

Efforts from FY 2025 in the climate change programs for existing buildings based on the Ordinance on Environmental Preservation to Secure the Health and Safety of Citizens of the Tokyo Metropolitan Area

Trend of decarbonization expanding around the world

The Paris Agreement adopted in December 2015 set a global-common goal of pursuing efforts to limit the increase in the global average temperature to well below 1.5°C above pre-industrial levels. According to the Special Report on Global Warming of 1.5°C by UN IPCC (Intergovernmental Panel on Climate Change) in October 2018, limiting the temperature rise to 1.5°C requires global greenhouse gas emissions to be net zero by 2050 and approximately halved by 2030.

The conflict between Ukraine and Russia has highlighted the vulnerability of Japan's energy supply. From the perspective of energy security, decarbonization action should be promoted in all fields, and this trend is rapidly accelerating around the world.

TMG's efforts for the realization of zero emissions

In 2019 TMG published a Zero Emission Tokyo that will contribute to achieving net zero greenhouse gas emissions worldwide by 2050 and in 2021 declared the realization of "Carbon Half," a plan to halve greenhouse gas emissions compared to 2000 by 2030. TMG has been strengthening the programs since September 2022 when we formulated the Basic Policy for the Revision of Ordinances/Programs to Realize "Carbon Half" and revised the Tokyo Environmental Master Plan based on the report of the Tokyo Metropolitan Environmental Council.

TMG has also been exploring new efforts from FY 2025 onwards in the Tokyo Cap-and-Trade Program and Carbon Reduction Reporting Program for Small and Medium-Sized Facilities for existing buildings in light of public comments and the opinions of expert panels on these programs.

TMG has announced the revisions to the Tokyo Metropolitan Environmental Security Ordinance and its enforcement regulations on October 13, 2023.

Programs to take the lead in decarbonization at home and abroad

The Sixth Assessment Synthesis Report released by IPCC in March 2023 indicates that achieving the 1.5°C target requires reducing greenhouse gas emissions by 60% (65% for CO₂) compared to 2019 levels by 2035. The G7 Hiroshima Summit in May also demonstrated its willingness to respond to the call of IPCC.

To fulfill its responsibility as a major energy consumer, Tokyo needs to boldly enhance its decarbonization actions and play a leading role in realizing a decarbonized society at home and abroad. Promoting measures to reduce greenhouse gas emissions is essential for cities to increase their value and strengthen their international competitiveness as shown by the fact that buildings, business activities, and even cities are evaluated or selected on the basis of efforts for decarbonization.

TMG will aim to realize a decarbonized society together with businesses by revising the Tokyo Cap-and-Trade Program and Carbon Reduction Reporting Program for Small and Medium-Sized Facilities to make them more effective programs that will lead decarbonization in Japan and abroad.

Part 1: Revisions to the Tokyo Cap-and-Trade Program to be applied to the fourth compliance period from FY 2025 to FY 2029

○ Scope of emitting activities subject to reporting and reduction obligations

- Fossil fuels etc. will continue to be subject to reduction obligations and energy consumption in crude oil equivalents which determines the requirements for entities to be covered by the program.
- For targets for which consumption and emissions are reported, consumption in self-power generation using non-fossil fuels for which emission factors are not set, heat from natural sources, and renewable energy will be added to ensure consistency with the revised Act on the Rational Use of Energy.
 - * The primary energy conversion factors and calorific values of electricity will be consistent with the revised Act on the Rational Use of Energy. Emission factors for electricity and heat (cold water, hot water, and steam) will be actual emission factors, and those for fuels etc. will be changed to values adopted by the Greenhouse Gas Emissions Calculation, Reporting, and Disclosure System of the Ministry of the Environment.

○ Continuation of the existing base-year emissions and setting method

- ① For facilities already subject to reduction obligations before the start of the fourth compliance period:
 - The base-year emissions applied in the third compliance period will be continued.
- ② For facilities subject to reduction obligations in the middle of the fourth compliance period:
 - As with those for new entrants in the first, second, and third compliance periods, base-year emissions will be determined by means of historical emissions or the emission intensity standards set by TMG based on emissions from FY 2005 to FY 2007.

○ Setting of compliance factors for the fourth compliance period

- Compliance factors will be set for each category with consideration for the characteristics of facilities and their potential for additional energy efficiency in the future.
- In the fourth compliance period, the relaxation of compliance factors will start for facilities with an electrification rate of less than 20%.

Categories		Compliance factors for 4th period compared to base-year emissions	Matters to be implemented in the fourth compliance period
Category I-1	Office buildings etc.*1	50%	<ul style="list-style-type: none"> • For medical facilities for which electricity is vital to preserve life and health, the compliance factor will be reduced by 2% as a relaxation measure for a drastic change from the third compliance period to the fourth compliance period.
Category I-2	Facilities among office buildings etc.*1, which use a larger amount of heat-related energy supplied by others*2	48%	<ul style="list-style-type: none"> • The compliance factor will be reduced by 3% for facilities with an electrification rate of less than 20% in the fourth compliance period alone. • In principle, a compliance factor of 41% or 39%*4 in the third compliance period will be applied to new entrants in the fourth compliance period with transitional measures taken.
Category II	Factories etc.*3	48%	<ul style="list-style-type: none"> • In principle, the reduction in the compliance factor for top-level facilities will be abolished with transitional measures taken.

*1 Office buildings, commercial facilities, accommodation facilities etc., and heating suppliers, except for those included in Category I-2

*2 District heating and cooling plants supply 20% or more of the entire energy consumption at the facilities

*3 Facilities not belonging to Category I-1 or I-2, including factories, water supply and sewage facilities, and waste treatment facilities

*4 The compliance factors with reduction obligations added to the percentage equivalent to reductions due to the use of renewable energy (14%) while continuing the relaxation of the percentage resulting from the compliance factor based on the current fixed emission factor to which energy efficiency measures are mainly reflected

○ **Switching emission factors for electricity and heat to actual emission factors**

- Emission reduction methods have been diversified, as shown by the use of off-site renewable energy, including self-consignment and PPA, an electricity menu with low CO₂ emission factors, and certificates derived from renewable energy, such as Non-Fossil Certificates, in addition to energy efficiency measures. In order to incorporate their effects into the calculation of covered facilities' annual emissions, the emission factors for electricity and heat, which have been fixed in principle, will be changed to actual emission factors.
 - * This represents a shift from the mechanism for selecting low-carbon electricity/heat where low-carbon electricity/heat procured from a TMG-certified low-carbon electricity/heating supplier is calculated as reductions which will be deducted from a purchasing facility's emissions.

○ **Expanding the use of renewable energy**

- ① Handling of self-consumption of renewable energy
 - Self-consumption of electricity or heat generated by renewable energy equipment will continue to be excluded from emissions accounting, being considered zero emission
 - From the perspective of calculating accurate emissions in line with the actual situation, TMG will terminate the mechanism awarding a reduction effect of 1.5 times the value for the self-consumption of electricity generated by renewable energy equipment
- ② Handling of off-site renewable energy, including self-consignment and PPA
 - Renewable electricity or heat procured from outside facilities will be reflected in emissions accounting as zero emission.
 - * Non-Fossil Certificates derived from virtual PPA will be treated in the same manner as physical PPA from the perspective of additionality, and the certified amount of power generated will be deducted from power consumption.
- ③ Handling of certificates derived from renewable energy
 - Only for certificates derived from renewable energy, including Green Electricity/Heat Certificates and Non-Fossil Certificates, CO₂ reduction effects will be directly deducted from annual emissions.

○ **Change in methods for creating excess emission reductions**

- In order to encourage energy efficiency measures and the use of renewable energy (on-site/off-site), a new mechanism will be set up to create excess emission reductions according to the achievements in these initiatives.

Calculation of excess emission reductions:

For compliance facilities, out of the amount obtained by subtracting annual energy-related CO₂ emissions from base-year emissions, TMG will issue as credits the total of the amount equivalent to the energy efficiency measures and the use of renewable energy (on-site/off-site) in the amount exceeding mandatory emission reductions for each fiscal year (the amount obtained by multiplying base-year emissions for each fiscal year by compliance factors for each fiscal year).

However, excess emission reductions will only be able to be issued up to the amount obtained by subtracting mandatory emission reductions from 65% of base-year emissions.

○ **Expanding the content of reporting and disclosure of target setting and the status of efforts**

- Reporting will be required on the setting of target and status of efforts related to renewable energy.
- In order to improve the evaluation of facilities with proactive initiatives, TMG will disclose changes in primary energy consumption intensity per floor area, including individual values for each facility and overall average, and changes in CO₂ emission intensity per floor area as well as the content of reports on renewable energy.

○ **Matters related to the top-level facility certification system**

- ① Promoting efforts to realize zero emissions
 - New items will be established to evaluate efforts for zero emissions, including the use of renewable energy, in addition to existing energy efficiency efforts.
 - To promote efforts for zero emissions, TMG will add a certification category that is higher than before, having three certification categories in total.
- ② Setting up a new certification route
 - For new buildings that are already awarded a high value at the design stage, a new approval route will be established to evaluate them in conjunction with the Tokyo Green Building Program.
 - If that applies, they will be evaluated by replacing items in II Energy Performance of Building and Equipment of the Top-Level Facility Certification Criteria with their shell and equipment performance.
- ③ Handling of compliance factors etc.
 - In light of the purpose of certifying facilities that are actively promoting efforts for zero emissions, TMG will in principle terminate the reduction of the compliance factor of certified facilities, and eliminate the upper limit for issuing excess emission reductions.
 - However, if a facility certified as top level in the first fiscal year of the third compliance period is certified for the fourth compliance period again, we will as a transitional measure allow a decrease rate for the compliance factor to be 3/5 for a facility equivalent to an existing top-level facility or 4/5 for a facility equivalent to an existing near-top-level facility. (The upper limit for issuing excess emission reductions will not be eliminated in this case)
 - For facilities that were certified as top-level in the middle of the third compliance period, TMG will keep the certification valid until the fifth fiscal year from the fiscal year of the certification. During the certification period, we will allow their compliance factors to be relaxed according to the certification categories. For facilities that are certified again after the above certification period, TMG will allow their compliance factors to be relaxed according to the certification categories during the fourth compliance period alone. (The upper limit for issuing excess emission reductions will not be eliminated in this case)
 - For facilities that were covered by the program by the third compliance period and certified as they met certain requirements, TMG will allow their compliance factors to be relaxed according to the certification categories during the fourth compliance period alone. (The upper limit for issuing excess emission reductions will not be eliminated in this case)
- ④ Reducing the burden of administrative procedures for certification and enhancing public relations
 - With a view to balancing the reliability of certification with a mitigation of the burden on facilities, TMG will reduce the burden of administrative procedures at the time of self-evaluation of efforts by facilities and third-party verification of the efforts.
 - TMG will strengthen efforts for public relations to contribute to the improvement of the social and economic evaluation of certified facilities, including the provision of more information on certified facilities, recognition by TMG, and the enhancement of PR activities in cooperation with related organizations.

Part 2: Revisions to the Carbon Reduction Reporting Program for Small and Medium-Sized Facilities

○ FY 2030 Achievement Levels determined by TMG and the formulation of plans and reporting on achievement status by businesses

- TMG has determined the FY 2030 Achievement Levels for energy efficiency and the use of renewable energy.
- Based on TMG's FY 2030 Achievement Levels, businesses will formulate their own promotion plans for energy efficiency and the use of renewable energy and report their achievement status.

* 2030 Achievement Level for Energy Efficiency

- As for the 2030 Achievement Level for Energy Efficiency, businesses will choose an energy consumption reduction rate or intensity improvement rate.
- For the energy consumption reduction rate, the total energy consumption of all facilities in Tokyo must be at least the target reduction rate for 2030 indicated in the standard timeline defined by TMG.
- For the intensity improvement rate, the energy consumption intensity of facilities in Tokyo subject to benchmark must be at least Range A indicated in the Energy Benchmark created by TMG.

* 2030 Achievement Level for the Use of Renewable Energy

- As for the 2030 Achievement Level for the Use of Renewable Energy, businesses will choose the percentage of renewable electricity* in electricity used by all facilities in Tokyo or the percentage of facilities using 100% renewable electricity in all facilities in Tokyo.
- Renewable electricity must account for at least 50% of electricity used by all facilities in Tokyo.
- Facilities using 100% renewable electricity must account for at least 20% of all facilities in Tokyo.
 - * Renewable electricity includes electricity generated by renewable energy power generation equipment installed in facilities, electricity procured from outside facilities through self-consignment/corporate PPA, purchases from general electricity utilities etc., and the use of certificates derived from renewable energy.
 - * The scope of electricity from renewable energy sources will be consistent with the Tokyo Cap-and-Trade Program and other TMG programs.

○ Expansion of items to be reported and disclosed

- Items to be reported and disclosed will be expanded to encourage the efforts of businesses and improve their professional reputation in their field.
- Proactive efforts will be encouraged by disclosing initiatives of small and medium-sized facilities in an easy-to-understand and convenient manner for third parties.

○ Enhancing the evaluation of excellent businesses

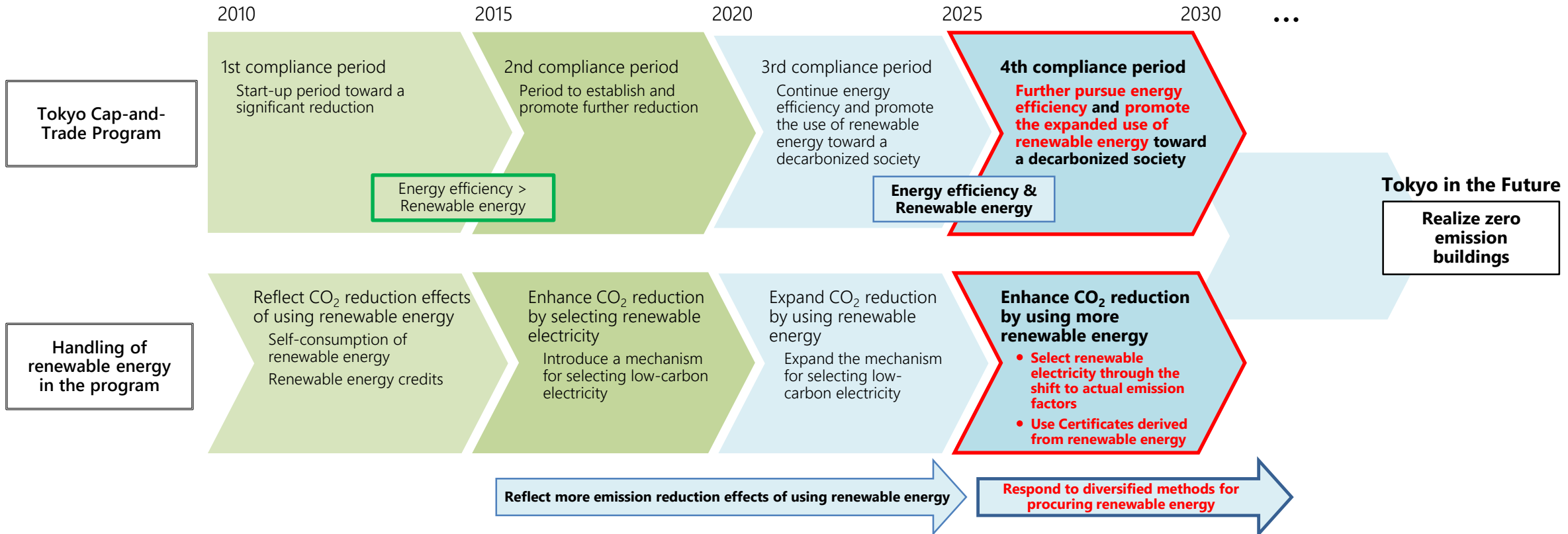
- Proactive efforts of businesses will be encouraged by recognizing those that have reached the 2030 Achievement Levels before 2030.
- The evaluation will be made from three perspectives, energy efficiency and renewable energy for which the 2030 Achievement Levels are indicated as well as CO₂ reduction, to promote steady efforts toward "Carbon Half."

- **Further visual depiction and promotion of measures taken at facilities by expanding the carbon report**
 - Three indicators, carbon benchmarks for CO₂ emissions (actual emission factors), energy benchmarks, and the levels of using renewable electricity, will be used to further visually depict measures taken at facilities and promote their proactive efforts.

Direction of the Tokyo Cap-and-Trade Program from FY 2025 Onwards (Fourth Compliance Period)

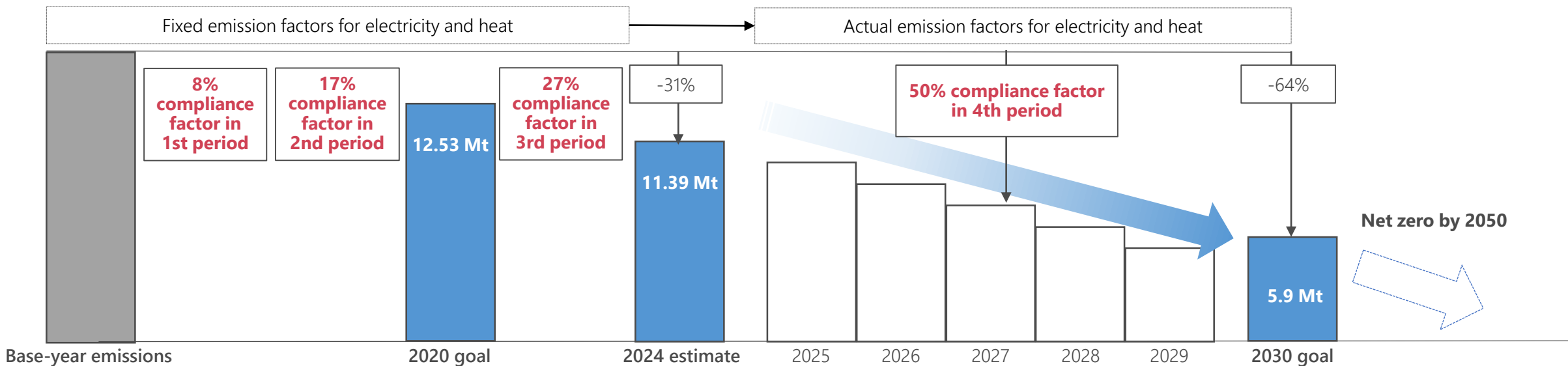
- Promote CO₂ reduction through both **energy efficiency** and **expanded use of renewable energy** to realize a decarbonized society

Global common goals	Reduce global greenhouse gas emissions by at least half by 2030 to achieve the 1.5°C goal	Net zero by 2050	
TMG's goals	2020 goals: GHG emissions: 25% reduction from 2000 Energy consumption: 30% reduction from 2000	2030 goals: GHG emissions: 50% reduction from 2000 Energy consumption: 50% reduction from 2000 Percentage of power generated by renewable energy: Approx. 50%	2050 goals: Aim to realize a Zero Emission Tokyo that will contribute to achieving net zero CO ₂ emissions worldwide



Compliance Factors for the Fourth Compliance Period

- Determine a compliance factor at **50%** using the premise of backcasting from the target emissions at large facilities in 2030, taking into account the potential reductions through taking of energy efficiency measures, introduction of renewable energy equipment, and procurement of renewable electricity as well as de facto emissions at new and closed facilities



Category			3rd compliance period (FY 2020 to FY 2024)	4th compliance period (FY 2025 to FY 2029)
I	I-1	Office buildings etc.	27%	<u>50%</u>
	I-2	Facilities among office buildings etc., which use a larger amount of heat-related energy supplied by others	25%	<u>48%</u>
II		Factories etc.	25%	<u>48%</u>

1. Self reduction

Energy efficiency measures

- Upgrading to high-efficiency energy consumption equipment and developing operational measures for reducing fuel, heat, and electricity consumption

Use of renewable energy

- Expand renewable energy available for calculating facilities' emissions taking into account diversified procurement methods for renewable electricity and heat, such as the use of renewable energy on-site and off-site, low-carbon electricity and heat (shift to actual emission factors), and Certificates derived from renewable energy

2. Emissions trading (A mechanism that complements the reduction obligation program in addition to self-reduction)

● Excess emission reductions

Reductions created according to the level of energy efficiency measures and the use of renewable energy (on-site/off-site) in reductions that exceed mandatory emission reductions

● Small and mid-size facility credits

Emission reductions achieved through the reduction of energy consumption by small and medium-sized facilities in Tokyo

● Renewable energy credits

Environmental values of renewable energy (Green Electricity/Heat Certificates etc.)

● Outside Tokyo credits

Reductions achieved through energy efficiency and renewable energy measures by large facilities outside Tokyo

● Saitama credits

Credits of Saitama Prefecture created under the Saitama Target-Setting Emissions Trading System
Explore the shape of linkage based on Saitama's consideration of the fourth compliance period

3. Banking from the third compliance period

Excess emission reductions and credits from the third compliance period can be appropriated for reduction obligations in the fourth compliance period