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. Each covered facility has its own cap, which serves as the "baseline" from which it must achieve its reduction target. Facilities' baselines are calculated using base-year 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 Tokyo Cap-and-Trade Program is currently in its third compliance period (FY2020 to FY2024), which requires facilities to reduce emissions to 25-27% below base-year emissions, depending on their assigned category. The third compliance period aims to expand the use and production of low-carbon and renewable energy and for covered facilities to reduce their compliance obligations by switching to cleaner electricity or heat.

In March, TMG published the results for the second fiscal year of the third compliance period (FY2021), showing that emissions from covered entities totaled 11.1 $MtCO_2$. This is a 33% reduction below base-year emissions.

In June, TMG launched a public consultation on design elements for the fourth compliance period, beginning FY2025, after a series of meetings of an expert committee. TMG proposed a high compliance factor to be consistent with its goal of a 50% reduction in 2030 emissions.

In October, TMG released the final design elements of the fourth compliance period based on the public consultation result. The main points are as follows;

- Setting compliance factors in anticipation of a "2030 Carbon Half" (emission reduction target to 50% of the 2000 level by 2030). The facilities will have to reduce emissions by a compliance factor of 48-50% below base-year emissions. Those with an electrification rate of 20% or less will receive a lower compliance factor, similar to the rate applied to medical facilities.
- Expand the use of renewable energy. In addition to energy efficiency measures, evaluate various renewable energy sources including self-consignment and PPA as an environmental value that can be excluded from annual emissions. The covered facilities evaluate their emission reductions by using the actual emission factors.
- Excess emission reductions will be issued according to the level of energy efficiency measures and the use of renewable energy with

high additionality.
- The relaxation of compliance factors for top-level facilities (see ‘Allowance Allocation’) will be abolished in order to evaluate facilities that promote zero-emissions, including the use of renewable energy as top-level facilities.

Sectoral coverage

Buildings
Industry

Emissions & Targets

Overall GHG Emissions excl. LULUCF (MtCO2e)

60.8 $MtCO_2e$* (2021)

* 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: Climate neutrality (Tokyo Environmental Master Plan)

Current Allowance Price (per t/CO2e)

Average price: ~JPY 650 (USD 4.63)*

* Estimated standard transaction price provided by TMG.

Size & Phases

Covered emissions (2021)

18.00%

Verified ETS Emissions

11.10$MtCO_2e$

GHGs covered

CO2

Phases

PHASE ONE: 1 April 2010 to 30 September 2016

PHASE TWO: 1 April 2015 to 31 January 2022

PHASE THREE: 1 April 2020 to 30 September 2026

PHASE FOUR: 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 emissions limit for the third compliance period under the Tokyo ETS is a 27% reduction on average over 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 (floor space above 5,000 m^2 or over six million kWh electricity usage per year) are also required to prepare and submit their own emission reduction report.

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

Point of regulation

Downstream (industry, buildings)

Type of entities

Installations, companies

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 (5 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 committee of experts 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.

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 credits' for the reductions beyond the obligation amount. For those that exceed their baseline must purchase and surrender credits from elsewhere to meet their compliance obligation. Credits may also be issued through the use of renewable energy (see 'Offset Credits' section).

COMPLIANCE FACTOR:

First period (FY2010 to FY2014): 8% or 6% reduction below base-year emissions.

Second period (FY2015 to FY2019): 17% or 15% reduction below base-year emissions.

Third period (FY2020 to FY2024): 27% or 25% reduction below base-year emissions.

Fourth period (FY2025 to FY2029): 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.

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 that receive either 25% or 50% lower compliance factors, according to their rate of progress. The certification standards represent the best available energy efficiency measures, covering more than 200 different energy-saving measures.

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 t-CO_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.

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 tonnes 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 credits: 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.

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.

220, 874 $tCO2_e$ of offset credits were issued in FY2023.

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.

Compliance

Compliance mechanism

Covered facilities that exceed their baseline must procure and surrender credits from elsewhere to meet their compliance obligations.

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 instruments to meet each facility’s targets must be submitted by the end of the 18-month adjustment period, after the end of the compliance period.

FIRST COMPLIANCE PERIOD: FY2010 to FY2014

SECOND COMPLIANCE PERIOD: FY2015 to FY2019

THIRD COMPLIANCE PERIOD: FY2020 to FY2024

FOURTH COMPLIANCE PERIOD: FY2025 to FY2029

Monitoring, Reporting, Verification (MRV)

REPORTING FREQUENCY: Annual emissions reporting, including emission reduction plans. All seven GHGs must be monitored and reported: CO_2, CH_4, N_2O, PFCs, HFCs, SF_6, and NF_3. Large tenants, i.e., those with a floor space above 5,000 m^2 or over six million kWh of electricity use per year, are required to submit their own emissions reduction plans to TMG in collaboration with building owners.

VERIFICATION: Annual emissions reports require third-party verification.

FRAMEWORK: These are based on “TMG Monitoring/Reporting Guidelines” and “TMG Verification Guidelines.”

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 3,559]) 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 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 entities (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 entities who 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.

Other Information

Institutions involved

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

Regulatory Framework

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

Outline documents and detailed documents for large facilities

Tokyo Environmental Master Plan

Evaluation / ETS review

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

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

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