Japan - Tokyo Cap-and-Trade Program

General Information

ETS Description

The Cap-and-Trade Program of the Tokyo Metropolitan Government (TMG) was launched in April 2010 and is Japan's first mandatory ETS. It covers around 20% of the metropolitan area's emissions.

The Tokyo ETS covers CO_2 emissions from large buildings, factories, heat suppliers, and other facilities that consume large quantities of fossil fuels. Covered facilities must surrender compliance units for emissions that exceed the installation's baseline, and the baseline is based on absolute historical emissions and a compliance factor. Compliance factors are determined based on the type of facility and factors such as expected energy efficiency gains and the extent to which they consume energy supplied by other facilities.

Tokyo's ETS is linked to the Saitama Prefecture ETS, with credits mutually exchangeable between the two jurisdictions.

ETS Status

in force

Jurisdictions

Tokyo

Year in Review

The Cap-and-Trade Program of the Tokyo Metropolitan Government's (TMG) third compliance period, spanning from FY2020 to FY2024, ends in March 2025 and the fourth starting from April 2025. The program continues to cover ~1,200 facilities that annually use 1,500 kL or more of energy equivalent to crude oil, and all allowances are freely allocated. In 2022, total emissions of covered facilities dropped by 32% compared to the base year.

Following a public consultation that concluded in 2023, Tokyo announced three major updates for the fourth compliance period (FY2025 to FY2029).

First, the compliance factor will rise to 50% for office buildings and 48% for factories.

Second, to boost the use of renewable energy, off-site renewable energy, including self-consignment and PPA, will count as zero emissions, and certificates derived from renewable energy can be deducted from energy-related CO_2 emissions. In addition, actual emission factors, instead of fixed emission factors, will be used to calculate emissions from electricity, heat, and city gas supplied by retailers, based on contracts at the facilities.

Third, a new system for excess emission reductions will limit credits to those achieved through energy efficiency or renewable energy; credits will no longer be awarded for certification improvements or emission factor adjustments. These updates take effect in April 2025, with guidelines released in September 2024.

In March 2024, the TMG published the results for the third fiscal year of the third compliance period (FY2022), showing that emissions from covered facilities totaled 11.2 $MtCO_2$. This is a 32% reduction below base-year emissions.

Sectoral coverage

Buildings
Industry

Emissions & Targets

Overall GHG Emissions excl. LULUCF (MtCO2e)

59.5 $MtCO_2e$* (2022)

* The overall emissions figure for Tokyo is higher than the total of the emissions by sector because the former includes all GHGs, whereas the emissions by sector only measures CO_2 emissions.

GHG reduction targets

By 2030: 50% reduction from 2000 GHG levels (“Tokyo Environmental Master Plan”)

By 2050: Net zero CO_2 emissions (Tokyo Environmental Master Plan)

Current Allowance Price (per t/CO2e)

Average price: ~JPY 600 (USD 3.96)

Size & Phases

Covered emissions (2022)

19.00%

Verified ETS Emissions

11.20$MtCO_2e$

GHGs covered

CO2

Phases

PHASE 1: 1 April 2010 to 30 September 2016

PHASE 2: 1 April 2015 to 31 January 2022

PHASE 3: 1 April 2020 to 30 September 2026

PHASE 4: 1 April 2025 to 30 September 2031

The Tokyo ETS has phases as well as compliance periods (see ‘Compliance’ section). A phase is defined as the compliance period plus an additional 18-month adjustment period, during which time facilities may continue to trade credits in order to reach their targets for the corresponding compliance period.

Cap or total emissions limit

The total emission limit under the Tokyo Cap-and-Trade program is the sum of the bottom-up installation-level emissions limits for all individual covered facilities.

The total emissions limit for the fourth compliance period under the Tokyo ETS is a 50% reduction on average over the five years compared to the base-year emissions which are the average emissions of any three consecutive years between FY2002 and FY2007 (see ‘Allowance Allocation’ section).

Sectors and thresholds

Consumption of fuels, heat, and electricity in commercial and industrial buildings. Building owners are subject to surrender obligations, and all tenants are required to cooperate in owners' reduction measures. Large tenants (those with a floor space above 5,000 m^2or electricity usage per year over six million kWh) are also required to prepare and submit their own emission reduction report.

INCLUSION THRESHOLDS: Facilities that consume energy equivalent to at least 1,500 kL of crude oil per year.

Point of regulation

Downstream (industry, buildings)

Type of entities

Facilities

Number of entities

~1,200 facilities:

- Office/commercial buildings: ~1000
- Factories: ~200

Allowance Allocation & Revenue

Allowance allocation

All allowances in the Tokyo Cap-and-Trade Program are allocated for free.

Under the Tokyo ETS, each facility has its own cap, which serves as the "baseline" from which it must achieve its reduction target. Baselines for facilities are set according to the following formula: *Base-year emissions* x (1 - *compliance factor*) x *compliance period* (five years). The compliance factor for each period is determined based on regulations established by the Governor of Tokyo. Prior to the start of each new compliance period, TMG holds expert meetings to garner those experts' opinions to aid in determining the compliance factors.

For facilities that have been designated as compliance facilities since the launch of the ETS, base year-emissions are based on average emissions of any three consecutive years between FY2002 and FY2007.

Base-year emissions for new entrants are calculated using either historical emissions (average annual emissions for three consecutive fiscal years of the four fiscal years immediately preceding the compliance period) or an emission intensity standard provided by the government (based on emissions from FY2005 to FY2007).

At the beginning of each new compliance period, all allowances are allocated for free to covered facilities for the full five years. Facilities with emissions below their baseline can receive excess emission reductions for the reductions beyond the obligation amount. Those facilities that exceed their baseline must purchase and surrender credits from elsewhere to meet their compliance obligation. Credits may also be issued using renewable energy (see 'Offset Credits' section).

COMPLIANCE FACTOR:

First compliance period: 8% or 6% reduction below base-year emissions.

Second compliance period: 17% or 15% reduction below base-year emissions.

Third compliance period: 27% or 25% reduction below base-year emissions.

Fourth compliance period: 50% or 48% reduction below base-year emissions.

The lower compliance factor applies to factories and office buildings that use district heating and cooling for more than 20% of their energy consumption.

In the third compliance period, in medical facilities where electricity is vital to preserve life and health, the compliance factor is two percentage points lower than whichever category would otherwise apply.

The compliance factor will be reduced by three percentage points for facilities with an electrification rate of less than 20% in the fourth compliance period alone.

Facilities demonstrating outstanding performance in emissions reductions, as well as in the introduction, use, and management of energy efficient equipment, are certified as top-level facilities with the limit on the issuance of excess emission reductions removed.

The reduction of the compliance factor for certified top-level facilities, which had been in place until the third compliance period, is eliminated in principle except in certain cases in order to recognize establishments that are proactive in reducing emissions.

QUALIFYING FOR ADDITIONAL EMISSIONS REDUCTIONS THROUGH USE OF RENEWABLE ELECTRICITY: In order to evaluate the energy efficiency efforts of the covered facilities, CO_2 emission factors of the supply side (electricity and others) are fixed during each compliance period. If covered facilities procure electricity from TMG-certified suppliers with lower emission factors (0.37 tCO_2/1,000 kWh or less), they can deduct the difference between these emission factors from their reported emissions accordingly, to reflect this lower emission factor of purchased electricity. If covered facilities generate electricity from renewable sources for their own use, they can deduct this amount of electricity from the total energy usage of the facility to be reported.

In the fourth compliance period, off-site renewable energy, including self-consignment and PPA, will count as zero emissions, and certificates derived from renewable energy can be deducted from energy-related CO_2 emissions. In addition, actual emission factors, instead of fixed emission factors, will be used to calculate emissions from electricity, heat, and city gas supplied by retailers, based on contracts at the facilities to evaluate the use of renewable energy at the covered facilities.

Flexibility & Linking

Offset credits

The use of offset credits is allowed.

QUALITATIVE LIMITS: Four types of offset credits are permitted, based on certification criteria, to complement emissions reduction credits issued to facilities covered by the Tokyo ETS whose emissions fall below their baseline:

- Small and mid-size facility credits: Emissions reductions from non-covered small and medium-sized facilities in Tokyo.
- Outside Tokyo credits: Emissions reductions achieved from large facilities outside of the Tokyo area. Large facilities are those with an energy consumption equivalent to at least 1,500 kL of crude oil in a base year and with base-year emissions of 150,000 tCO_2 or less.
- Renewable energy credits: Renewable energy credits generated under the Tokyo ETS encompass the following types: Environmental Value Equivalent, Renewable Energy Certificates, and New Energy Electricity, generated under the Renewable Portfolio Standard Law. Credits from solar (heat, electricity), wind, geothermal, or hydro (under 1,000 kW) electricity production for use under the Tokyo ETS are converted on a one-to-one basis, as are credits from biomass (biomass rate of 95% or more, black liquor excluded).
- Saitama credits (via link): These encompass (1) Excess emission reductions: Emissions reductions from facilities in Saitama with base-year emissions of 150,000 tonnes or less and (2) Saitama's small and mid-size facility credits: Emissions reductions from non-covered small and medium-sized facilities issued by Saitama Prefecture. For small and medium-sized credits, the link is suspended during the fourth compliance period.

QUANTITATIVE LIMITS: Quantitative limits apply only for Outside Tokyo credits: these are issued only for the reduction amount that exceeds the compliance factor. These credits can be used for compliance for up to one-third of facilities' reduction obligations.

All offset credits must be verified by a verification agency.

65,187 tCO_2e of offset credits were issued in FY2023, and 7,657 tCO_2e were surrendered for compliance in FY2023. Out of those, 4,312 tCO_2e were renewable energy credits and 3,345 tCO_2e were Saitama credits.

Banking and borrowing

Banking is allowed only between consecutive compliance periods.

Borrowing is not allowed.

Links with other Systems

Tokyo linked its program with the Saitama Prefecture ETS in April 2011. Tokyo and Saitama credits are officially eligible for trade between the two jurisdictions. About 60 credit transfers have taken place so far between Saitama and Tokyo.

Other carbon pricing instruments in the jurisdiction

Carbon tax: Japan national carbon tax

Compliance

Compliance mechanism

Covered facilities must surrender one compliance unit per tCO_2that exceeds the facility's emissions limit (baseline).

Compliance Period

Five years.

Facilities must submit a "GHG Emissions Reduction Plan" and an implementation status report by the end of November every year.

Compliance units to meet each facility's targets must be surrendered by the end of the 18-month adjustment period, after the end of the compliance period (see 'Phases' section above).

Monitoring, Reporting, Verification (MRV)

MONITORING AND REPORTING: Annual emissions reporting, including emission reduction plans. Seven GHGs must be monitored and reported: CO_2, CH_4, N_2O, PFCs, HFCs, SF_6, and NF_3. Large tenants are required to submit their own emissions reduction plans to TMG in collaboration with building owners.

As of April 2025, actual emission factors, instead of fixed emission factors, are to be used to calculate emissions from electricity, heat, and city gas supplied by retailers, based on contracts at the facilities. This should incentivize the use of renewable energy.

VERIFICATION: Annual emissions reports require third-party verification.

FRAMEWORK: These are based on the "TMG Monitoring/Reporting Guidelines" and the "TMG Verification Guidelines".

Penalties and enforcement

In the case of non-compliance, the following measures may be taken:

FIRST STAGE: The governor orders the facility to reduce emissions by the amount of the reduction shortfall multiplied by 1.3.

SECOND STAGE: Any facility that fails to carry out the order will be publicly named and subject to penalties (up to JPY 500,000 [USD 3,303]) and surcharges (1.3 times the shortfall).

Market Regulation

Market Stability Provisions

In general, covered facilities and other market participants (trading account holders) trade over the counter, and the TMG does not control carbon prices.

Market Design

MARKET PARTICIPATION: Compliance facilities, i.e., those above the inclusion threshold (see 'Sectors and Thresholds' section); non-compliance facilities (trading account holders). TMG allows only "reduction credits" and not "emission credits," i.e., one can earn credits only after achieving emission reductions. Basically, only compliance facilities and legal entities with an office in Japan may open trading accounts.

MARKET TYPES:

Primary: All allowances are allocated for free.

Secondary: Covered facilities and other facilities which hold trading accounts trade credits over the counter. Businesses wishing to buy or sell credits can also go through a private intermediary to find a buyer and negotiate the price.

LEGAL STATUS OF ALLOWANCES: Allowances are not financial instruments under the Tokyo ETS.

Other Information

Institutions involved

Tokyo Metropolitan Government: Oversees the Tokyo Cap-and-Trade Program, via the Bureau of Environment

Regulatory Framework

Tokyo Metropolitan Environmental Security Ordinance and Regulation for the Enforcement of the Tokyo Metropolitan Environmental Security Ordinance

Revised Tokyo Cap-and-Trade Program for the fourth compliance period

Outline documents and detailed documents for large facilities

Tokyo Environmental Master Plan

Evaluation / ETS review

For every new compliance period, the TMG establishes a committee of experts to discuss and determine compliance factors and other important issues for the next compliance period.

The TMG held seven committee meetings from September 2022 to August 2023 and ran a public consultation in June 2023.

Disclaimer

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.