

China National ETS

General Information

ETS Description

China's national ETS began operating in 2021, with the objective of contributing to the effective control and gradual reduction of carbon emissions. China's national ETS is the world's largest in terms of covered emissions, estimated to cover around 5 billion tCO₂ and accounting for over 40% of the country's CO₂ emissions.

The China national ETS regulates more than 2,000 companies from the power sector with annual emissions of more than 26,000 tCO₂, including combined heat and power, as well as captive power plants in other sectors. Covered entities must surrender allowances for all their covered emissions, and allocation is based on intensity, with allowances freely allocated using benchmarks and based on actual production levels. Compliance obligations are currently limited and vary between different types of power generation. The system's coverage will expand to other sectors over time.

The national ETS builds on the successful experience of pilot carbon markets implemented in eight regions. These pilots continue to operate in parallel with the national ETS, covering sectors and entities not included in the national system. As the national system expands, entities covered by regional systems are expected to be integrated into it.

ETS Status

in force

Jurisdictions

China

Year in Review

In March, the Chinese Ministry of Ecology and Environment (MEE) released the retroactive "Allocation and Compliance Work Plan" for the second compliance period (2021 to 2022) of the national ETS. This announcement followed a public consultation process held in December 2022 on the draft version of the allocation plan. The allocation plan includes several significant changes compared to the allocation plan for 2019 to 2020, including allowing borrowing future allowance and significantly tightening benchmarks.

In February, the MEE published the "Work Plan on the Management of Power Enterprise GHG Emissions Reporting and Verification in 2023-2025" and, in October, the "Work Plan on the Management of Industrial Enterprise GHG Emissions Reporting and Verification in 2023-2025". These two documents laid out earlier MRV submission deadlines for enterprises in various sectors, including power generation, cement, electrolytic aluminum, and steel. The verification of emissions reports of enterprises in other key industries should be completed by the end of the year. For the cement, electrolytic aluminum and steel sectors, the MEE also updated the MRV guidelines to require installation data and detailed measuring of different parameters, which would help the MEE to set the benchmarks for these sectors.

In July, the MEE published a notice regarding compliance in the national ETS in 2021 and 2022. This document confirmed the unlimited banking allowed from the first compliance period and published detailed requirements for borrowing.

In January 2024, China launched its domestic offsetting scheme, the Chinese Certified Emissions Reduction scheme (CCER), after six years of suspension during which time it was undergoing reform (see 'Offset Credits' section). In October 2023, the MEE published the

new regulations for the CCER, followed by four new methodologies including forestation, mangrove cultivation, solar thermal power, and grid-connected offshore wind power projects. In November, the National Center for Climate Change Strategy Research and International Cooperation published guidelines for the CCER registry. The Beijing Green Exchange has also published guidelines for CCER trading and clearing. In December, the SAMR (State Administration for Market Regulation) published the guidelines of the validation of CCER Projects and Verification of Emission Reduction, including the basic processes and general requirements of validation and verification. The Certification and Accreditation Administration (CNCA) started to accredited verifiers in January 2024, after which project owners can commence their applications.

In February 2024, the State Council of People's Republic of China published a regulation for the national ETS, which significantly increased the punishment for non-compliance, data fraud and market manipulation behaviors.

Sectoral coverage

Power

Emissions & Targets

Overall GHG Emissions excl. LULUCF (MtCO₂e)

13,035 MtCO₂e (2018)

GHG reduction targets

By 2025: Reduction in carbon emissions per unit of GDP of 18% compared to 2020 levels (14th Five-Year Plan)

By 2030: Peak CO₂ emissions; reduction of CO₂ emissions per unit of GDP by over 65% from 2005 levels ('1+N' policy framework; updated NDC)

By 2060: Carbon neutrality ('1+N' policy framework; updated NDC)

Size & Phases

Covered emissions (%)

40.00%

GHGs covered

CO₂

Phases

There are currently no specific phases for the Chinese national ETS. The current rules only apply to the first and second compliance periods, which cover 2019 to 2020 and 2021 to 2022.

Cap or total emissions limit

The cap under the China national ETS is the sum of the bottom-up total allowance allocation to all individual covered entities. The cap changes according to the actual production levels.

The national ETS is estimated to have had a cap of ~4,500 MtCO₂ in 2019 and 2020; and ~5,000 MtCO₂ in 2021 and 2022.

Sectors and thresholds

Power sector (including combined heat and power, as well as captive power plants of other sectors). Compliance obligations are currently limited (see 'Enforcement' section).

The scope is expected to be gradually expanded to cover seven other sectors: petrochemicals, chemicals, building materials, steel, nonferrous metals, paper, and domestic aviation. Entities in these sectors have MRV obligation since 2015. There is no specific timeline for this expansion.

INCLUSION THRESHOLDS:

For 2019 to 2020: Entities with annual emissions of 26,000 tCO₂ or greater in any year from 2013 to 2019.

For 2021 to 2022: Entities with annual emissions of 26,000 tCO₂ or more in any year from 2020 to 2021.

Point of regulation

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

Type of entities

Companies

Number of entities

2,257 (2021 and 2022)

Allowance Allocation & Revenue

Allowance allocation

Allowances are distributed for free, using benchmarking. 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: Output-based benchmarking is used as the main allocation method, with four distinct benchmarks: conventional coal plants below 300 MW; conventional coal plants above 300 MW; unconventional coal; and natural gas.

In March 2023, the MEE proposed benchmark values for allocation for the 2021 to 2022 compliance period. These propose a significant tightening, especially for coal-fired power plants.

Entities received allowances at 70% of their 2021 verified emissions. Allocation was subsequently adjusted to reflect actual generation in 2021 and 2022. A unit load (output) adjustment factor distributed more allowances for entities operating at load rates lower than 85%. This may have provided more allowances to less efficient power units.

AUCTIONING: Allocation currently takes place through free allocation, but the Interim Regulations clarify that auctioning is to be introduced and gradually expanded. There is currently no timeline for this.

Use of Revenues

There is currently no arrangement for the use of revenues generated by the scheme.

Flexibility & Linking

Offset credits

The use of offset credits is allowed.

QUANTITATIVE LIMITS: Covered entities can use CCERs generated from projects not covered by the national ETS for up to 5% of their verified emissions.

QUALITATIVE LIMITS: There were no additional project or vintage restrictions.

Development of the CCER scheme began in 2009 alongside the development of the regional ETS pilots. In 2012, the NDRC issued the “Interim Measures for the Management of Voluntary GHG Emissions Reduction Transactions”, which provided guidelines for the issuance of CCERs. The registration of CCER projects started in 2015 but the program was suspended in 2017 while regulations were reviewed. MEE launched the new CCER system with new methodologies, registry, verifiers and exchange.

The National Center for Climate Change Strategy and International Cooperation (NCSC) operates the CCER registry. The Beijing Green Exchange is dedicated to CCER trading platforms.

Banking and borrowing

Borrowing was not allowed in 2019 to 2020. In the 2021 to 2022 allocation plan, borrowing is allowed. Companies with a shortfall of 10% or more can apply to borrow from a pre-approved allocation for 2023, up to 50% of the shortfall. Banking from 2019 to 2020 was allowed in 2021 to 2022. Future rules on banking are not yet defined.

Links with other Systems

The China national 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 an emissions intensity benchmark.

Compliance Period

Two calendar years. Covered entities were requested to surrender allowances in 2021 for emissions from 2019 and 2020. Covered entities had to surrender allowances in 2023 for emissions from 2021 and 2022.

Monitoring, Reporting, Verification (MRV)

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

REPORTING FREQUENCY: Covered entities must submit the previous year's emissions reports by the end of April each year.

VERIFICATION: Provincial-level ecological and environmental authorities are responsible for organizing the verification of GHG reports. They may commission technical service agencies to provide verification services. Verification of emissions from the power sector must be complete by the end of June. Verification of the cement, electrolytic aluminum and steel industries should be completed before the end of September each year. Verification of other key industries should be completed by before the end of the year.

FRAMEWORK: MRV guidelines, supplementary data sheets, verification guidelines, and other guidance are available for the eight sectors expected to be covered by the ETS. This MRV framework has evolved continuously since 2013 (see 'Sectors and Thresholds' section).

OTHER: The MEE amends the existing MRV guidelines and technical specifications for the national ETS every year.

Enforcement

According to the 2021 to 2022 allocation plan, compliance obligations are limited. Gas-fired plants only need to surrender allowances up to their level of free allocation as per the benchmarks. For coal-fired plants with free allowance less than 80% of their verified emissions will have their allocation adjusted upwards to 80% of their verified emissions. This means that 20% remains the maximum shortfall, similar to the first compliance period.

Covered entities that "undertake major tasks to safeguard people's livelihoods" that are unable to meet obligations can apply to borrow allowances from future compliance periods.

According to the Interim Regulation, fines for failing to submit a report would increase from CNY 10,000-30,000 (USD 1,411-4,234) to CNY 50,000-200,000 (USD 7,058-28,232), while fines for failing to comply would increase from CNY 20,000-30,000 (USD 2,822-4,234) to five to ten times the market value of and the missing allowances, based on the average price in the month before the compliance deadline. In serious cases, the gap would be deducted from the following year's allocation and the government may require the entity to stop business.

The regulation introduced the requirement to technical services organizations and market participants. If consultancies, third-party verifiers and testing labs participate in MRV data fraud, they will face penalties up to ten times of their illegal income, as well as disqualification in their business. Similar punishments also apply to market manipulation behaviors. Individuals involved in these cases would face penalties and disbarment.

Market Regulation

Market Stability Provisions

In May 2021, the MEE announced the option of establishing a market-regulating and protection mechanism. This would enable the MEE to respond to abnormal fluctuations in trading prices, for instance through buy-back, auctioning, or adjusting the rules related to CCER use. The necessary triggers and specifics of this mechanism are yet to be defined.

Market Design

MARKET PARTICIPATION: Compliance entities. The Interim Regulations indicate that other types of institutions or individuals may in the future also be allowed to participate in the market; however, there is no specific timeline for this.

MARKET TYPES:

Primary: Allowances are currently only distributed by free allocation. The Interim Regulations state the intention to introduce auctioning, though without a specific timeline.

Secondary: China Emission Allowances (CEA) can be traded on a dedicated trading platform managed by the Shanghai Environment and Energy Exchange. CEAs for the 2019 to 2020 period, CEAs for 2021, and CEAs for 2022 are categorized as three different products on the exchange, and have similar prices.

Due to financial market regulations, other products (i.e., derivatives) are currently not allowed.

LEGAL STATUS OF ALLOWANCES: Allowances are not considered financial instruments. For financial accounting purposes, the Ministry of Finance published an interim policy that categorizes only purchased allowances, and not those received for free, as assets in financial statements.

Other Information

Institutions involved

The China national ETS has a multi-level governance structure involving three levels of government:

Ministry of Ecology and Environment (MEE):

Acts as the national competent authority setting the rules and overseeing the system, jointly with other national regulators.

Provincial-level MEE subsidiaries: Oversee the implementation of the ETS, including identifying covered entities, organizing MRV, hiring verifiers, calculating allowance, managing provincial registry account, oversee compliance.

Municipal-level authorities: Responsible for managing covered entities directly.

China Carbon Emissions Registration and Clearing Co., Ltd.: Responsible for operating the CEA registry and clearing platform.

Shanghai Environment and Energy Exchange: Operates the CEA trading platform.

National Center for Climate Change Strategy and International Cooperation (NCSC): Operates the CCER registry.

The Beijing Green Exchange: Responsible for operating the CCER trading and clearing platform.

Regulatory Framework

[The National Measures for the Administration of Carbon Emission Trading \(trial\) \(2021\)](#)

[Allocation Plan for the Power Sector\(2019-2020\) and list of covered entities \(2021\) \(English translation\)](#)

[Guidelines for Enterprise Greenhouse Gas Verification \(trial\) \(2021\)](#)

[Notice on Strengthening the Management of Enterprise Greenhouse Gas Emissions Reporting \(2021\)](#)

[Allocation Plan for the Power Sector\(2021-2022\)](#)

[CCER regulation \(2023\)](#)

[Guidelines for GHG Monitoring and Reporting for various sectors \(2013, 2014, and 2015\)](#)

[Updated Guidelines for GHG Monitoring and Reporting for the power sector \(2023\)](#)

[Updated Guidelines for GHG Monitoring and Reporting for industrial sectors \(2023\)](#)

[Interim Regulations on the Administration of Carbon Emission Trading \(2024\)](#)

Evaluation / ETS review

An evaluation framework is currently under development.

Disclaimer

Copyright © 2022 by International Carbon Action Partnership (ICAP). All rights reserved. The content provided by the ICAP ETS map is protected by copyright. You are authorized to view, download, print and distribute the copyrighted content from this website subject to the following condition: Any reproduction, in full or in part, must credit the International Carbon Action Partnership (ICAP) must include a copyright notice. If you have any questions please contact [infoicapcarbonaction \[dot\] com](mailto:infoicapcarbonaction@icapcarbonaction.com) ([info\[at\]icapcarbonaction\[dot\]com](mailto:info@icapcarbonaction.com)).

In line with ICAP's mandate, the ICAP ETS map exclusively covers cap-and-trade systems for greenhouse gas emissions. Information displayed on the map is regularly updated by ICAP Secretariat staff based on official and public information as far as possible and subject to annual peer review by government representatives from the covered systems. Although the information contained in the map is assembled with utmost care, ICAP cannot be held liable for the timeliness, correctness and completeness of the information provided. Please refer to the imprint on the website of the International Carbon Action Partnership regarding links to external websites, liability and privacy policy.