International Carbon Action Partnership

# China - Hubei pilot ETS

## General Information

**ETS Description**

The Hubei Pilot ETS was launched in April 2014. Covered entities must surrender allowances for all their covered emissions, and allocation is based on auctions or free allocation.

Hubei's system covers more than 300 entities in a broad range of industrial sub-sectors. Unlike the other Chinese pilots, Hubei does not pre-define which sectors are covered under its ETS; rather, it sets a threshold which applies to all industrial sectors. Allowances have primarily been freely allocated, through both grandparenting and benchmarking, although several ad hoc auctions have been held since 2014.

Hubei has been one of the most active regional markets in China in terms of trading and has the second largest market in terms of spot trading volume, after Guangdong. It is also one of the regional pioneers for allowance forward trading in China. Hubei has also played an important role in the national ETS: in 2017, it was selected to lead the development of the registry for the national ETS, which the China Hubei Emission Exchange has operated since the national ETS began. In 2022, Hubei established the China Carbon Emissions Registration and Clearing Co., Ltd. in Wuhan to manage the registry and clearing system for the national ETS.

The Hubei ETS operates in parallel with the Chinese national carbon market. As the national ETS expands to new sectors, covered entities in these sectors will be integrated into the national.

**ETS Status**

in force

**Jurisdictions**

Hubei

**Year in Review**

In January 2024, the Hubei Provincial Government updated the "Interim Management Rules for Emissions Management and Trading in Hubei Province" following public consultation. These new management rules changed the competent authority from the Hubei Provincial Development and Reform Commission to the Hubei Ecology and Environment Bureau (EEB). It also lowered the threshold of the covered entities and clarified market monitoring rules.

In November, the Hubei EEB released the 2023 allocation plan, which applies similar allocation methods as the 2022 plan.

**Sectoral coverage**

Industry

**Revenue usage**

General budget, including debt reduction

## Emissions & Targets

**Overall GHG Emissions excl. LULUCF (MtCO2e)**

350.5 $MtCO_2$ (2020)

**GHG reduction targets**

**By 2030:** Peak carbon emissions (Hubei Province Implementation Opinions on Implementing the New Development Concept and Promoting Carbon Neutrality)

**By 2060:** Climate neutrality (Hubei Province Implementation Opinions on Implementing the New Development Concept and Promoting Carbon Neutrality)

**Current Allowance Price (per t/CO2e)**

Average secondary market price: CNY 40.41 (USD 5.75) (updated prices available here)

## Size & Phases

**Covered emissions (2020)**

50.00%

**GHGs covered**

CO2

**Phases**

2014 and ongoing

**Cap or total emissions limit**

A cap limits the total emissions allowed in the system. Inclusive of reserves, the caps for past years were as follows:

2014: 324 $MtCO_2$

2015: 281 $MtCO_2$

2016: 253 $MtCO_2$

2017: 257 $MtCO_2$

2018: 256 $MtCO_2$

2019: 270 $MtCO_2$

2020: 166 $MtCO_2$*

2021: 182 $MtCO_2$

2022: 180 $MtCO_2$

2023: 179 $MtCO_2$

* This decrease is mainly due to the transfer of the power sector into the national ETS.

**Sectors and thresholds**

Unlike other Chinese pilots, Hubei does not pre-define which sectors are covered under its ETS; rather, it sets a threshold which applies to all industrial sectors. Sub-sectors with entities above the threshold are then covered.

Those currently covered include heat supply, iron and steel, nonferrous metals, petrochemicals, chemicals, textiles, cement, glass and other building materials, pulp and paper, ceramics, automobile manufacturing, equipment manufacturing, food and beverages, medicine producers, and water supply. Until 2019, power generation was also covered, after which it was integrated into the national ETS.

**INCLUSION THRESHOLDS:**

**Until 2015:** Annual energy consumption of more than 60,000 tonnes of coal equivalent (tce) in any year between 2010 and 2011, applying to all energy and industrial sectors.

**2016 to 2022:** Annual energy consumption of more than 10,000 tce in any of the most recent two years, applying to all energy and industrial sectors.

**2023 onwards:** Entities with annual emissions of 13,000 $tCO_2$ or more.

**Point of regulation**

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

**Type of entities**

Companies

**Number of entities**

449 (2023)

## Allowance Allocation & Revenue

**Allowance allocation**

Allowances are distributed for free, using benchmarking or grandparenting. A pre-allocation method is adopted for the annual allowance allocation for sectors using benchmarking or historical intensity methods. Allocation is then adjusted ex-post to reflect the actual production in the respective compliance year.

**FREE ALLOCATION:**
**Benchmarking:** Benchmarking is used for the cement sector (except for entities using outsourced clinker) and plate glass.

**Grandparenting:** Historical emissions intensity is used for heat production and supply, pulp and paper, other glass and building materials, water supply, textile, and automobile and equipment manufacturing. Grandparenting is based on the previous three years' historical emissions for all other sectors.

Ex-post allocation adjustments are applied, especially for those sectors that use benchmarks and emissions intensity. In this case, entities first receive half of their total allowances based on the previous year's actual emissions or historical emissions baseline; actual production data are then used to update allocation ex-post.

Hubei also uses a "market adjustment factor", which is applied to all covered entities to reduce overall allocation. This is determined based on the previous year's supply-demand balance, while taking the province's overall economic development and the achievement of its climate mitigation targets and strategies into consideration. For the 2023 compliance year, it was set at 0.9706 (as compared to 0.9836 for the previous year).

Hubei uses a capping mechanism for compliance obligations. If the difference between an entity's annual verified emissions and the allocation exceeds either 20% of the allocation or 200,000 $tCO_2$ (above or below the allocation), the cap will be adjusted accordingly to balance out the surplus or deficit.*

**AUCTIONING:** A small share of the annual cap can be auctioned. The main purpose of auctions is to promote price discovery and provide regulated entities with additional supply to meet their compliance demand. To date, auctions have been held on an ad hoc basis and took place in 2014, 2019, 2020, 2021, 2022, and 2023. Recent years have seen two auctions per year, with the first for covered entities only and the second open to all participants. The reserve price of the auctions is the weighted average spot market price of the previous two years. Allowances have sold at the reserve price or slightly above.

* Two types of limits, as opposed to only one, are set based on the consideration that 20% may suit smaller entities better while 200,000 $tCO_2$ may suit larger ones.

**Total Revenue**

CNY 432.75 million (USD 60.13 million) since the beginning of the program

**Use of Revenues**

Revenues are attributed to the provincial treasury.

## Flexibility & Linking

**Offset credits**

The use of offset credits (CCERs) and green electricity certificates is allowed. The green electricity certificates are the proof of the environmental attributes of China's renewable energy power, which can be commercially transferred between power producers and consumers.

The Hubei EEB allows covered entities in Wuhan city to use Wuhan city credits to encourage the development of a city-level low carbon incentive program.

**QUANTITATIVE LIMITS:** The use of CCERs is limited to 10% of the annual initial allocation for each entity.

Only covered entities with shortfall can use green electricity certificates and city-level credits to offset their emissions. This use is limited to the shortage and maximum 10% of the annual initial allocation for each entity. Green electricity certificates cannot be banked to offset the emission in the future.

The use of Wuhan city credits is limited to 10% of the annual initial allocation for each entity.

**QUALITATIVE LIMITS:** Generally, CCERs must be generated within the administrative areas of the province, but outside the covered entities of the Hubei ETS. According to the latest rules on offset credit use, published for 2018 compliance, CCERs must come from rural biogas or forestry projects in the key counties under the national or provincial poverty alleviation plan in areas of the middle reaches of the Yangtze River (within Hubei). CCERs must have been generated between 2013 and 2015, with reductions achieved between these dates.

Green electricity certificates must be certified both by the China Hubei Emission Exchange and the Hubei Electricity Exchange.

**Banking and borrowing**

Banking is allowed, but only for allowances that have been traded at least once.

Borrowing is not allowed.

**Links with other Systems**

Though Hubei explored linking with the Guangdong ETS pilot in 2012 and 2013, this did not materialize and there are no further plans for linking.

**Other carbon pricing instruments in the jurisdiction**

**ETS:** Chinese national ETS

**Domestic crediting mechanisms:** Tan Pu Hui local offset credits in Hubei

**Domestic crediting mechanisms (national):** China Certified Emissions Reduction (CCER)

## Compliance

**Compliance mechanism**

Covered entities must surrender one allowance per $tCO_2e$ emitted for all their covered emissions.

**Compliance Period**

One calendar year; covered entities have until the last working day of May of the following year to surrender allowances. In practice, in most compliance years the exact date for the covered entities to surrender allowances is set by the government on an annual basis and varies across years.

**Monitoring, Reporting, Verification (MRV)**

**MONITORING:** Covered entities are required to set up and implement plans to monitor their emissions.

**REPORTING:** Annual

**VERIFICATION:** Third-party verification is required. Third-party verifiers may be involved in mutual evaluation of each other's verification reports. In addition, "fourth-party verification" is carried out by government-assigned experts to further enhance accuracy.

**FRAMEWORK:** The Hubei government has released general rules on monitoring and reporting guiding for all sectors as well as sector-specific guidance for the following 11 sectors: power, glass, aluminum, calcium carbide, pulp and paper, automobile manufacturing, iron and steel, ferroalloys, ammonia, cement, and petroleum processing. Hubei also refers to national guidelines on MRV, especially for the sectors outside these 11.

**Penalties and enforcement**

**COVERED ENTITIES:** Penalties for failing to submit an emissions or verification report on time range from CNY 20,000 (USD 2,779) to CNY 30,000 (USD 4,168). Furthermore, companies that fail to surrender enough allowances to match their emissions will have that amount deducted from the following year's allocation.

Other non-financial penalties include disqualification from the national or provincial energy-saving program and blacklisting for carbon emission and credit records.

**TRADING INSTITUTIONS:** Trade participants who manipulate the market face up to CNY 150,000 (USD 20,841) in fines.

**THIRD-PARTY VERIFIERS:** Penalties for submitting false verification reports range from CNY 10,000 (USD 1,389) to CNY 30,000 (USD 4, 168). Verifiers involved in illegal payments in addition to submitting false verification reports are fined one to three times the value of the payment, up to CNY 150,000 (USD 20,841).

## Market Regulation

**Market Stability Provisions**

**ALLOWANCE RELEASE AND REPURCHASE Instrument type:** Price-based instrument

**Functioning:** In case of market fluctuations, severe supply-demand imbalances, or liquidity issues, the Hubei EEB – in consultation with an advisory committee consisting of government institutions and other stakeholders – can buy or sell allowances in order to stabilize the market. Specifically, the Hubei EEB takes action if the allowance closing price reaches a low or high point of the daily negotiation range six times during a 20-day period.

5% of the total cap is kept as a government reserve for market stabilization. The Hubei EEB can organize irregular auctions according to market demand, no fixed triggers are envisaged

**EXCHANGE**

**Instrument type:** Price-based instrument

**Functioning:** The exchange limits day-to-day price fluctuations to a 10% move in either direction for listed trading, as well as 30% for block trading. Only transactions within this price range can be successfully completed on the exchange.

**Market Design**

**MARKET PARTICIPATION:** Compliance entities; non-compliance entities such as domestic and international institutional investors; individual investors meeting the participation requirements of the relevant local trading exchange.

**MARKET TYPES:**

**Primary:** The China Hubei Emission Exchange organizes ad hoc auctions for the primary market. Since 2019, Hubei has held two separate rounds of auctions targeting different types of entities.

**Secondary:** Spot products include Hubei Emission Allowances (HBEAs) and CCERs. The HBEA spot forward product was introduced in 2016 but has not been traded since May 2017. The China Hubei Emission Exchange manages trading of all products.

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

## Other Information

**Institutions involved**

**Hubei Ecology and Environment Bureau (EEB):** Responsible for establishing and overseeing the Hubei ETS after governmental restructure in 2019.

**China Hubei Emission Exchange:** Responsible for operating the trading platform and registry.

**Regulatory Framework**

Hubei Pilot ETS Implementation Plan (2013)

Interim Management rules of Emission Management and Trading (2024)

Hubei Province Implementation Opinions on Implementing the New Development Concept and Promoting Carbon Neutrality (2022)

Allocation Plan for 2023 (including list of covered entities)

**Evaluation / ETS review**

No information is publicly available regarding the evaluation or review system. However, research on improving the Hubei ETS has been undertaken every year, funded by the local government.

# Disclaimer



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