

# 广东碳市场进展与展望

Status Update on  
Guangdong Province's ETS

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# 广东碳市场建设背景--广东省经济及碳排放背景

## Background of Guangdong ETS--Economy & Carbon Emissions

- **面积:** 17.977万平方公里
  - **人口:** 1.26亿 (2020年), 中国第一人口大省
  - **经济发展现状:**
    - GDP11万亿元, 占中国10%, 中国第一经济大省; 近五年年均增长率约为7%;
    - 人均GDP9.61万元, 达中高收入地区的较高水平;
    - 毗邻香港、澳门, 拥有广州、深圳两个国家中心城市, 大湾区城市圈将是中国经济最活跃区域之一;
    - 区域经济发展差异大, 珠三角地区面积占30%产出80%GDP。
- 
- **Area:** 179.77 thousand square kilometers
  - **Population:** 126 million in 2020, the most populous province in China
  - **Status of economic development :**
    - In 2020, GD GDP was 1.7 trillion US dollars, accounts for 10% of China, the largest province in China in GDP; the average annual growth rate in the past five years has been about 7%;
    - GDP per capita is 15 thousands US dollars, a relatively high level in middle - and high-income areas;
    - Adjacent to Hong Kong and Macao, with two national central cities of Guangzhou and Shenzhen, Guangdong-Hong Kong-Macao Greater Bay Area will be one of the most economically active area in China;
    - There are great differences in regional economic development in Guangdong, with the Pearl River Delta region accounting for 30% of the area and outputting 80% of GDP.



# 广东碳市场建设背景--广东省经济及碳排放背景

## Background of Guangdong ETS--Economy & Carbon Emissions

### ■产业结构以服务业、制造业为主

- 三次产业结构：一产：二产：三产
  - 广东 (4.3%：39.2%：56.5%)
  - 中国 (7.7%：37.8%：54.5%)

### ■能耗体量较大但能效先进、能源结构优化程度较高

- 能源结构：煤：油：气：调入电及可再生能源
  - 广东 (34.2%：25.9%：8.7%：31.2%)
  - 中国 (57.7%：18.9%：8.1%：15.3%)
- 能耗强度：排名全国第二~第三低
- 能耗总量：全国第二高

### ■碳排放虽以工业为主，但碳强度整体较低

- 碳排放以发电、制造业行业为主，占比超过70%
- 碳强度：排名全国第二低
- 碳排放总量：排名全国第六高

### ■Industrial structure is dominated by service industries and manufacturing

- Industrial structures: Agriculture, Industry, Services
  - Guangdong (4.3%：39.2%：56.5%)
  - China (7.7%：37.8%：54.5%)

### ■Large energy consumption volume, but advanced energy efficiency and low carbon energy structures

- Energy structure: coal, oil, gas, purchased electricity and renewable energy
  - Guangdong (34.2%：25.9%：8.7%：31.2%)
  - China (57.7%：18.9%：8.1%：15.3%)
- Energy consumption intensity: ranked 2nd to 3rd lowest in China
- Total energy consumption: the 2nd highest in China

### ■Although the carbon emissions are mainly from industry, the carbon intensity is relatively low overall

- Power generation and manufacturing account for about 70% of carbon emissions
- Carbon intensity: the 2nd lowest in China
- Total carbon emissions: the 6th highest in China

# 广东碳市场建设背景--地方试点碳市场工作启动

## Background of Guangdong ETS--Regional Pilots Begin

- 2011年，国家发展和改革委员会同意在北京、天津、上海、重庆、广东、湖北、深圳等开展碳排放权交易试点

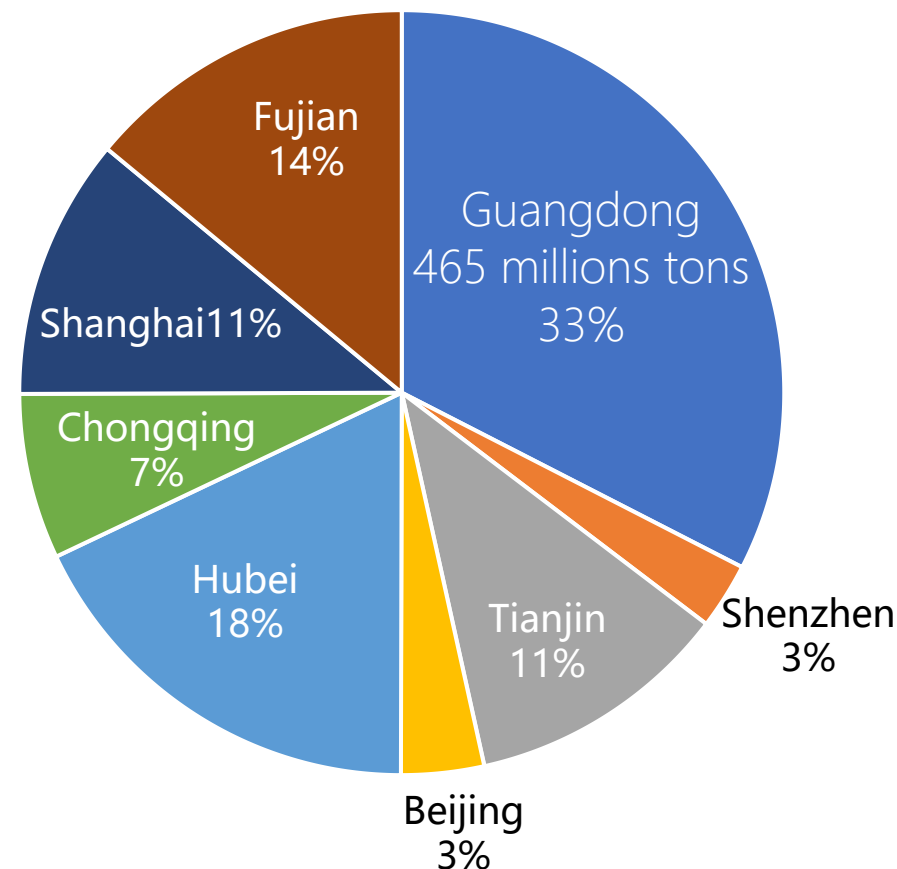
In 2011, China National Development and Reform Commission agreed to start emission trading pilots in Beijing, Tianjin, Shanghai, Chongqing, Guangdong, Hubei, Shenzhen

- 市：北京、天津、上海、重庆、深圳

City: Beijing, Tianjin, Shanghai, Chongqing, Shenzhen

- 省：广东、湖北

Province: Guangdong, Hubei



中国碳交易试点配额总量  
Total of China ETS Pilots Allowances

# 广东碳市场现状--基本要素

## Status of Guangdong ETS---Basic Elements

### 基本要素



#### 纳入行业

电力、水泥、钢铁、石化、造纸、民航



#### 纳入门槛

年碳排放 2万吨(或年消耗量1万吨标准煤)以上



#### 纳入企业数量

245 (2020年度)



#### 配额总量

达到约4.65亿吨



#### 履约情况

迄今已完成7个履约期，且大履约率基本为100%

### Basic elements

#### Covered Sectors

Power, cement, steel, petrochemical, paper making, civil aviation

#### Threshold

Annual emission of 20,000 tons (or energy consumption of 10,000 tons of standard coal equivalent)

#### Number of Covered Enterprises

245 (2020)

#### Cap

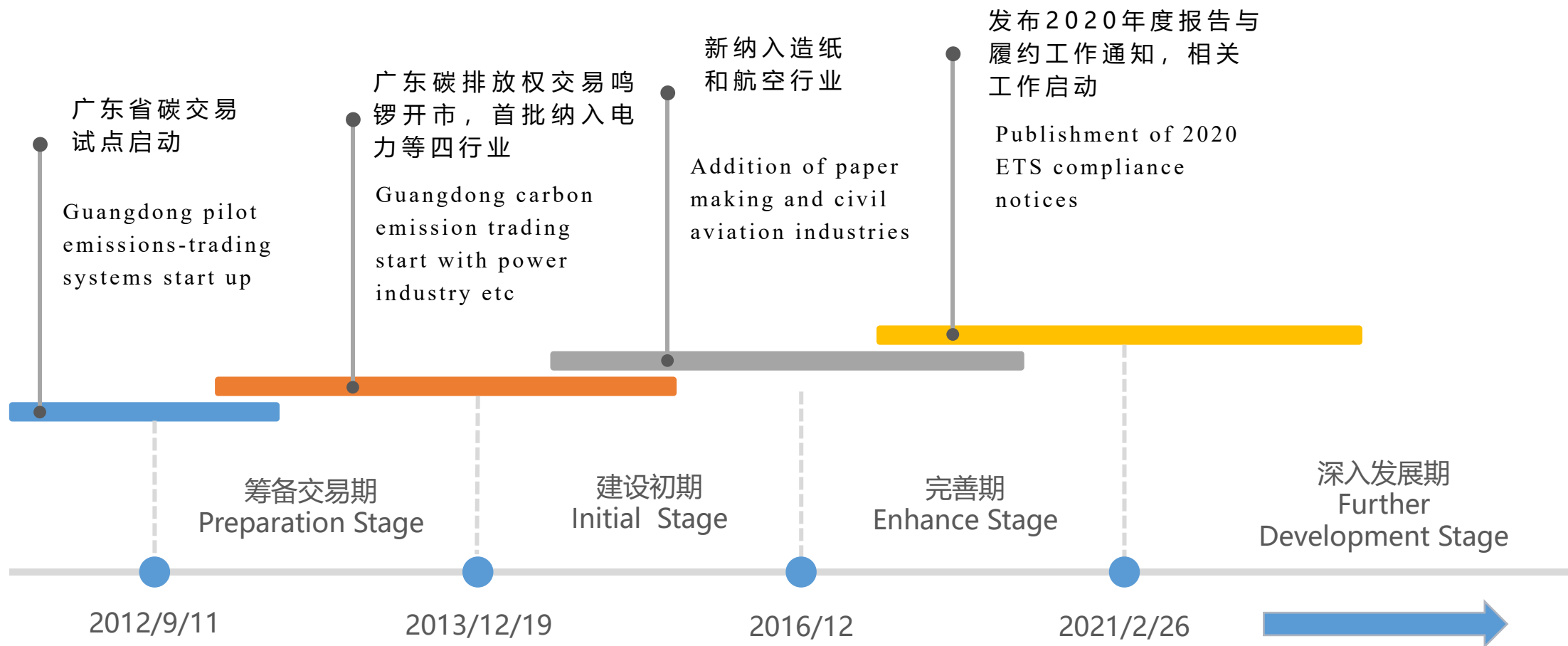
About 465 million tons

#### Performance

Completed 7 compliance periods to date, with 100% compliance rate in most years

# 广东碳市场现状--建设历程

Status of Guangdong ETS---Construction History



# 广东碳市场现状--政策及机制体系

## Status of Guangdong ETS---Policy and Institutional System

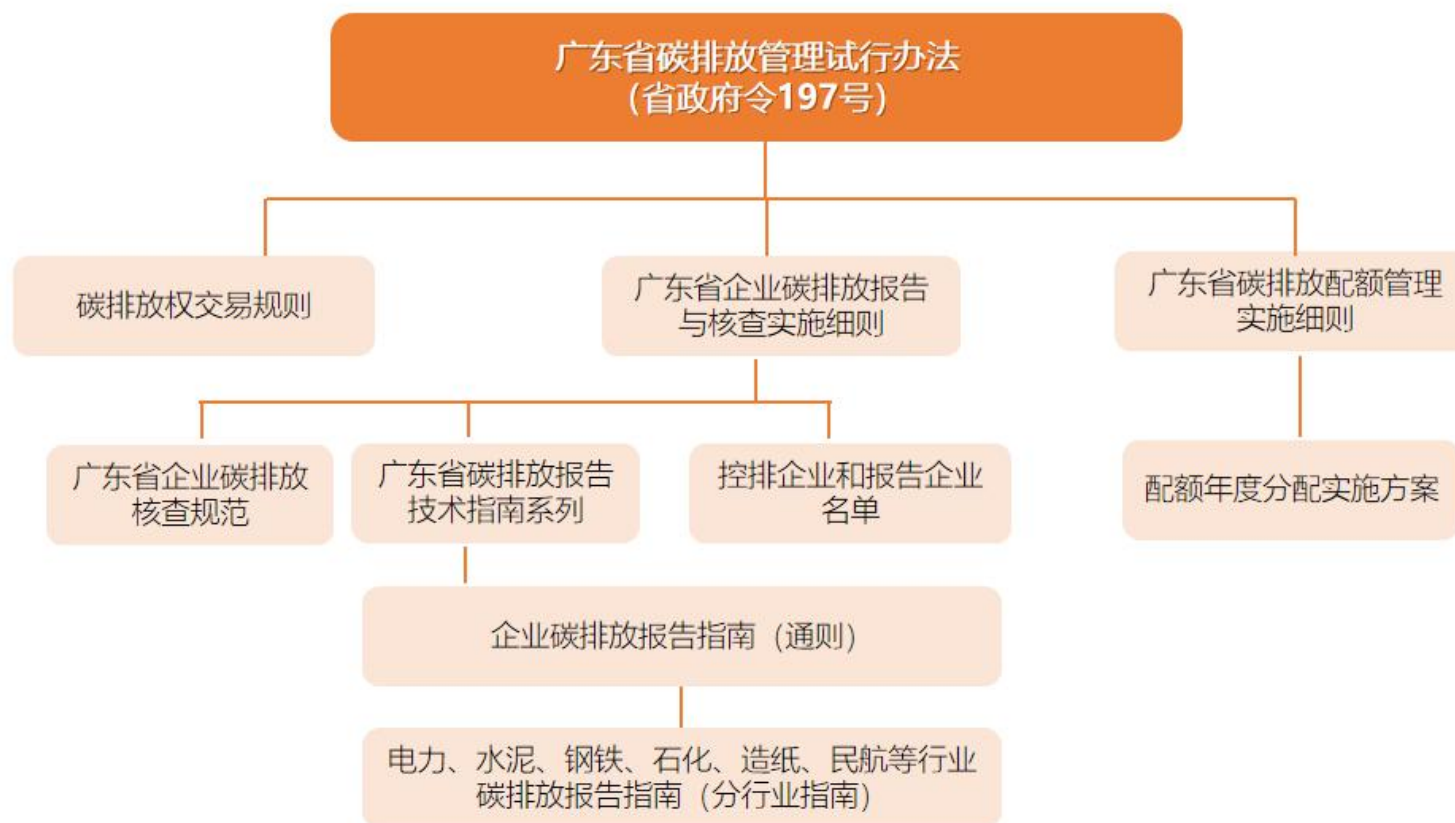
配额管理机制  
Allowances  
Management  
Mechanism

报告核查机制  
MRV  
Mechanism

交易机制  
Trading  
Mechanism

激励惩罚机制  
Penalty and  
Reward  
Mechanism

抵消机制  
Offsetting  
Mechanism



总纲性管理文件  
General Management  
Regulation

管理细则  
Management  
Rules

技术细则  
Technical  
Rules



# 广东碳市场现状--制度特点

## Status of Guangdong ETS--Characteristics

### 刚柔并济的引导性履约机制

A stringent, yet flexible, guided compliance mechanism

#### 激励性措施 Incentive Measures

同等条件下支持已履行责任的企业优先申报相关领域资金项目扶持  
Enterprises that have fulfilled their responsibilities will be prioritized in national efforts to project or financial support

#### 沟通引导性措施 Communication And Guidance Measures

主管部门和工作组共同与企业沟通协调，了解实际困难，形成协助企业的对策建议；一系列协调措施无效的情况下，再启动处罚程序

Competent authorities and the carbon trading working group communicate and coordinate with the enterprises to understand their practical difficulties and formulate suggestions to assist them; Penalty procedures are implemented only when communication and coordination measures remain ineffective.

#### 惩罚措施 Publishment Measures

- 罚款
- 配额抵减
- 公告违规
- 纳入征信记录
- Financial Fines
- Allowance Deduction
- Enterprise Violation Announcement
- Credit Record

# 广东碳市场现状--制度特点

## Status of Guangdong ETS--Characteristics

覆盖范围纳入间接排放，促进用电端减排

Emission coverage include indirect emissions so as to promote emission reduction of electricity users

### 挑战 Challenges

#### ■ 中国电力市场化改革进程：

China electricity marketization reform process:

- 2015年发布深化电力体制改革方案  
In 2015, deepening the reform of the electricity system plan was released
- 2017年，各地建立基本电力交易中心，逐步扩大电力市场化交易规模  
In 2017, the basic electricity trading centers were established and promote the transaction of electricity market gradually

#### ■ 电价非市场化的情况下电力企业无法有效传导碳成本，无法对用电端企业减排产生压力

Electricity companies hardly transmit carbon costs and cannot exert pressure on emission reduction of power users when non-marketization of electricity prices

### 解决措施 Solutions

- 覆盖范围计入纳入企业的间接排放，有效提升对用电端的控排  
The emission coverage include enterprises indirect emissions which improve the control of electricity consumption

- 深入探讨在强度控制/总量控制碳排放体系纳入间接排放的重复性问题  
In-depth research on the repetitive problems of intensity control and total control carbon emission system included in indirect emissions

# 广东碳市场现状--制度特点

## Status of Guangdong ETS--Characteristics

平衡经济发展与减排，在设置分配因子时进行压力测试，渐进式加强控排

Balance economy and emission reduction, setting allocation factors after conducting stress tests and strengthen emission control gradually

**电力**  
**Electric Power**

免费: 95%

Free: 95%

**其他行业**  
**Other Sectors**

免费: 97%

Free: 97%

2014

- 电力行业免费比例下降至95%

The Free Charge proportion of electricity industry dropped to 95%

2015

- 燃煤热电联产机组优化为基准法

Coal-fired cogeneration units optimized for emissions-based method

- 有偿配额计划拍卖量下调

Reduce quantity of allowances auction

2016

- 配额总量下调至历年最低The total allowances has been lowered to the lowest level
- 钢铁基准值下调Steel benchmark decreased
- 所有历史法行业年度下降系数下调Industry annual decline coefficient has reduced of grandfathering methods

2017

- 电力、水泥、钢铁基准值下调

The benchmarks of power, cement, steel and steel downward

2018

- 电力基准值下调  
The power benchmark downward
- 造纸能源修正因子下调  
Papermaking energy correction factors downward

# 广东碳市场现状--制度特点

## Status of Guangdong ETS--Characteristics

积极探索有偿分配制度，提升企业有偿意识，促进碳价格发现

Actively explore the paid distribution system, enhance enterprises awareness, and promote the discovery of carbon prices

	2013年度 Year 2013	2014年度 Year 2014	2015、2016年度 Year 2015、2016	2017年度以后 After Year 2017
参与方Participant	控排企业 Covered Enterprises	控排企业、机构 Covered Enterprises、institutional investor	控排企业、机构 Covered Enterprises、institutional investor	控排企业、机构 Covered Enterprises、institutional investor
拍卖底价 Auction reserve price	固定 Fixed	阶梯上升 Stepwise Rise	政策保留价 Policy Reserve Price	政策保留价 Policy Reserve Price
时间Time	不定期 Irregularly Scheduled	每季度末 End of Each Season	每季度末 End of Each Season	不定期 Irregularly Scheduled

与碳普惠制度联动，构建碳市场促进生态补偿的创新机制

Interaction with Carbon Inclusive Mechanism (Puhui Mechanism), promoting eco-compensation

# 广东碳市场现状--实施效果

## Status of Guangdong ETS--Implementation Effect

自碳市场启动以来：边界一致的情况下实现绝对量减排

Since the beginning of the carbon market: Absolute emission reductions with consistent scope of coverage

1

对比试点启动初期（2013年）和2019年，边界一致情况下，碳交易企业排放量实现了绝对量减排，减排幅度达12.3%

Under the premise that the scope of the market, the province's electricity, cement, iron and steel, and petrochemical enterprises achieved absolute emission reductions of 12.3%.

2

自纳入碳市场以来，累计300余家控排企业中有66家落后企业关停、停产或降产至控排门槛以下，该类企业年排放量规模达1480万吨。

Since being incorporated into the carbon market, 66 enterprises have chosen to shut down or suspend their production, or have reduced their operations and emissions to below the control threshold. The total annual emissions for these enterprises reached 14.8 million tons.

3

提高市场各方参与碳市场的基础能力，已累计培训碳市场各方人员8000余人次。

Enhance the basic ability of all parties to participate in ETS, and more than 8,000 personnel have received training.

# 广东碳市场现状--实施效果

## Status of Guangdong ETS--Implementation Effect

广东碳市场交易活跃，价格持续上升

The Guangdong ETS remains active as trading price increasing annually

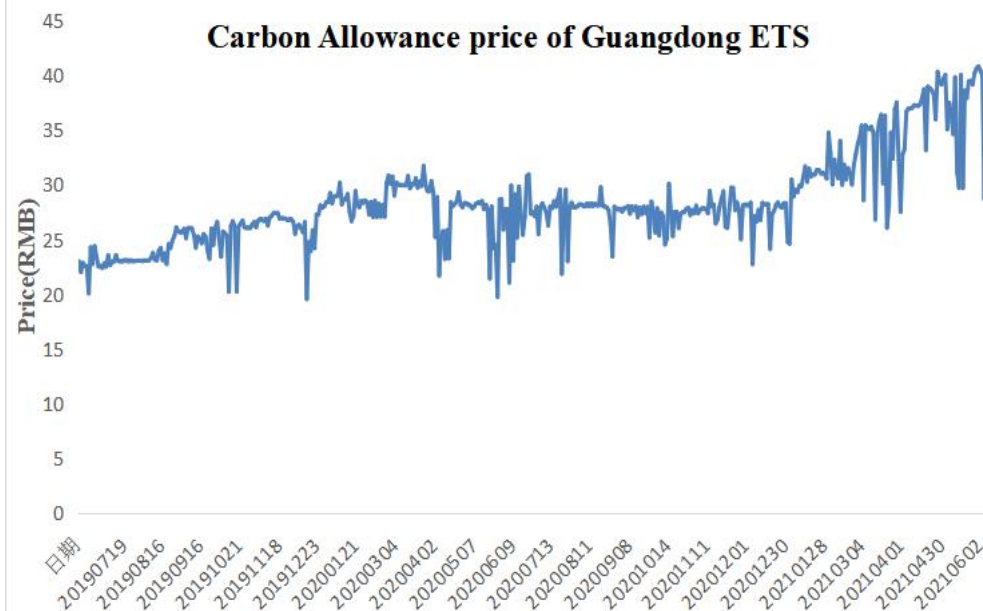


- 截至2021年6月4日，广东碳市场累计交易量达1.86亿吨，交易额超过40亿元人民币（6.26亿美元），位居中国地方碳市场第一。

Up to June 4th, 2021, the cumulative trading amount of the GD-ETS was 186 million tons, and the trading turnover exceeded 4,000 million RMB (626 million USD), ranking first in the regional carbon markets in China.

- 近年（2019-2020年）广东碳市场配额现货成交量已超过欧洲能源交易所（EEX）同期配额现货成交量，位居世界前列。

In recent years (2019–2020), the volume of spot trading in the Guangdong ETS has exceeded that in the European Energy Exchange (EEX) over the same period, ranking among the top in the world.



# 对广东碳市场发展的考虑

## Thoughts on the Development of Guangdong ETS

### 国家碳市场建立

#### Establishment of national ETS

- 不再建设地方碳排放权交易市场

Restrictions on the construction of regional emission trading market

- 已经建立的地方碳排放权交易市场，逐步向全国碳市场制度靠拢，逐步纳入全国碳排放权交易市场

The regional carbon emission trading markets that have been established should gradually move closer to the national carbon market system and gradually be incorporated into the national carbon emission trading market

- 国家与地方碳市场不重复纳入相同温室气体种类和相同行业的企业

National and local carbon markets shall not include companies in the same greenhouse gas category and the same industry



# 对广东碳市场发展的考虑

## Thoughts on the Development of Guangdong ETS

面向“30 \* 60”碳达峰、碳中和目标  
“30 \* 60” Peak Carbon Emission and Carbon Neutrality Targets

消费端：产业转型升级+生活方式转变  
Consumer Side: Industrial Transformation and Upgrading +Lifestyle Change

供应端：能源结构零碳化  
Supply Side: Zero Carbonization of Energy Structure

全国经济社会发展的缩影：

The summary of china economic and social development :

1. 发展不充分、不平衡

Insufficient and unbalanced development

2. 制造业门类齐全

Complete manufacturing categories

3. 关键行业 “低端过剩,高端不足”

Key industries "Excessive low-end, insufficient high-end"

本地可再生资源禀赋较差：

Poor Foundation of local renewable resource:

1. 目前占总能耗比例不足5%

Currently accounting for less than 5% of total energy consumption

2. 现有技术下可开发的风光发电总量预计占2030年用电需求的1/4

The total wind and solar power generation is expected to account for a quarter of the electricity demand in 2030

“工业+市场”为主的减碳模式探索，契合高质量发展内涵且示范意义重大

Exploration of carbon reduction mode based on "industry + market", which fits the connotation of high quality development and has great demonstration significance

① 资源调配更高效

More efficient allocation of resources

② 联动性持续提升

Improve the linkage continuously

③ 零碳产业培育和技术创新

Zero-carbon industry cultivation and technological innovation

广东现状  
Guangdong  
Status

碳市场作用  
ETS  
Functions



# 对广东碳市场发展的考虑

## Thoughts on the Development of Guangdong ETS

### 政策趋向 Policy Trend

- 《广东“十四五”规划纲要》：深化碳交易试点，积极推动形成粤港澳大湾区碳市场。  
“Guangdong 14th Five-Year Plan”: Deepen carbon trading pilots and actively promote the development of a Guangdong-Hong Kong-Macao Greater Bay Area ETS
- 生态环境部和广东省人民政府签署了《共建国际一流美丽湾区合作框架协议》：基于现有碳排放权交易试点，研究建设粤港澳大湾区碳排放权交易市场  
“Cooperation Framework Agreement on Building a Classic International Beautiful Bay Area”: Aims to explore the construction of carbon emission trading market based on the present carbon emission trading pilot

### 挑战 Challenges

- 粤港澳三地涉及三个行政区  
Involves three administrative regions
- 共性行业为交通和建筑，其配额分配及管理存在技术难度  
The common industries are transportation and construction, whose allowance allocation and management have technical difficulties



# 对广东碳市场发展的考虑

## Thoughts on the Development of Guangdong ETS

### 形势 Situation

- 试点碳市场将与国家碳市场共存一段时间：国家碳市场逐步扩大、试点逐步纳入的过程持续一定的时间

The ETS pilot will coexist with the national ETS for a period of time: the national carbon market will gradually expand while the pilot will be gradually incorporated

- 碳市场经过实践检验，是有效的市场化减排工具

ETS has been tested in practice that is an effective marketization emission reduction tool

- 试点碳市场已建立了相关机制框架，应充分利用并发挥作用

ETS pilots has established relevant mechanism framework

# 对广东碳市场发展的考虑

## Thoughts on the Development of Guangdong ETS

进一步优化碳市场机制设计  
Further optimization of ETS

与碳达峰、碳中和工作有效衔接

Effectively connect with peak carbon emissions and carbon neutrality

- 推进广东碳市场广东碳达峰目标、碳中和目标有效衔接，促进低成本实现政策目标  
Promote the effective linkage of peak carbon emissions and carbon neutrality in Guangdong ETS , and promote the realization of policy objectives as low cost
- 研究如何在重点排放行业纳入全国碳市场、广东碳市场体量下降的情况下服务地方减排目标  
How to serve local emission reduction targets when key emission industries are included in the national ETS and the volume of Guangdong ETS declines

复杂行业配额分配方法进一步优化

Further optimization of allowance allocation methods for complex industries

探索产品差异性较大、能源物料关系复杂的行业的基准法配额分配方法

To explore the benchmark method allowance allocation methods for industries with high product variability and complex relationships among energies and raw materials

进一步提升数据质量保障体系

Further enhancement of the data quality assurance system

将企业MRV监管逐步从事前、事后监管逐步渗透至事中监管

MRV requirements should be gradually transitioned from pre- and post-operational oversight to oversight during operations

# 对广东碳市场发展的考虑

## Thoughts on the Development of Guangdong ETS

探索扩大纳入行业范围

Explore to expand sector coverage

新行业还需从排放体量、行业发展趋势、管理成本、企业承受能力、配额分配技术难度等多方面因素进行综合考量。

A variety of factors need to be considered for the specific industries to be included in the near future; these factors include the volume of emissions, industry trends, management costs, affordability to the enterprise, and the technical difficulty of allowance allocation.

- **数据中心**：新兴的排放领域，耗电量高、间接排放较大，排放体量预计将会达千万吨的级别
- **陶瓷行业**：广东省的特色行业，陶瓷产量约占全国的五分之一；但陶瓷行业以中小企业为主，管理成本相对偏高。
- **纺织行业**：与陶瓷行业类似，且企业间工艺、工序差异偏大
- **交通运输、建筑行业**：碳排放增长大，单体排放量小，管理权、所有权、使用权存在分散的情况，不利于控排责任的确定和管理。
- **Data centers**: are an emerging source of emissions in Guangdong, with high electricity consumption and large indirect emissions, generating a volume of emissions that is expected to reach 10 million tons per year
- **Ceramics industry**: A typical industry in Guangdong Province, the province accounts for about one-fifth of national ceramic production. However, the ceramics industry is dominated by small and medium-sized enterprises and management costs can be relatively high.
- **Textiles industry**: Similar to the ceramics industry, it mainly consists of small and medium-sized enterprises, process differences between these enterprises are large
- **Transportation and Construction industry**: However, individual generating a relatively small volume of emissions and fragmented management, ownership and use rights. These factors usually work against the determination and management of emission control responsibilities.

# 对广东碳市场发展的考虑

## Thoughts on the Development of Guangdong ETS

### 探索建立粤港澳大湾区碳市场

Explore the ETS in the Guangdong-Hong Kong-Macao Greater Bay Area

- 自愿减排项目合作，如港澳地区的减排量作为广东碳市场的抵消机制减排量来源之一  
Cooperation in voluntary emission reduction projects, such as the emission reduction from Hong Kong and Macao as one of the emission reduction sources in Guangdong ETS offset mechanism.
- 港澳企业自愿加入广东碳市场  
Hong Kong and Macau enterprises voluntarily join the Guangdong ETS
- 与港澳在碳金融、碳普惠等方面的合作，例如推进跨境人民币碳交易、打造粤港澳大湾区碳市场合作示范区、碳金融产品开发、碳普惠项目开发等  
Cooperation with Hong Kong and Macao on carbon finance and carbon inclusion, such as promoting cross-border RMB carbon trading, building the Guangdong-Hong Kong-Macao Greater Bay Area carbon market cooperation demonstration area, carbon finance product development, carbon inclusion project development, etc.



**谢谢!**  
**Thank You!**