

China - Beijing pilot ETS

General Information

ETS Description

The Beijing Pilot ETS was launched in November 2013 and is one of three Chinese pilots with ETS regulation passed by its regional congress. Beijing applies a bottom-up approach to cap-setting. The ETS covers ~30% of the city's total emissions, including those from: heat, cement, petrochemicals, and other industrial enterprises; manufacturers; the service sector; and public transport. Covered entities must surrender allowances for all their covered emissions, and allocation is based on auctions or free allocation.

Beijing is the only regional pilot in China that uses a price floor (CNY 20, USD 2.82) and ceiling (CNY 150, USD 21.17) as a price stability mechanism. In cases of consecutively high or low average prices, the government can auction or buy back extra allowances. The Beijing pilot has seen a relatively high carbon price level compared to the other ETS pilots in China.

Beijing plays a supporting role in the national offset crediting program. The Beijing Green Exchange operates the China Certified Emissions Reduction (CCER) national registry.

ETS Status

in force

Jurisdictions

Beijing

Year in Review

In April, the Beijing Municipal Ecology and Environment Bureau (EEB), which manages the pilot, released a notice on the "Management of Key Carbon Emission Units and the Pilot Work of Carbon Emissions Trading in 2023", which included several documents on MRV, allowance allocation, and offset credits. In this document, the EEB also introduced a methodology to develop hydrogen fuel cell vehicle offset projects. Like in the previous year, the EEB moved the compliance deadline for 2022 emissions to late October.

Beijing organized two auctions in August and October. The Beijing EEB auctioned 1,528 thousand tonnes of allowances for a total of CNY 161 million (USD 22.72 million).

Sectoral coverage

Transport
Buildings
Industry
Power

Revenue usage

General budget, including debt reduction

Emissions & Targets

Overall GHG Emissions excl. LULUCF (MtCO₂e)

132.1 MtCO₂e (2020)*

* No data is publicly available for recent years; the data here is estimated by local experts.

GHG reduction targets

By 2025: At least 10% reduction in CO₂ emissions (excluding passenger and cargo aviation) compared to the peaking level; reduce CO₂ intensity by ~18% compared to 2020 levels (Beijing 14th Five-Year Plan on Environment Protection)

By 2030: Peak Beijing CO₂ emissions (Beijing Carbon Peaking Plan)

By 2035: “Significant” reduction of CO₂ emissions (Beijing 14th Five-Year Plan on Energy Saving and Climate Change)

Current Allowance Price (per t/CO₂e)

Average auction price: CNY 115 (USD 16.26)

Average secondary market price: CNY 90.96 (USD 12.84)

Size & Phases

Covered emissions (2020)

30.00%

GHGs covered

CO₂ only

Phases

2013 and ongoing*

* In the short term, the existing Chinese regional carbon markets operate in parallel with the national Chinese carbon market. When the national ETS expands to new sectors, covered entities in these sectors will be integrated into the national ETS from the regional markets.

Cap or total emissions limit

The cap under the Beijing Pilot ETS is the sum of the bottom-up installation level for all individual covered entities. Caps over the past years have been as follows:

2020: ~50 MtCO₂

2021: ~35 MtCO₂ [1]

2022: ~44 MtCO₂ [2]

[1] Lower than 2020 mainly due to transfer of the power sector to the national ETS.

[2] Higher than 2021 mainly due to 41 new covered entities in Beijing ETS.

Sectors and thresholds

Industrial and non-industrial companies and entities, including grid, heating, cement, petrochemicals, other industrial enterprises, manufacturers, the service sector, public transport, and domestic aviation.* The power sector transferred to the national ETS in 2019; however, one entity remains covered by the Beijing pilot ETS for management reasons.

INCLUSION THRESHOLDS:

Until 2015: 10,000 tCO₂ per year, considering both direct and indirect emissions.

From 2016 onwards: 5,000 tCO₂ per year, considering both direct and indirect emissions.

MANDATORY REPORTING: 2,000 tonnes of coal equivalent (tce) energy consumption per year

* Currently, the domestic aviation sector is only subject to mandatory reporting.

Point of regulation

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

Type of entities

Companies

Number of entities

909 within the pilot. In addition, 388 other entities had mandatory reporting but no surrender obligations for the 2022 compliance year.

Allowance Allocation & Revenue

Allowance allocation

Beijing carbon emission allowances (BEAs) are distributed for free, using benchmarking or grandparenting. For sectors using benchmarking or historical intensity methods, a pre-allocation method is adopted for the annual allowance allocation. Allocation is then adjusted ex-post to reflect the actual production in the respective compliance year.

FREE ALLOCATION: Free allocation through grandparenting based on historical emissions or emissions intensity in the baseline years (the previous three years).

Benchmarking is used for new entrants and entities with expanded capacity in the power sector, heat production, cement, and data centers (three new sectors with benchmarking from 2020).

AUCTIONING: Beijing may set aside up to 5% of allowances for regular and irregular auctions (see 'Market Stability Provisions' section).

Total Revenue

CNY 274 million (USD 38.67 million) since beginning of program

CNY 161 million (USD 22.72 million) in 2023
2023

Use of Revenues

Revenues are attributed to the city treasury.

Flexibility & Linking

Offset credits

The use of offset credits is allowed. These are Chinese domestic, project-based offset credits (CCERs). In addition, Beijing has also introduced a local offset program focusing on carbon sinks, low-carbon transport, and energy saving.

QUANTITATIVE LIMIT: The use of offset credits is limited to 5% of the annual allocation.

QUALITATIVE LIMIT: CCERs from energy conservation projects and forestry carbon sink projects are eligible, whereas credits from hydropower, HFC, PFC, N₂O, and SF₆ projects are not. CCERs must come from projects that began operating from 2013 onwards (with exceptions for carbon sink projects, for which the date is February 2005).

Of the 5% limit, at least 50% must come from projects within the jurisdiction of the city of Beijing. Among non-Beijing CCERs, priority is given to those with regional climate or pollution control cooperation agreements (e.g., Hebei and Tianjin).

Banking and borrowing

Banking is allowed.

Borrowing is not allowed.

Links with other Systems

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

Compliance

Compliance mechanism

Covered entities must surrender one allowance per tCO₂e emitted for all their covered emissions, and allocation is based on auctions or free allocation.

Compliance Period

One calendar year: covered entities have until mid-June of the following year to surrender allowances.*

* In recent years, compliance deadlines have been postponed to later dates, for reasons such as the COVID-19 pandemic.

Monitoring, Reporting, Verification (MRV)

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

REPORTING: Annual

VERIFICATION: Third-party verification is required. In addition, the government organizes expert review of all verification reports; 30% are subject to further fourth-party verification.

FRAMEWORK: The Beijing EEB has general rules for monitoring and reporting, as well as for sector-specific guidelines for the following sectors: heat production and supply, [thermal power generation](#), cement, petrochemicals, public transport, aviation, other industrial enterprises, and the service sector.

OTHER: In addition to covered entities under the ETS, all legal entities with energy consumption over 2,000 tce must report their emissions. Verification is not required.

Enforcement

Penalties for failing to submit emissions or verification reports on time can result in fines of up to CNY 50,000 (USD 7,058). Furthermore, companies failing to surrender enough allowances to match their emissions are fined up to five times the average market price over the previous six months for each missing allowance. Other non-financial penalties include negative impacts on access to bank loans and subsidy programs.

Market Regulation

Market Stability Provisions

PRICE FLOOR AND CEILING: The competent authority can auction extra allowances if the weighted average price exceeds CNY 150 (USD 21.17) for ten consecutive days. It can also buy back allowances from the market using a special funding source from the municipal budget if the price is below CNY 20 (USD 2.82).

EXCHANGE: The Beijing Green Exchange implements a system of limits on price increases and decreases for trading over the exchange. This is 20% above or below the reference price (the weighted average price of all transactions on the previous trading day) to prevent large price fluctuations. It also sets the maximum position limit for the different market participants: the sum of their annual allocated

allowances plus one million tonnes for compliance entities, one million tonnes for institutional investors, and 50,000 tonnes for natural persons.

RESERVE: The competent authority may set aside up to 5% of allowances for regular and irregular auctions.

Market Design

MARKET PARTICIPATION: Covered entities, domestic non-compliance entities, and domestic individuals that meet the requirements of the carbon emission trading rules set up by Beijing Green Exchange.

MARKET TYPES:

Primary: BEAs are distributed through free allocation. Beijing may set aside to 5% of allowances for regular and irregular auctions.

Secondary: Trading consists of five spot products: BEAs, CCERs, forest certified emission reductions (FCER), green transport certified emission reductions (PCER)*, and energy-saving project certified emission reductions. The Beijing Green Exchange manages the trading of all five products. The Beijing Pilot ETS also allows over-the-counter trading.

Due to financial market regulations in China, no forward markets or derivatives are allowed.

LEGAL STATUS OF ALLOWANCES: Allowances are not considered financial instruments.

* Acronym is related to the Chinese rather than English name.

Other Information

Institutions involved

Beijing Municipal Commission of Development and Reform: Responsible for establishing the Beijing ETS until governmental restructure in 2019.

Beijing Ecology and Environment Bureau: Responsible for the Beijing ETS after governmental restructure in 2019.

Beijing Green Exchange (previously known as the Beijing Environment Exchange): Responsible for the trading platform.

Beijing Research Center for Climate Change: Responsible for the registry.

Regulatory Framework

[Beijing Municipal People's Congress ETS Pilot Bill \(2013\)](#)

[Interim Measures for the Management of Emissions Trading in Beijing \(2014\)](#)

[Beijing EEB Notice on the Management of Key Carbon Emission Units and the Pilot Work of Carbon Emission Rights Trading in 2020](#)

[Beijing EEB Notice on the Management of Key Carbon Emission Units and the Pilot Work of Carbon Emission Rights Trading in 2021](#)

[Beijing Local MRV Standards for Seven Industries \(power generation, cement, petrochemical, heat production, service, road transportation and other industries\) \(2021\)](#)

[Beijing EEB Notice on the Management of Key Carbon Emission Units and the Pilot Work of Carbon Emission Rights Trading in 2022](#)

[Beijing EEB Notice on the Management of Key Carbon Emission Units and the Pilot Work of Carbon Emission Rights Trading in 2023](#)

Evaluation / ETS review

No public information is available about the evaluation or review system. However, the local carbon exchange has published annual reports with an overview of the system's performance from 2014 to 2018. In addition, research on improving legislation, MRV, and benchmarking, among other issues, has been funded by the local government.

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