2018-2019

THE PROGRESS OF CHINA'S CARBON MARKET

EDF
ENVIRONMENTAL DEFENSE FUND
Finding the ways that work

国家发展和改革委员会能源研究所
Energy Research Institute National Development And Reform Commission

INTRODUCTION

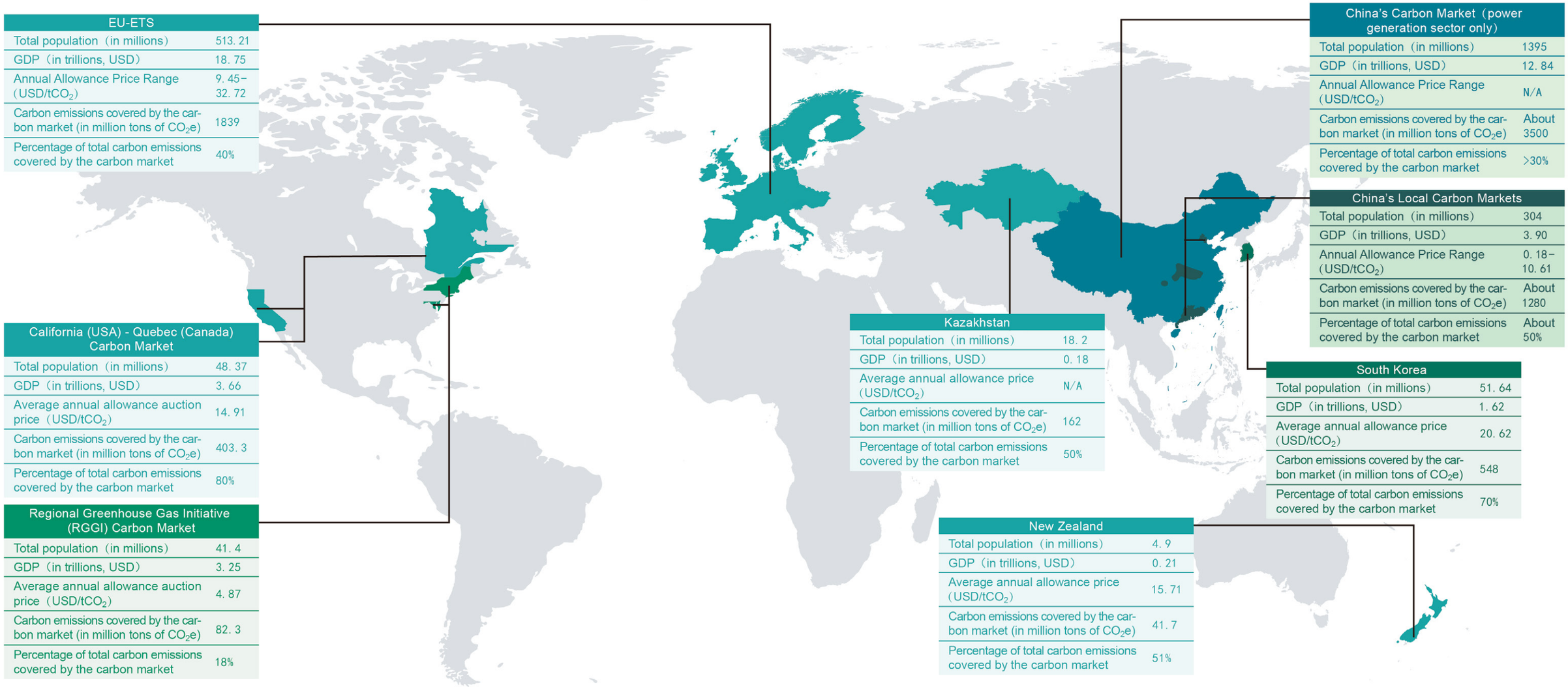
The challenge of global climate change has reached a critical breaking point. In 2018, atmospheric carbon dioxide (CO_2) concentration reached its highest level in the history; Earth's surface temperatures recorded the fourth highest yearly average in recorded history; the Arctic Circle experienced its highest temperature in history; and many places in Europe, India, China and the Americas saw unprecedented extreme weather events like floods and blizzards.

The key of addressing climate change is achieving deep greenhouse gas emission reductions. The Paris Agreement's goal of "holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels" reflects global consensus on the urgency of addressing climate change. The special report Global Warming of 1.5°C, released by the Intergovernmental Panel on Climate Change (IPCC) in 2018, stated that global greenhouse gas emissions would have to be halved from 2010 levels by 2030 and that net zero emissions would need to be reached by mid-century in order to realize the 1.5°C target. As such, promoting the early peak and rapid decline of greenhouse gas emissions has become the core objective of global action to address climate change.

Carbon trading is an important policy tool to effectively reduce emission at a low cost. Carbon trading can encourage low-carbon investment and technology innovation, in turn spurring low-carbon transformations of social economy. To this end, China launched seven carbon emission trading pilots in 2013, announced its plan to gradually establish a national carbon market in 2015, and started the national carbon market infrastruction construction in 2017. This report aims to outline the progress of China's carbon market so far.

GLOBAL CARBON MARKET CURRENT STATUS

In 2018, there are 20 carbon markets in operation worldwide, accounting for 8% of global emissions and 37% of the global economy. Six additional carbon trading systems are still in the planning phase. Under The Paris Agreement, 96 of 185 submitted Nationally Determined Contributions (NDCs), that represents 55% of global greenhouse gas emissions, have proposed carbon pricing as an important tool to support emission reduction commitments. Once it is established, China's national carbon market will be the world's largest.



EU-ETS	
Total population（in millions）	513. 21
GDP（in trillions, USD）	18. 75
Annual Allowance Price Range（USD/tCO_2）	9. 45–32. 72
Carbon emissions covered by the carbon market (in million tons of CO_2e)	1839
Percentage of total carbon emissions covered by the carbon market	40%

California (USA) - Quebec (Canada) Carbon Market	
Total population（in millions）	48. 37
GDP（in trillions, USD）	3. 66
Average annual allowance auction price（USD/tCO_2）	14. 91
Carbon emissions covered by the carbon market (in million tons of CO_2e)	403. 3
Percentage of total carbon emissions covered by the carbon market	80%

Regional Greenhouse Gas Initiative (RGGI) Carbon Market	
Total population（in millions）	41. 4
GDP（in trillions, USD）	3. 25
Average annual allowance auction price（USD/tCO_2）	4. 87
Carbon emissions covered by the carbon market (in million tons of CO_2e)	82. 3
Percentage of total carbon emissions covered by the carbon market	18%

China's Carbon Market（power generation sector only）	
Total population（in millions）	1395
GDP（in trillions, USD）	12. 84
Annual Allowance Price Range（USD/tCO_2）	N/A
Carbon emissions covered by the carbon market (in million tons of CO_2e)	About 3500
Percentage of total carbon emissions covered by the carbon market	>30%

China's Local Carbon Markets	
Total population（in millions）	304
GDP（in trillions, USD）	3. 90
Annual Allowance Price Range（USD/tCO_2）	0. 18–10. 61
Carbon emissions covered by the carbon market (in million tons of CO_2e)	About 1280
Percentage of total carbon emissions covered by the carbon market	About 50%

Kazakhstan	
Total population（in millions）	18. 2
GDP（in trillions, USD）	0. 18
Average annual allowance price（USD/tCO_2）	N/A
Carbon emissions covered by the carbon market (in million tons of CO_2e)	162
Percentage of total carbon emissions covered by the carbon market	50%

South Korea	
Total population（in millions）	51. 64
GDP（in trillions, USD）	1. 62
Average annual allowance price（USD/tCO_2）	20. 62
Carbon emissions covered by the carbon market (in million tons of CO_2e)	548
Percentage of total carbon emissions covered by the carbon market	70%

New Zealand	
Total population（in millions）	4. 9
GDP（in trillions, USD）	0. 21
Average annual allowance price（USD/tCO_2）	15. 71
Carbon emissions covered by the carbon market (in million tons of CO_2e)	41. 7
Percentage of total carbon emissions covered by the carbon market	51%

European Union: The Market Stability Reserve began operation in early 2019. The carbon emission allowance price has climbed from $9.45 per ton at the beginning of 2018 to a near-record high of $32.72 per ton in July 2019.

North America: California approved the post-2020 carbon market design plan in December 2018. Ontario linked its carbon market to California and Quebec in January 2018, but terminated it after six months. Virginia and New Jersey are respectively expected to join and to re-join the Regional Greenhouse Gas Initiative (RGGI).

Asia Pacific: Kazakhstan re-launched its carbon market in 2018 after the temporary suspension for two years. South Korea adjusted the second phase rules of its carbon market, expanded the scope of using benchmark for carbon emission allowance allocation, and introduced auctions. The New Zealand carbon market also introduced an auction mechanism and established a five-year plan for allowance issuance that will be updated annually.

China: Eight local carbon markets have continued to operate. Meanwhile, the progress of the national carbon market's legislation, system design, infrastructure, capacity building have been made through related work.

CHINA'S CARBON MARKET DEVELOPMENT MILESTONES

In 2011, China initiated the establishment of pilot carbon markets. By 2014, seven pilot carbon markets, Beijing, Tianjin, Shanghai, Chongqing, Guangdong, Hubei and Shenzhen,have begun operation, each with a comprehensive design but unique, regionally responsive elements. In 2013, China's national carbon market began its design phase. After a national carbon market teleconference in December 2017, *National Carbon Emissions Trading System (ETS) Establishment Work plan (Power Generation Industry)* was released, and national carbon market started its infrastructure construction phase. After 2018, the establishment of China's national carbon market started in order as planned, and major progress has been made in areas including legislation, infrastructure, and capacity building.

China's National Carbon Market

- December: Initiated the 2019's annual major emitting entities' carbon emission reporting and verification across 8 industries, and their next year's emission monitoring plan development.
- December: The Ministry of Finance published *Interim Provisions on Accounting Treatment of Carbon Emission Trading.*
- November: The national carbon emission registration system has been completed bidding for its data center design.
- October - December: 17 training sessions were organized nationwide for carbon market emission allowances' allocation and management.
- September: The MEE published the 2019 Power Generation Industry's Major Emitting Entities (Including Captive Power Plants and Cogeneration Plants) Carbon Dioxide Emission Allowance Allocation Work plan (Trial Calculation Version).
- August: The MEE reiterated the importance of the carbon market and highlighted it will take relevant measures to accelerate the national carbon market establishment in its monthly press conference.
- July: Premier Li Keqiang convened a meeting of the National Leading Group on Addressing Climate Change, and requested to accelerate the establishment of the national carbon market.
- April: The MEE organized a discussion was held on the reform plan of voluntary green house gas emissions reduction mechanism.
- April: *The Interim Regulations of Carbon Emissions Trading Management (Draft for Comment)* was published for public consultation.
- March: The MEE organized a discussion on determining the national carbon market's total amount of carbon emission trading allowances and its allocation plan.
- March: The MEE organized a discussion on management systems designed to support the national carbon market operation.
- December: Large-scale training activities were initiated for local government officials who were recently assigned carbon-market related work.
- December: The national carbon market emission registration system and clearing system have been completed their biding for construction.
- September: A training was held to facilitate the power generation industrys' participation in the national carbon market.
- March: The responsibility of addressing climate change was transferred to the newly established Ministry of Ecology and Environment (MEE).
- December: A teleconference for launching the national carbon emissions trading system was held, marking the start of the carbon market's infrastructure construction phase.
- October: The *13th Five-Year Plan for Greenhouse Gas Emissions Control* put forward specific requirements for establishing a national carbon emissions trading system.
- March: *Outline of the 13th Five-Year Plan* outlined the work "promote the establishment of a national unified carbon emissions trading market."
- September: President Xi Jinping announced that China would launch a national carbon emissions trading system in 2017.
- December: *Interim Measures for the Carbon Emissions Trading Management* was officially promulgated as further clarify the general framework of the national carbon market.
- November: The Third Plenary session of the 18th Communist Party of China's (CPC) Central Committee listed the establishment of national carbon market as a key task in "comprehensively deepening reform", a key goal in the CPC's governance.

2011 2012 2013 2014 2015 2016 2017 2018 2019 2020

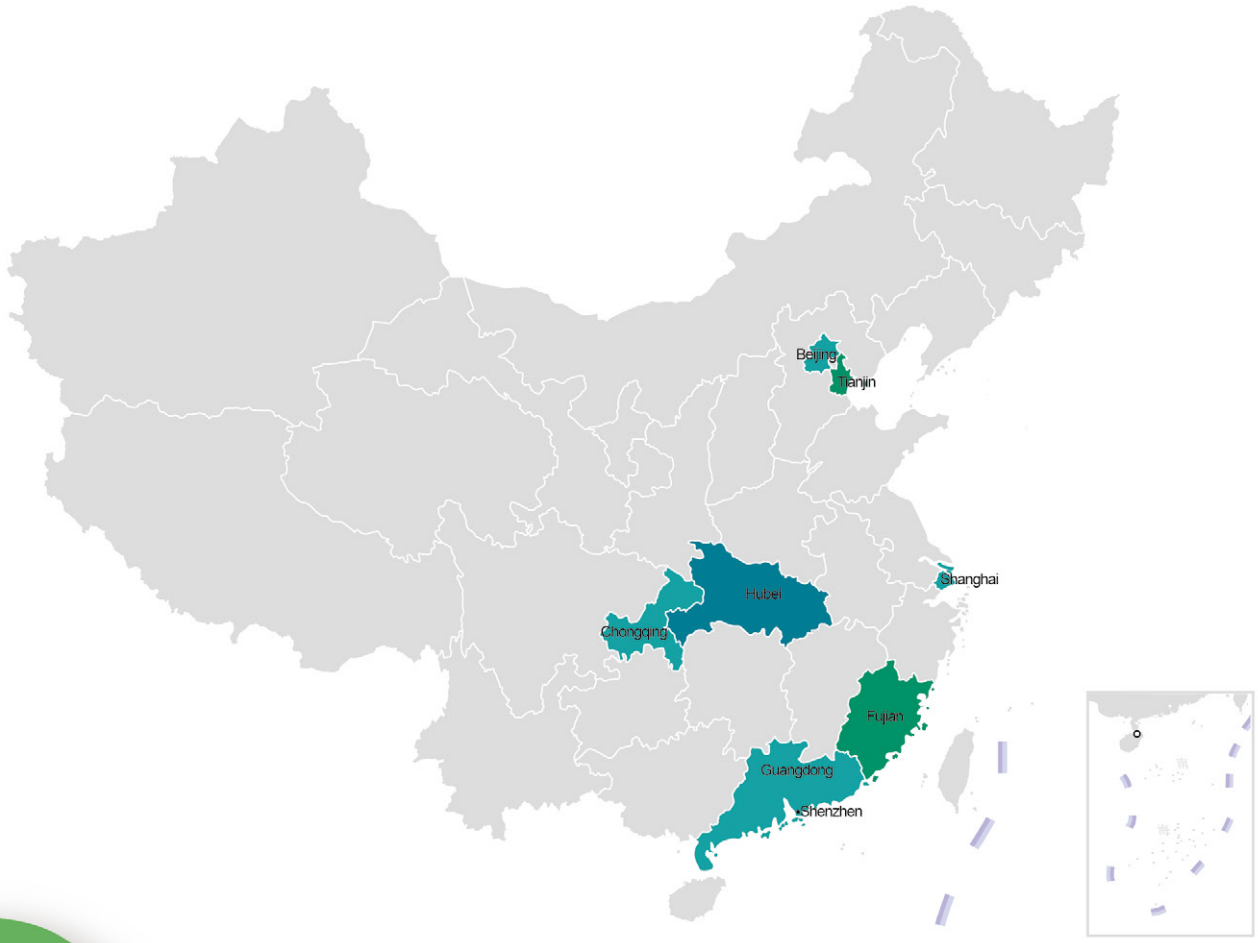
- October: seven China's carbon emissions trading pilots started their establishment.
- June: Shenzhen carbon emissions trading pilot was launched.
- November: Shanghai and Beijing carbon emissions trading pilots were launched.
- December: Guangdong and Tianjin carbon emissions trading pilots were launched.
- April: Hubei carbon emissions trading pilot was launched.
- June: Chongqing carbon emissions trading pilot was launched.
- December: Fujian local carbon market was launched.
- Since 2017: Local carbon markets have been continuing to operate.
- June: first round of carbon emissions verification and compliance procedures was completed for all seven carbon emissions trading pilots.

China's Pilot And Local Carbon Markets

CHINA'S LOCAL CARBON MARKETS

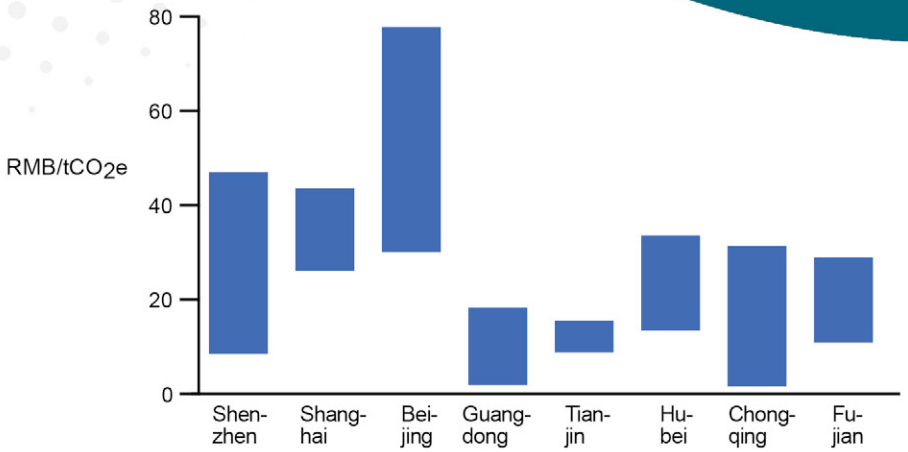
In 2011, Chinese government decided to launch carbon emissions trading pilots in Beijing, Tianjin, Shanghai, Chongqing, Guangdong, Hubei and Shenzhen. Seven carbon emission trading pilots, which are currently considered as local carbon markets, started their market operation between 2013 and 2014. In 2016, Sichuan launched its exchange of China Certified Emission Reductions (CCERs), and Fujian also launched its local carbon market and started the carbon emission allowances trading. After operating for several years, the local carbon markets have formed, each with a comprehensive design but unique, regionally responsive elements.

The China's local carbon markets cover more than 20 industries and nearly 3,000 major emitting entities. By June 2019, the China's local carbon markets' cumulative trading volume reached 330 million tons of CO_2, with more than 1.10 billion US dollars as the trading value. Different local carbon market has its different price range. All China's local carbon markets allowed to use CCERs credits for their compliance. As of August 2019, the total number of retired CCERs credits was about 18 million tons of CO_2e, which accounted for 22% of all issued CCERs.



China's Local Carbon Markets Map

Map Approval No. :GS(2019)1831



China's Local Carbon Market Price Range (2018)

Accumulated Trading Volume And Trading Value Of China's Local Carbon Market

All of China's local carbon markets have adopted innovative approaches to improve their systems, which provides valuable experience to borrow from in establishing the national carbon market. First, the local carbon markets gradually expanded the coverage of sectors and the scope of participating entities based on their own development needs. Second, the local carbon markets also explored carbon finance services, including carbon asset custody, carbon pledge loan, carbon emission allowance buyback, and carbon insurance. Third, the local carbon markets worked to link the citizens' low-carbon daily activites with the carbon market and helped implement voluntary emission reduction projects of PUHUI Certified Emission Reduction (PHCER).

Most importantly, the local carbon markets also facilitated local low-carbon transformations. All provinces and cities covered by the local carbon markets have achieved their annual target of Carbon emission reductions per unit of GDP for six consecutive years. For example, the carbon emissions of covered entities in Shanghai local carbon market decreased by 7% in 2017 compared to 2013, and Shanghai's total amount of coal consumption accumulatively dropped by 11.7%. The carbon emissions of covered entities in Hubei local carbon market fell by an average of 3.8% annually from 2014 to 2016.

CHINA'S NATIONAL CARBON MARKET

In November 2013, the Third Plenary Session of the 18th Communist Party of China (CPC) Central Committee adopted *The Decision of the CPC Central Committee on Several Major Issues Concerning Comprehensively Deepening the Reform*. Since then, the national carbon market establishment has become one of the key tasks in "comprehensively deepening reform", a key theme of the CPC's governance. This decision also marked China started the design phase of its national carbon market.

In December 2017, the teleconference of the national carbon emissions trading system and the issuance of National Carbon Emission Trading Market Establishment Work Plan (Power Generation Industry) marked the completion of the national carbon market design phase and the beginning of the national carbon market infrastructure construction. Meanwhile, Hubei and Shanghai were selected to respectively lead the construction of national carbon market's registration system and trading system.

March 2018, the responsibility of addressing climate change was transferred from National Development and Reform Commission (NDRC) to the Ministry of Ecology and Environment (MEE). After the transition, the government started to deeply integrate its carbon market development with its ecological and environmental protection work. Meanwhile, the national carbon market's legal framework, institutional regulations, data management, infrastructure construction, capacity building and other areas have also been comprehensively improved over time. From October to December 2019, the MEE organized 17 training sessions on carbon market emission allowances allocation and management nationwide, featuring trial calculation of carbon emission allowance and carbon trading simulation for major emitting entities. The training sessions also introduced the trading and registration policies and their system design, and the compliance process for the participating major emitting entities.

Market Framework

The national carbon market will be a unified market, consisted of four systems: the legal system, the allowance management system, the monitoring reporting and verification (MRV) system, and the market supervision system. The legal system will define national carbon trading-related regulations, serving as the fundamental basis for China's national carbon market. The allowance management system will define rules for carbon allowance setting, registration and allocation for major emitting industries, while the MRV system will collect, monitor, and verify data about their carbon emissions. Finally, the market supervision system will effectively ensure the stable and effective operation of the carbon market through oversight the market partcipants and their activites.

Legal System

- Legally and institutionally define major systematic arrangements of the carbon market

Allowance Management System

- Set national and key industries' carbon emission allowances and their allocation methodologies
- Establish the allowance registration system and management regulation

Monitoring Reporting And Verification (MRV) System

- Define the management regulations for major emitting entities and third-party verification agencies
- Define the specific process and method of carbon emission data monitoring, reporting, and verification

Market Supervision System

- Clarify the management regulations for market participants
- Supervise the trading related activities

Legislation

The *Interim Measures for the Carbon Emissions Trading Management* (hereinafter refer to as "Interim Measures") that was issued in 2014, aims to use departmental regulation to clarify the national carbon market's design and management system. After the responsibility of addressing climate change was transferred from the NDRC to the MEE, the MEE conducted public consultation for *Interim Regulations of Carbon Emissions Trading Management (Draft for Comment)* (hereinafter refer to as " Interim Regulations") in April 2019, thereby trying to elevate the carbon market's legal position and strengthening its abililty to penalize illegal activity.

Comparison Between The "Interim Measures" And The "Interim Regulations"

The Legal Status Of The Interim Regulations Is Higher

- The Interim Regulations will be a more comprehensive and systematic piece of legislation; If it's approved, it will be issued in the name of China's State Council, making its legal status second only to national law (as approved by the National People's Congress)
- The Interim Measures is a set of departmental rules, which is issued from relevant departmental administrative authorities and thus has a more limited scope

Legal Liability Is Clearer

- The Interim Regulations more clearly enunciates the responsibilities, rights, and benefits of stakeholders in the carbon market
- The Interim Regulations does not address certain system design issues and instead leaves them for supplementary legislation; thereby leaving flexibility for adjusting the carbon market in the future

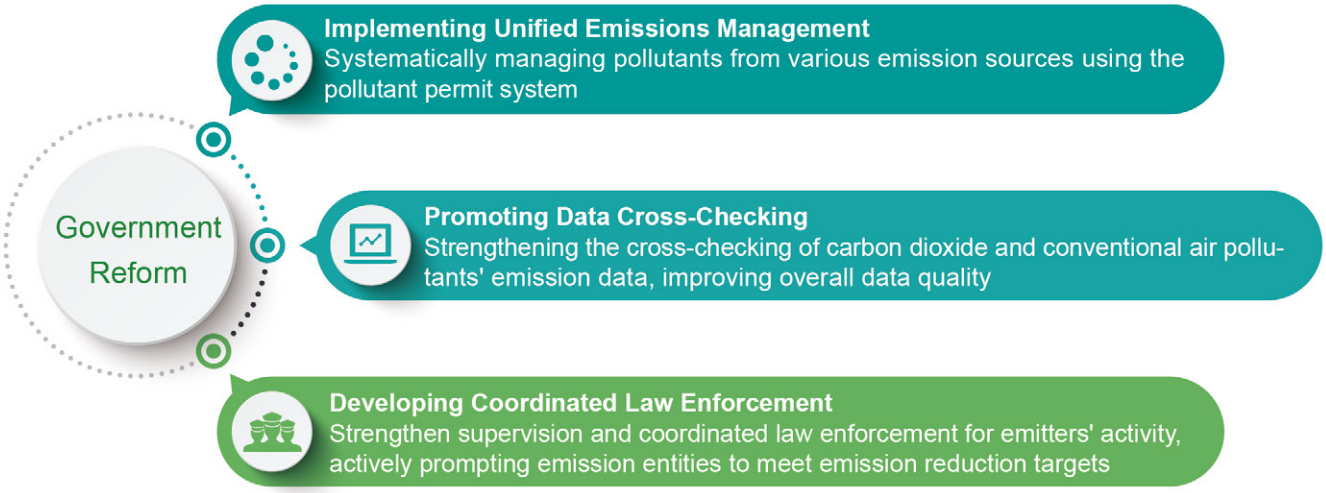
Penalities For Breaking The Law Are Heavier

- The Interim Regulations relies more on the law enforcement capacity. As such, the prescribed penalties are significantly heavier.
- The Interim Measures mainly uses administrative precedents to define enterprises' responsibility for policy violations. As such, its overall system of penalties is relatively light.

Government Reform

In March 2018, according to the requirements in *Plan for Deepening the Reform of Party and National Institutions*, the climate change department was transferred from the NDRC to the MEE. The national climate change department and local climate change departments respectively completed the transfers of authority in June 2018 and December 2018.

The newly transferred climate change department is not only continuing the design and management of the national carbon market, but also strengthening the carbon market's integration with other ecological and environmental protection work, bringing more opportunities for sound and effective implementation for national carbon market.



Actions From Power Generation Industry

The power generation industry has been selected as the first to be included in the national carbon market and as such has taken proactive steps to facilitate its implementation.

Specifically, the China Electricity Council (CEC) has actively coordinated with government authorities, conducted research on carbon trading for the power sector, and organized trainings to enhance its capacity for carbon market implementation.

Major power generating corporations have also established their own carbon asset management companies, thereby improving their carbon trading management. In addition, they have also mobilized entities covered in local carbon markets to proactively meet their compliance goals, as well as helped entities not yet covered by the carbon market to conduct research and receive technology training.

Actions From China Electricity Council

Establishing Professional Organizations	•Helped establish the Low-Carbon Electricity Development Reserch Center to manage the power sector's low carbon development policy planning and research, strengthen industry self-discipline, formulate technical specifications, and execute trainings.
Improving And Implementing System Design	•Conducts research on issues like carbon emission allowance allocation for the power sector and the power industry's carbon market test run •Released a technical guide on carbon emissions trading for power generation enterprises
Experience Exchange And Trainings	•Facilitated the power generation industry's participation in the carbon trading training sesssion •Released a training guide on carbon trading for the power industry •Participated in UNFCCC COP 24 and COP 25, as well as the 2018 Global Climate Action Summit

Actions From Power Generation Corporations

Building Carbon Asset Management Systems	•Many major power generation corporations have implemented a three-level, top-down management system composed of the head office, secondary companies, and generating facilities •Most groups have also set up carbon asset managment subsidiary companies
Successfully Fulfilling Compliance Obligations	•From 2013 to 2018, all power plants in carbon trading pilot programs fulfilled their compliance obligations
Organizing Carbon Emissions Monitoring and Technical Trainings	•Major power corporations have established their own digitized platforms, which helped conduct their annual carbon emissions' stock taking •Major power corporations also organized periodic technical trainings for carbon emissions management, and also sought experience from power companies participated in pilots

Enhancing Coordination Between The Carbon Market And Electricity Markets

China's power industry is in the midst of great change, with developments like the growth of renewable energy dramatically lowering the cost of power generation and a wave of broader reforms in the electricity market. Enhanced coordination between the carbon market and the electricity market is a crucial element in furthering the power sector's clean and low-carbon development.

Systemic Coordination: thermal power enterprises are currently under great operating pressure, which will become more pronounced with the implementation of the carbon market. An improved electricity market design is needed to transmit costs of carbon emissions downstream for thermal power enterprises.

Policy Coordination: Aside from carbon markets, the power industry also needs to comply with other energy efficiency and carbon reduction policies, such as those stipulated under energy efficiency targets and green energy certificates. Effectively coordinating the power sector's carbon trading policies with other environmental regulations is another important issue to consider.

Power Generation Industry's Carbon Emission Allowance Allocation Work Plan

Carbon emissions allowances for the power generation industry will be allocated using baseline method; the baseline will be determined the type of entity's power generator units. The MEE published two proposed set of plans to determine the allowance allocation in the *2019 Power Generation Industry's Major Emitting Entities Major Emitting (Including Captive Power Plants and Cogeneration Plants) Carbon Dioxide Emission Allowance Allocation Work Plan (Trial Calculation Version).*

Plan One divided power generator units into three categories according to the fuel type, specifically conventional coal-fired units, unconventional coal-fired units (including coal-fired circulating fluidized bed units) consuming coal gangue or coal water slurry, and gas-fired units.

Plan Two further divided conventional coal-fired units into two categories: conventional coal-fired units with installed capacity above 300MW and conventional coal-fired units with installed capacity equal to or below 300MW.

In addition, for cogeneration units, the carbon emissions baselines for the part of coal or gas-powered heating are 0.135 tCO_2/GJ or 0.059 tCO_2/GJ respectively.

Baselines For Carbon Emission Allowance Allocation In The Power Generation Industry

Plan One	
Generator Units	Baseline（tCO_2/MWh）
Conventional Coal-fired Units	1.015
Unconventional Coal-fired Units	1.12
Gas-fired Units	0.382
—	—

Plan Two	
Generator Units	Baseline（tCO_2/MWh）
Conventional Coal-fired Units With Installed Capacity Above 300MW	0.989
Conventional Coal-fired Units With Installed Capacity Equal To And Below 300MW	1.068
Unconventional Coal-fired Units	1.12
Gas-fired Units	0.382

NATIONAL CARBON MARKET DEVELOPMENT PROSPECTS

According to the *National Carbon Emission Trading Market Establishment Work plan (Power Generation Industry)* , 2020 will be a crucial moment to promote spot trading under the national carbon market. The national carbon market's establishment should thus accelerate the release of rules and regulations concerning carbon market allowance allocation, company GHG emissions data reporting, and data verification; improve the registration and trading system design; conduct thorough test runs; enhance its coordination with broader ecology and environment work; and facilitate operational improvements. It should strive for a goal of establishing the national carbon market with complete institutional regulations, active trading, strict supervision, and data transparency.

Items		Status	Completion	Immediate Direction	Urgency
Legal System		• *Interim Measures for the Carbon Emissions Trading Management* has come into effect • *Interim Regulations of Carbon Emissions Trading Management (Draft for Comment)* completed its public consultation period in May 2019 • *Interim Provisions on Accounting Treatment of Carbon Emission Trading was pulished by the Ministry of Finance*	◔	• Facilitate the promulgating of the interim regulations as early as possible • Initiate the revision and update of departmental regulations in a timely manner • Actively Develop supporting laws and regulations	★★☆
Allowance Management System	Allowance Setting and Allocation	• The plan of national carbon market's total carbon emission allowances and its allocation is in development • The MEE published the *2019 Power Generation Industry's Major Emitting Entities (Including Captive Power Plants and Cogeneration Plants) Carbon Dioxide Emission Allowance Allocation Work plan (Trial Calculation Version)* • Power plants conducted their trail allowance allocation	◔	• Publish the national carbon market's total carbon emission allowance and its allocation plan, and the power generation industry's allowances allocation plan • Develop allowance allocation plans for other sectors	★★★
	Registration System	• The national CCER registry has been online • The national carbon market emission registration system and clearing system have been completed their biding for construction. • The construction of a national carbon emission registration system has been accelerated • The national carbon emission registration system has been completed bidding for its data center design • The account opening of national carbon emission registration system will be started	◔	• Further accelerate the registration system's construction and account opening to save more time for carbon market test run • Facilitate the linkage between the national carbon emission registration system and trading system	★★★
Monitoring and Reporting Verification System	Monitoring and Reporting	• 24 industries' GHG emissions accounting methodology and reporting guidelines have been issued • 11 key industries' national standards of GHG emissions accounting methodology and reporting have been issued • The enterprise's emission monitoring plan template has been issued • The list of covered emitting entities in the power generation industry is submitted • The work of 2019 annual carbon emission report, verification and 2020 emission monitoring plan has started • Management measures for major emitting entities' GHG emission report is in development	◔	• Accelerate the development of management measures for major emitting entities' GHG emission report • Complete the verification of major emission entities' 2019 annual carbon emission report • Publish the list of covered emitting entities in the power generation industry	★★☆
	Verification	• The qualifications of third-party verification agencies and verifiers has been published • The guidelines of emissions monitoring plan verification and emissions report verification have been issued • The administrative measures for third-party verification agencies are in development	◔	• Outline the criteria of third-party verification agencies and verifiers, as well as related application and withdrawal process • Identify funding resources for verification-related costs	★★☆
Market Supervision System	Regulatory Plan	• The administrative measures of trading agencies are in development	◒	• Clarify the specific regulations for trading entities, trading products, and trading activities • Clarify the methods and frequency for supervision of trading agencies	★★★
	Trading System	• The national carbon emissions trading system has been completed bidding for its system construction	◕	• Ensure the construction of trading system is completed • Accelerate the trading entities' account opening in the trading system • Establish the linkage between the national carbon emission trading system and the national carbon emission registration system	★★★

MILESTONES

1 Local Carbon Market

Oct 2011 — NDRC issued *Notice of Carbon Emission Trading Pilot*, which decided to launch 7 domestic carbon emission trading pilots

Jun 2013 — Shenzhen carbon emission trading pilot was launched

Nov 2013 — Shanghai and Beijing carbon emission trading pilots were launched

Dec 2013 — Guangdong and Tianjin carbon emission trading pilots were launched

Apr 2014 — Hubei carbon emission trading pilot was launched

Jun 2014 — Chongqing carbon emission trading pilot was launched

Jun 2015 — Chongqing carbon emission trading pilot completed its first round of carbon emissions verification and compliance, which marked all 7 provincial and municipal carbon emission trading pilots completed their first round of verification and compliance

Dec 2016 — Fujian local carbon market was launched

2 National Carbon Market

Major Policy Documents

Nov 2013 — The Third Plenary Session of the 18th CPC Central Committee adopted The Decision of *the CPC Central Committee on Several Major Issues Concerning Comprehensively Deepening the Reform*. The national carbon market establishment has become one of the key tasks in such reform. This decision marks China started the design phase of its national carbon market

Dec 2014 — The NDRC published *Interim Measures for the Carbon Emissions Trading Management [No.17 Order of the NDRC of the People's Republic of China]*, which defined the overall framework of the national carbon market

Jul 2015 — The NDRC organized a public hearing of the *National Carbon Emissions Trading Management Decree (Draft)*

Sep 2015 — The China-US Joint Presidential Statement on Climate Change indicated that China would launch a national carbon emissions trading system in 2017

Sep 2015 — The *Overall Plan of Ecological Civilization System Reform* proposed to gradually establish the national carbon emission trading market, determine the national carbon market's total amount of carbon emission trading allowances and its allocation plan, improve the carbon trading registration system, and establish the carbon emissions trading market supervision system"

Oct 2015 — *The Fifth Plenary Session of the 18th CPC Central Committee* put forward the goals of "establishment a strong allowance allocation system of energy usage, water usage, pollution discharge, and carbon emission "

Jan 2016 — Public consultation began for *Carbon Emissions Trading Management Decree (Draft for Approval)*

Jan 2016 — The NDRC issued the *Notice on Earnestly Launching a National Carbon Emission Trading Market*

Mar 2016 — *The 13th Five-Year Plan for National Economic and Social Development of the People's Republic of China* outlined the establishment of a unified national carbon emission trading market and the implementation of carbon emission reporting, verification, certification and allowance management system for major emi-stting entities

Oct 2016 — *The 13th Five-Year Plan for Controlling Greenhouse Gas Emissions [GF[2016]No.61]* stated "establishing the national carbon emission trading system, initiating the operation of the national carbon emission trading market, and strengthening the national carbon emission trading basic support capacity"

Dec 2017 — The *National Carbon Emission Trading Market Establishment Work Plan (Power Generation Industry) [FGQHG[2017]2191]* was issued

Mar 2018 — The CPC central committee issued *Plan for Deepening the Reform of Party and State Institutions*, thereby transferred the responsibility of addressing climate change from the NDRC to the newly established MEE

Jan 2019 — The MEE released the *Interim Regulations of Carbon Emissions Trading Management (Draft for Comment)* for public comment

Sep 2019 — The MEE published the *2019 Power Generation Industry's Major Emitting Entities (Including Captive Power Plants and Cogeneration Plants) Carbon Dioxide Emission Allowance Allocation Work plan (Trial Calculation Version)*

Data Quality

Oct 2013 — Issued the first series (ten-item) of industry GHG emissions accounting methodology and reporting guidelines

Dec 2014 — Issued the second series (four-item) of industry GHG emissions accounting methodology and reporting guidelines

Jul 2015 — Issued the third series (ten-item) of industry GHG emissions accounting methodology and reporting guidelines

Nov 2015 — Issued 11 key industry's GHG emissions accounting methodology and reporting national standards

Jan 2016 — Issued national carbon emission trading's guidelines of third party verification

Jan 2016 — Issued national carbon emission trading's qualifications of third-party verification agencies and verifiers

Jan – Jun 2016 — Organized 2013~2015 carbon emission data reporting and the name list submission of 8 key industries' major emitting eneities

Mar 2016 — Issued self-study materials of enterprises' GHG accounting methodology and reporting guidelines for the 24 key industries in three series

May 2017 — Organized local trial calculation of carbon emission allowance allocation in Sichuan and Jiangsu

Dec 2017 — Initiated the 2016 and 2017's annual major emitting entities' carbon emission reporting and verification across 8 industries, and their next year's emission monitoring plan development

Dec 2017 — Established the national carbon market help platform

May 2018 — Issued the template of enterprises's emission monitoring plan and the guidelines of emissions monitoring plan verification and emissions report verification

Apr 2019 — Initiated the 2018's annual major emitting entities' carbon emission reporting and verification across 8 industries, and their next year's emission monitoring plan development

May 2019 — Organized the name list submission of major emitting entities in the power generation industry

Dec 2019 — Initiated the 2019's annual major emitting entities' carbon emission reporting and verification across 8 industries, and their next year's emission monitoring plan development

System Construction

Jan 2015 — The national CCERs registry is online

Apr 2015 — Begin the construction of direct reporting system for carbon emission data

May 2017 — The MEE reviewed the construction plan of national carbon market registration system and national carbon market trading system

Dec 2017 — Hubei and Shanghai have been selected to respectively lead the construction of the national carbon market's registration system and trading system

Dec 2018 — The national carbon market emission registration system and clearing system have been completed their biding for construction

Jun 2019 — Initiated account openings as a part of the national carbon market's registration and trading systems

Jun 2019 — Hundsun Technologies Inc. won the bidding of the national carbon emission trading system construction

Nov 2019 — The national carbon emission registration system has been completed bidding for its data center design

Capacity Building

Mar 2016 — National Carbon Market Capacity Building (Shenzhen) Center began operation

Apr 2016 — National Carbon Market Capacity Building (Hubei) Center began operation

May 2016 — National Carbon Market Capacity Building (Guangdong) Center began operation
National Carbon Market Capacity Building (Beijing) Center began operation
National Carbon Market Capacity Building (Chongqing) Center began operation

Jul 2016 — National Carbon Market Capacity Building (Chengdu) Center began operation
National Carbon Market Capacity Building (Shanghai) Center began operation

Sep 2016 — National Carbon Market Capacity Building (Tianjin) Center began operation

Mar 2017 — National Carbon Market Facilitative Office established

Mar – Dec 2018 — Governmental responsibility of addressing climate change was transferred from the NDRC to the MEE, while local government agencies tasked with climate change also transferred the responsibility to their local environmental bureaus

Sep 2018 — A training was held to facilitate the power generation industry's participation in the national carbon market

Dec 2018 — Large-scale training activities were held for local government officials who were newly assigned climate change-related responsibilities

Oct – Dec 2019 — 17 training sessions were organized nationwide for carbon market emission allowances' allocation and management

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