



Japan's Current Progress on Global Warming Countermeasures

**The 19th Workshop on Greenhouse Gas
Inventories in Asia (WGIA19), 11th July 2022**

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

Outline of this Presentation

- Greenhouse Gas Emissions & Trends
- New Emission Reduction Targets
- Plan for Global Warming Countermeasures & Current Progress Status on Emission Reduction Targets
- International Cooperation
- Summary

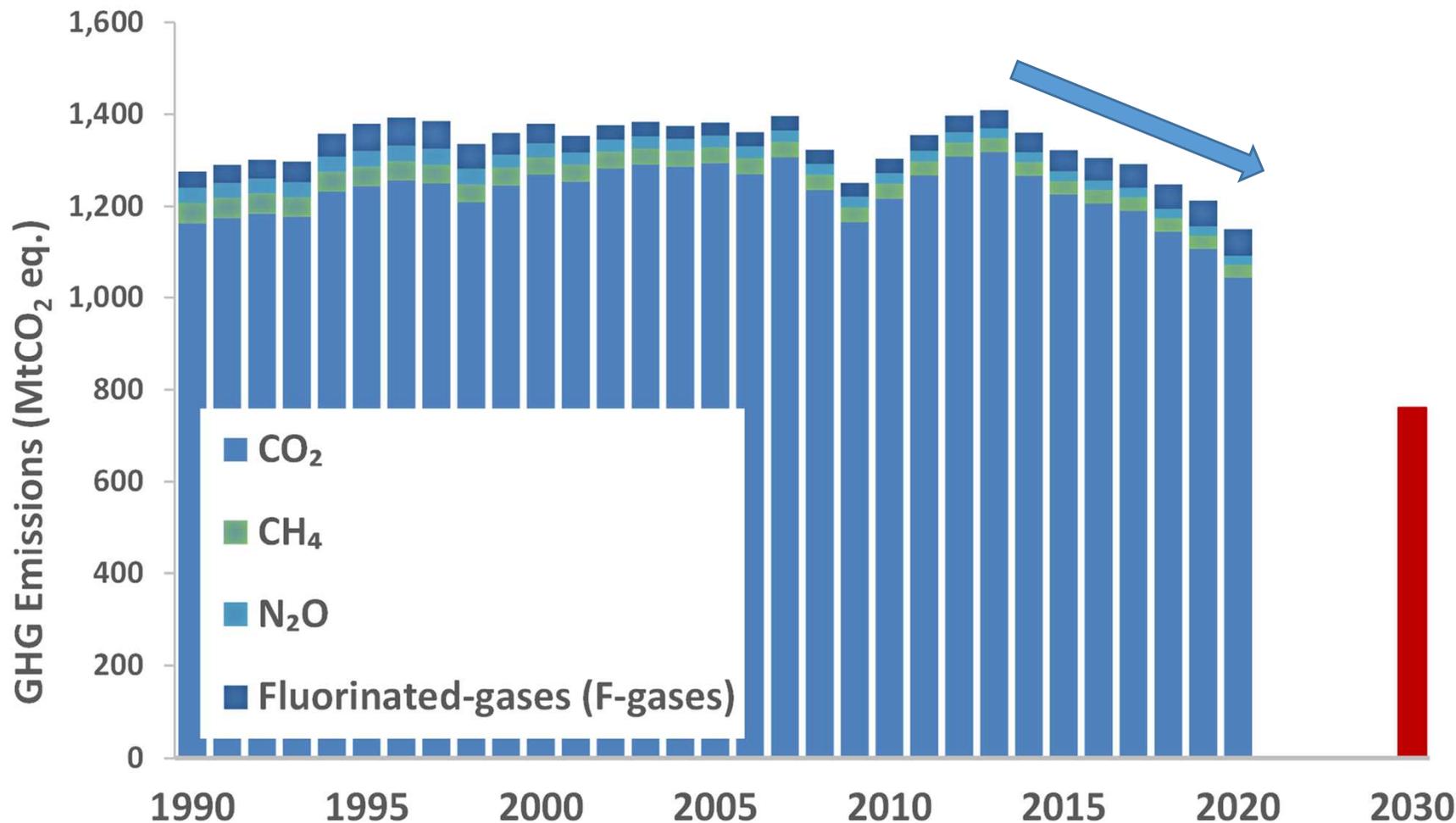
Greenhouse Gas Emissions & Trends



Total GHG Emissions

FY2020: **1,150 million** tonnes-CO₂ eq.

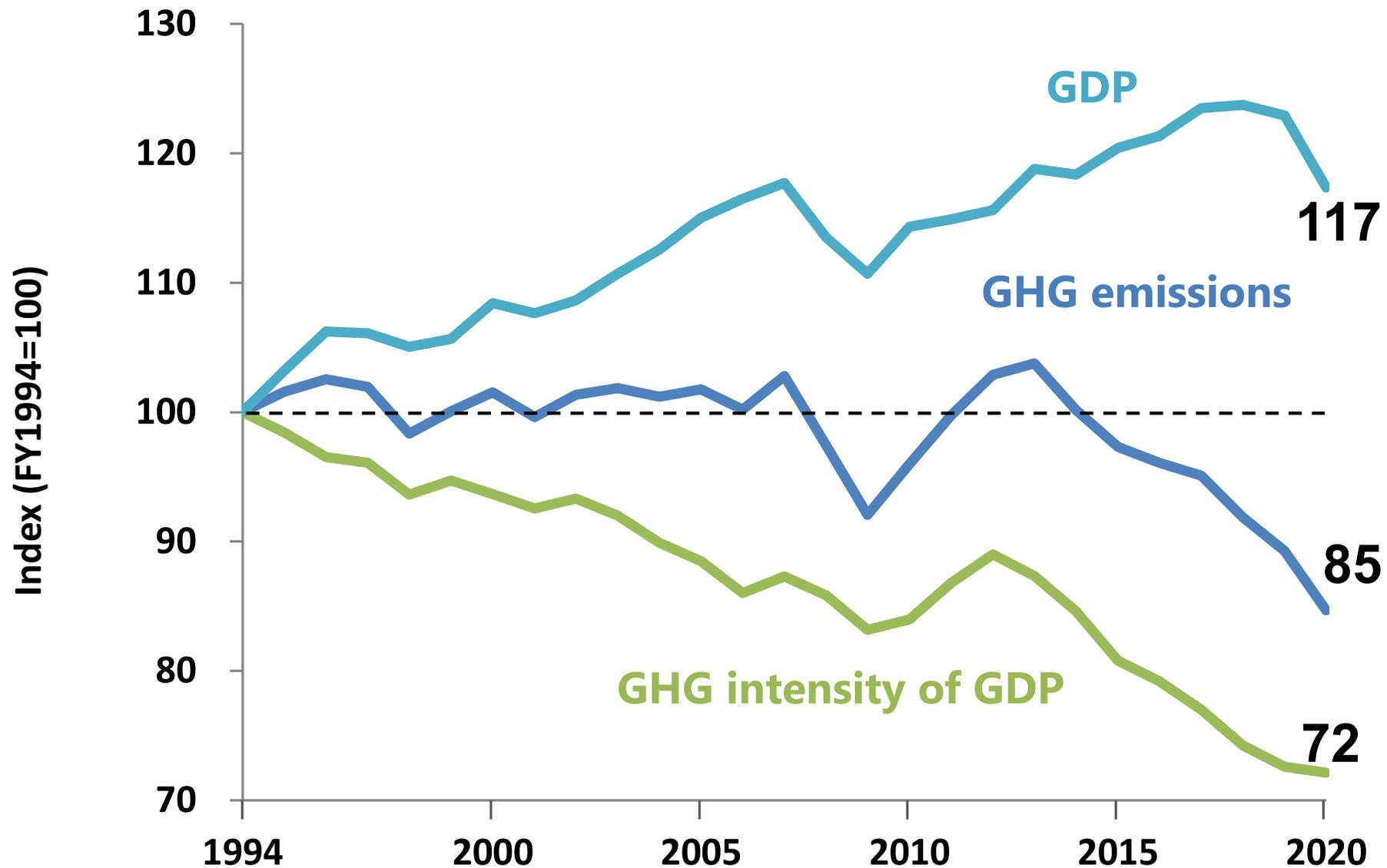
- ✓ **Lowest since FY1990 (-18.4% from FY2013)**
- ✓ **Have fallen steadily over the last seven years** mainly due to the decrease in energy consumption and decarbonization of electricity



FY2030 target:
-46% against
FY2013
(continue
strenuous
efforts to 50%)

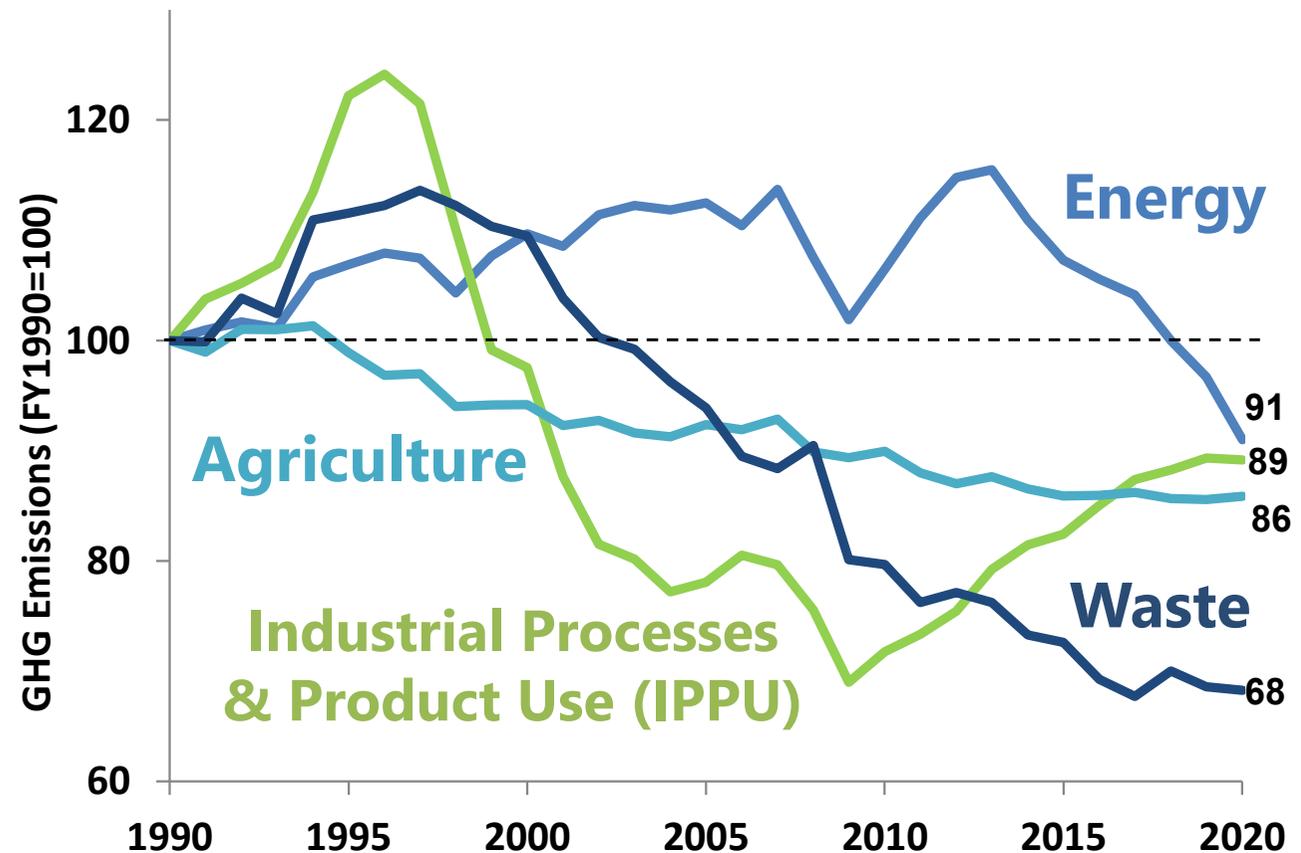
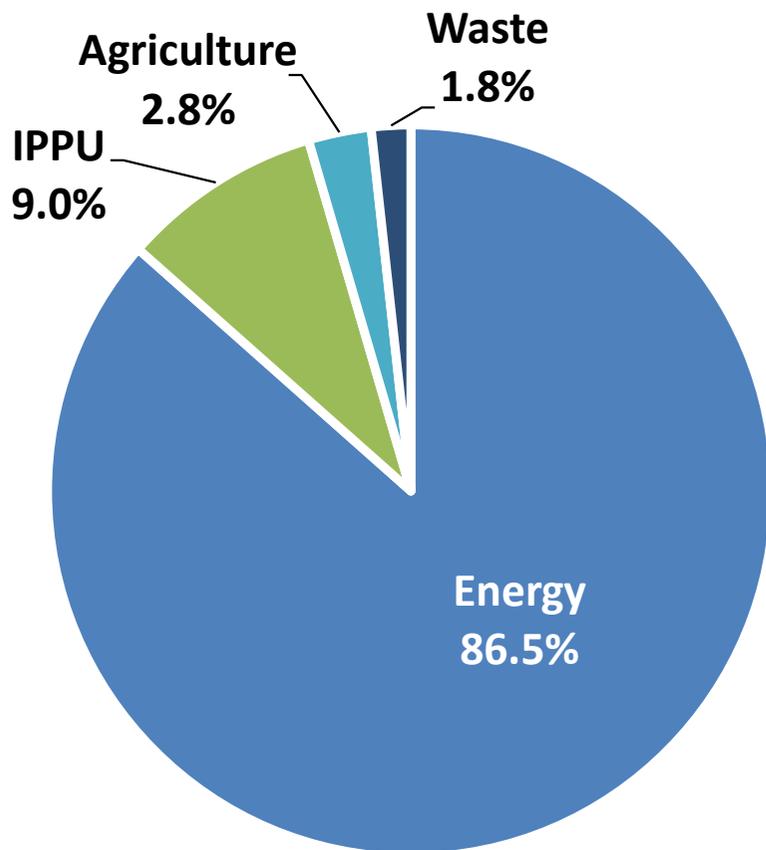
Trends of GHG Intensity of GDP

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



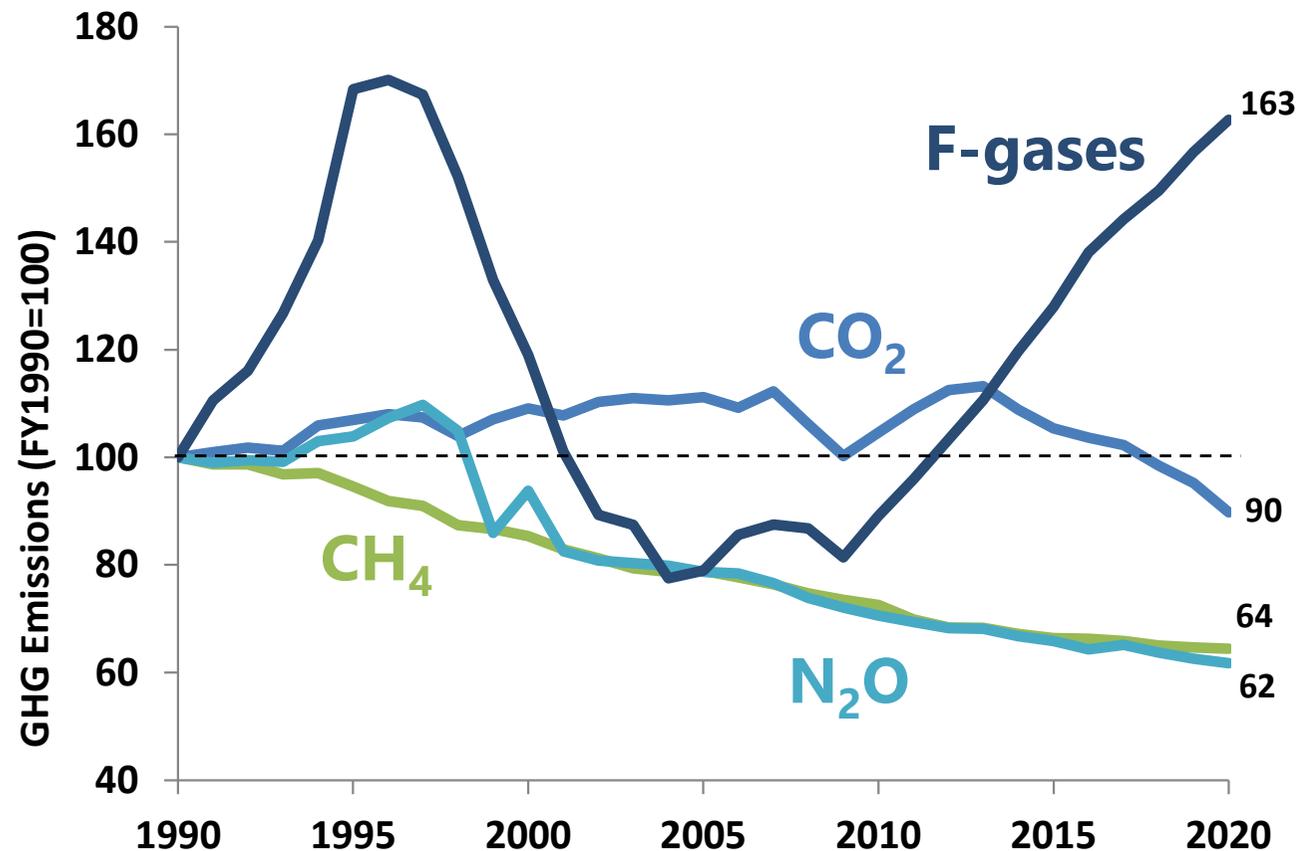
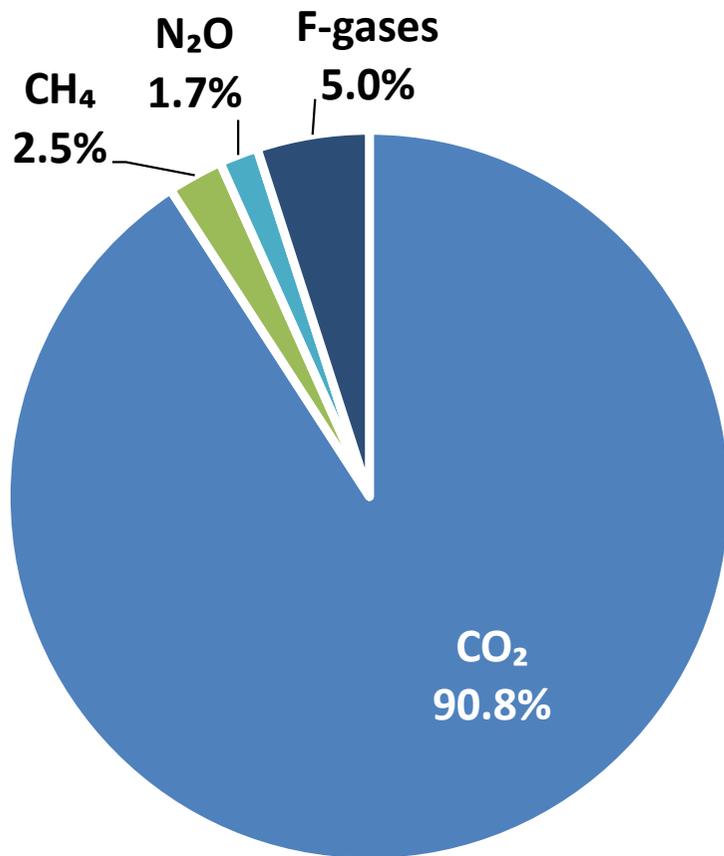
GHG Emissions by Sector (excl. LULUCF)

- ✓ **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.

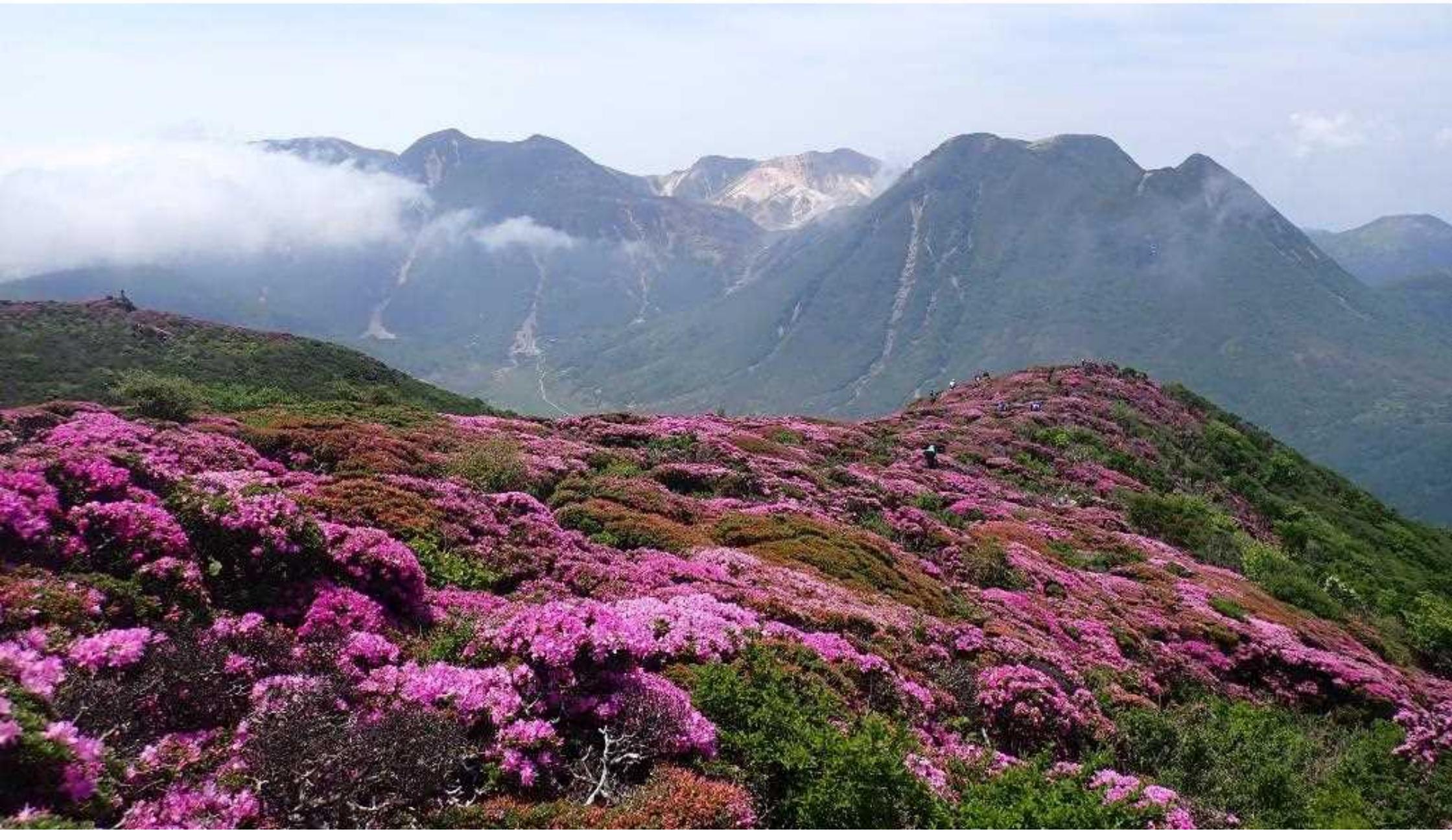


GHG Emissions by Gas (excl. LULUCF)

- ✓ **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.



New Emission Reduction Targets



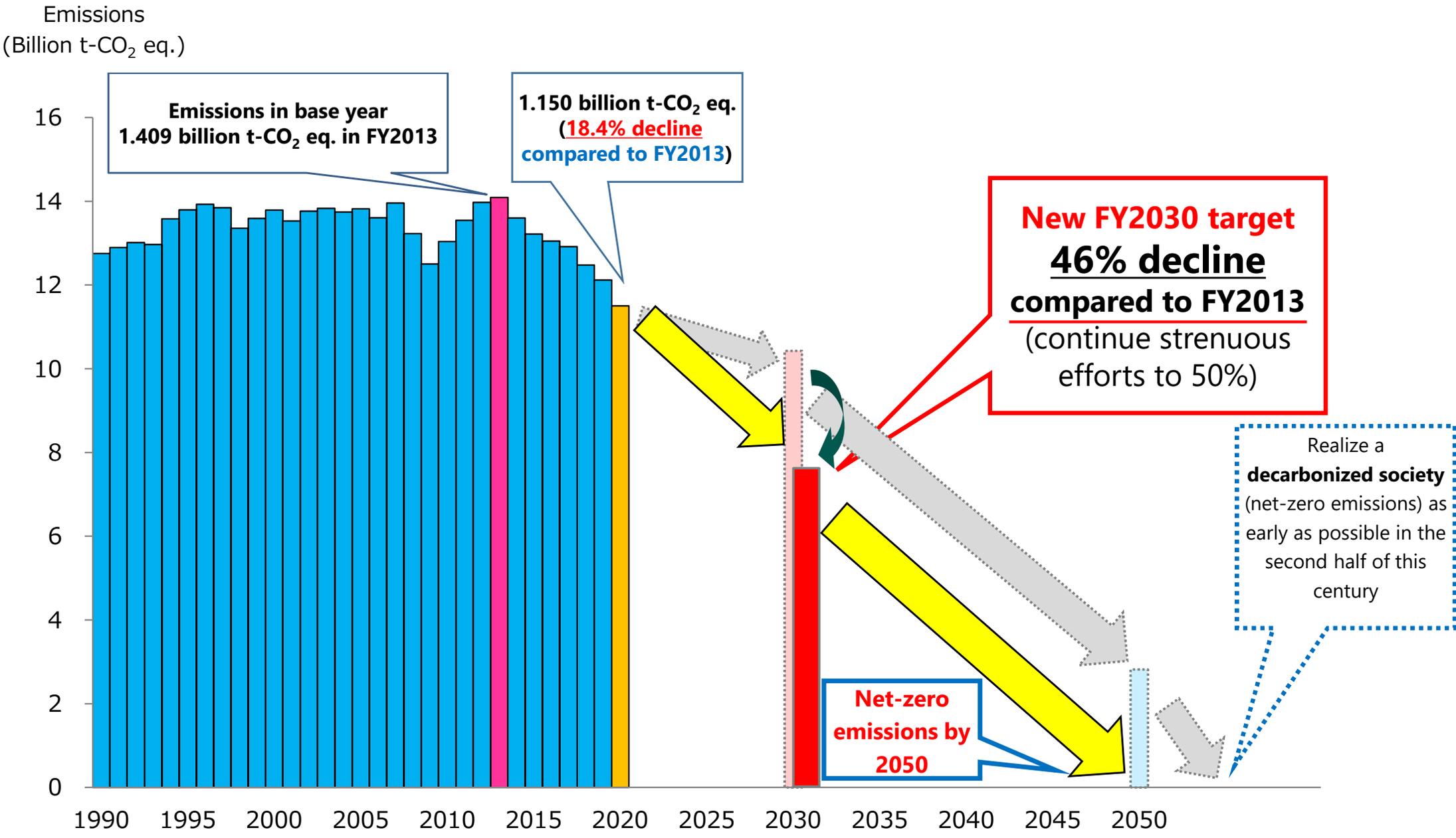
Estimated Emissions & Removals in FY2030

(Unit: Mt-CO ₂ eq.)	FY2013 ^{*1}	FY2020 ^{*2}	-46% (Japan's NDC)
GHG Emissions and Removals	1,408	1,106	760
Energy-related CO ₂	1,235	967	677
Industry	463	356	289
Commercial and others	238	182	116
Residential	208	166	70
Transport	224	185	146
Energy conversion	106	82.1	56
Non-energy-related CO ₂	82.3	76.8	70.0
CH ₄	30.0	28.4	26.7
N ₂ O	21.4	20.0	17.8
Four gases incl. alternative CFC (HFCs, PFCs, SF ₆ , and NF ₃)	39.1	57.5	21.8
Removals	-	-44.5	-47.7
Joint Crediting Mechanism (JCM)	Contributing to international emission reductions and removals at the level of a cumulative total of approximately 100 million tCO₂ by fiscal year 2030.		

*1 Source: the Plan for Global Warming Countermeasures

*2 Source: Japan's National Greenhouse Gas Emissions in FY2020 (Final Figures)

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



Source: National Greenhouse Gas Inventory Report of Japan (April, 2022)

Medium-term target

Long-term target



**Plan for Global Warming
Countermeasures &
Current Progress Status
on Emission Reduction Targets**

Examples of PaMs in the Plan for Global Warming Countermeasures

Renewable Energies · Energy Efficiency

- Encouraging the establishment of **promotion zones**
 - Wider use of renewable energy benefitting local communities (e.g. **Solar energy**)
- Enhancing mandatory compliance with energy conservation standards in **houses and buildings**

Industry · Transport etc.

- Innovation support toward 2050
 - Support of R&D on the priority fields such as hydrogen and storage batteries, and social implementation by a 2 trillion yen fund
- Support of R&D and demonstration toward improving energy efficiency of all new data centers by 30% or more

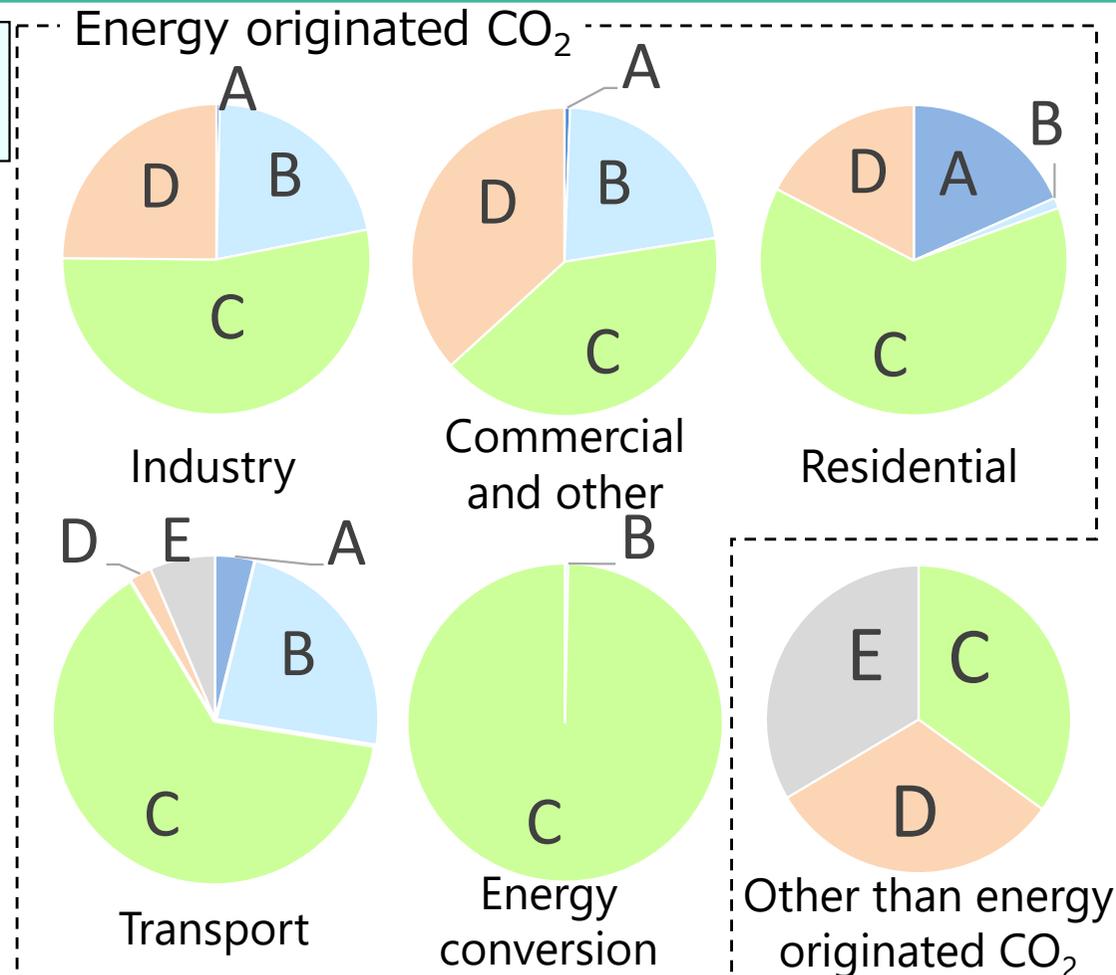
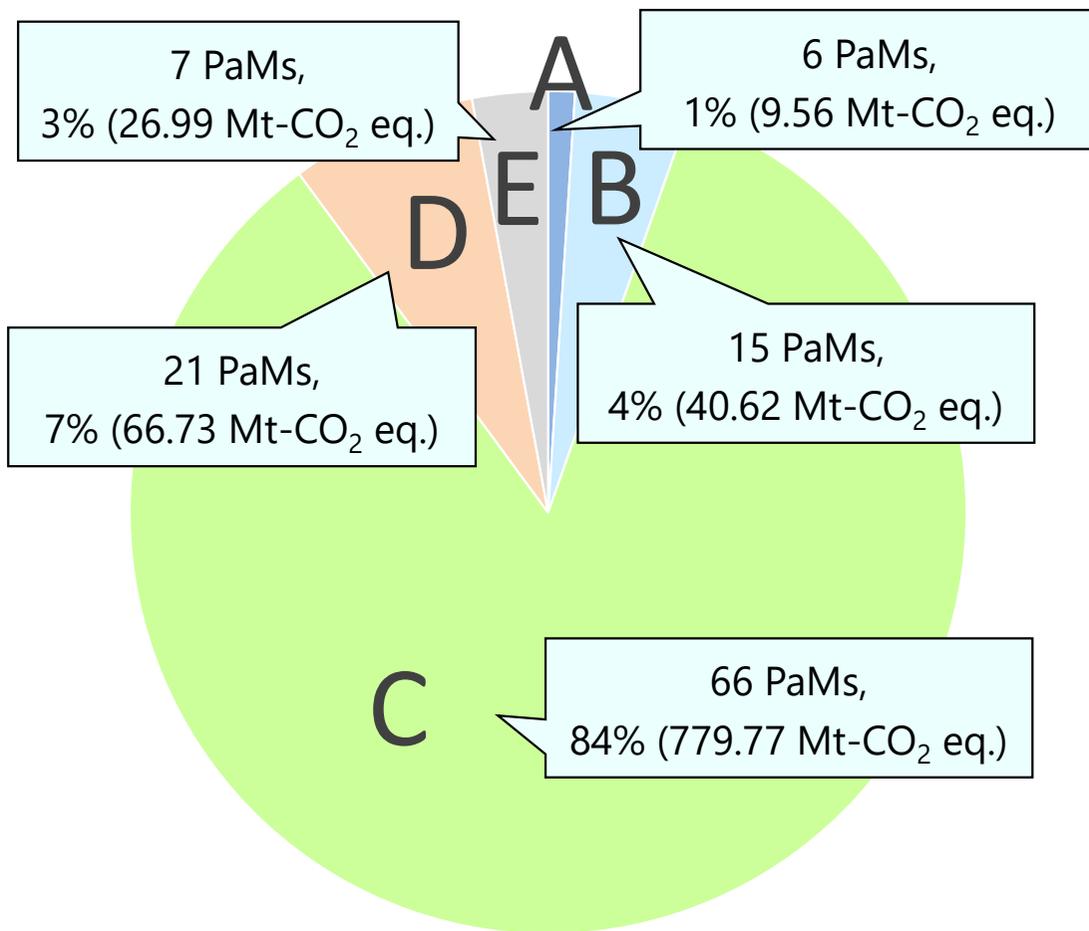
Cross-sectoral Effort

- Creation of **100 "decarbonization leading areas"** by 2030 (Regional Decarbonization Roadmap)
- Reductions of GHG emissions in developing countries by utilizing leading decarbonization technologies
 - Contributing to global GHG emission reductions by "the Joint Crediting Mechanism: JCM"

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 FY2020 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)





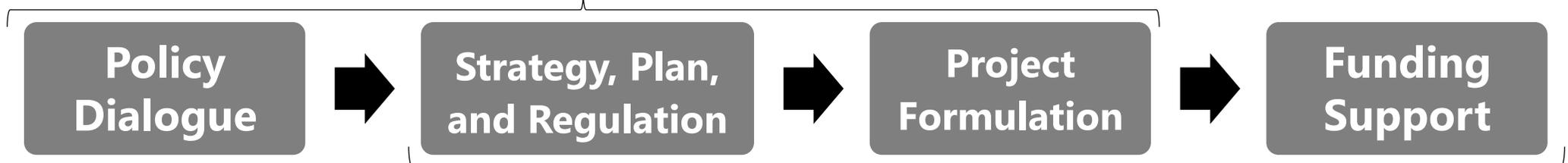
International Cooperation



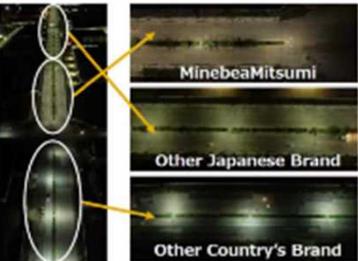
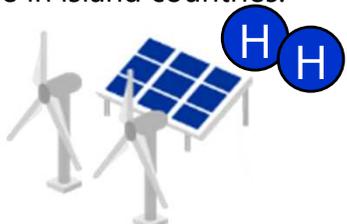
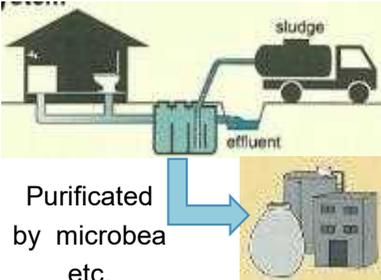
Japan's Support for Transition to Decarbonization

- ✓ Contribution for Carbon Neutrality and SDGs is the main focus of MOEJ policy for international cooperation
- ✓ MOEJ supports for **transition to decarbonization by partner countries** through promoting **comprehensive cooperation** from upstream strategy planning and downstream project formulation.

Promoting inter-city cooperation in and out of Japan,
Transferring experience and know-how to abroad



Developing a business environment in public private platform
(Japan Platform for Redesign; sustainable Infrastructure)

Energy saving / renewable energy infrastructure	Renewable hydrogen	Adaptation	Waste to Energy plant	Johkasou
<p>Developing in China and Vietnam etc. for necessity of wastewater treatment</p> 	<p>Produce and storage renewable hydrogen in a third country, and transport to supply and use in island countries.</p> 	<p>Developed Climate Change Risk assessment methodology for Coastal Airports Operations.</p> 	<p>Installed first WtE plant in Myanmar (2017)</p> 	<p>Developing in China and Vietnam etc. for necessity of wastewater treatment</p>  <p>Purificated by microbea etc.</p>

Action Agenda in the ASEAN region

- ✓ At **the Japan-ASEAN Summit Meeting in October 2021**, Japan put forward the "ASEAN-Japan Climate Change Action Agenda 2.0".
- ✓ Taking into account **the three pillars on transparency, mitigation, and adaptation**, the government of Japan has significantly expanded and strengthened its efforts to co-create a decarbonized economy in the region.

Agenda2.0(2021)

Black; Continued menu from Agenda1.0
Red; New cooperation menu

1. Transparency

MRV, Inventory, Satellite data(GHG, land), SOER6, workshop on CF and LCA, risk disclosure of financial institution

2. Mitigation

(1) Long term Strategy and Policy Making

Scenario formulation, Policy dialogue, Platform for Redesign 2020

(2) Decarbonization of Each Sector

Fluorocarbons, Renewable Energy, Waste-recycle, Water-Air(co-benefit), Green Logistics(ship, port, airport, transport)

(3) Dissemination of Decarbonization Technologies through the JCM and related schemes

JCM(promote and scale-up by private finance), Co-Innovation (demonstration), JPRSI (public-private platform), Grant assistance for NGO project, Innovative technology(CCUS, clean Hydrogen), green investment

(4) Expansion of Zero Carbon Cities

City-to-City Collaboration, International forum, Smart City

3. Adaptation

AP-PLAT, Disaster Prevention(Mapping exercise, dam upgrading), Meteorological satellite data

Supporting Long term Strategy and Policy Making with AIM

- ✓ **Asia-Pacific Integrated Model (AIM)** is a large-scale simulation models, developed by research institutes in Japan, to assess policy options and pathways for decarbonization.
- ✓ MOEJ and AIM project team have provided technical support for **developing long-term strategy (LTS)** through scenario analysis and capacity development of researchers and policymakers.
- ✓ Indonesia, Thailand and Viet Nam (draft)'s long-term strategy on climate change refers to the contribution of AIM.



4.1. Scenario Development

4.1.1. Models for Mitigation Pathways

Indonesia used a set of models in developing the emission pathways with two stages of analysis. In the first stage, separate models were developed for modelling agriculture, forestry and other land uses (AFOLU), and energy. The AFOLU sector used AFOLU Dashboard (a spreadsheet model), meanwhile energy sector used AIM-EndUse and the AIM-ExSS (Extended Snapshot). In both models, economic and population growth are the key drivers for changes in food and energy demand. In the second stage, the economic and economic impact of both AFOLU and energy sector mitigation are analysed by utilizing the Asia Pacific Integrated Model/Computable General Equilibrium (AIM/CGE)-Indonesia (see Figure 3).

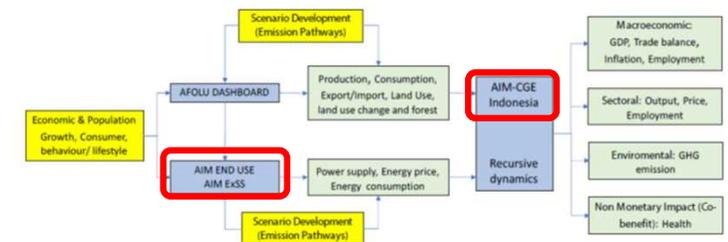


Figure 3. Models for developing emission pathways in Indonesia

Implementation of the JCM

- ✓ At COP26 in 2021, the Rulebook for Article 6 (market mechanisms) of the Paris Agreement was concluded, paving the way for utilizing market mechanisms to reduce global emissions.
- ✓ Japan will take the following three actions for implementation of the Article 6.

<3 Actions>

1. Expand JCM partner countries and strengthen project development and implementation in collaboration with international organizations;

- For achieving the target of the JCM, accelerating consultations to **expand partner countries up to approximately 30 countries worldwide by around 2025, from the current 17 countries.** (June 2022, Cabinet Decision)
- Strengthen cooperation with **the Asian Development Bank (ADB), the UN Industrial Development Organization (UNIDO), the World Bank, and others**

2. Scale up the JCM by mobilizing further private finance

3. Contribute to the global operationalization of market mechanisms

- Support capacity building for relevant officials and project developers with **UNFCCC's Regional Collaboration Centre (RCC).**





Summary

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