

20170828 UNEP DTU Copenhagen Center's Webinar Series
Think globally, act locally

Webinar 3: Energy Efficiency Actions in ASEAN-Japan-Tokyo

Experiences from Tokyo on energy efficiency actions at the city level

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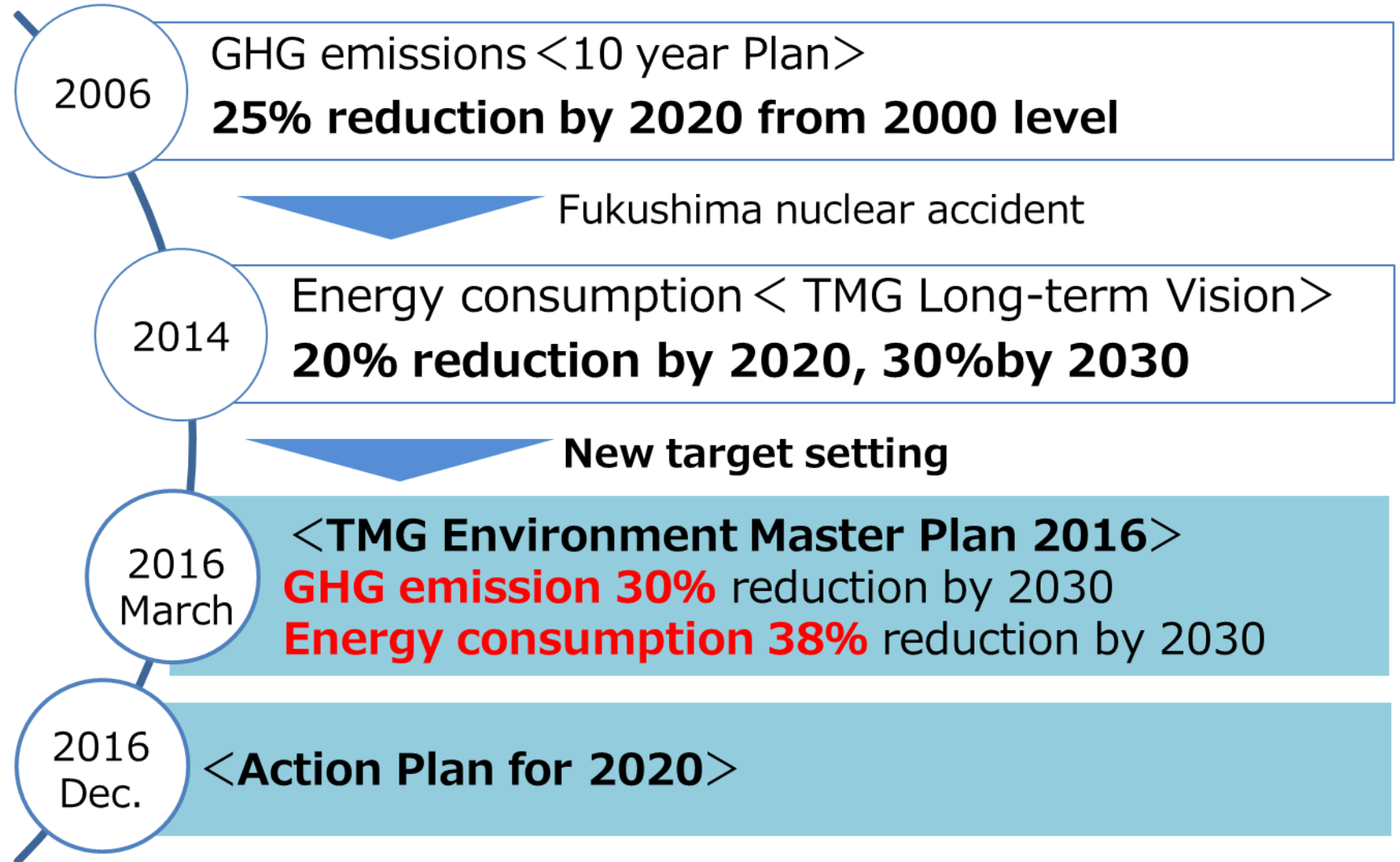


RENEWABLE ENERGY INSTITUTE

TOKYO's GHG/Energy Consumption Targets

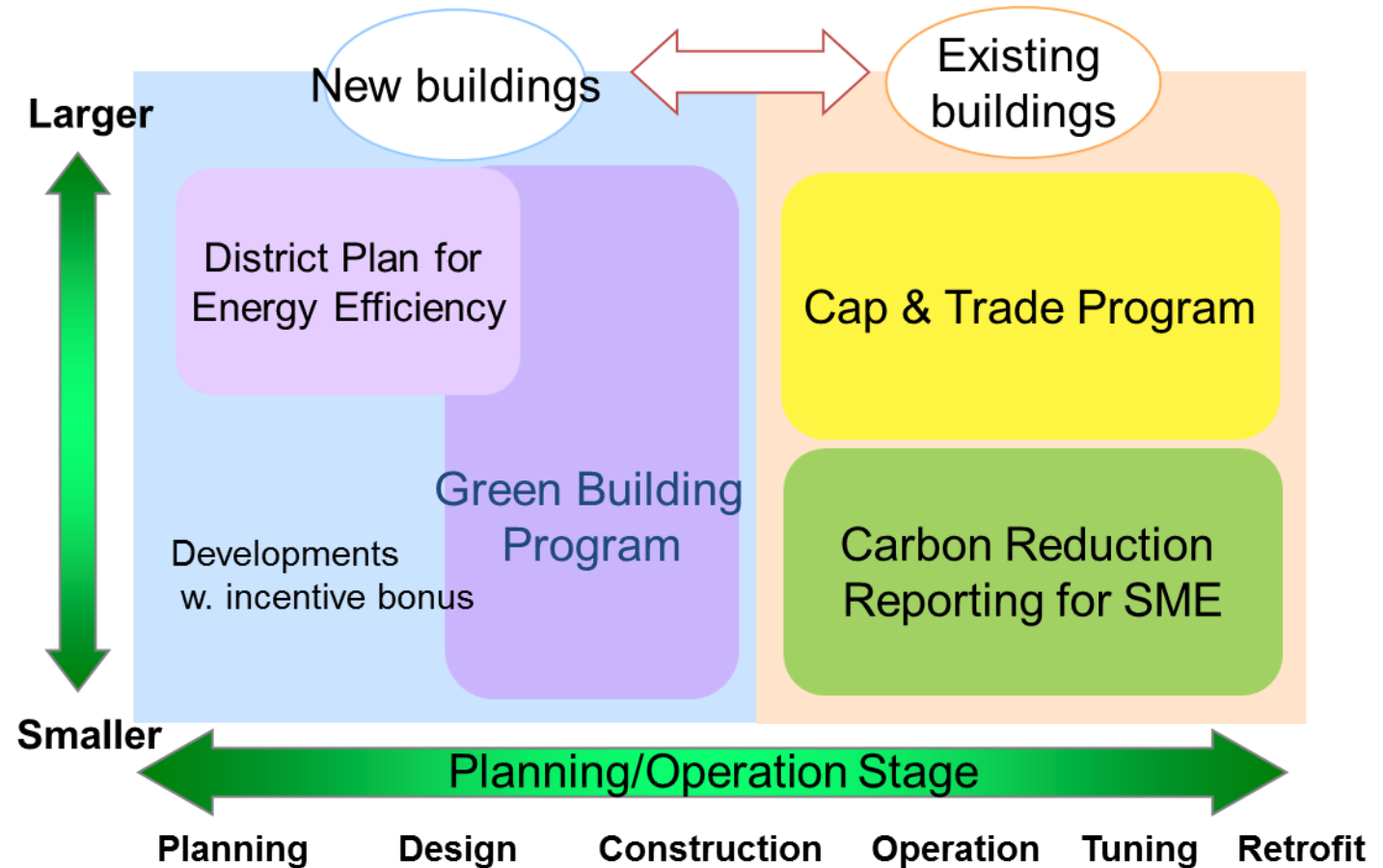
Tokyo's Policy Targets

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



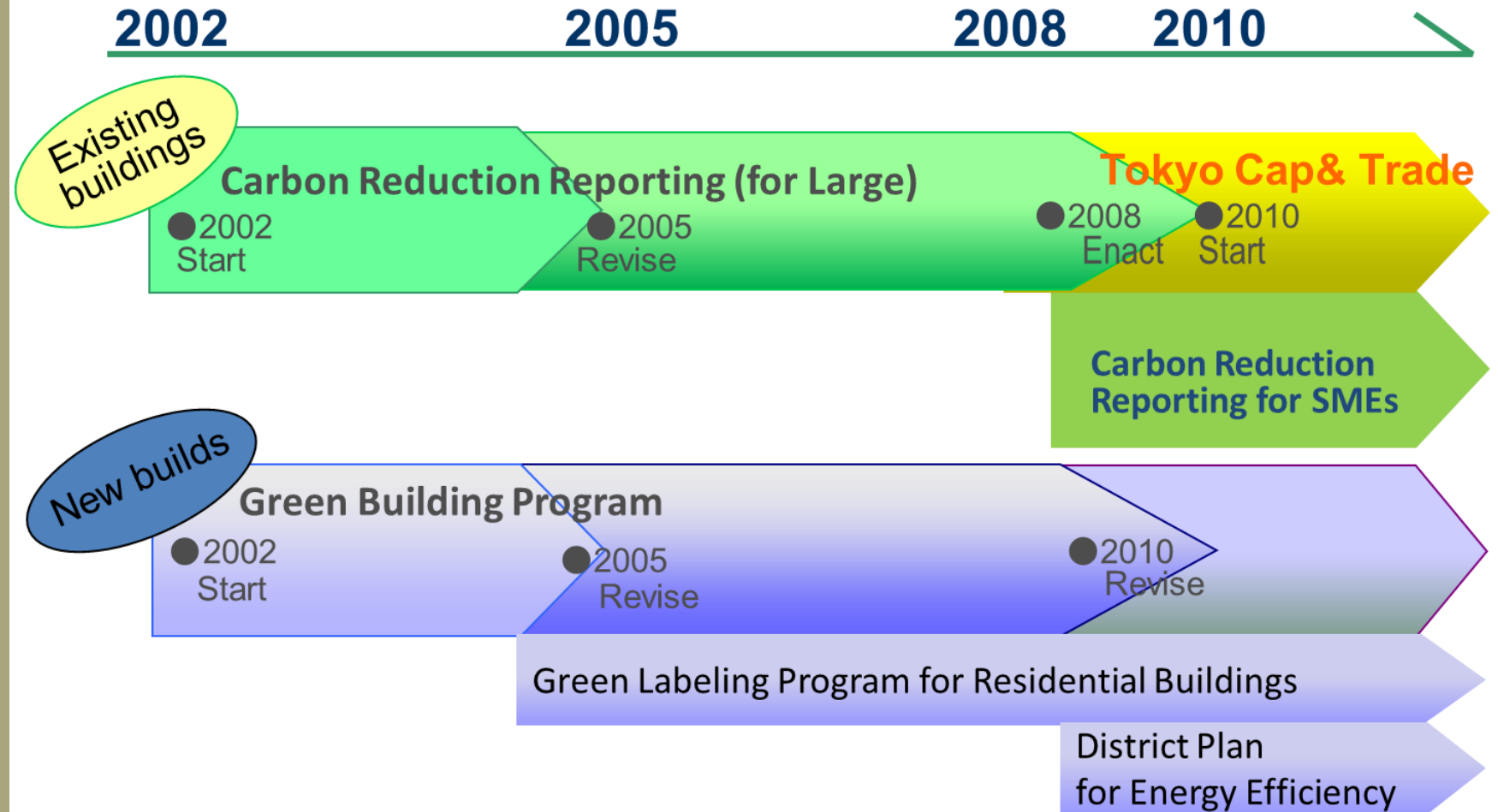
TOKYO's Green Building Policy Framework

Tokyo's Policy Framework



Tokyo's Policy Targets

TOKYO's Policy development



What is Tokyo Cap-and-Trade Program?

1. Tokyo Cap-and-Trade Program

http://www.kankyo.metro.tokyo.jp/en/climate/cap_and_trade.html

Building Sector

Existing Buildings

Energy consumption
including power

5 years
for Compliance

Emission Trading Scheme



Tokyo Cap-and-Trade Program

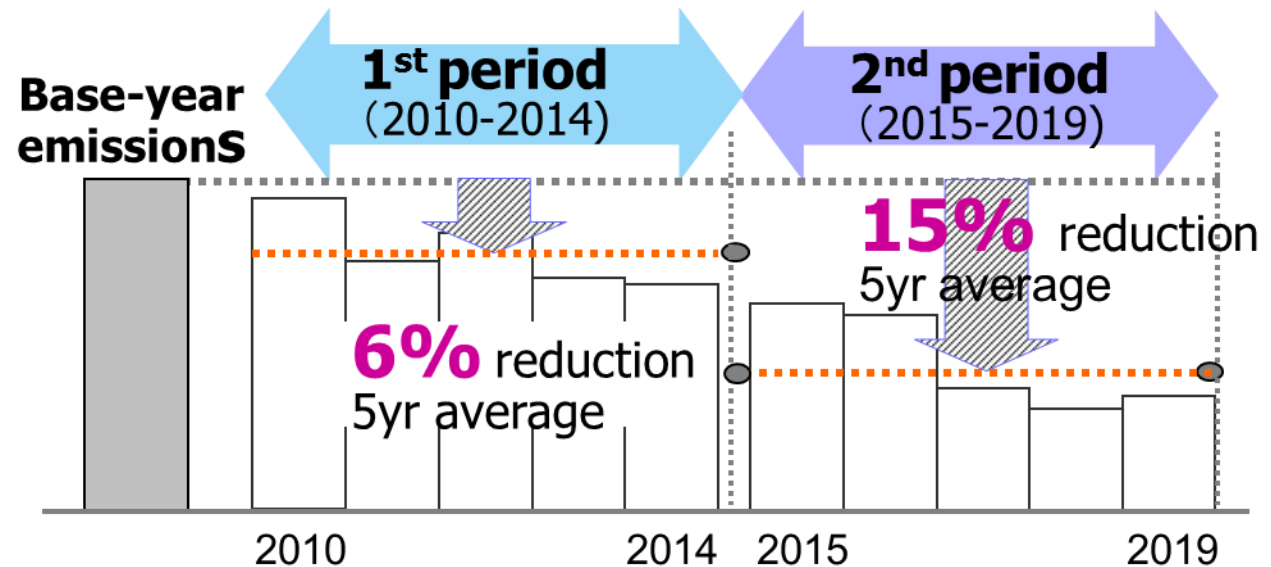
Program Outline

Cap, Covered Facilities, Cap Settings

Cap (Total emissions allowed for the covered sector) was designed to enable Tokyo to achieve "-25% by 2020" emission target

Setting cap on emissions from 1,300 facilities (Mainly commercial bldgs.), accounting for 20% of Tokyo's total emissions

Under the cap, each building is obligated to reduce emissions by 6-8 % (first period) and 15-17% in the second period



Tokyo Cap-and-Trade Program

Program Outline

Trading and Offsetting

Emission Trading:

Trade scheme can be utilized by owners to fulfill their obligations
Tradable allowances are limited to the excess reductions over compliance obligations

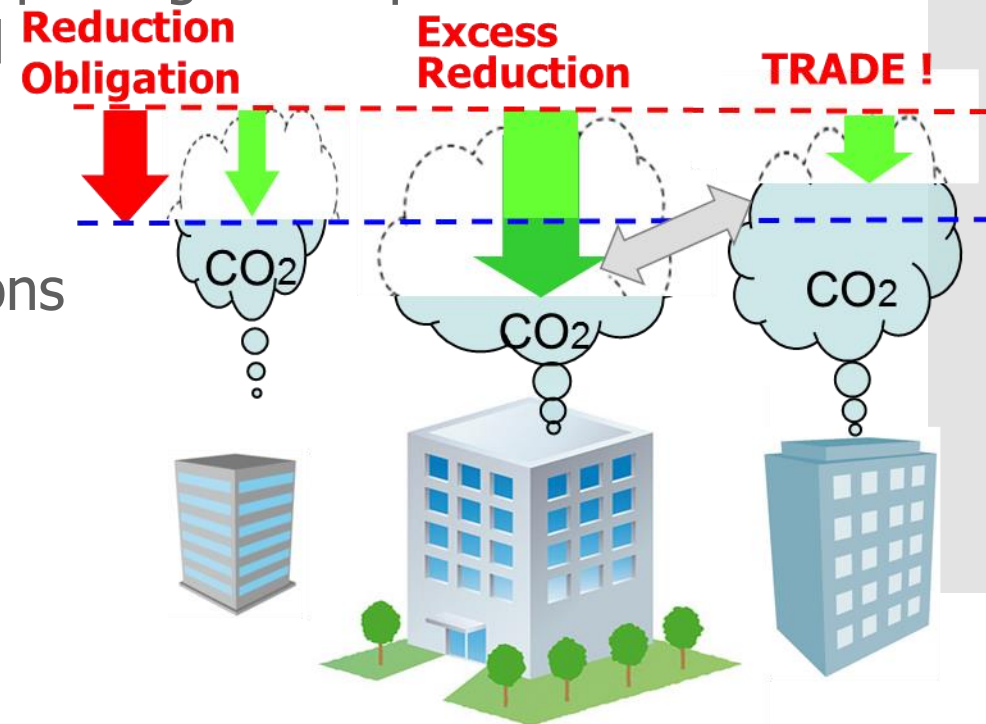
MRV: Monitoring and annual reporting are required
Verification system established for the program

Offset systems:

Renewables, emission reductions in small facilities, etc.

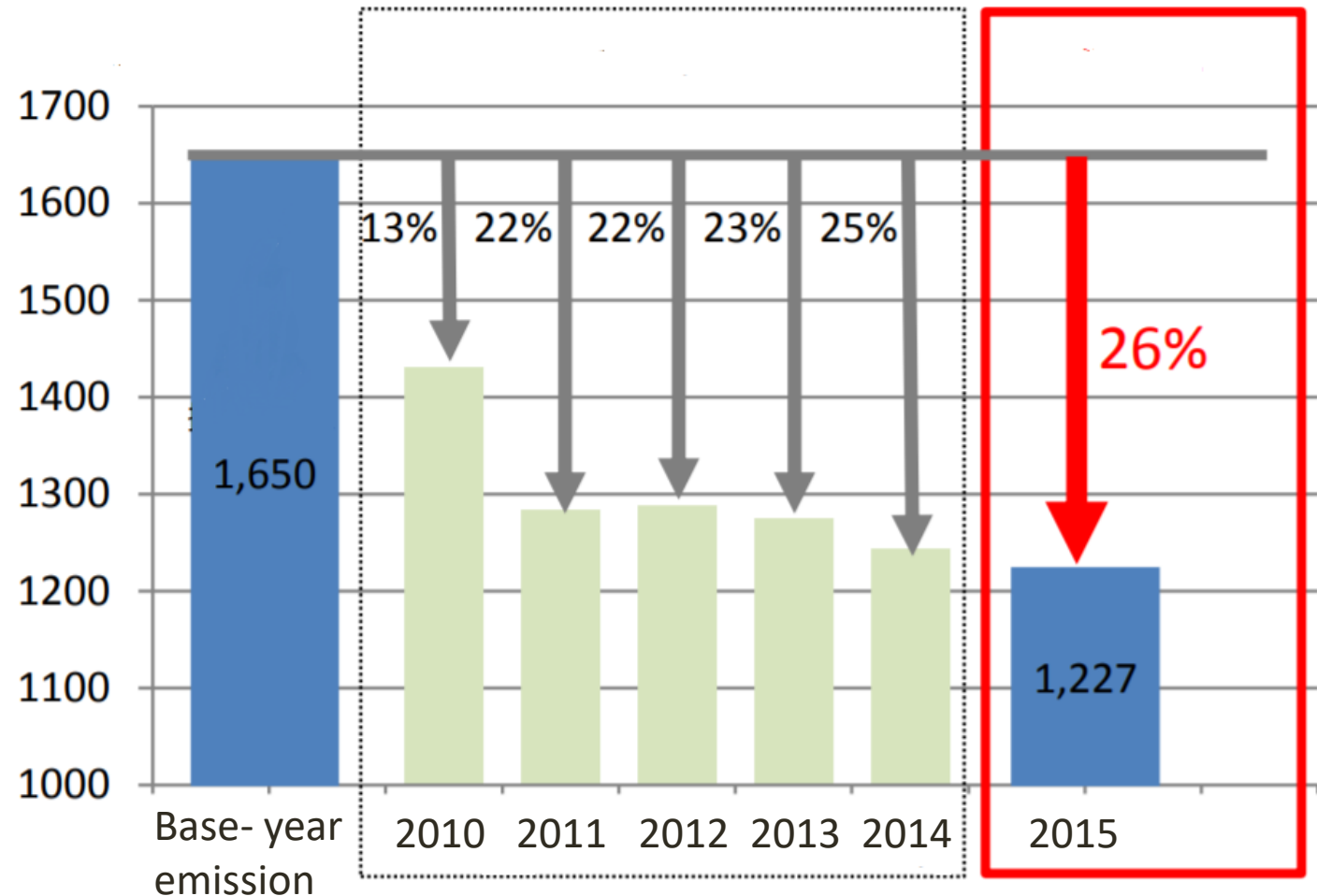
Linkage:

Link with the C&T of an adjacent prefecture



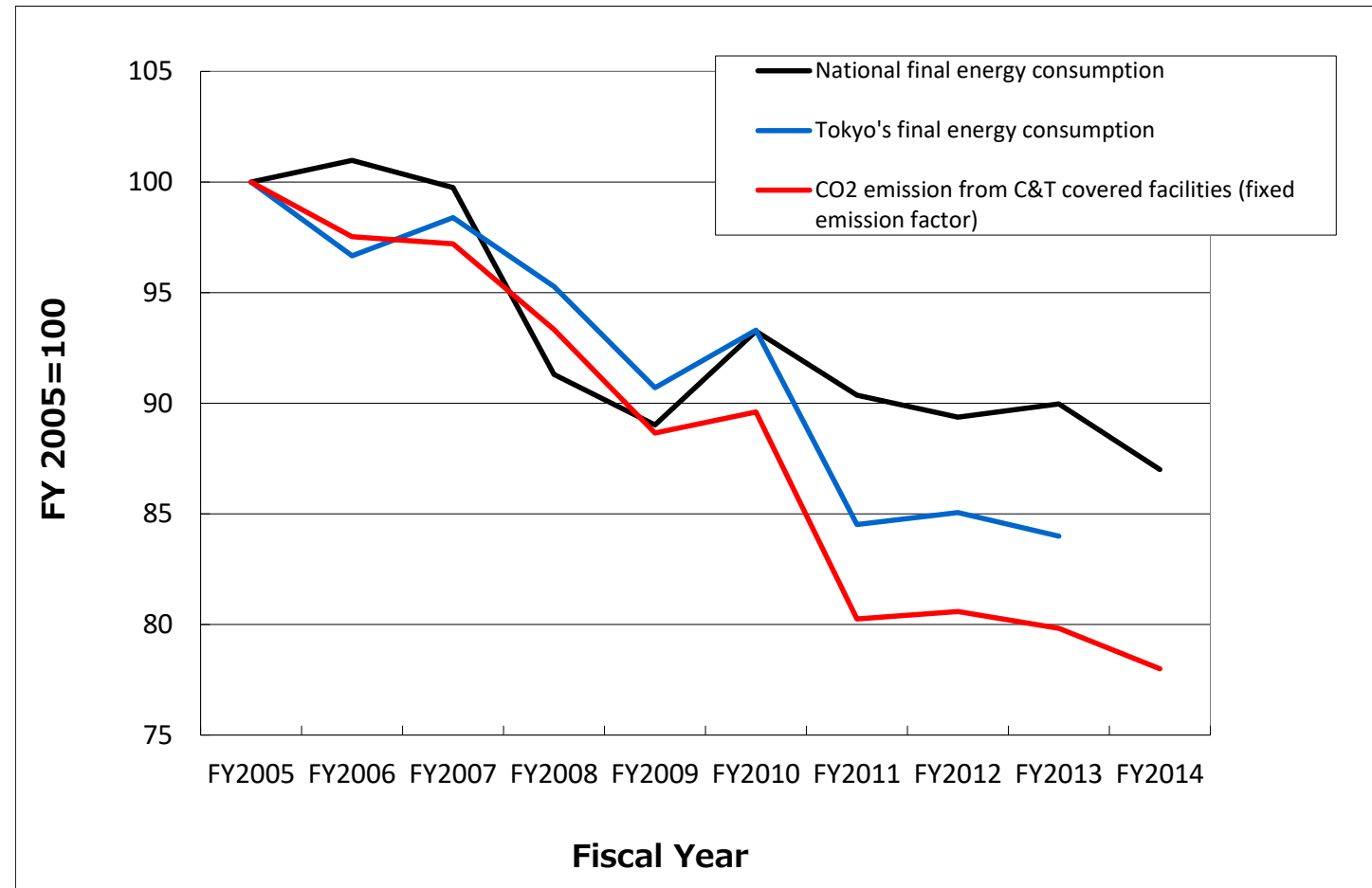
Tokyo Cap-and-Trade Program

CO2 Emission Reduction



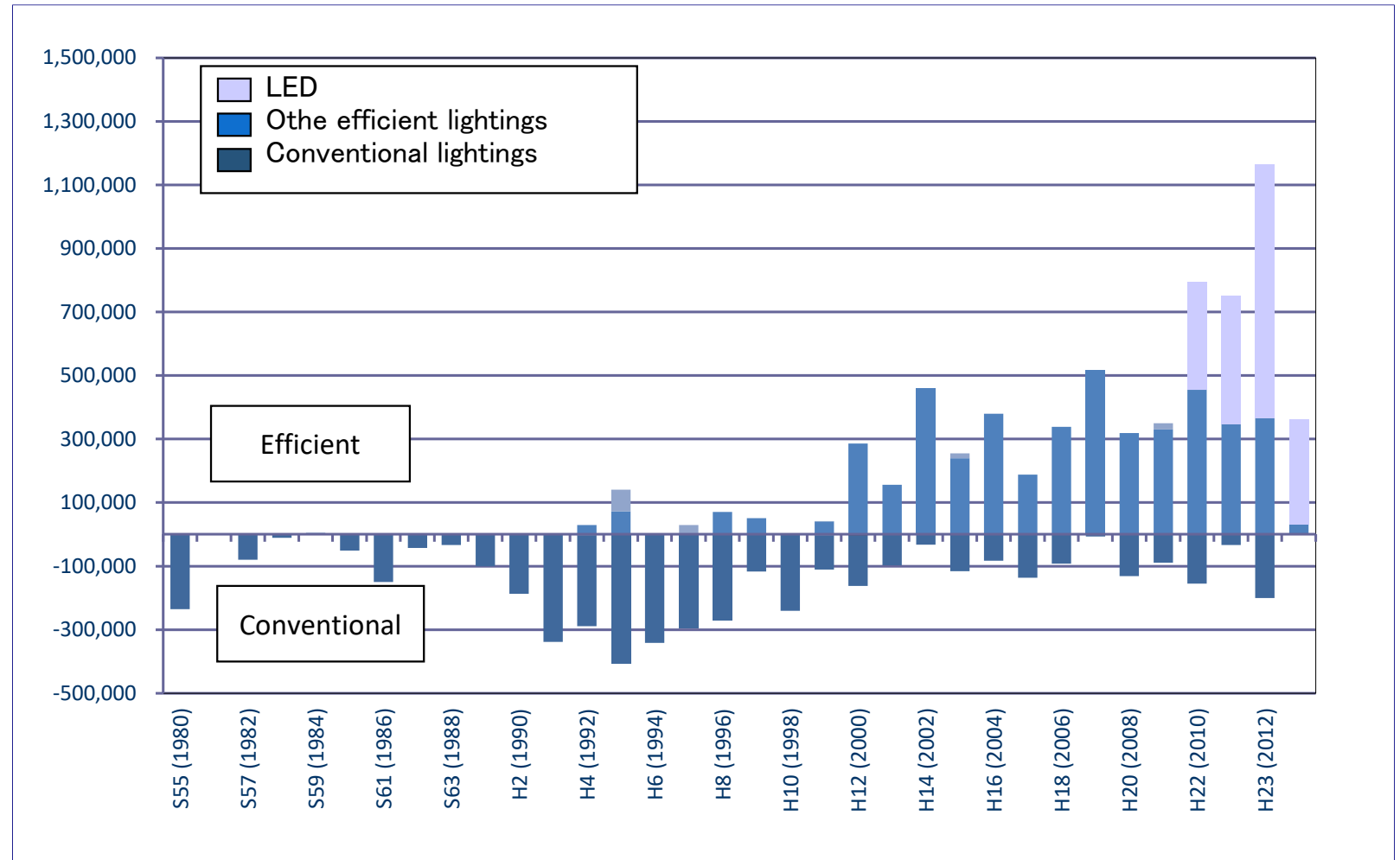
Tokyo Cap-and-Trade Program

Comparison with the national trend



Tokyo Cap-and-Trade Program

Huge jump in LED installation



2. Carbon Reduction Reporting for SMEs

http://www.kankyo.metro.tokyo.jp/en/climate/tokyo_carbon_reduction_reporting_program_for_small_and_medium-sized.html

Carbon Reduction Reporting for SMEs

Target: "Small and medium-sized facilities"

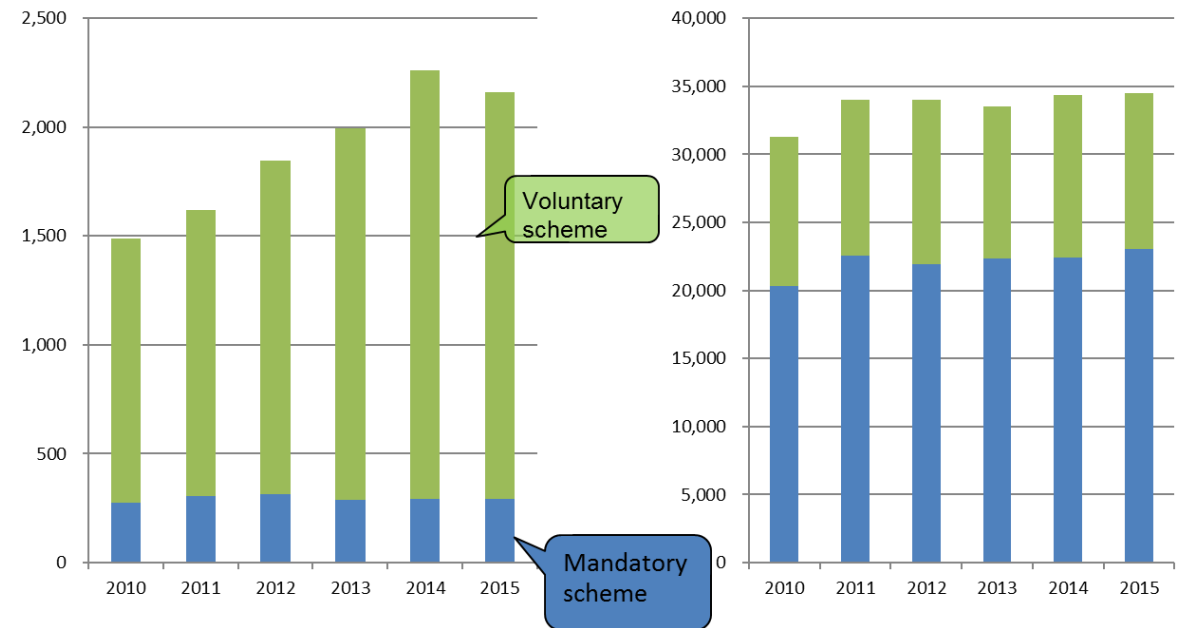
Non-residential facilities

Not covered by the Tokyo Cap-and-Trade scheme

Own or Use

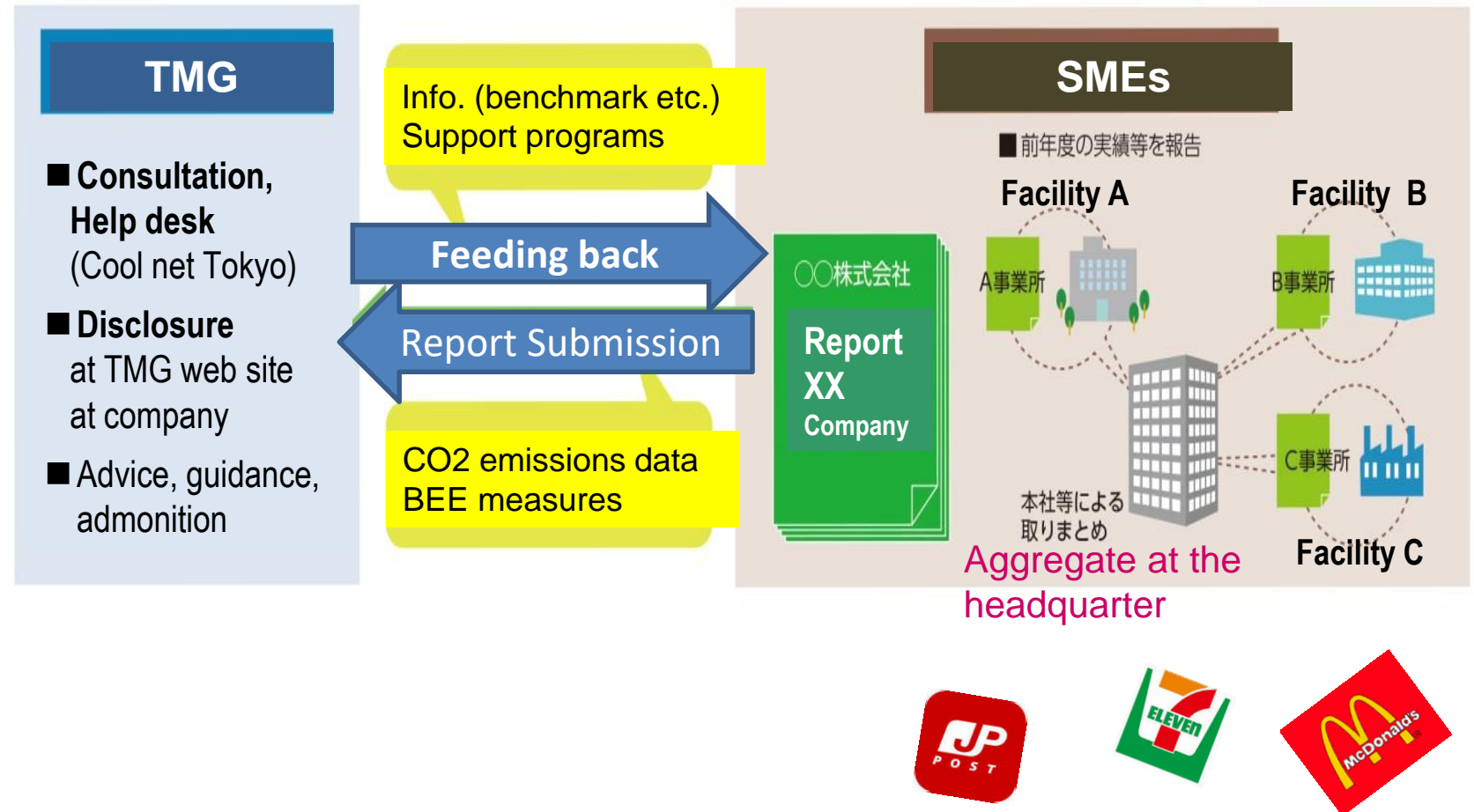
Mandatory
and
Voluntary

Number of reporting Entities
(companies)



Carbon Reduction Reporting for SMEs

Carbon Reduction Reporting for SMEs Reporting Process



Carbon Reduction Reporting for SMEs

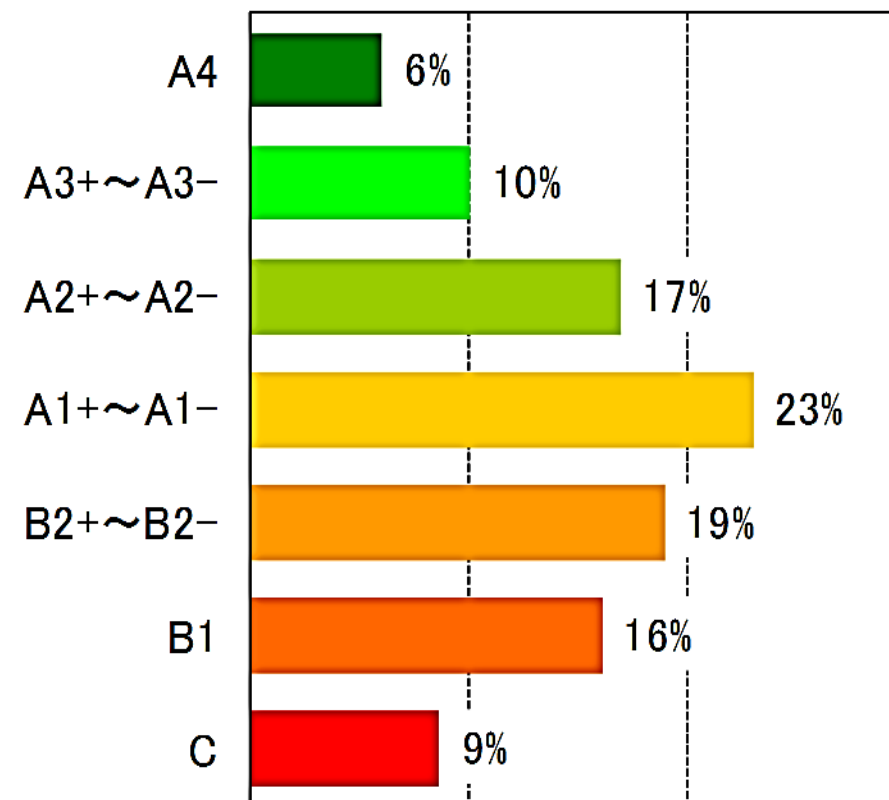
Carbon Reduction Reporting for SMEs

Feeding back –Low Carbon Benchmark

(1) Benchmark (7 grade, 15 ranges)

Range		Range of CO ₂ emission intensity (kg-CO ₂ /m ²)	
A4	A4	32.9 or below	
A3	A3+	Over 32.9	35.9 or below
	A3	Over 35.9	38.9 or below
	A3-	Over 38.9	41.8 or below
A2	A2+	Over 41.8	44.8 or below
	A2	Over 44.8	47.8 or below
	A2-	Over 47.8	50.8 or below
A1	A1+	Over 50.8	53.8 or below
	A1	Over 53.8	56.8 or below
	A1-	Over 56.8 (Average value)	59.7 or below
B2	B2+	Over 59.7 (Average value)	62.7 or below
	B2	Over 62.7	65.7 or below
	B2-	Over 65.7	68.7 or below
B1	B1	Over 68.7	89.6 or below
C	C	Over 89.6	
		Average intensity	59.7 kg-CO ₂ /m ²

(2) Ratio of facility



Benchmark category: Tenant building (office type, medium-sized)



Carbon Reduction Reporting for SMEs

Carbon Reduction Reporting for SMEs Reporting Contents

255 types of Carbon reduction/energy efficiency improvement measures

Each measure is explained in the guideline

- Used as a manual for measures
- Used to check if any appropriate measure is overlooked

対策番号		C804	104
手法の大分類	<input type="checkbox"/> 組織体制の整備 <input type="checkbox"/> エネルギー等の使用状況の把握 <input checked="" type="checkbox"/> 運用対策 <input type="checkbox"/> 保守対策 <input type="checkbox"/> 設備導入等対策		
対象業種	<input type="checkbox"/> 全事業所共通 <input type="checkbox"/> 飲食系 <input type="checkbox"/> 排水利用系 <input type="checkbox"/> 宿泊系 <input type="checkbox"/> その他サービス系 <input type="checkbox"/> 食品小売系 <input type="checkbox"/> その他小売 <input checked="" type="checkbox"/> テナントビル所有者等		
対象となる設備	共用部の空調設備		
対策名 共用部のフロアごとの空調の管理			
内容		実施目標	
ビルの使用時間は使用者ごとに異なる場合があります。その場合には、フロアごとに空調の運転を管理することで省エネルギー効果を得ることができます。		共用部の空調がフロアごとに停止可能な場合は、テナント等の営業時間に合わせるなどフロアごとの運転管理を実施すること。	
①現状の問題点			
共用部では、フロアごとに空調の管理を行っていますか？			
テナントビルの場合、フロアごとに労働時間が異なるものですが、ビルの共用部の空調を一括で管理すると、最も労働時間の長いテナントに合わせて、最も出勤の早いテナントと残業の多いテナントの双方に合わせてることになったりするなど、非効率な運用になります。 テナントごとの労働形態を把握し、共用部の空調設備をフロアごとに管理することでエネルギーロスを削減し、コスト削減を目指しましょう。			
		フロアを使用していない時間に共用部の空調がついていないか確認するのがいいかも…。	
 共用部空調のフロアごとの管理をして、余分な空調を抑えましょう！！			

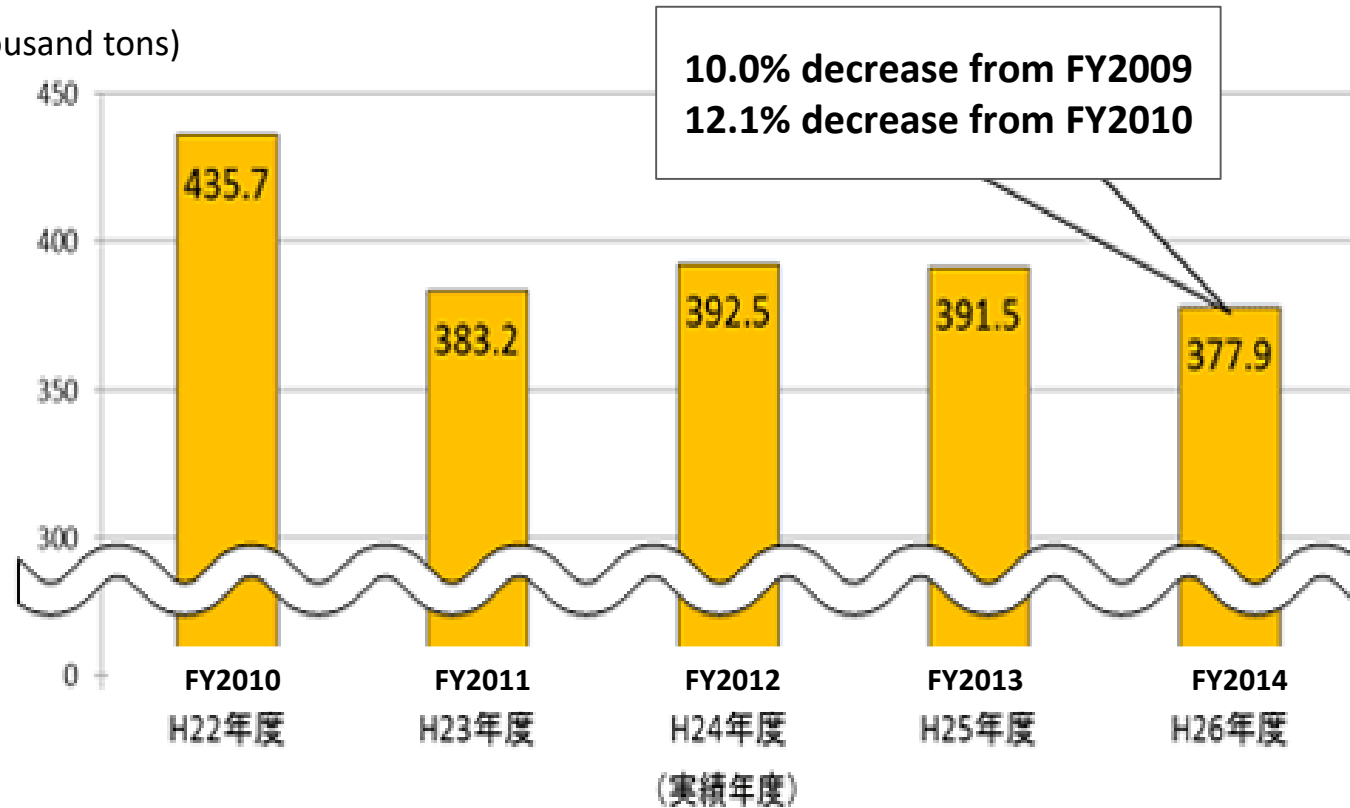


Carbon Reduction Reporting for SMEs

Carbon Reduction Reporting for SMEs Continuous Reductions

CO₂ emissions of small and medium-sized facilities

(Ten thousand tons)



Tokyo Green Building Program for New Construction

Tokyo Green Building Program

Rating and disclosure system for sustainable design

Coverage:

40% of new buildings

Newly planned large buildings (over 5,000 sq. meters)

Requirement:

Mandatory reporting

Submit sustainable design plan with its ratings

Rating & Disclosure:

12 items in 4 categories

Energy, Greenery, Water/Material, and Heat Island

Rated results are disclosed on the TMG website

Labeling and **Energy Efficient Certificate Programs** have been developed based on this GB program

TMG Green Labeling Program for Condominiums		
	insulation	★★★
	Energy efficiency	★★★
	Solar Energy	★★★
	Longer building life	★★★
	Greening	★★★
This indication is based on the TMG Environmental Security Ordinance.		2009 Criteria



Tokyo Green Building Program for New Construction

<http://www.kankyo.metro.tokyo.jp/en/climate/build.html>



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Tokyo Green Building Program 2

Rating and disclosure system for sustainable design

Assessment items: 12 Items

Category	Items
Energy	Heat load resistance of the building envelope
	Renewable energy installation
	Energy efficiency in building equipment
	Building energy management system
Resources Material	Usage of eco-materials
	Protection of ozone Layers
	Longer building life-expectancy
	Water re-cycle, rainwater use
Natural environment	Greening (vegetation, landscape, etc.), bio-diversity
	Heat waste discharge
Heat-Island subject	Surface of ground and buildings (greenery, water retaining pavement, etc)
	Wind environment

Disclosure @ TMG website
--Plan with ratings are displayed

●Charts display the rated results in 3 grades



●Find buildings from a location map

Conclusion

Tokyo's Experiences on Energy Efficiency Actions

