

# Tokyo Cap and Trade Program & Strategic Reporting Requirements



**Yuko Nishida**

Bureau of Environment

Tokyo Metropolitan Government

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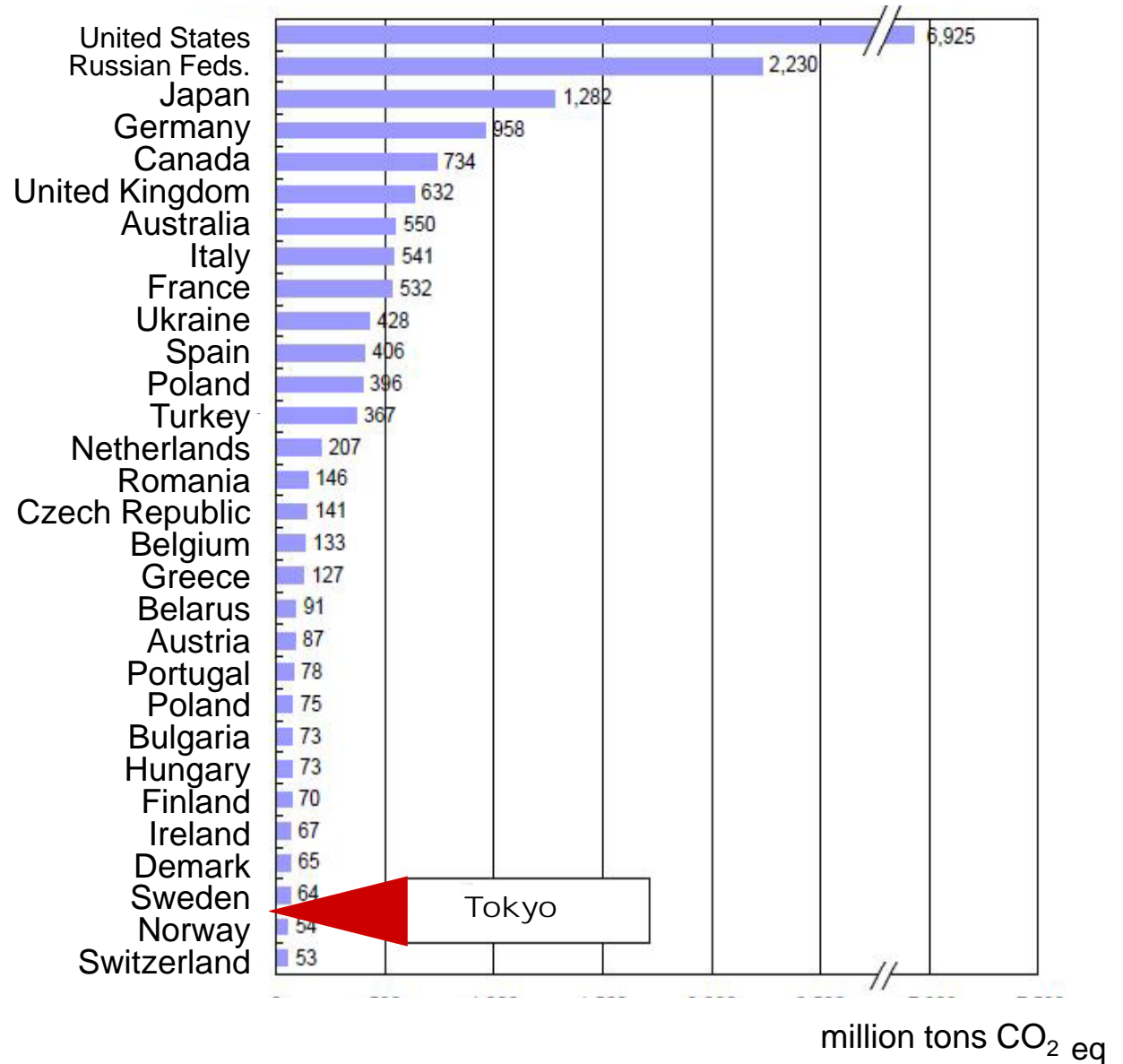
TOKYO  
METROPOLITAN  
GOVERNMENT



# 1. Tokyo's Green Building Policy

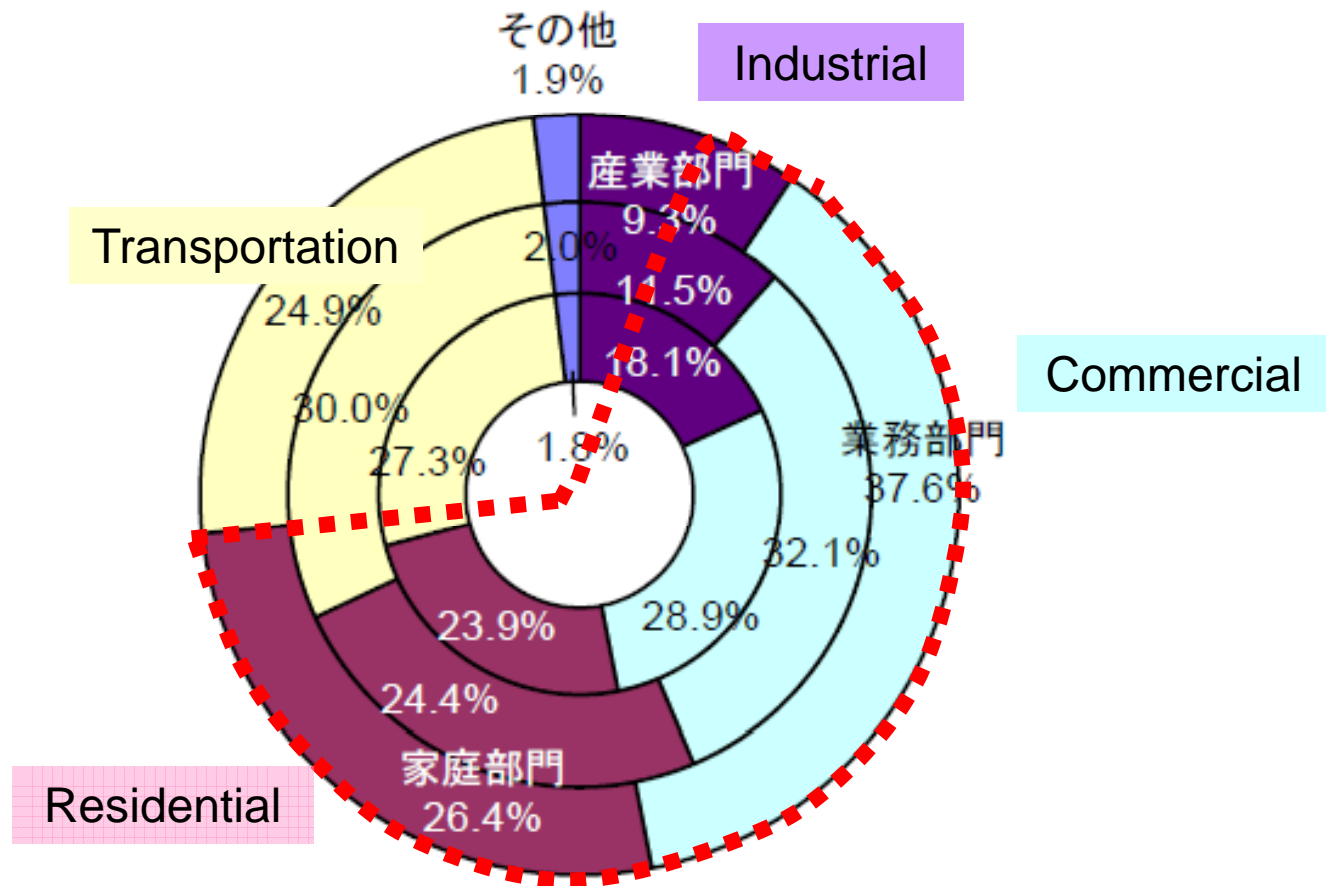
# GHG Emissions in TMG area

**63 million tons  
CO<sub>2</sub> eq (08 fiscal  
yr.)**




Source: UNFCCC, GHG emissions of Annex I parties

# Increasing Carbon Emissions from the Buildings Sector



CO<sub>2</sub> emissions in TMG area by sector  
 Inner circle: 1990  
 Middle circle: 2000  
 Outer circle: 2007



# Tokyo Climate Change Strategy Basic Policy

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## 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

## Tokyo Cap and Trade Program

Require annual emission reduction from existing buildings

Covers Existing buildings

## TMG Green Building Programs

Require energy conservation design and renewable energy use in new buildings

Covers New buildings

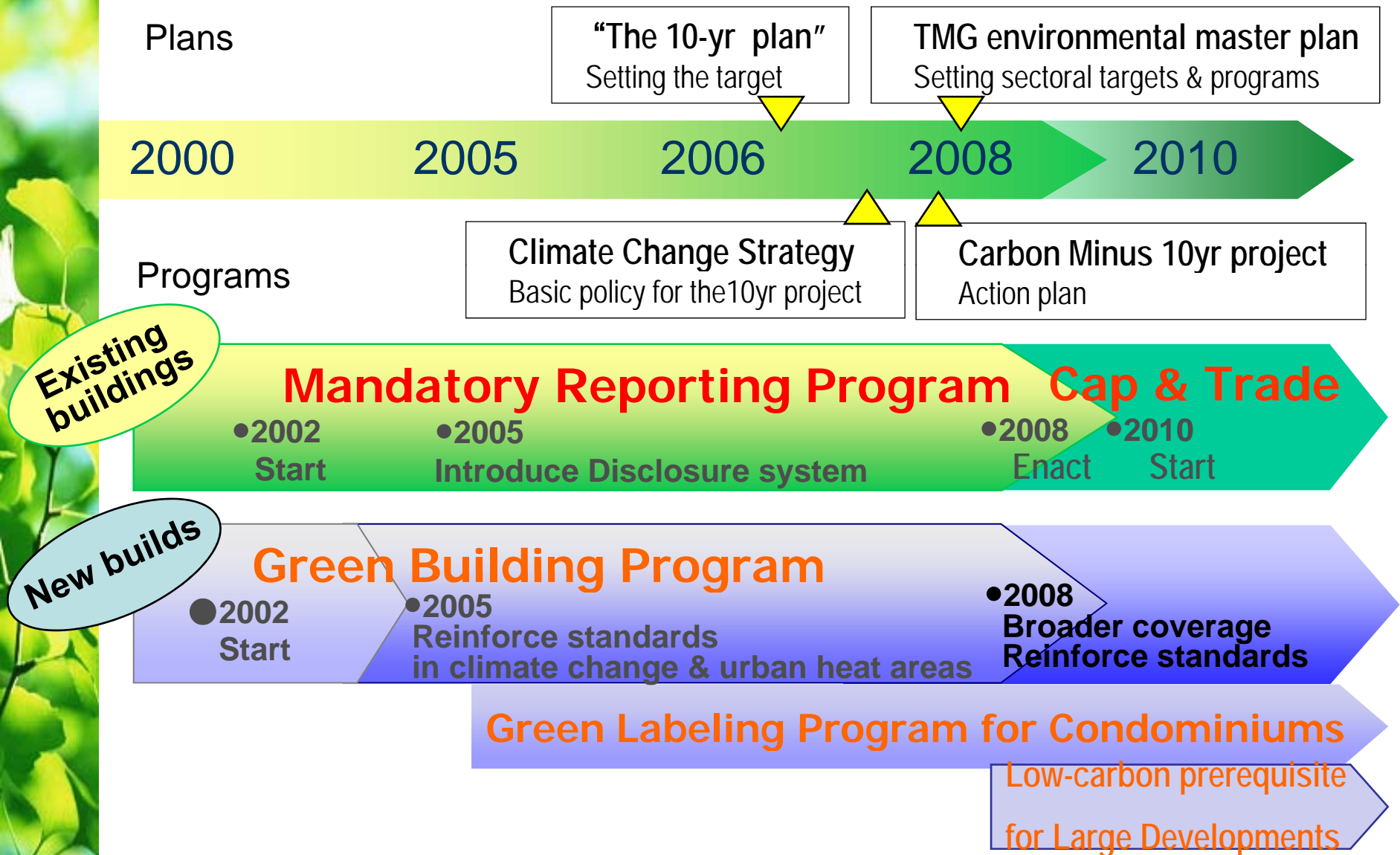
Introducing energy efficient measures in new buildings design

▶ 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







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

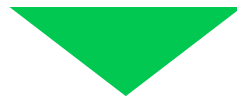
# Unique coverage of urban facilities

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)

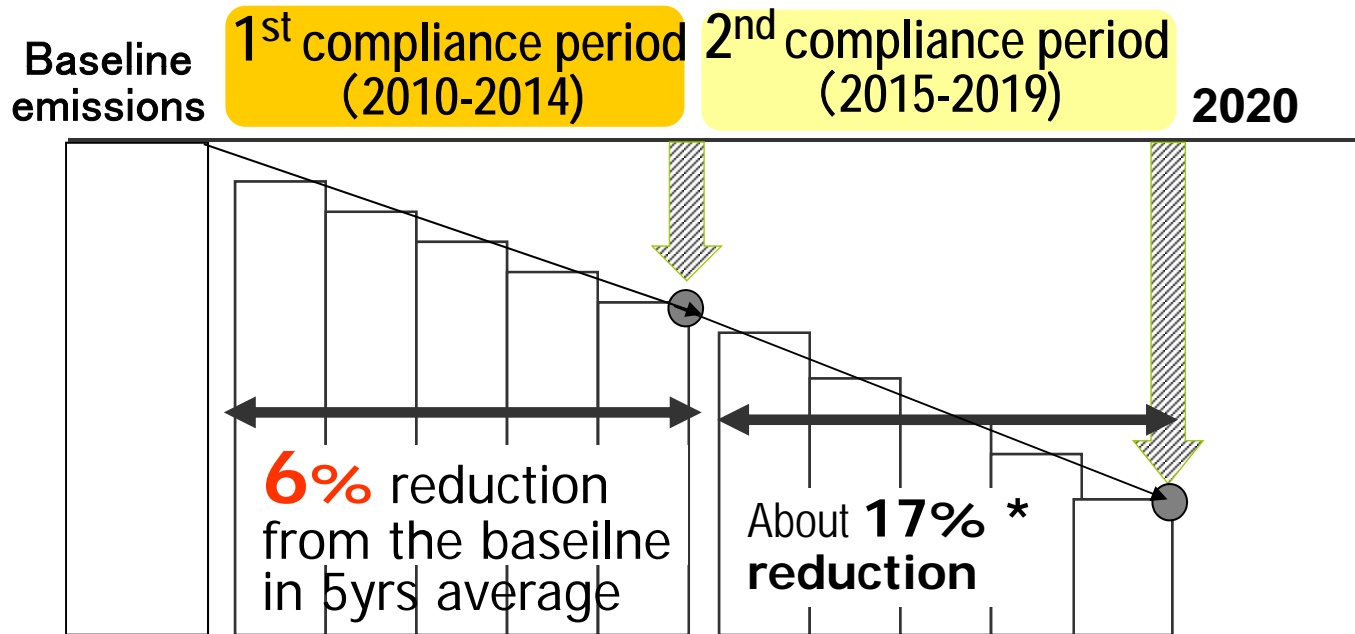
Approx. 1000 commercial & institutional buildings  
Approx. 300 industrial facilities



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

# Strict Cap Setting to Achieve the TMG Target

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

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

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

**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%
<b>Top level</b>	A facility already achieved high energy efficiency is certified as a: <b>Top Level / Near-top level Facility</b>	<b>1/2 or 3/4 of the compliance factor</b>



# 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

## 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

# **P**enalties 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 image is slightly hazy, suggesting a distant or elevated perspective. The text is overlaid on a semi-transparent white rectangular area at the bottom 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

## 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』

事業者名： Aビル

### 1. 貴事業者のCO2排出量・エネルギー消費量(原単位)について (2017年度排出状況報告書より抜粋)

#### (1) 用途別の平均値について

(ア) 用途別のCO2排出量(原単位)の平均値

用途	貴事業者 事業所数	CO2排出原単位の平均値	CO2排出原単位の平均値の範囲で、上位20%事業者のCO2排出原単位
業務用ビル	100	86	70
マンションビル	200	107	88
商業施設	119	101	127
学校施設	20	160	120
体育施設	47	87	57
娯楽施設	48	101	147
住宅施設	15	104	87
その他	49	117	82

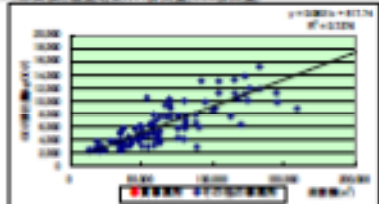
※事業所数1～99件に対して算出を行った結果です。算出値。

(イ) 用途別のエネルギー消費量(原単位)の平均値

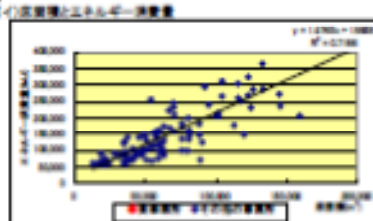
用途	貴事業者 事業所数	エネルギー消費原単位の平均値	エネルギー消費原単位の平均値の範囲で、上位20%事業者のエネルギー消費原単位
業務用ビル	100	2,265	1,840
マンションビル	200	2,718	2,060
商業施設	119	2,718	2,260
学校施設	20	3,225	2,260
体育施設	47	1,542	1,710
娯楽施設	48	2,542	2,260
住宅施設	15	2,417	1,820
その他	49	2,181	1,840

#### (2) 貴事業所と同一用途事業所の状況(事業所ビルの場合)

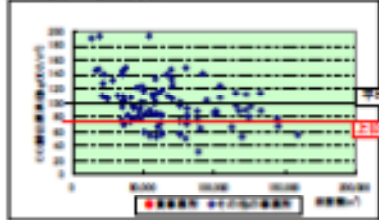
(ア) CO2排出量とエネルギー消費量の関係



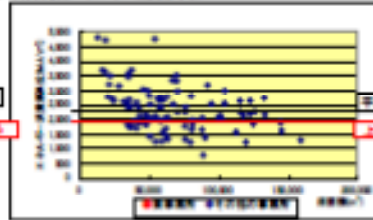
#### (イ) 貴事業所のエネルギー消費量



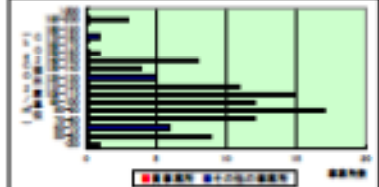
(ウ) 貴事業所のCO2排出原単位



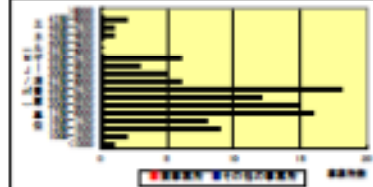
(エ) 貴事業所のエネルギー消費原単位



(オ) CO2排出原単位の人あたりの消費量



(カ) エネルギー消費原単位の人あたりの消費量



上記のグラフは、地球温暖化対策計画策定委員会が貴事業所の用途別原単位を算出したものであり、用途の別を区別することができます。貴事業所の状況を比較しています。

上記のグラフでは、貴事業所が該当する用途に30ヶ所未満の事業者を算出するのと、用途別にはおおよそ貴事業所の状況を算出しました。グラフでは、左下から右上への斜線から貴事業所が上方に傾いている場合は、他に比べて特長があることを示しています。この特長を踏まえて、貴事業所がエネルギー消費量を削減することにより、CO2排出量を削減することがあります。グラフでは、貴事業所の用途別の原単位を算出しています。

グラフでは、貴事業所の平均値と、用途別の平均値を算出しています。

また、同じ用途の事業者を算出し、中位とエネルギー消費量の差を把握することができます。

### 2. 過去4年間の原単位の推移について (地球温暖化対策計画策定委員会2017年度排出状況報告書より抜粋)

#### (1) 用途別の平均の推移

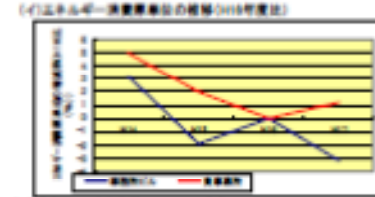
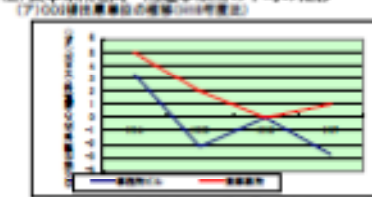
(ア) 用途別のCO2排出原単位の推移(2014年度比)

用途	2014	2015	2016	2017
業務用ビル	2.2%	-2.2%	2%	-2.2%
マンションビル	2.2%	-2.2%	2%	-2.2%
商業施設	-1.8%	-2.2%	2%	-2.2%
学校施設	2.2%	-2.2%	2%	-1.1%
体育施設	-1.2%	-4.2%	2%	-1.2%
娯楽施設	2.2%	-2.2%	2%	0.1%
住宅施設	-2.2%	-2.2%	2%	-2.2%
その他	-2.2%	-2.2%	2%	-2.1%

(イ) 用途別のエネルギー消費原単位の推移(2014年度比)

用途	2014	2015	2016	2017
業務用ビル	2.2%	-1.2%	2%	-2.2%
マンションビル	2.2%	-1.2%	2%	-2.2%
商業施設	-1.8%	-2.2%	2%	-2.2%
学校施設	1.2%	-3.1%	2%	-1.1%
体育施設	-1.2%	-4.2%	2%	-1.2%
娯楽施設	2.2%	-2.2%	2%	0.1%
住宅施設	-2.2%	-2.2%	2%	-2.2%
その他	-1.2%	-2.2%	2%	-2.1%

#### (2) 貴事業所と同一用途事業所の平均の推移(事業所ビルの場合)

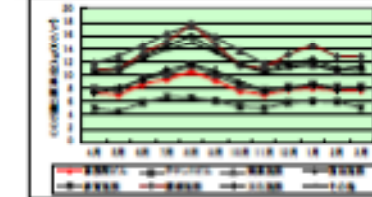


上記のグラフは、2014年度を基準にCO2排出量の推移を示しています。貴事業所の状況を比較しています。上記のグラフは、貴事業所の平均の推移と貴事業所の平均の推移(用途別)を示しています。用途別の平均と貴事業所の推移を比較し、貴事業所の状況が、その年度のエネルギー消費量の推移に、平均のエネルギー消費量の推移に比べてどうなるかを把握することができます。

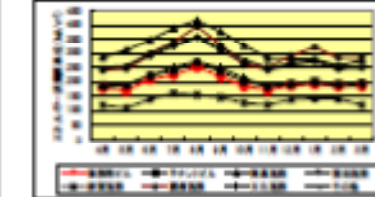
### 3. 月別原単位の推移について (2017年度排出状況報告書より抜粋)

#### (1) 用途別の月別推移

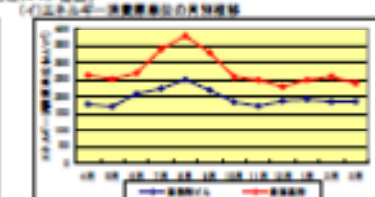
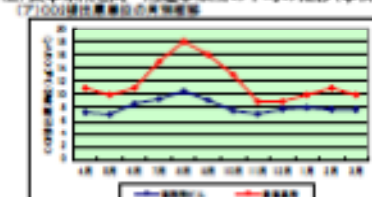
(ア) 用途別のCO2排出原単位の月別推移



(イ) 用途別のエネルギー消費原単位の月別推移



#### (2) 貴事業所と同一用途事業所の平均の推移(事業所ビルの場合)



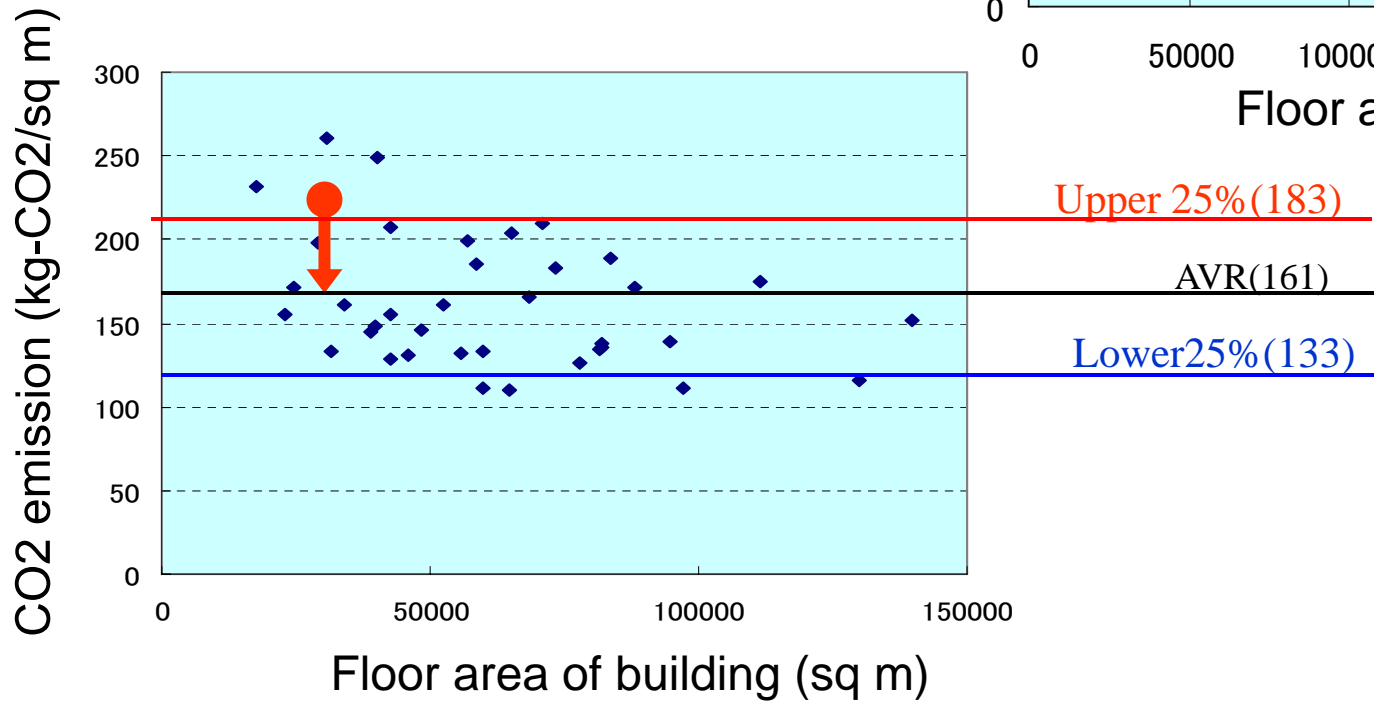
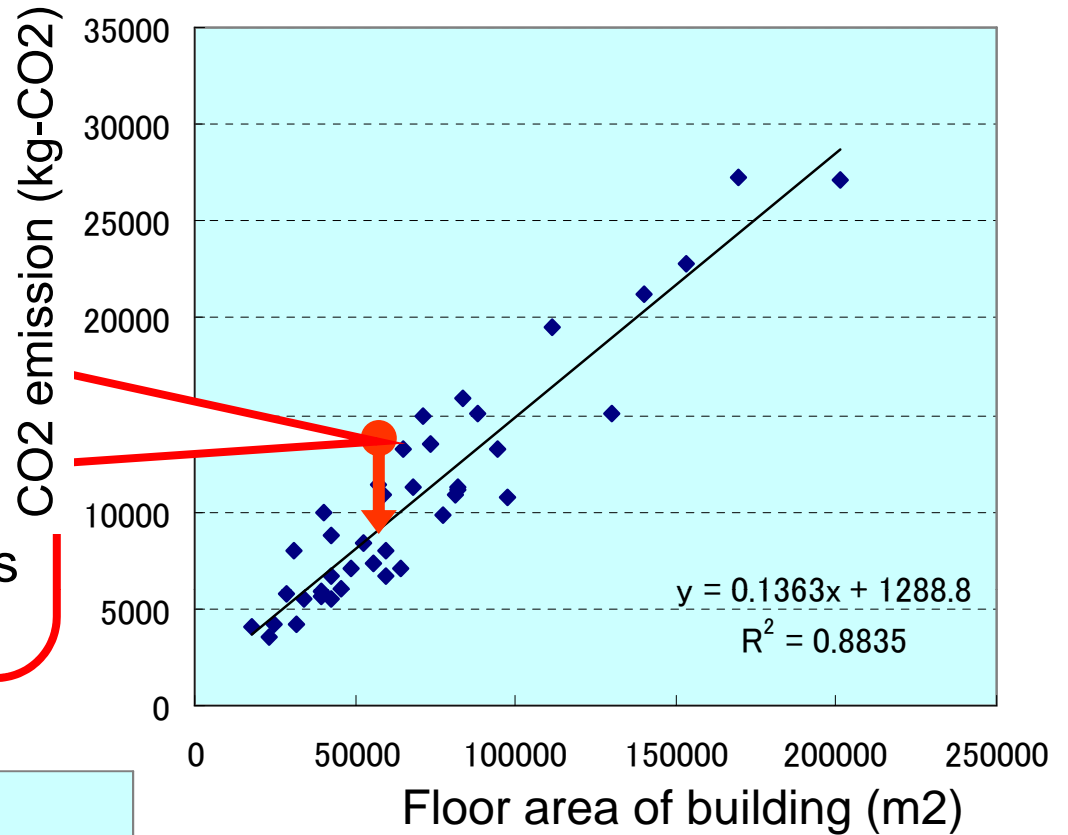
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# Feeding Back

## \* Distribution

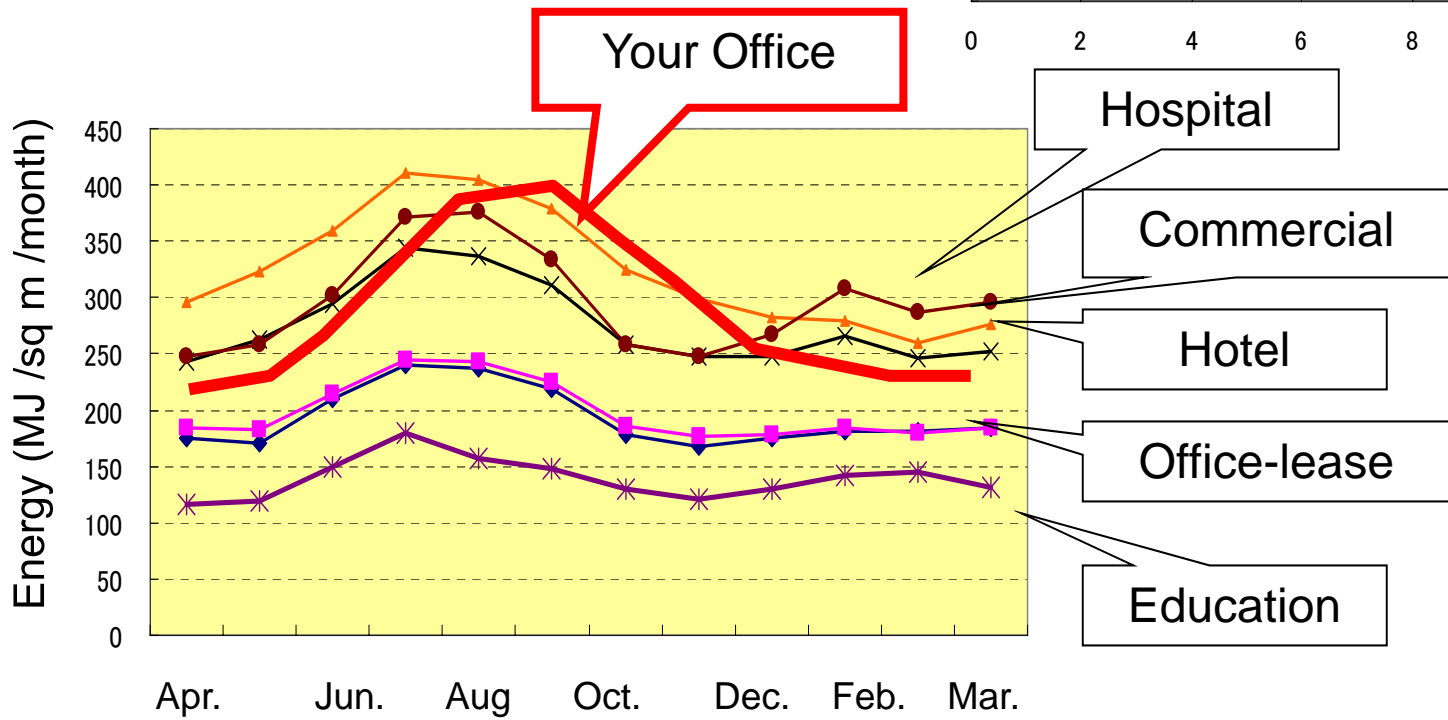
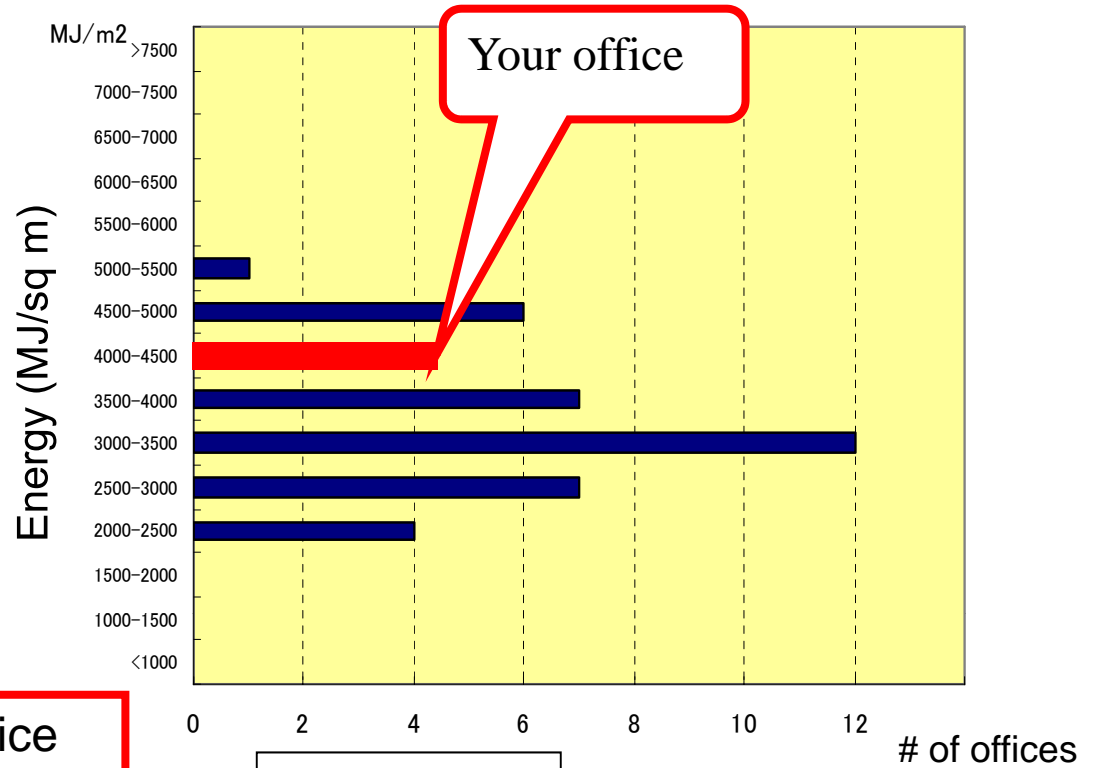
CO2 emission of your office is a little higher among those in the same business category  
Check factors and seek measures for further reduction!



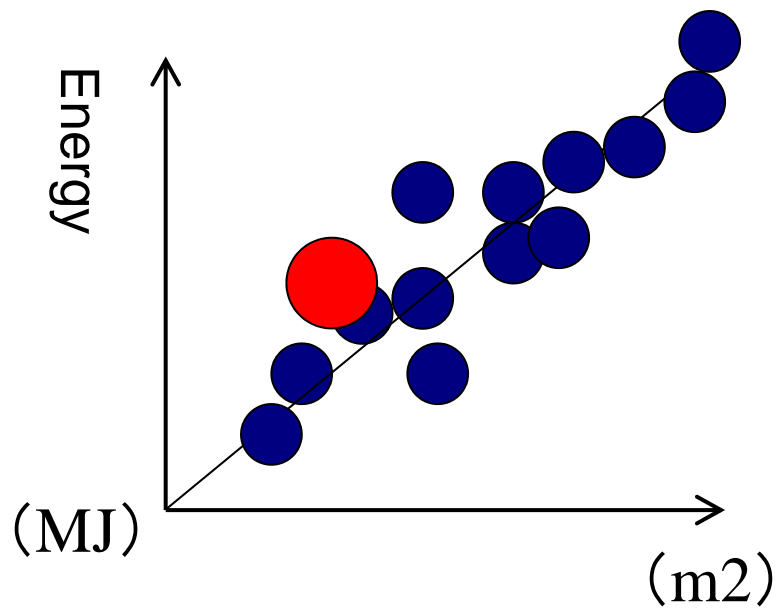
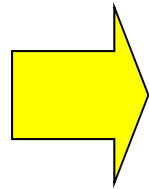
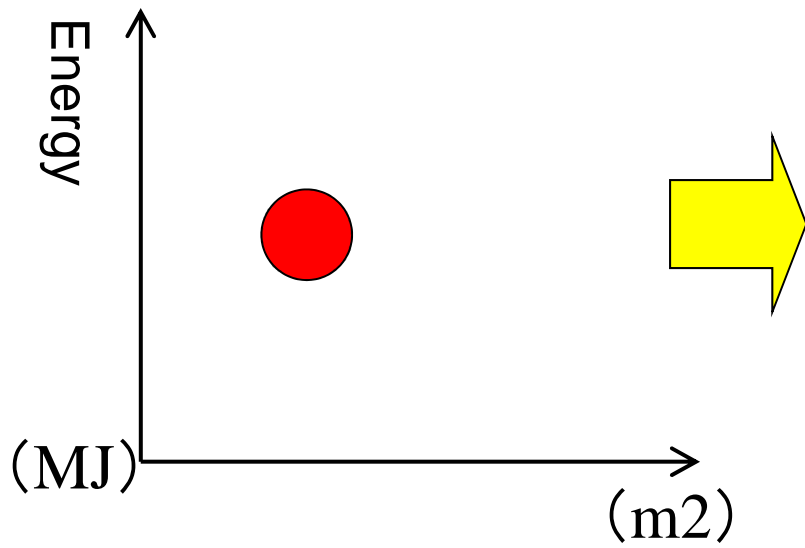
# Feeding back

\* Ranking

\* Seasonal Change



## ◆ Distribution





## 4. Green Buildings Era in Tokyo



# Low Emission Buildings TOP30

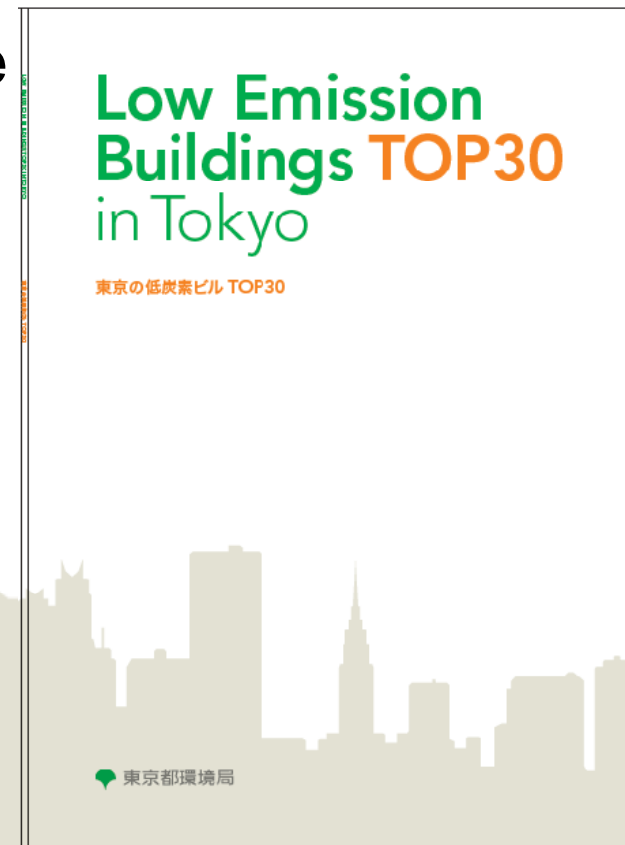
TOP30 buildings were selected in line with the policy measures of TMG.

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 Osaki
- 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/](http://www.kankyo.metro.tokyo.jp/en/climate/)



Contact us: [tokyoets@kankyo.metro.tokyo.jp](mailto:tokyoets@kankyo.metro.tokyo.jp)