

Japan's Current Progress on Global Warming Countermeasures

**The 18th Workshop on Greenhouse Gas
Inventories in Asia (WGIA18), 12th July 2021**

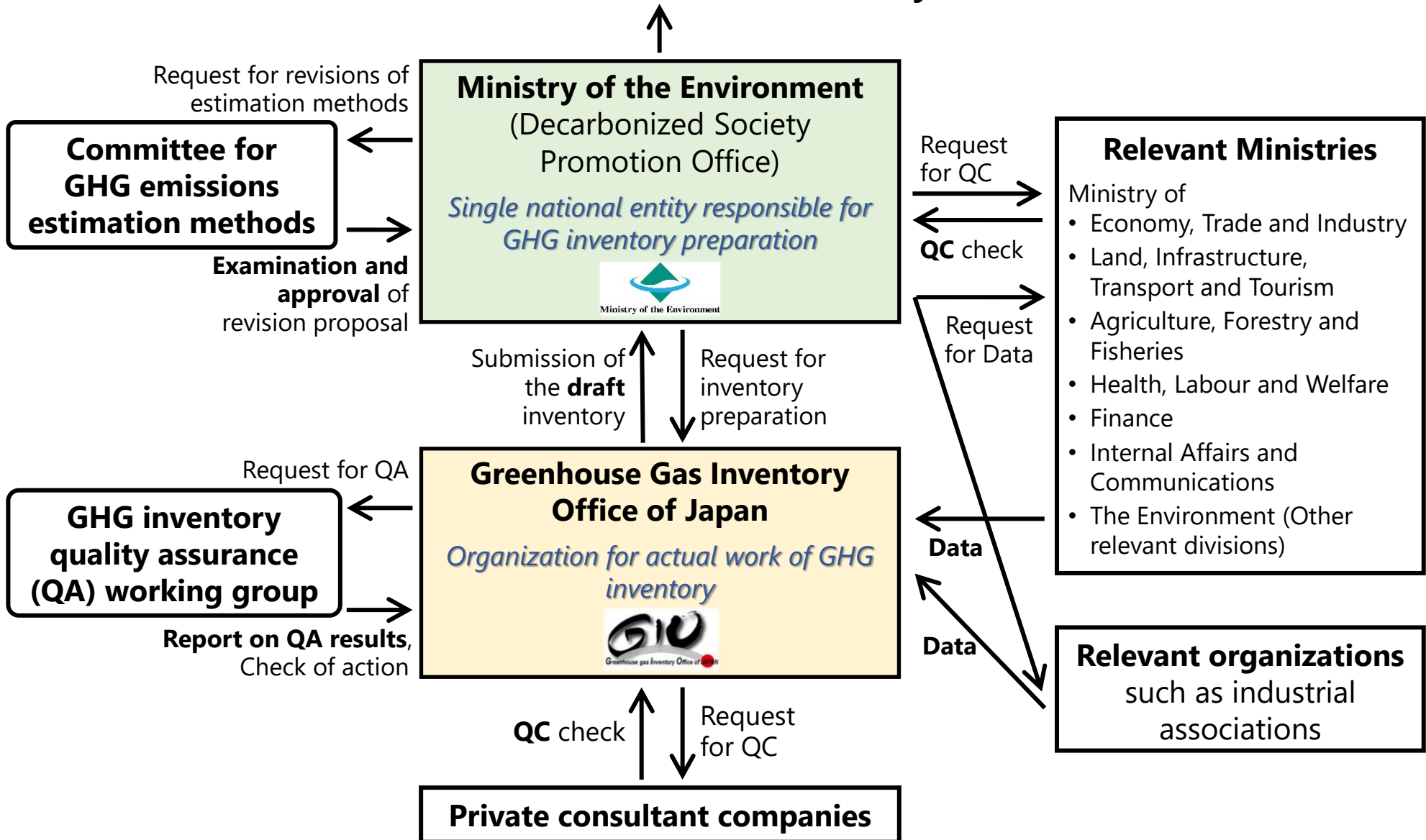
**Decarbonized Society Promotion Office,
Ministry of the Environment, Japan**

Outline of this Presentation

- Institutional Arrangement for GHG Inventory
- Greenhouse Gas Emissions & Trends
- Current Progress Status on Emission Reduction Targets
- New Emission Reduction Targets
- Summary

Japan's Institutional Arrangement for GHG Inventory

Submission of the GHG Inventory



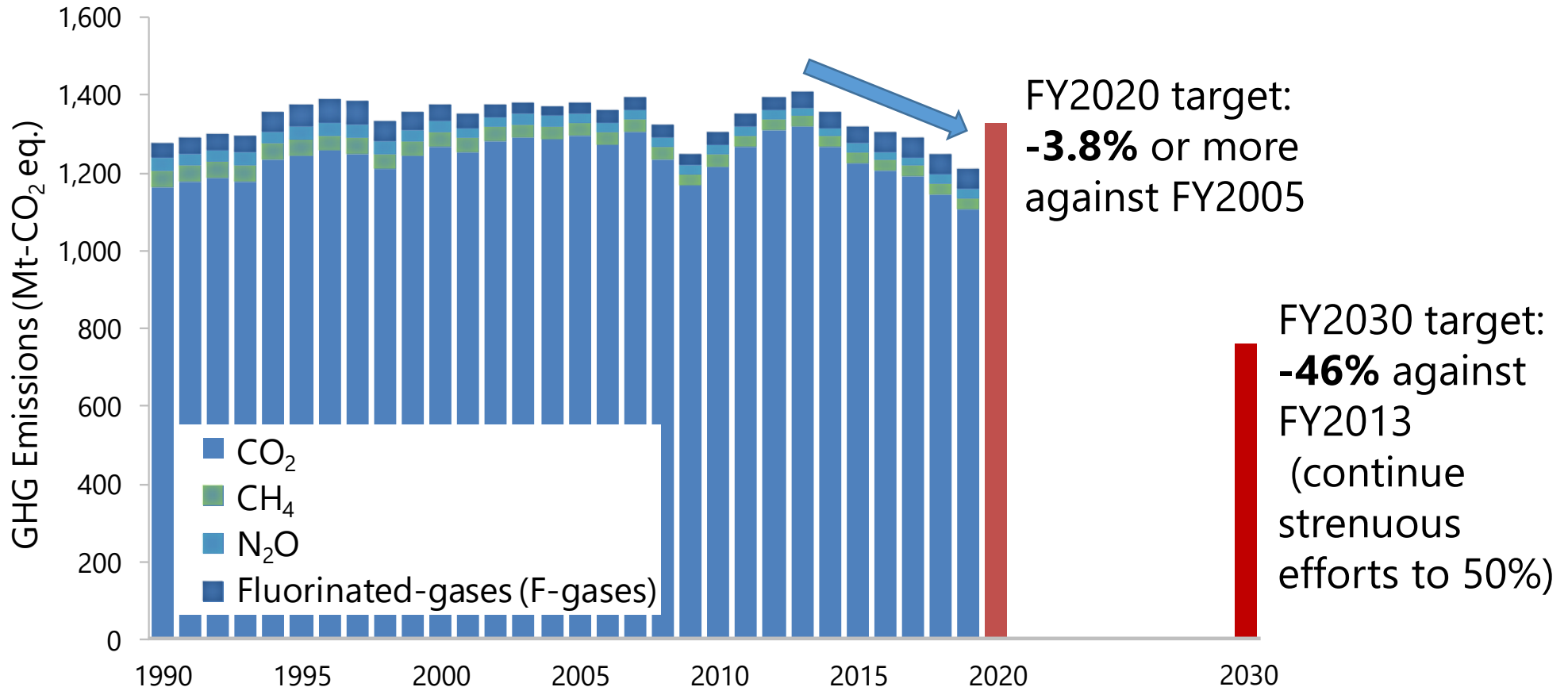
Greenhouse Gas Emissions & Trends



Total GHG Emissions

FY2019: **1,212 million** tons-CO₂ eq.

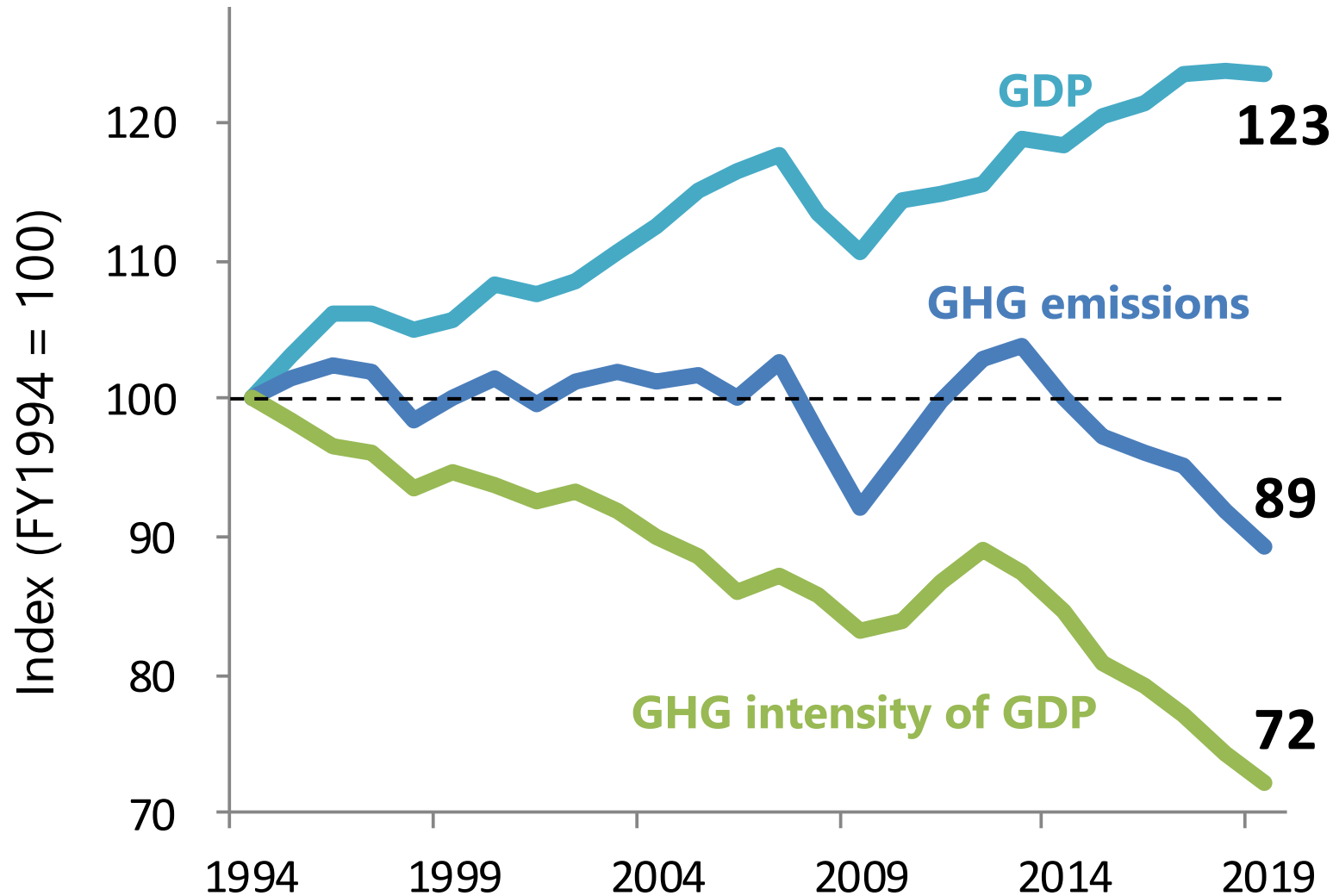
- ✓ **Lowest since FY1990 (-12.3% from FY2005, -14.0% from FY2013)**
- ✓ **Have fallen steadily over the last six years** mainly due to the decrease in energy consumption and decarbonization of electricity



Source: National Greenhouse Gas Inventory Report of Japan (April, 2021)

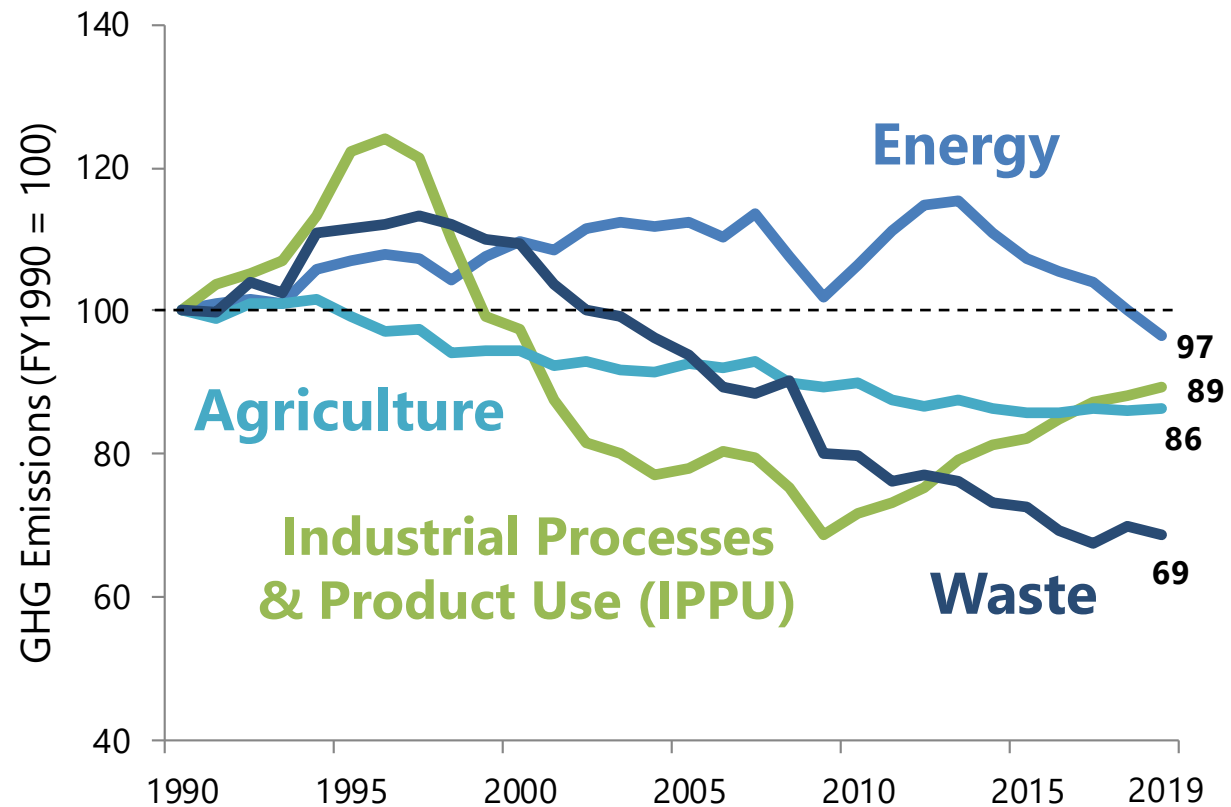
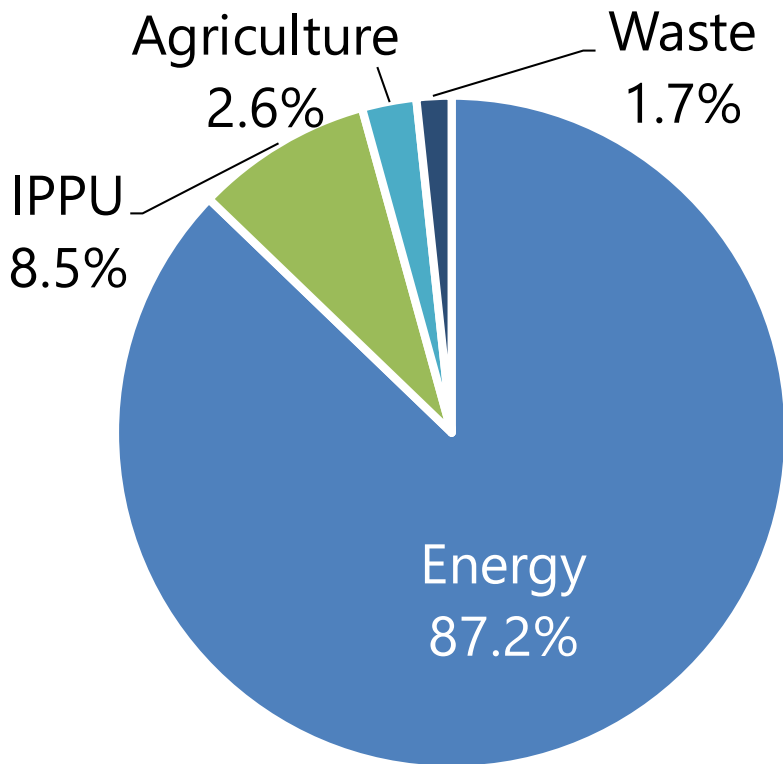
Trends of GHG Intensity of GDP

- ✓ **GHG intensity of GDP has been decreasing** for seven consecutive years since FY2013.



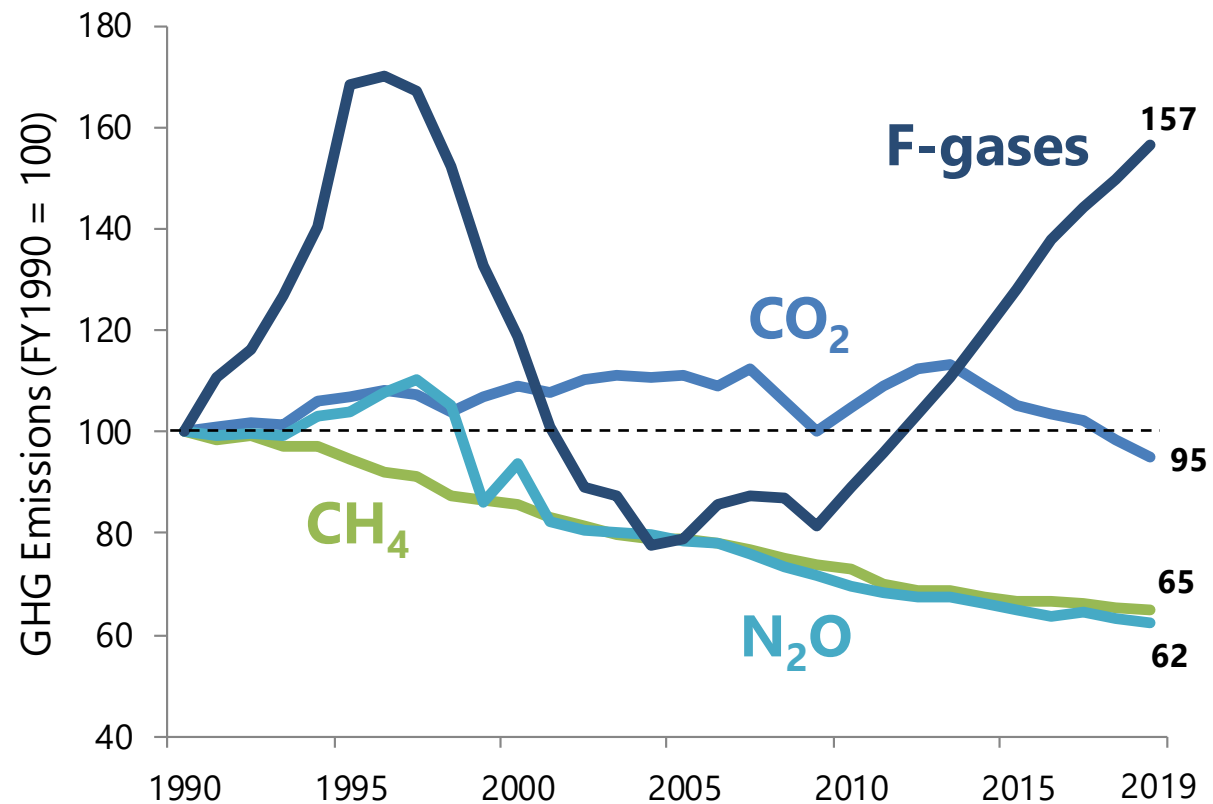
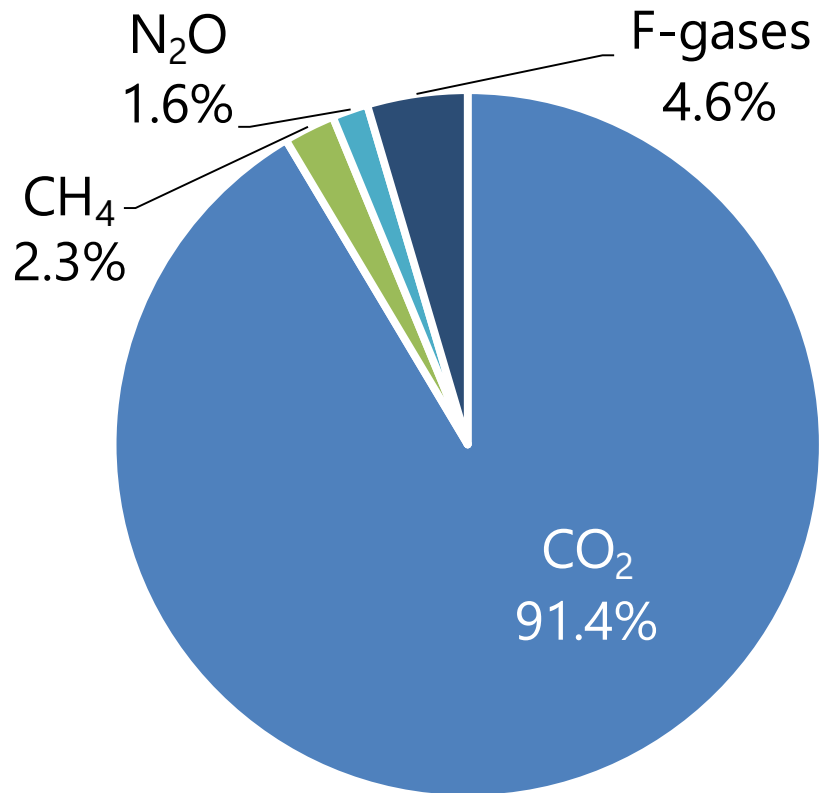
GHG Emissions by Sector (excl. LULUCF)

- ✓ **Emissions from the energy sector**, the largest source, **have been decreasing** due to the progress in energy saving activities and the decrease in thermal power generation



GHG Emissions by Gas (excl. LULUCF)

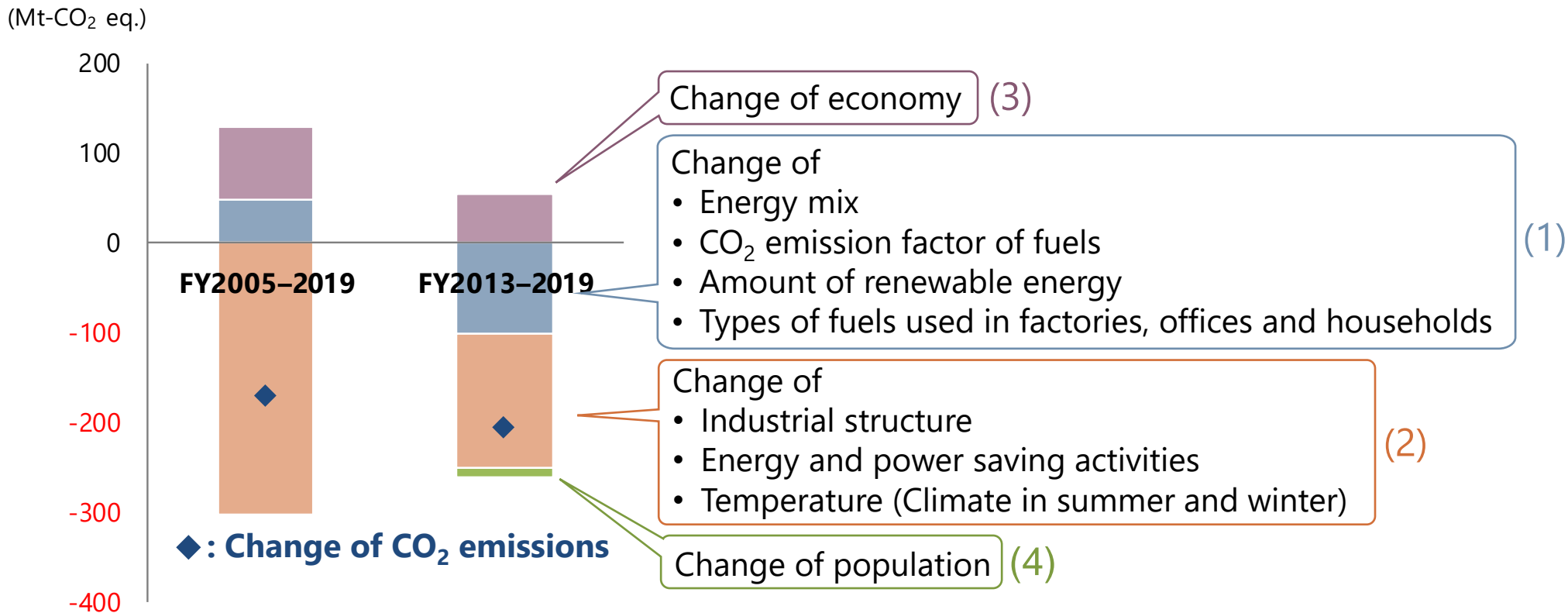
- ✓ **CH₄ and N₂O emissions have been decreasing** constantly as a result of the implementation of policies and measures.
- ✓ **F-gas emissions have been increasing** since FY2009 with the replacement of equipment using ozone-depleting substances with HFCs.



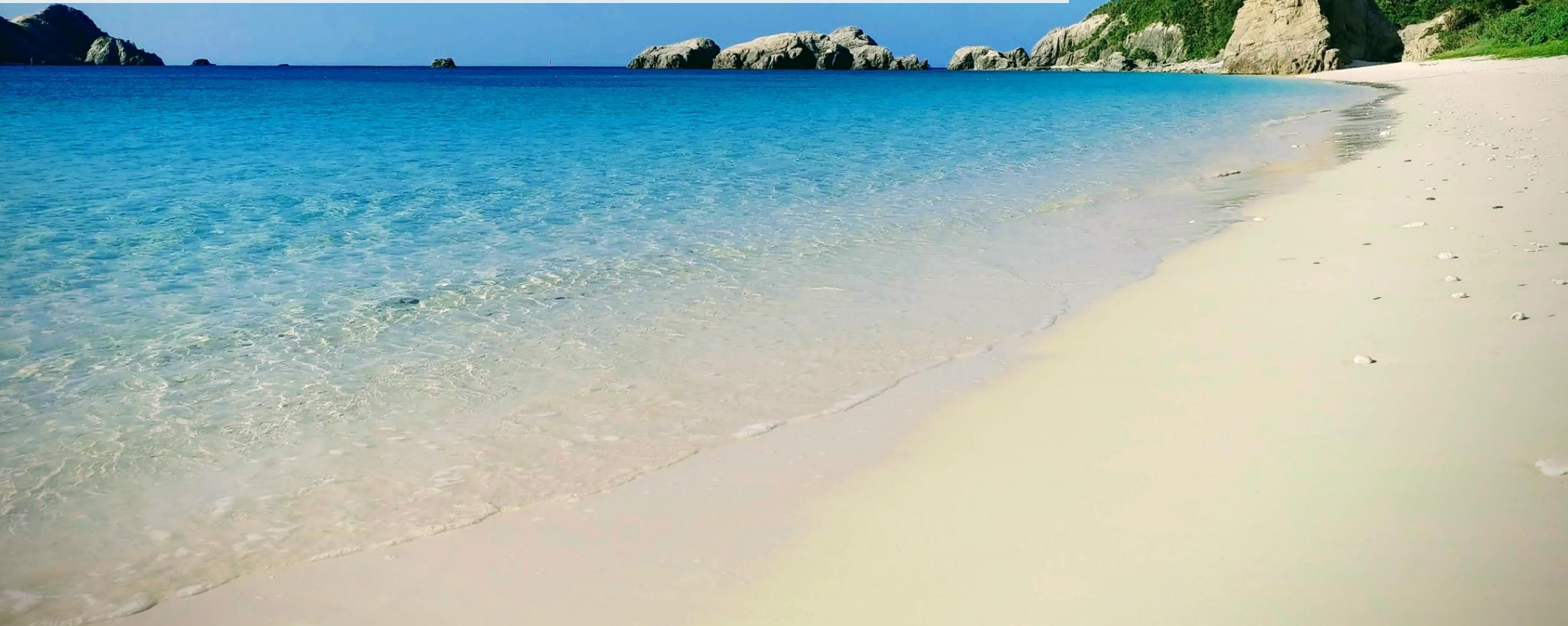
Factor Analysis of Energy-related CO₂ Emissions

$$\text{CO}_2 \text{ emissions} = \frac{\text{CO}_2 \text{ emissions}}{\text{Energy consumption}} * \frac{\text{Energy consumption}}{\text{GDP}} * \frac{\text{GDP}}{\text{Population}} * \text{Population}$$

(1) *Factor of carbon intensity* (2) *Factor of energy intensity* (3) *Factor of GDP per capita* (4) *Factor of population*



Current Progress Status on Emission Reduction Targets



Current Progress Status on Emission Reduction Targets

	2020	2030
Current status (FY2019)	-15.6% (excl. LULUCF: -12.3%) against <u>FY2005</u>	-17.2% (excl. LULUCF: -14.0%) against <u>FY2013</u>
Emission reduction target	<u>-3.8% or more reduction</u> against <u>FY2005</u>	<u>-26.0%</u> against <u>FY2013</u> (-25.4% against FY2005) (in Japan's 1 st NDC)
Covered gases	CO ₂ , CH ₄ , N ₂ O, HFCs, PFCs, SF ₆ , and NF ₃	
Covered sectors	Energy, Transport, IPPU, Agriculture, LULUCF, and Waste	
Removals from LULUCF	Included (Activity-based approach) * Forest-related activities (Afforestation, Reforestation, Deforestation and Forest Management): gross-net basis compared with FY1990 Cropland management, Grassland management and Revegetation: net-net basis compared with FY1990	

Plan for Global Warming Countermeasures

Examples of PaMs (Policies and Measures)

PaMs in Each Sector

Industrial

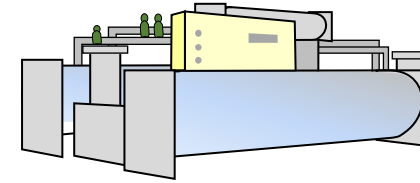
- ✓ Action plans including emission reduction targets voluntarily set up by industrial organizations whose progress is evaluated in a stringent and regular manner

Commercial and Other

- ✓ Promotion of compliance of energy saving standards for new buildings, energy saving renovation of existing buildings, and Net Zero Energy Buildings (ZEBs)
- ✓ Dissemination of energy-efficient devices

Residential

- ✓ Promotion of compliance of energy saving standards for new homes, energy saving renovation of existing homes, and Net Zero Energy Houses (ZEHs)
- ✓ Dissemination of energy-efficient equipment



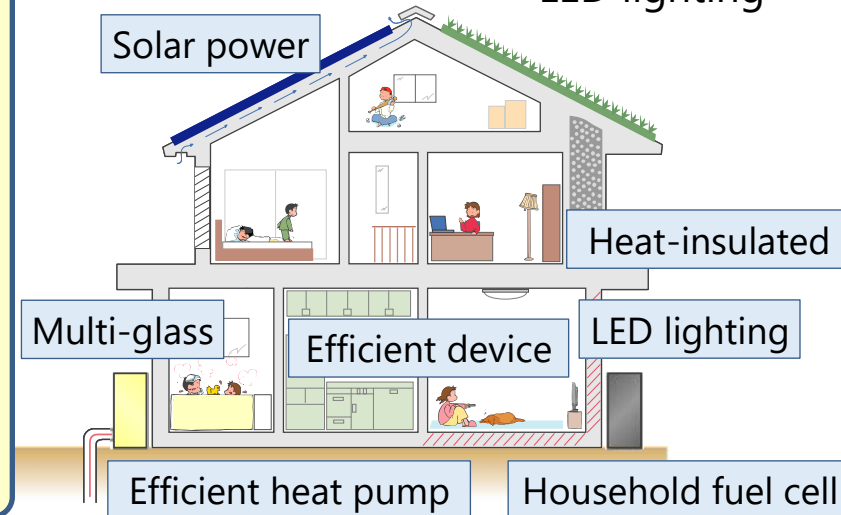
Introduction of highly-efficient air conditioning



Promotion of ZEBs



LED lighting



Examples of PaMs in the Plan for Global Warming Countermeasures

PaMs in Each Sector

Transport

- ✓ Diffusion of next-generation automobiles, improvement of fuel efficiency

Energy Conversion

- ✓ Expanding renewable energy introduction to the maximum extent possible (Appropriate use and review of feed-in tariffs, grid system maintenance and consolidation of grid system operation rule)
- ✓ Pursuit of high efficiency in thermal power generation (Ensuring effectiveness of efforts of power industry by enhancing energy saving law, adoption of BAT, and response to small-scale thermal power generation)

Other GHGs and Removals by LULUCF

Cross-Sectional Strategies

- ✓ Realization of a hydrogen society
- ✓ Estimation, reporting and disclosure of businesses' GHG emissions
- ✓ Joint Crediting Mechanism (JCM)
- ✓ Greening tax system and utilization of Global Warming Countermeasure Tax
- ✓ Greening finance system

Foundational Measures, International Cooperation

- ✓ Development and societal implementation of technology, and measurement and monitoring (GaN, CNF, battery, GHG observing satellite)
- ✓ Promotion of international cooperation
- ✓ Progress management (Yearly progress review, consider revision of plan every 3 years, taking account of 5 year cycle of Paris Agreement)



Next-generation automobile



未来のために、いま選ぼう。

Promotion of nationwide campaigns

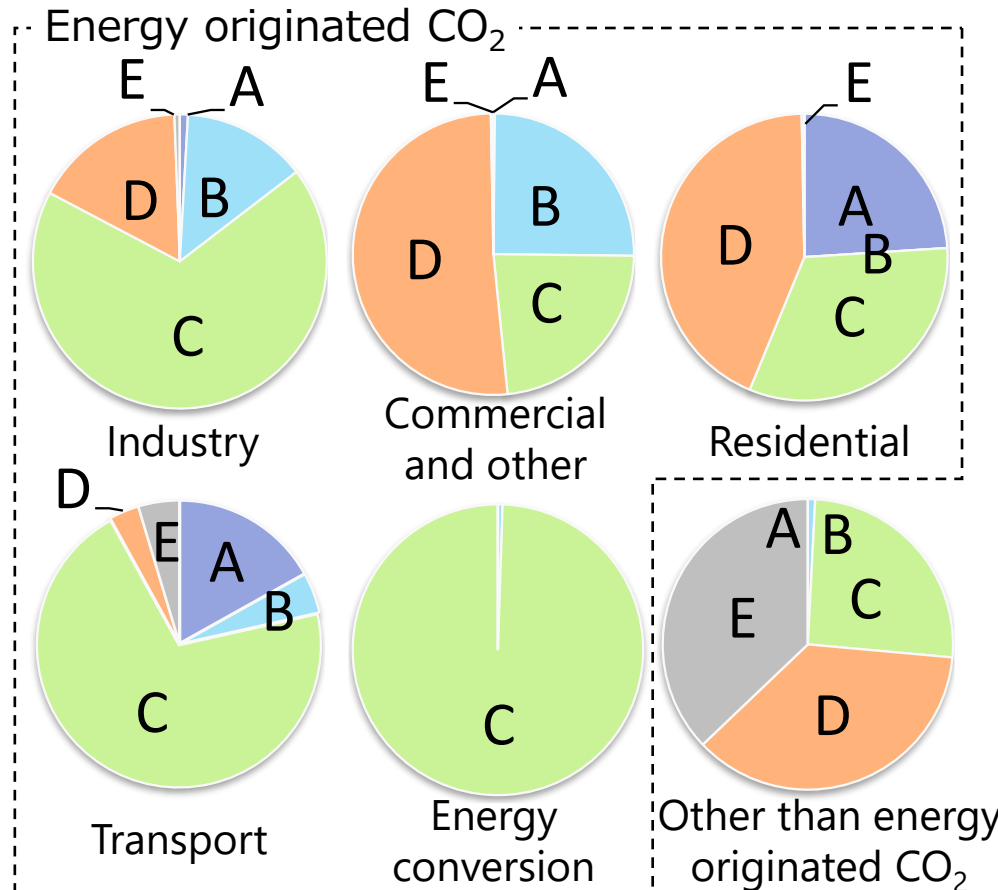
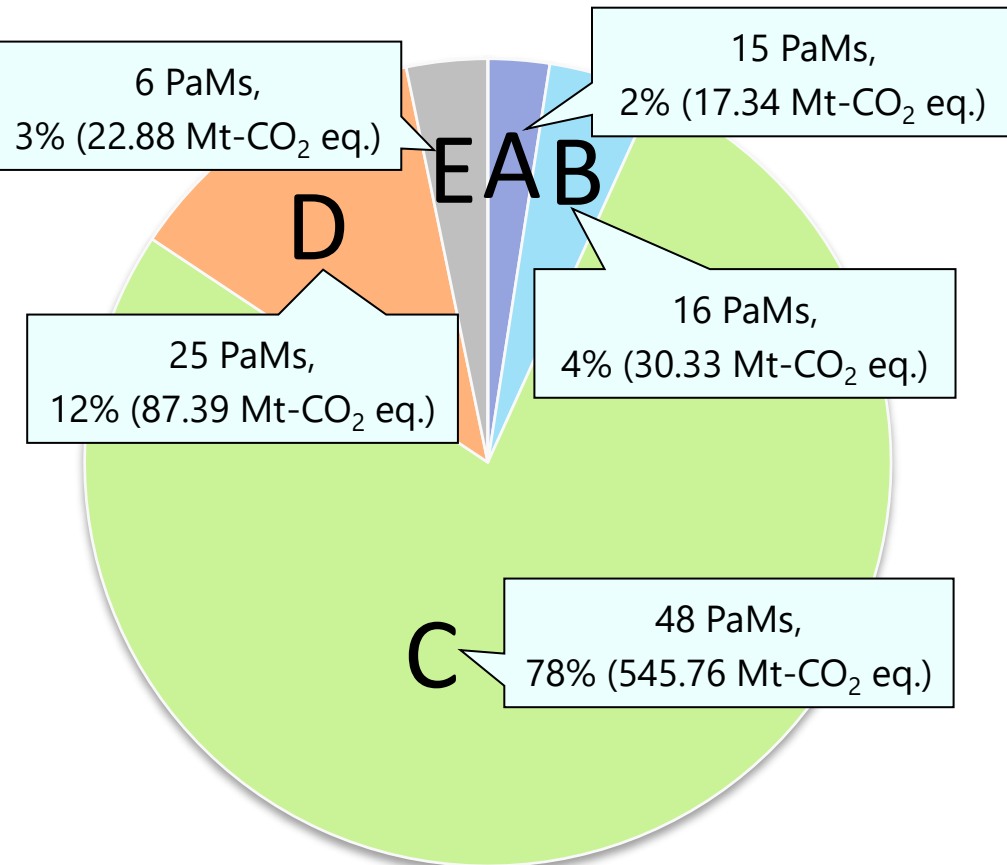


Solar power generation

Progress Evaluation of the Plan for Global Warming Countermeasures

Legend (if current efforts continue) , Expected to :

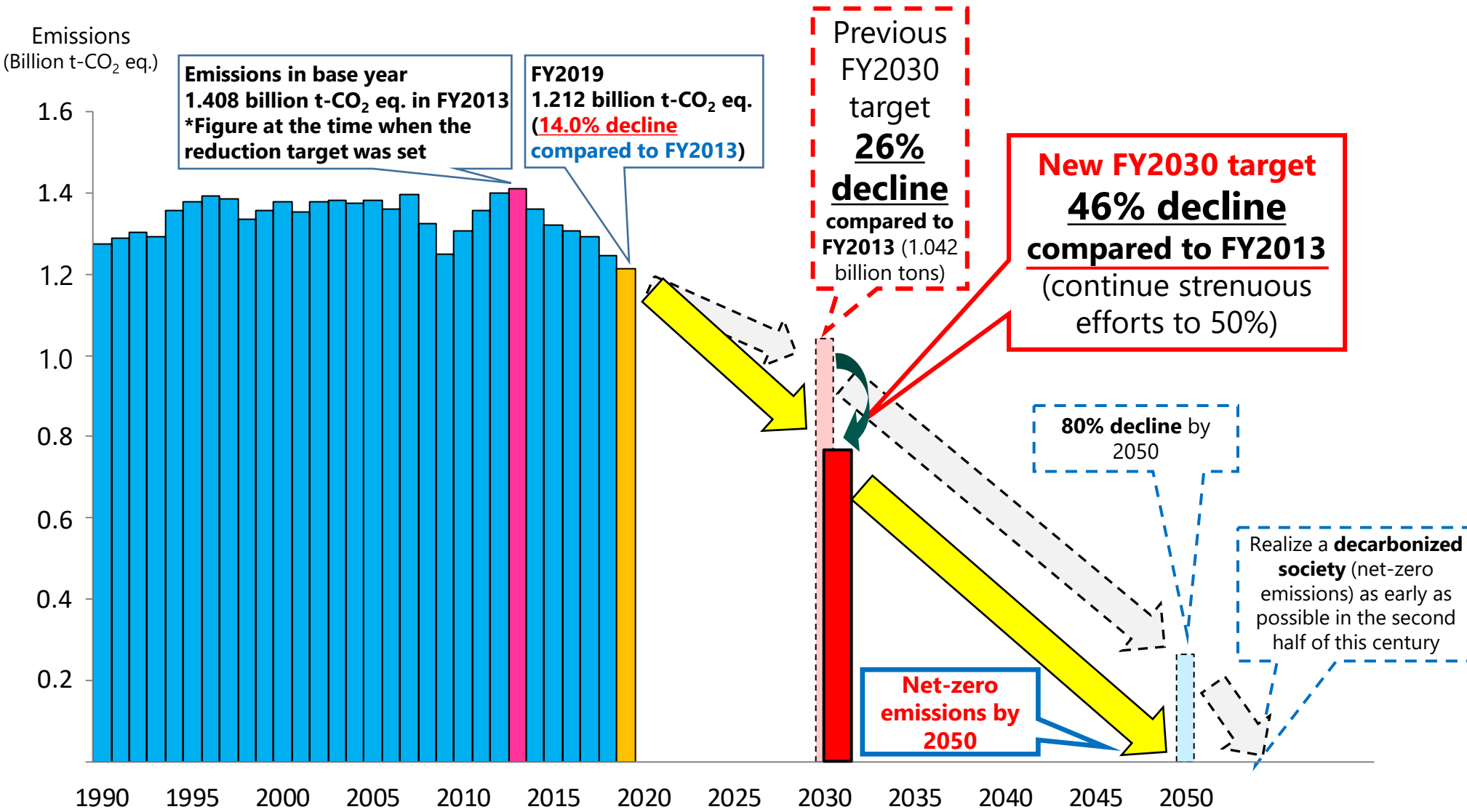
- A. Exceed the target levels by FY2030, or the actual performance value for FY2019 has already exceeded the target levels for FY2030.
- B. Exceed the target levels by FY2030.
- C. Reach the same levels as the target levels in FY2030.
- D. Fall below the target levels for FY2030.
- E. Other (efforts for which quantitative data cannot be obtained)





New Emission Reduction Targets

Japan's Medium- and Long-term Targets for GHG Reduction



Source: National Greenhouse Gas Inventory Report of Japan (April, 2021)

Medium-term target

Long-term target

Joint Meeting of Mid- and Long-term Climate Change Countermeasures Subcommittee, Central Environment Council & Working Group on Global Warming Countermeasures, Industrial Structure Council

Meetings	Agenda
<u>1st mtg.</u> (1 Sep 2020)	Current status of climate change and energy policies, and future climate change countermeasures based on the impact from COVID-19
<u>2nd mtg.</u> (16 Dec 2020)	(1) Current movement in relation to the achievement of net-zero GHG emissions by 2050 (2) Climate finance
<u>3rd mtg.</u> (26 Feb 2021)	(1) Current status of GHG emissions (2) Hearings with future generations
<u>4th mtg.</u> (9 Apr 2021)	(1) Progress evaluation of the Plan for Global Warming Countermeasures in FY2019 (2) Hearings with relevant Ministries and Agencies
<u>5th mtg.</u> (26 Apr 2021)	Hearings with relevant Ministries and Agencies
<u>6th mtg.</u> (14 May 2021)	Hearings with relevant Ministries and Agencies
<u>7th mtg.</u> (19 May 2021)	Structure of the Plan for Global Warming Countermeasures (draft) Concept for reviewing the Long-term Strategy under the Paris Agreement (draft)

Estimated Emissions & Removals in FY2030

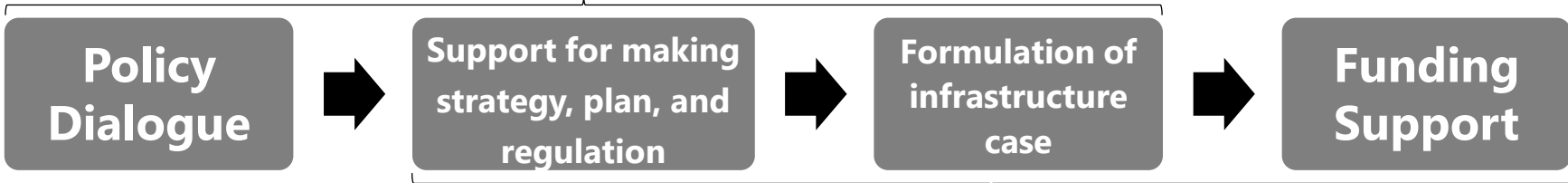
(Unit: Mt-CO ₂ eq.)	FY2013* ¹	FY2019* ¹	-26% (Japan's 1 st NDC)	-46%
GHG Emissions and Removals	1,408	1,212	1,042	760
Energy originated CO ₂	1,235	1,029	927	
Industry	463	384	401	
Commercial and other	238	193	168	
Residential	208	159	122	
Transport	224	206	163	
Energy conversion	103	86.2	73	
Non-energy originated CO ₂	82.3	79.2	70.8	
CH ₄	30.0	28.4	31.6	
N ₂ O	21.4	19.8	21.1	
Fluorinated gases (HFCs, PFCs, SF ₆ , and NF ₃)	39.1	55.4	28.9	
Removals by LULUCF	-	-	-37	

*1 Source: Japan's National Greenhouse Gas Emissions in FY2019 (Final Figures)

Environmental Infrastructure Promotion Strategy by Ministry of the Environment

- ✓ Contributions toward the achievement of net-zero GHG emissions and the SDGs including environmental targets have become a main determinant in the government-wide Infrastructure System Overseas Promotion Strategy.
- ✓ **Ministry of the Environment, Japan supports the transition to decarbonization in the Indo-Pacific region by building environmental infrastructures through public-private partnerships.**

Promoting City-to-City Collaborations domestically and internationally,
Transferring experiences and skills to overseas partners



Developing a business environment in public-private platform
(Japan Platform for Redesign: Sustainable Infrastructure)

Waste-to-Energy Plant (Joint Crediting Mechanism)

Installed the first **WtE plant** in Myanmar (2017)

Energy Saving and Renewable Energy (Joint Crediting Mechanism)

Installed a **solar power** plant in Mongolia (Area of 40 soccer fields)

Wastewater treatment by Johkasou Systems

Developing in China, Vietnam, etc. for the **necessity of wastewater treatment**

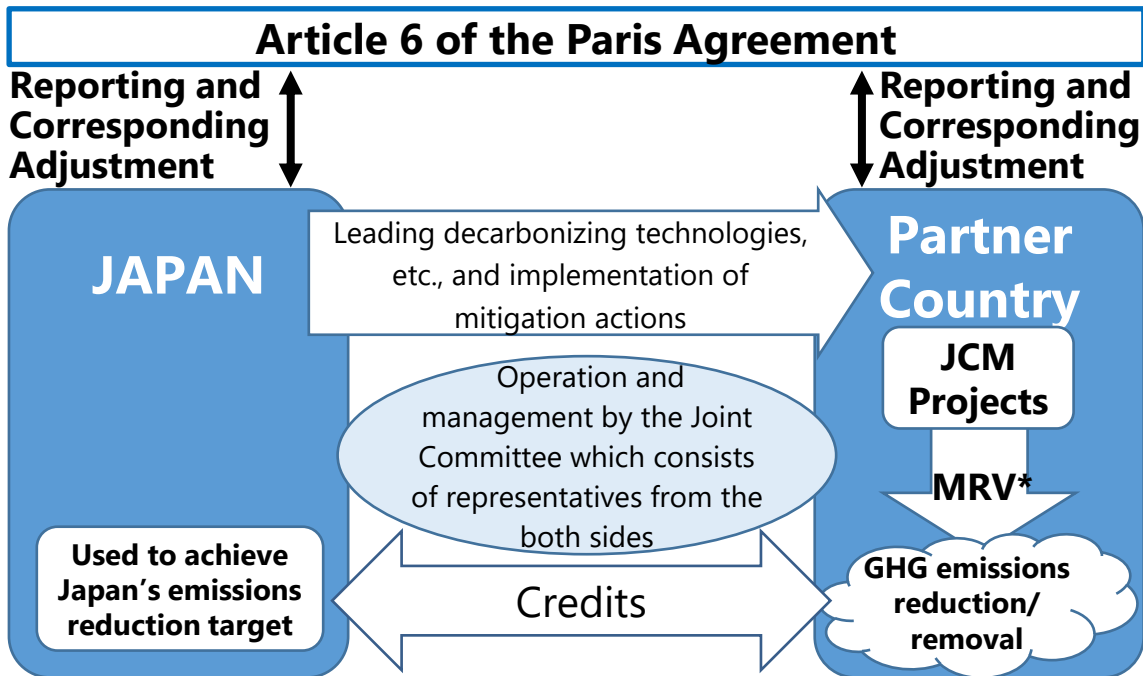
Purified by microbes etc.

Water/Air pollution

Concluded an agreement for **improving the water quality of Citarum River** (2018)

Joint Crediting Mechanism (JCM)

- ✓ Facilitating diffusion of leading decarbonizing technologies, products, systems, services, and infrastructure as well as implementation of mitigation actions, and contributing to the sustainable development of developing countries
- ✓ Appropriately evaluating contributions to GHG emission reductions or removals from Japan, through mitigation actions implemented in the partner countries and using those emission reductions or removals to achieve emission reduction targets of Japan and partner countries
- ✓ Implementing the mechanism in line with Article 6 of the Paris Agreement and contributing to the ultimate objective of the UNFCCC by facilitating global actions for GHG emission reductions or removals



*measurement, reporting and verification

Progress:

- Started in 2013, 17 countries have joined the partnership.
Mongolia, Bangladesh, Ethiopia, Kenya, Maldives, Viet Nam, Laos, Indonesia, Costa Rica, Palau, Cambodia, Mexico, Saudi Arabia, Chile, Myanmar, Thailand, and Philippines
- 187 projects in the pipeline
- 90,710 credits issued from 38 projects
- 66 projects registered
- 90 MRV* methodologies approved

Summary



Summary

- Aims to achieve the FY2030 target by implementing policies and measures based on the “Plan for Global Warming Countermeasures”
- Every year, strictly reviews the Plan’s progress
- Aims to reduce the GHG emissions by 46% in FY2030 from the FY2013 levels
- Will continue strenuous efforts in the challenge to meet the lofty goal of cutting the emission by 50%