

China - Tianjin pilot ETS

General Information

ETS Description

Tianjin launched its pilot ETS in December 2013. The Tianjin Pilot ETS covers emissions from 159 entities in iron and steel, petrochemicals, chemicals, oil and gas exploration, papermaking, airport, building materials, food and beverages, non-ferrous metals, machinery and equipment manufacturing, mining, agricultural and food processing, pharmaceutical manufacturing, and electronic equipment manufacturing sectors. Covered entities must surrender allowances for emissions that exceed its annual emissions limit, which is based on their historical emissions or historical emissions intensity.

Allowances are primarily allocated through grandfathering, based on either base year total emissions or emissions intensity. Auctions are also held, with the main purpose of providing covered entities with additional supply to meet their compliance demand. Two auctions have taken place thus far, in 2020 and 2021.

With the ETS extended until the end of June 2025, several measures were introduced in 2020 to strengthen compliance: companies that fail to surrender enough allowances will have double the amount of the shortfall deducted from the next year's allocation, and third-party verifiers found to not comply with regulations will be banned for three years.

Following the "Interim Regulations on the Administration of Carbon Emission Trading" coming into effect in May 2024, entities in the following eight industries that emit more than 26,000 tCO₂/year are to be gradually transferred from the Tianjin ETS to the national ETS: power, petrochemicals, chemicals, building materials, iron and steel, non-ferrous metals, paper-making and domestic aviation. The Tianjin ETS operates in parallel with the China national ETS, and entities under the power sector have been integrated into the national ETS from 2019.

ETS Status

in force

Jurisdictions

Tianjin

Year in Review

In June 2024, the Tianjin Pilot ETS completed the compliance process for 2023, with a reported 100% compliance rate for the ninth consecutive year.

In August, Tianjin launched a public consultation on "Tianjin Work Plan for Expanding the Scope of the Coverage of the Local Carbon Emissions Trading Market," where the government proposed including maritime, domestic aviation and data centers into the current ETS scope. The public consultation ended in early September 2024, and final decisions are to be announced. The proposed scope expansion is anticipated to apply to 150 entities, covering an additional 300 MtCO₂ of emissions annually.

In September, the Tianjin Ecology and Environment Bureau (EEB) published the 2024 allocation plan. A total of 159 entities were covered in 2024, ten more than the previous year.

Sectoral coverage

Mining and extractives

Industry

Revenue usage

General budget, including debt reduction

Climate mitigation

Emissions & Targets

Overall GHG Emissions excl. LULUCF (MtCO₂e)

183.14 MtCO₂* (2021)

*There is no publicly available data, the data reported here is estimated by local experts.

GHG reduction targets

By 2030: Reduction of carbon intensity by 65% compared to 2005; peak carbon emissions (Tianjin Carbon Peak Implementation Plan)

Current Allowance Price (per t/CO₂e)

Average secondary market price: CNY 23.66 (USD 3.29) (updated prices available [here](#))

Size & Phases

Covered emissions (2021)

50.00%

GHGs covered

CO₂ only

Phases

Ongoing (2014 to present)

Cap or total emissions limit

A cap limits the total emissions allowed in the system. For recent years, the cap was as follows:

2021: 75 MtCO₂

2022: 75 MtCO₂

2023: 74 MtCO₂

Sectors and thresholds

Iron and steel, petrochemicals, chemicals, oil and gas exploration, airport, building materials, non-ferrous metals, medical and pharmaceutical manufacturing, machinery and equipment manufacturing, agri-food processing, food and beverage, salt-mining, rubber and plastic products.

Electricity production was covered until 2019, after which it transitioned to the China national ETS.

In 2021, Tianjin expanded its ETS to entities above the inclusion threshold from all industrial sectors (without pre-selection of specific sectors).

INCLUSION THRESHOLDS: 20,000 tCO₂/year, considering both direct and indirect emissions.

Point of regulation

Point source (industry); downstream (indirect emissions from electricity and heat consumption).

Type of entities

Companies

Number of entities

159 (2024)

Allowance Allocation & Revenue

Allowance allocation

FREE ALLOCATION:

Grandparenting: Allowances are allocated through historical emissions for all sectors other than the building materials sector. For 2024, allocation was determined using emissions from 2023 as a base year. For the building materials sectors, an emissions intensity method is used.

From the 2024 compliance year, an emission reduction factor for iron and steel, chemical, petrochemical, building materials, non-ferrous, medical and pharmaceutical manufacturing sectors was set at 0.96. The remaining sectors* have an emission reduction factor of 0.98 instead.

Benchmarking: Benchmarking applies to new entrants and for entities expanding their capacity.

AUCTIONING: A small share of the annual cap can be auctioned. Participation is voluntary and the purpose of auctions is mainly to provide compliance entities with additional supply to meet their compliance demand. To date, auctions have been held on an ad hoc basis.

* Oil and gas exploration, airports, machinery and equipment manufacturing, agri-food processing, food and beverage, salt-mining, rubber and plastic products.

Total Revenue

CNY 148.18 million (USD 20.59 million) since the beginning of the program in 2013

Use of Revenues

Revenues are attributed to the city treasury. Revenues are mostly used to support work related to the control of GHG emissions.

Flexibility & Linking

Offset credits

The use domestic project-based China Certified Emission Reductions (CCERs) and Tianjin regional forestry offset credits is allowed. Non-fossil power bought through market-based methods may be used to offset part of their annual compliance obligation. Details are to be issued.

QUANTITATIVE LIMIT: The use of CCER credits is limited to 10% of the annual compliance obligation.

QUALITATIVE LIMIT: Credits must stem from CO₂ reduction projects, excluding hydroelectric power plants. The emissions reductions must have occurred after 2013.

Banking and borrowing

Banking is allowed. Borrowing is not allowed.

Links with other Systems

The Tianjin Pilot ETS is not linked with any other system.

Other carbon pricing instruments in the jurisdiction

ETS: Chinese national ETS

Domestic offsetting mechanisms: Tianjin regional forestry offset credits

Compliance

Compliance mechanism

Covered entities must surrender one allowance per tCO₂e emitted for all their covered emissions.

Compliance Period

One calendar year. Covered entities have until the end of June of the following year to surrender allowances.

Monitoring, Reporting, Verification (MRV)

MONITORING: Covered entities are required to set up monitor plans and monitor their emission based on these plans.

REPORTING FREQUENCY: Annual

VERIFICATION: Third-party verification is required. Covered entities cannot use the same verifiers for three consecutive years.

FRAMEWORK: The Tianjin Development and Reform Commission has released a guiding document on monitoring and reporting. The document includes sector-specific guidance for the covered sectors, which EEB – as the competent authority since 2019 – is continuing to improve.

Penalties and enforcement

REGULATED ENTITIES: The “Tianjin Carbon Peaking and Neutrality Promotion Regulations”, which took effect in November 2021, introduced financial penalties for failing to submit emission reports as required, ranging from CNY 20,000 (USD 2779) to CNY 200,000 (USD 27,787). Companies that fail to comply are subject to fines of between five and ten times the average market transaction price for the volume of allowances not surrendered.

In addition, according to the “Interim Measure for Management of Emissions Trading in Tianjin”, published in July 2020, companies failing to surrender enough allowances to match their emissions face a deduction of double the amount of the gap in the next year’s allocation. This rule is valid until June 2025.

THIRD PARTY VERIFIERS: Third-party verifiers found not to comply with regulations (e.g., in the case of false verification reports) are banned from providing verification services for three years.

Market Regulation

Market Stability Provisions

RESERVE

Instrument type: Price-based instrument

Functioning: In the case of market fluctuations, the Tianjin EEB can buy or sell allowances (for a fixed price or through auctioning) to stabilize the market. 5% of the total cap is kept as a government reserve for market stabilization. The Tianjin EEB can organize auctions according to market demand, no fixed triggers are required.

EXCHANGE

Instrument type: Price-based instrument

Functioning: Tianjin Climate Exchange implements a system of limits on price increases and decreases for trading over the exchange. It is 10% above or below the reference price (the weighted average price of all transactions on the previous trading day).

Market Design

MARKET PARTICIPATION: Covered entities, institutional investors (domestic and international) and individuals (domestic and international) that meet the requirements of the carbon emission trading rules set up by Tianjin Climate Exchange.

MARKET TYPES:

Primary: Most allowances are freely allocated. The Tianjin Climate Exchange organizes ad hoc auctions for the primary market. Between 2019 and 2021, it held five auctions. No auctions have been held since.

Secondary: Products include spot Tianjin carbon emission allowances and spot CCERs. The Tianjin Climate Exchange manages the trading of all products.

LEGAL STATUS OF ALLOWANCES: Allowances are not considered as financial instruments. Invoices are issued as intangible assets.

Other Information

Institutions involved

Tianjin Ecology and Environment Bureau: Responsible for establishing the Tianjin ETS after a governmental restructure in 2019.

Tianjin Climate Exchange: Responsible for operating the trading platform and registry system.

Regulatory Framework

[Tianjin Pilot ETS Implementation Plan \(2013\)](#)

[Interim Measure for Management of Emissions Trading in Tianjin \(2020\)](#)

[Tianjin Carbon Peaking and Neutrality Promotion Regulations \(2021\)](#)

[Allocation Plan for 2024 \(2024\)](#)

Evaluation / ETS review

Research on improving the Tianjin ETS has been undertaken by supporting institutes such as the Tianjin Climate Exchange.

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