

Tokyo Cap and Trade Program & Strategic Reporting Requirements



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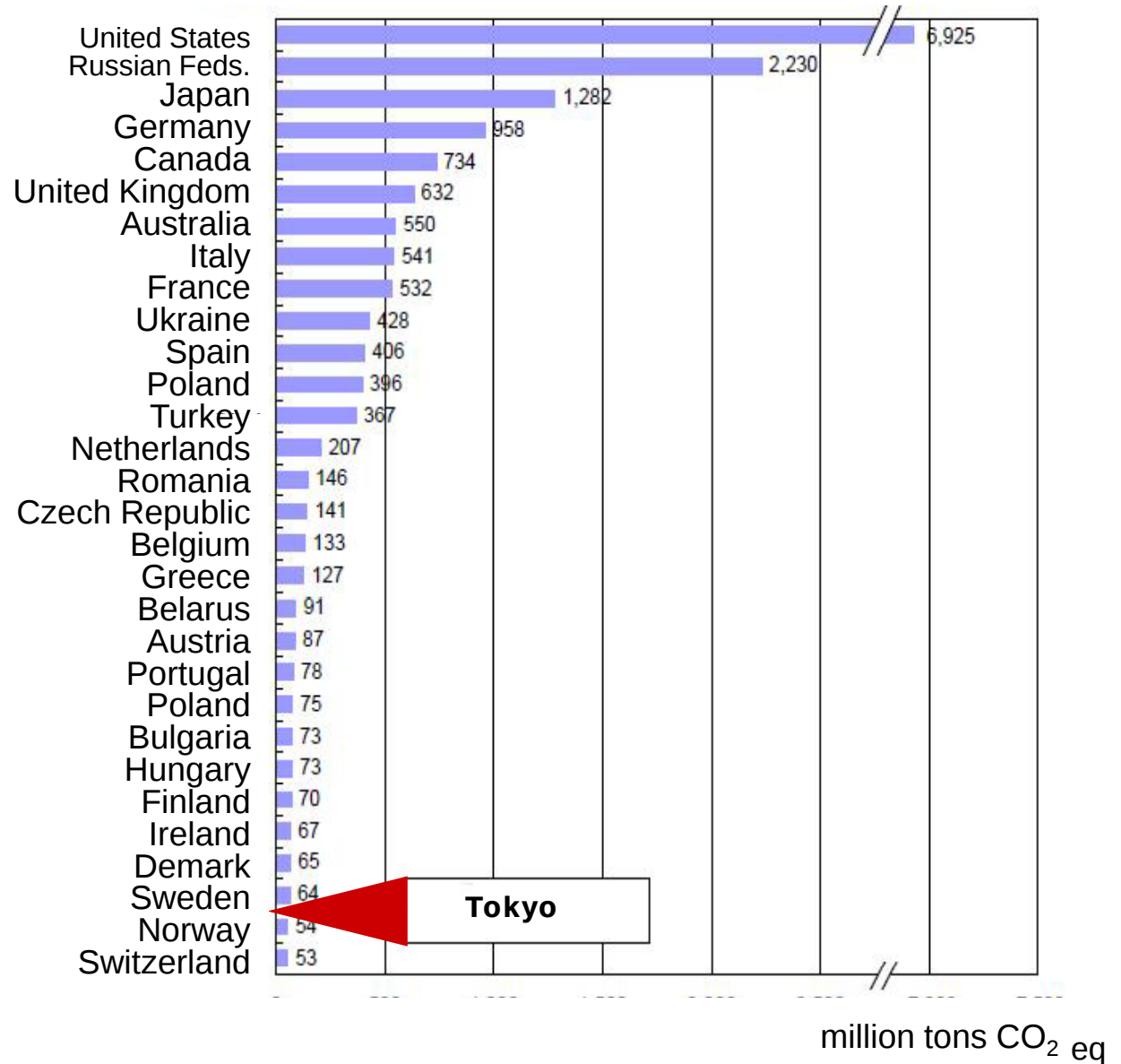


An aerial photograph of a dense urban landscape in Tokyo. In the foreground, a large, lush green park with many trees and a small pond is visible. Surrounding the park are numerous high-rise buildings, including several prominent skyscrapers. The background shows a vast expanse of the city, with many smaller buildings and a hazy horizon. The overall scene illustrates the integration of green spaces within a highly developed urban environment.

1. Tokyo's Green Building Policy

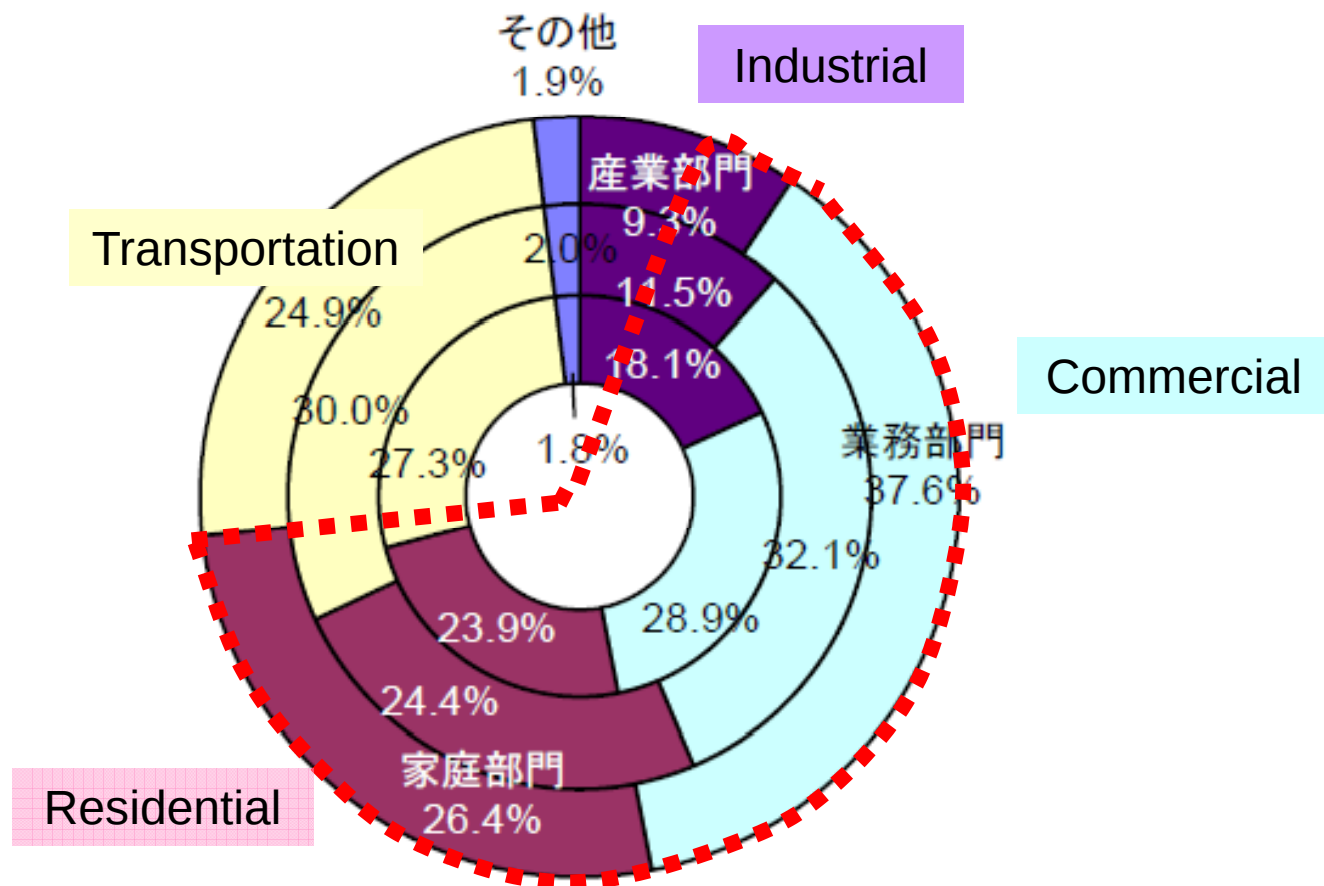
GHG Emissions in TMG area

**63 million tons
CO₂ eq (08 fiscal
yr.)**



Source: UNFCCC, GHG emissions of AnnexI parties

Increasing Carbon Emissions from the Buildings Sector





Tokyo Climate Change Strategy Basic Policy

1 Responsibility as the enormous energy consumer

Annual emissions in Tokyo area is large, it's comparable to those from Scandinavian countries.

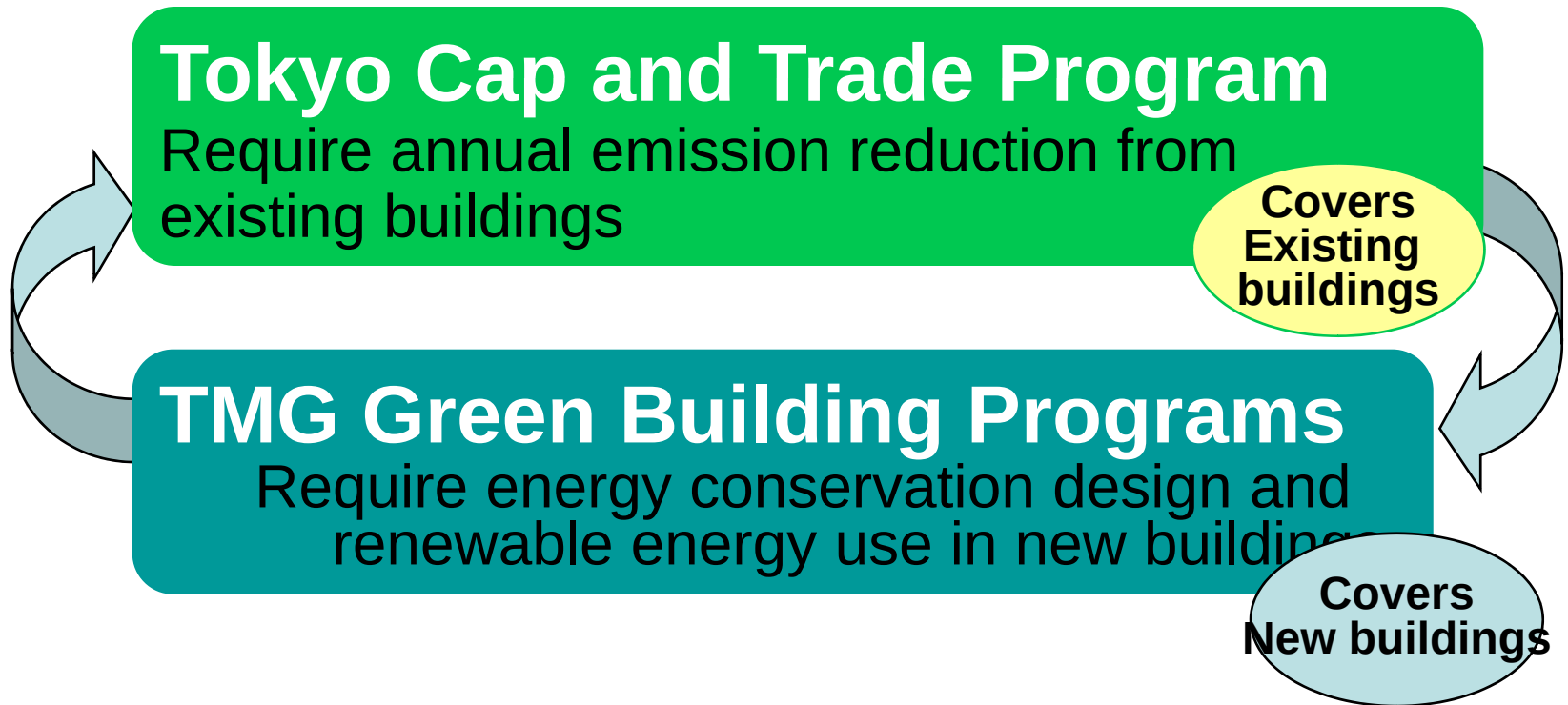
2 Importance to reduce emissions from urban buildings

Promoting measures in the buildings sector is the key to reduce emissions not only in Japan, but also in the urbanizing world

3 Enable Tokyo to grow in the coming carbon restrain age

Taking an advantage of the early shift to a low carbon city to realize sustainable growth of Tokyo

Framework of Measures for the Buildings Sector



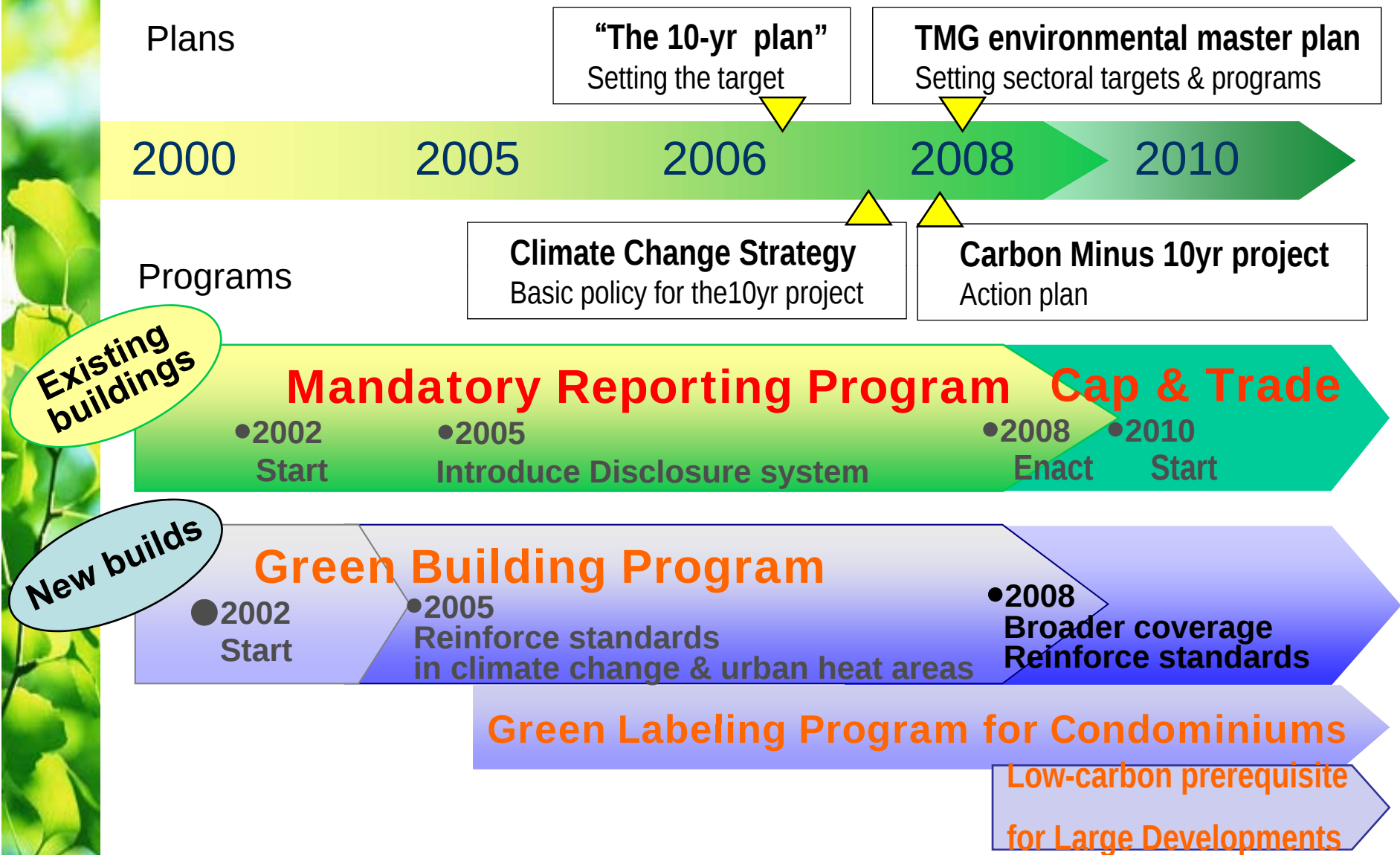
Introducing energy efficient measures in new buildings design

▶ Easier emission reductions in the Cap&Trade

Investing in energy efficient measures in new buildings

◀ Because of the future reduction obligations by Cap&Trade

Policy Development



An aerial photograph of a dense urban landscape, likely Tokyo, featuring numerous skyscrapers and a large green park area in the foreground. A semi-transparent white rectangular box is overlaid on the lower portion of the image, containing the title text.

2. Tokyo Cap and Trade Program Program Outline & its Features

Unique coverage of urban facilities

The world's first **urban cap and trade** program to cover office buildings

Target facilities: **1,300 facilities**

Facilities with annual energy consumption of 1,500 kl or more (crude oil equivalent)

Approx. 1000 commercial & institutional buildings
Approx. 300 industrial facilities

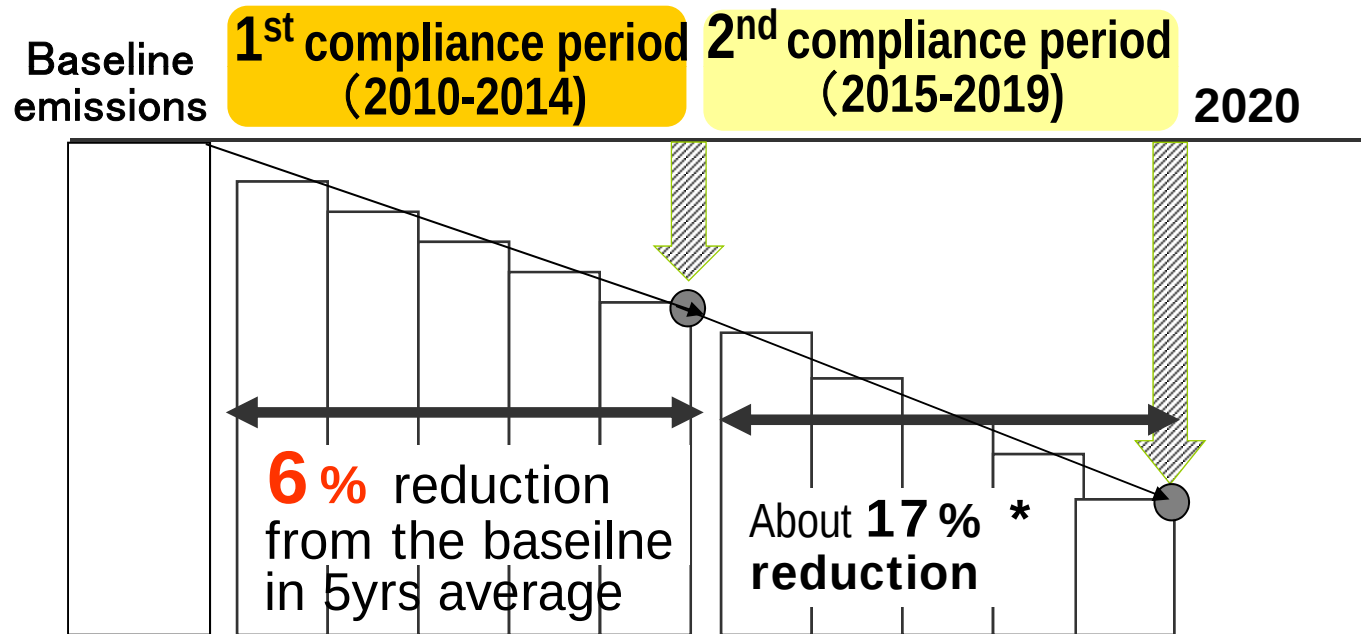


Covers approx. 40% of commercial & industrial sectors' emissions

Strict Cap Setting to Achieve the TMG Target

Tokyo Cap & Trade Program

To achieve the Tokyo's emission reduction target "By 2020 25% reduction from 2000", the necessary reduction in industry & commercial sector is 17% reduction



* Current estimation.
The Cap for the 2nd compliance period will be fixed by the end of the 1st compliance period

Fair allowance allocations

$$\text{Emission Allowance (5yrs)} = (\text{Base-year emissions} - \text{Obligation reductions}) \times 5 \text{ years}$$

$$\text{Obligation reductions} = \text{Base-year emissions} \times \text{Compliance factor}$$

Base-year emissions : Average emissions of three consecutive years between 2002 to 2007

Category		Compliance factor
I -1	Commercial buildings, District cooling & heating facilities (plants)	8%
I -2	Commercial buildings using EHC	6%
II	Factories, etc.	6%
Top level	A facility already achieved high energy efficiency is certified as a: Top Level / Near-top level Facility	1/2 or 3/4 of the compliance factor

Emission Trading: Creating a New Carbon Market

Tradable allowance:

Reductions exceeding the obligation

Creation of Emission Reduction Registry System:

Reductions exceeding

Creation of a MRV system:

Guidelines on MRV

Requirements of verification by a registered verification agency

Emission Trading: Offset Credits

Tokyo Cap & Trade Program

1. Emission reductions **from small and midsize facilities** within the Tokyo area

- * Emission reductions through energy-saving measures in smaller facilities not covered by the TC&T

2. **Renewable Energy** Certificates

- * Solar energy (heat and power), wind energy, etc.
- * No limit for offsetting

3. Emission reductions **outside the Tokyo** area

- * Sellers will be assumed to be covered under the Tokyo Cap-and-Trade Program, and reduction exceeding the reduction obligation would be counted as offset credit
- * Can only buy up to 1/3 of base year emissions

Penalties for non-compliance

Fines: up to JPY500,000

Charges: 1.3 times the shortfall

Violation will be published

***Among the other TMG programs,
exceptionally high charges**

Overview

Tokyo Cap & Trade Program

Mandatory emission reduction program targeting urban facilities in a cost effective way

- + Targeting **BUILDINGS**
- + Targeting **existing** buildings
- + Targeting total emissions from **a building as a whole**
- + Focusing on **demand side** energy consumption
- + Capturing **real energy consumptions** (emissions)
 - > design performance
- + Creating vast **investments on energy efficiency** measures and renewable energy introductions
- + Pursuing the **cost effectiveness** through the **ETS**

An aerial photograph of a city skyline, likely Tokyo, featuring numerous skyscrapers and a large green park area in the foreground. The text is overlaid on the lower portion of the image.

3. Strategic Reporting System in the Tokyo Cap & Trade

MRV in the Cap & Trading Program

Tokyo Cap & Trade Program

Measuring, reporting & verification Requirements

Measurement & reporting system is the basic rule of the cap & trade program

MRV on baseline emissions

- Set the starting point

Yearly report on emissions

- Measuring and reporting on annual emissions
- Verification required
- Including “Reduction Plan”

Yearly report from large tenants

- “Reduction Plan” by tenants

MRV for emission trading system

- Credits creation and trading

Strategic Reporting System in the Program

Tokyo Cap & Trade Program

Reporting Requirement of “Reduction Plan”

- Not only monitor the emission amount but also report the reduction plan with a targeting goal
- Disclosed on TMG website

Utilizing a reporting system to ensure/improve the program effectiveness

► Mandatory reporting program (2005-2010)

- Reporting requirement on emission inventory with a reduction target & reduction plan
- **Feedback system** to show their performance with comparable data & examples
- **Rating & disclosure** of the plan and results

Energy Efficiency Carte

～自らのエネルギーの消費状況がひと目でわかる～

『東京都★省エネカルテ』

事業所名： Aビル

1. 所管課あたりのCO2排出量・エネルギー消費量(標準単位)について (H17年度排出状況報告書より集計)

(1) 用途別の平均値について

(ア) 用途別の消費量(単位: 1000kWh)

用途	累計消費 事業所数	CO2排出量 の平均値	CO2排出量 の平均値 の順位
事務用ビル	105	89	70
ホテル・ビル	200	107	80
商業施設	119	101	127
飲食店	25	160	120
教育施設	41	87	52
医療施設	48	101	141
文化施設	15	104	82
その他	49	127	83

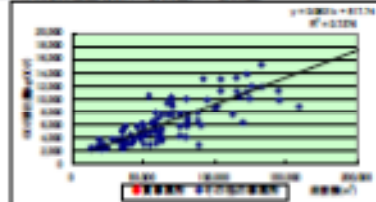
消費量センサ等を用いて集計を行う場合は、誤差が、

(イ) 用途別の消費量(単位: 1000kWh)

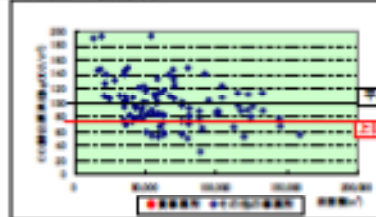
用途	累計消費 事業所数	2014年度 消費量の平均 値	2014年度消費量の 平均値の順位
事務用ビル	105	2,365	1,840
ホテル・ビル	200	2,518	2,060
商業施設	119	2,518	2,060
飲食店	25	2,225	2,030
教育施設	41	1,542	1,710
医療施設	48	2,542	2,040
文化施設	15	2,457	1,920
その他	49	3,194	1,460

(2) 事業所と同一用途事業所の状況(事務所ビルの場合)

(ア) 消費量とCO2排出量の関係



(イ) 消費量とCO2排出量の関係



(ロ) CO2排出量の大きい事業所



上記の図表は、所管課ごとの集計結果から事業所の用途別消費量を算出したものであり、用途の分類を把握することができます。

上記のグラフでは、事業所が設置する用途におけるCO2排出量を算出するのと、用途別のCO2排出量の順位を算出しました。ビルでは、左下から右上への向きから事業所が上向きに並んでいる場合、他に比べ特徴的な傾向があることが示されています。この特徴的な傾向を把握することで、省エネ対策を講じることがあります。(ウ)では、事業所の用途別のCO2排出量平均値、上位25%の事業所の平均値から上位25%にある事業所のCO2排出量を算出しています。

(エ)では、事業所の平均値と上位25%にある事業所のCO2排出量を比較しています。

2. 過去4年間の用途別の推移について (地域経済統計調査、H17年度排出状況報告書より集計)

(1) 用途別の平均の推移

(ア) 用途別の消費量の推移(単位: 1000kWh)

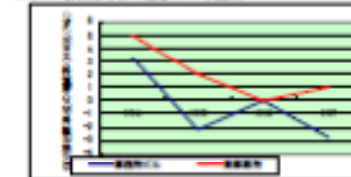
用途	H14	H15	H16	H17
事務用ビル	2.3%	-2.3%	2%	-2.3%
ホテル・ビル	2.3%	-2.3%	2%	-2.3%
商業施設	-1.8%	-2.3%	2%	-2.3%
飲食店	1.2%	-2.3%	2%	-1.1%
教育施設	-1.3%	-4.4%	2%	-1.2%
医療施設	0.7%	-2.3%	2%	0.1%
文化施設	-2.4%	-2.3%	2%	-2%
その他	-0.7%	-2.3%	2%	-2.1%

(イ) 用途別のエネルギー消費量の推移(単位: 1000kWh)

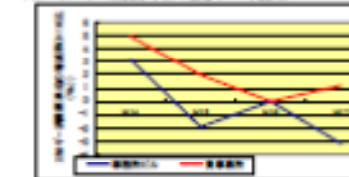
用途	H14	H15	H16	H17
事務用ビル	2.3%	-1.3%	2%	-2.3%
ホテル・ビル	2.3%	-1.3%	2%	-2.3%
商業施設	-1.8%	-2.3%	2%	-2.3%
飲食店	1.2%	-2.3%	2%	-1.1%
教育施設	-1.3%	-4.4%	2%	-1.2%
医療施設	0.7%	-2.3%	2%	0.1%
文化施設	-2.4%	-2.3%	2%	-2%
その他	-0.7%	-2.3%	2%	-2.1%

(2) 事業所と同一用途事業所の平均の推移

(ア) CO2排出量の推移(単位: 1000kWh)



(イ) エネルギー消費量の推移(単位: 1000kWh)

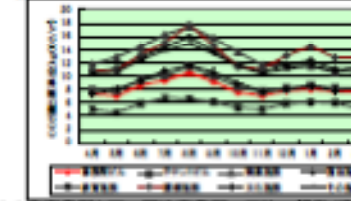


上記の図表は、H14年度からH17年度までのCO2排出量の推移を示しています。事業所の用途別消費量を算出したものであり、用途の分類を把握することができます。上記のグラフは、事業所の用途別の平均の推移と同一用途事業所の平均の推移(図表)を示しています。用途の平均と事業所の推移を比較し、差がある場合には、その年度のエネルギー消費量の削減率を算出します。削減率の算出方法は、削減率 = (削減率 / 削減率) × 100% で算出します。

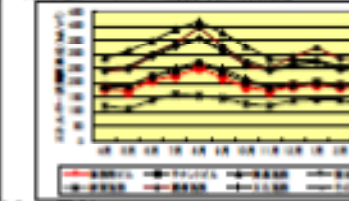
3. 月別用途別の推移について (H17年度排出状況報告書より集計)

(1) 用途別の月別推移

(ア) 用途別の消費量の月別推移

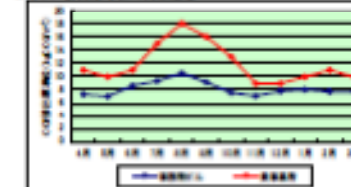


(イ) 用途別のエネルギー消費量の月別推移

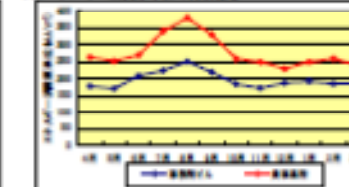


(2) 事業所と同一用途事業所の平均の推移(事務所ビルの場合)

(ア) CO2排出量の月別推移



(イ) エネルギー消費量の月別推移

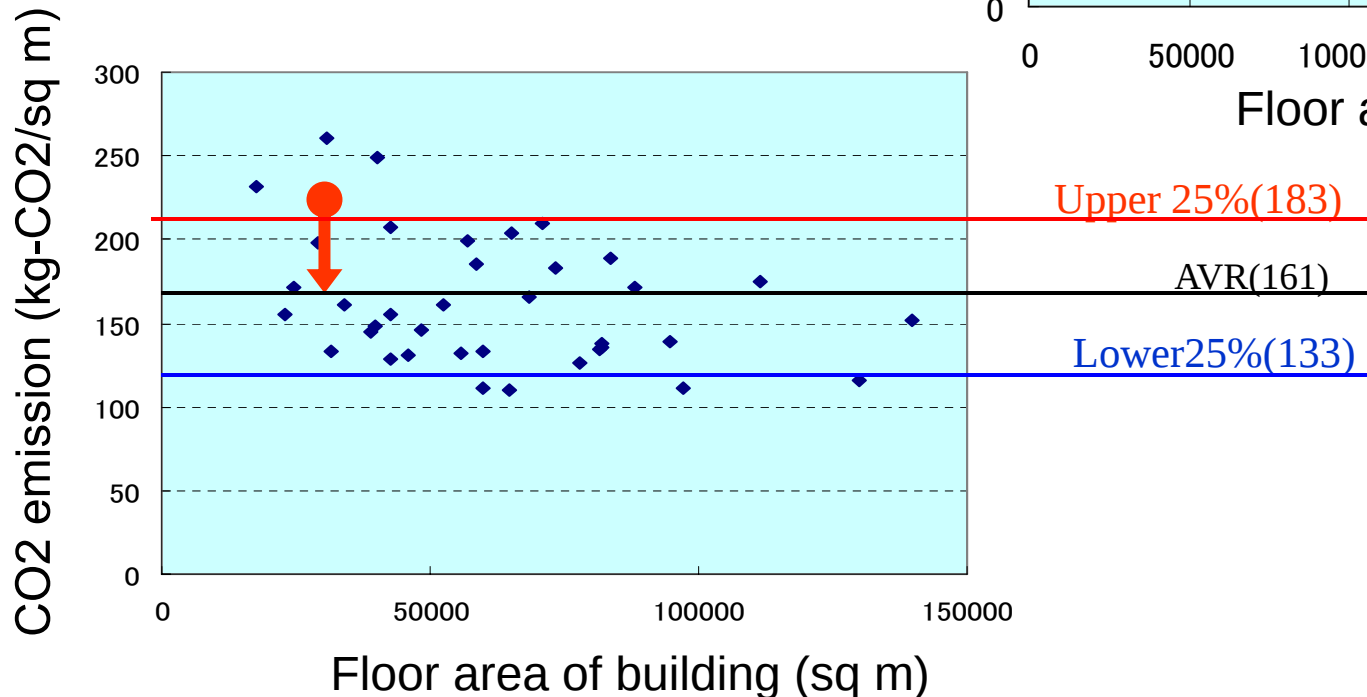
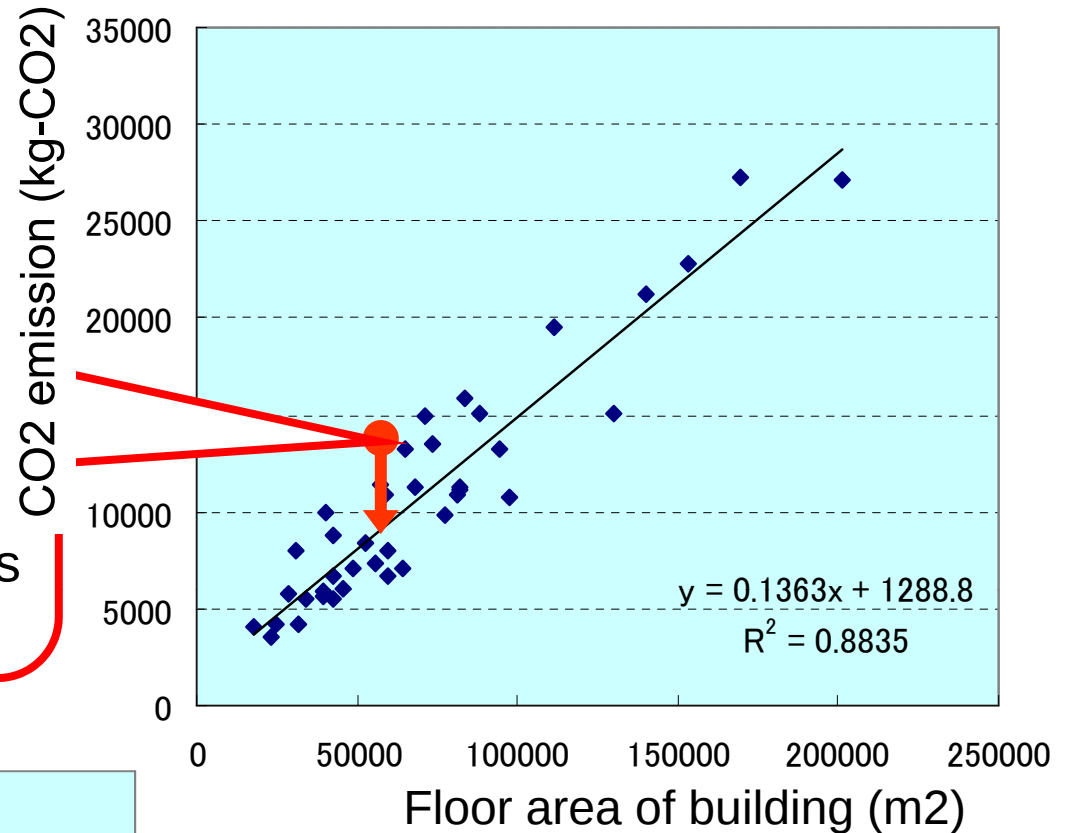


上記の図表は、用途別の消費量の月別推移を示したものであり、事業所の用途別のCO2排出量(図表)・エネルギー消費量(図表)の推移を把握することができます。事業所の用途別のCO2排出量(図表)・エネルギー消費量(図表)の推移を把握することができます。事業所の用途別のCO2排出量(図表)・エネルギー消費量(図表)の推移を把握することができます。

Feeding Back

*Distribution

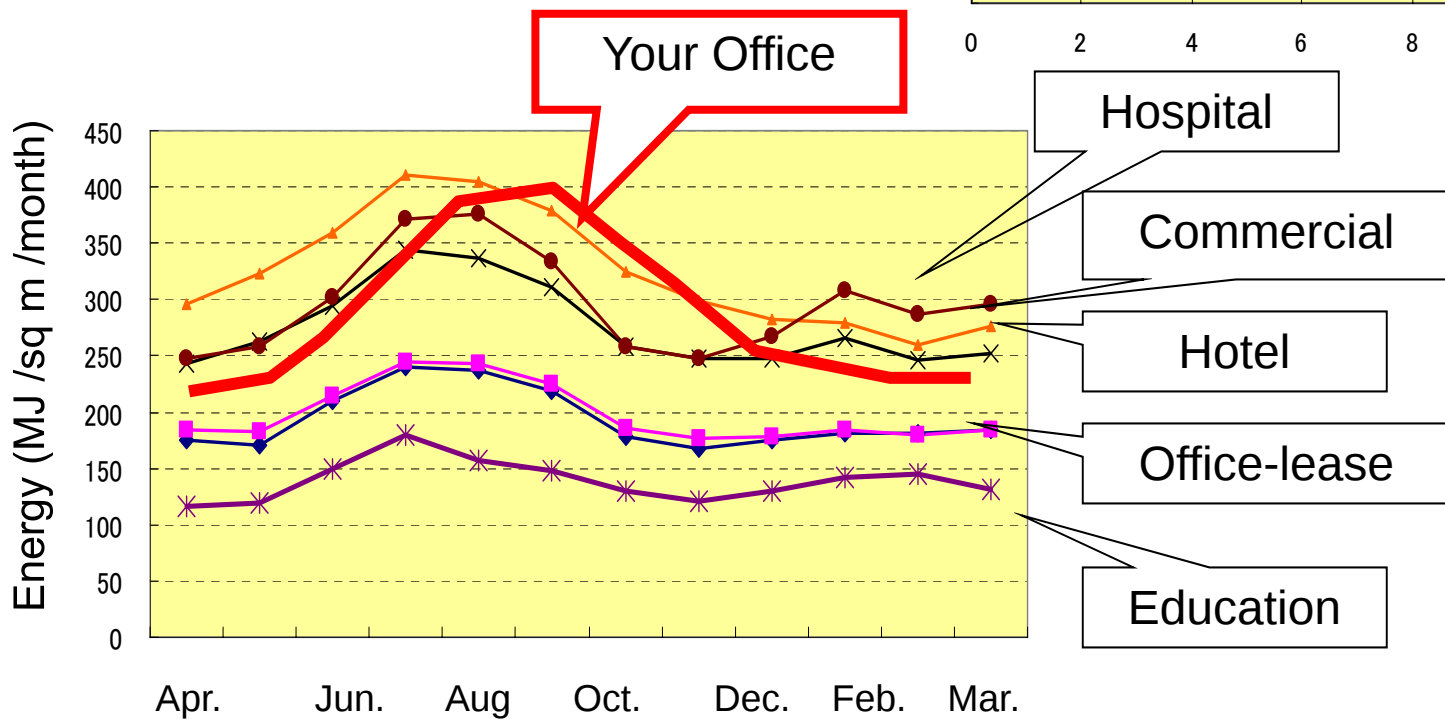
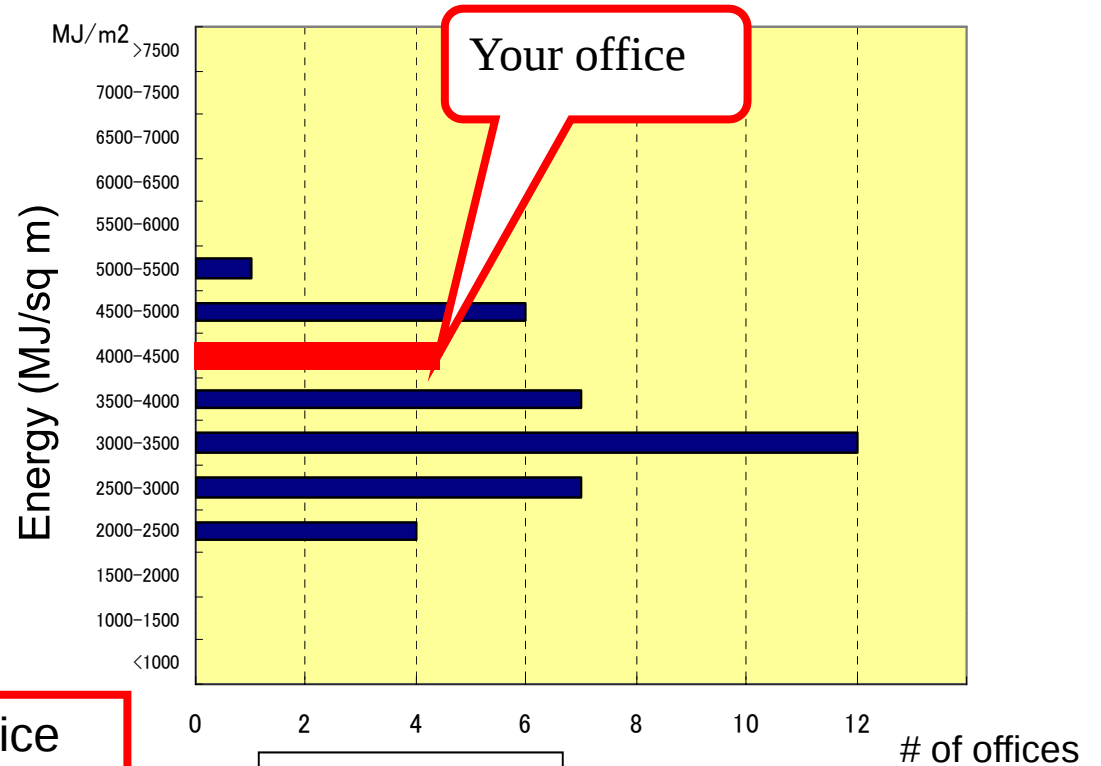
CO2 emission of your office is a little higher among those in the same business category
Check factors and seek measures for further reduction!



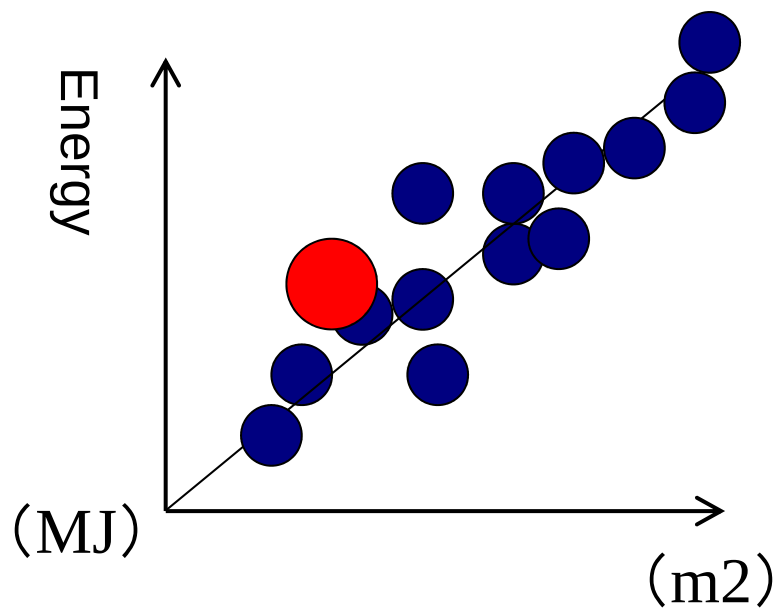
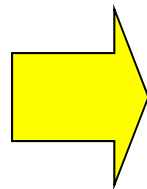
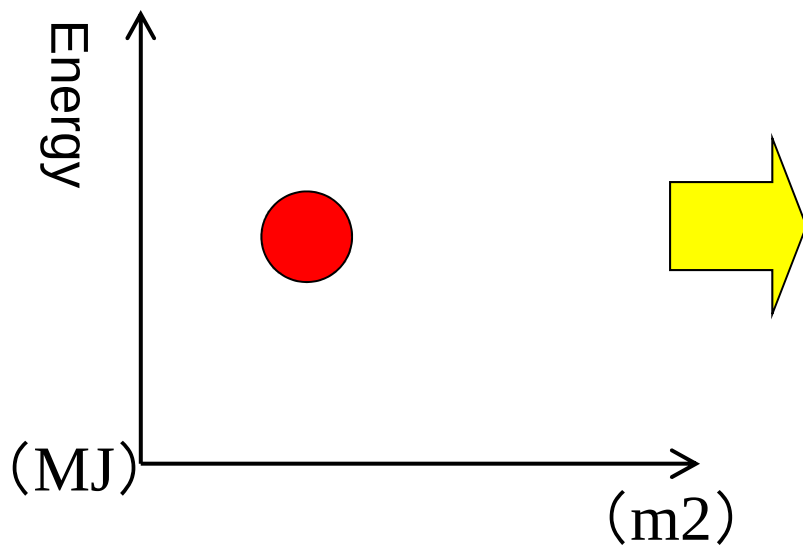
Feeding back

*Ranking

*Seasonal Change



◆ Distribution





4. Green Buildings Era in Tokyo

Low Emission Buildings TOP30

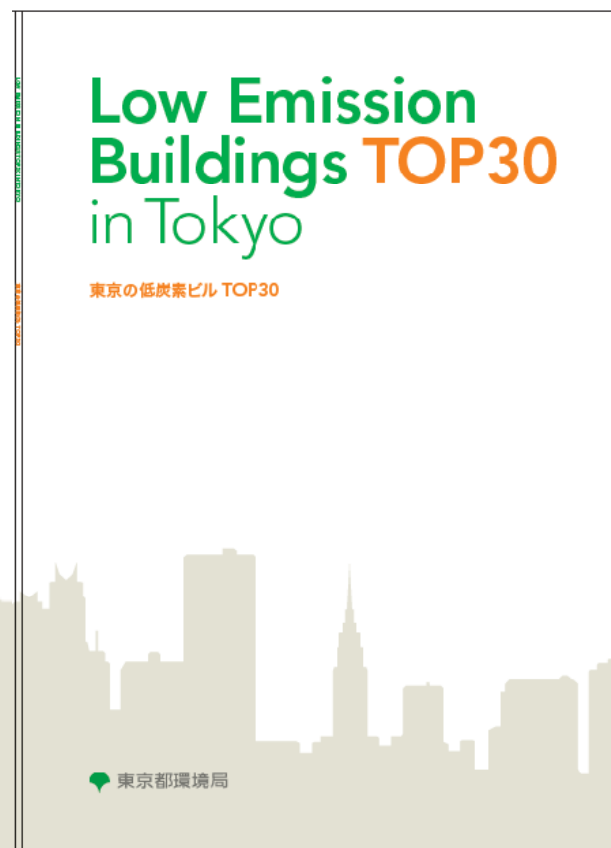
TOP30 buildings were selected in line with the policy measures of TMG.

Existing buildings section:

Highly valued in the C&T Program

New building section:

Based on the evaluation of the Green Building Program



<http://www.kankyo.metro.tokyo.jp/en/int/top30.html>

TOP30 Building List

東京の低炭素ビルTOP30 所在地マップ

EXISTING BUILDING

- 1 Dentsu Shiodome Head Office Building
- 2 Ginza Mitsui Building
- 3 Hibiya International Building
- 4 Meiji Yasuda Seimei Building and Meiji Seimei Kan Building
- 5 Mitsubishi Shoji Building
- 6 Marunouchi Building
- 7 Nihonbashi Mitsui Tower
- 8 Otsuka Corporation Head Office Building
- 9 Roppongi Hills
- 10 Sapia Tower
- 11 Shin-Otemachi Building
- 12 Sony City
- 13 Tokyo Midtown
- 14 Toranomon Towers Office
- 15 Kokuryu Shiba Koen Building

Alphabetical order

NEW BUILDING

- 16 Chiyoda Ward Koujimachi Junior High School
- 17 Fujimi Mirai Kan
- 18 JP Tower (tentative name)
- 19 Kasumigaseki Common Gate Central Government Building No.7
- 20 Kyobashi 3-1 Project (tentative name)
- 21 Marunouchi 1-4 Project New Building (tentative name)
- 22 Marunouchi Park Building
- 23 Shimizu Corporation New Headquarters Construction Project
- 24 Shopping Center at 1-1 block in the first south area of Musashi-Koganei Station
- 25 Sony Corporation Sony City Osaka
- 26 Takenaka Corporation Tokyo Main Office
- 27 Tokyo Metropolitan Matsuzawa Hospital
- 28 Toyosu Cubic Garden
- 29 Obayashi Corporation Technical Research Institute Main Building (Tecno-Station)



Tokyo Climate Change Strategy

www.kankyo.metro.tokyo.jp/en/climate/



Contact us: tokyoets@kankyo.metro.tokyo.jp