay foundations for responding to carbon trading market
- ◆ Offer carbon management data bank accessible anytime

2 Introduction to Carbon Emissions Data Management Platform

A green, inclusive model bolsters an enterprise' sustainable development

Green, inclusive



- ◆ Record and reward green behaviors of an enterprise's employees
- ◆ Offer positive stimulus to their green behaviors and convey green concepts of the enterprise
- ◆ Drive its sustainable development and build green brand

2 Introduction to Carbon Emissions Data Management Platform

System interface



2 Introduction to Carbon Emissions Data Management Platform

System interface





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3 Pioneers in Power Sector

China Huaneng Group



Company profile:

As one of the five largest state-owned power generation enterprises in China, China Huaneng owns coal-fired and gas-fuelled power plants, and will join the power generation sector to be first included in the national carbon market; it also invested in and established many projects in wind power and other renewable energy

- Sets up a **specialized carbon asset management company**, supported with **Huaneng Carbon Asset Management Platform**;
- Expedites **system building**, unveiling group-wide measures for managing greenhouse gas emissions reduction (“Four Unified” principle), and developing a series of regulatory documents and systems, ranging from framework documents to detailed implementation rules;
- Initiates **GHG emissions statistics**, developing systems for emissions statistics, indicator adjustment and optimization;
- Works on voluntary emissions reduction project development;
- The carbon asset management company serves emission entities subordinate to the group, to perform fulfilment tasks;
- The carbon asset management company provides capacity building and information services for entities within the group.



3 Pioneers in Power Sector

China Huaneng Group



China Huaneng Group Carbon Asset Management Information Platform

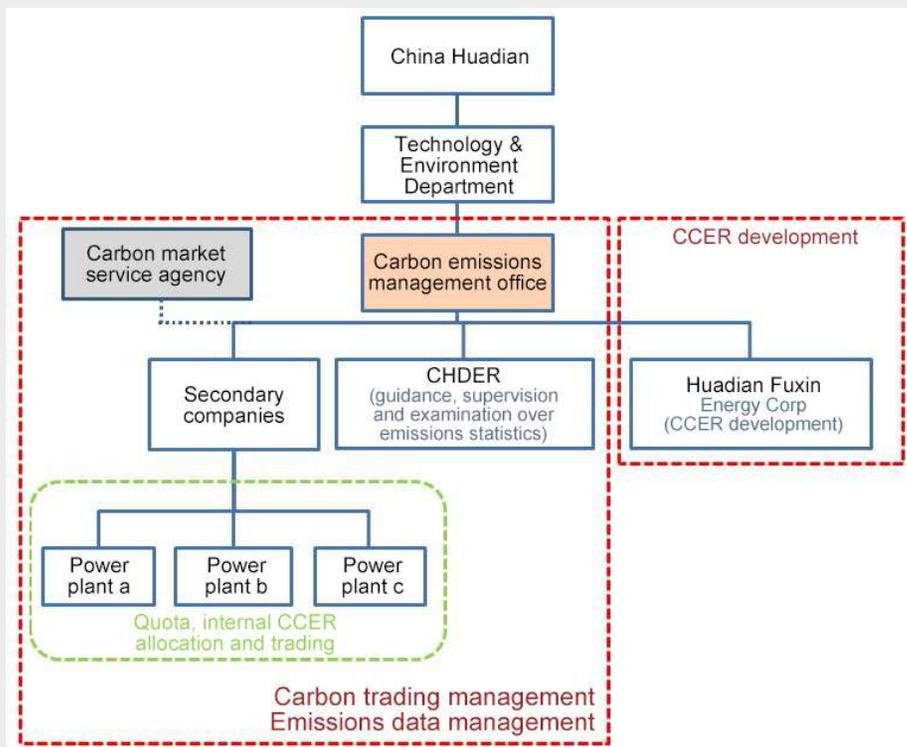


Phase II Planning

Market information such as trading price and volume will be garnered through external data sources. When conditions permit, **Phase II** will involve building data connection to related platforms in various regions, including carbon emissions data reporting systems of governments, and related carbon emissions or environment exchanges.

3 Pioneers in Power Sector

China Huadian



- Boasts a **sound carbon management system**, being a pioneer among central SOEs that has set up the group-level carbon emissions management office (affiliated with Innovative Development Department);
- Carries out group-level research on countermeasures against carbon emissions constraints, carbon strategy planning, and the like, backed by solid foundations in **policy research capacity**;
- **Self-checks carbon emissions**, completing the GHG data reporting and emissions checking in 102 China Huadian-affiliated power plants in China;
- Takes a lead among central SOEs in releasing *White Paper on Greenhouse Gas Emissions during the “12th Five-Year Plan” Period*;
- **Builds emissions system (Phase I and Phase II)**, with the former focusing on emissions data management and the latter aimed at all-around planning of carbon emissions, carbon trading, CCER project and fulfillment management;
- Vigorously launches low-carbon project studies, including CCUS Project demonstration program and online monitoring.

3 Pioneers in Power Sector

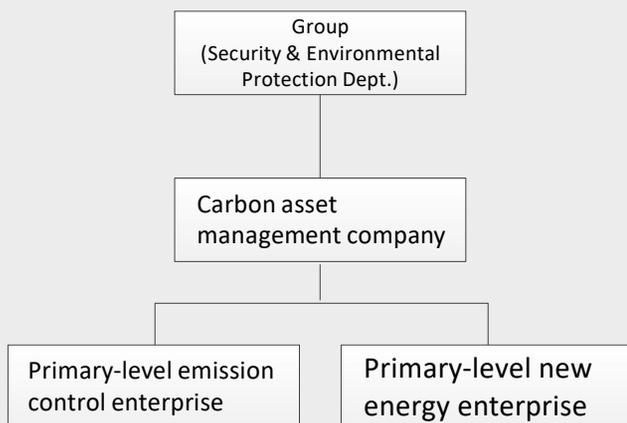
State Power Investment Corp



Company profile:

Controlling 80+ power plant enterprises, covering electrolytic aluminum, coal and cement industries.

- Specialized carbon management company: China's first specialized carbon asset consulting company established by central SOE;
- Lays down regulations: *Measures of State Power Investment Corporation Limited for Carbon Emissions Management*
- Introduces carbon emissions management system: **State Power Investment Corporation Carbon Emissions Management System**



Centralized 3-tier Management Structure



3 Pioneers in Power Sector

State Power Investment Corp



State Power Investment Corporation
Carbon Emissions Management System





Thank You

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