

Climate Change Policy Challenges in 2024

—Pathways to 2035 Reduction Targets and Addressing Emerging Policy Challenges—

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Key Messages of the Presentation

- **Global Impact of the Energy Crisis and Policy Responses**

The energy crisis in Europe, triggered by Russia's invasion of Ukraine in 2022, has affected the whole world. As a result, major advanced economies, including Japan, have implemented subsidy programs to reduce the burden of soaring energy prices on consumers. In addition, some advanced economies are becoming more careful about implementing policies that could increase energy costs. For example, in September 2023, British Prime Minister Sunak acknowledged that inadequate explanations had been given to the public regarding the high-cost policies put in place to date with the aim of achieving net-zero targets. He expressed a commitment to more practical measures, transparently disclosing the relevant costs, and seeking public consent for the implementation of measures. This change in approach by the UK, one of the world's climate change leaders, is significant when forecasting global climate change policies for 2024.

- **2024 Climate Change Policy Outlook and Key Events**

In 2024, the primary focus among international climate change-related events is on the submission of Nationally Determined Contributions (NDCs) for 2035 by member economies. These new NDC will be formulated in response to the outcomes of the Global Stocktake (GST), as agreed at the 28th Conference of the Parties (COP28) to the UN Framework Convention on Climate Change (UNFCCC). Furthermore, the first post-Brexit European Parliament elections are scheduled to be held in June, while the U.S. presidential elections are scheduled to take place in November. The outcomes of these events may also have an impact on global climate change policies and the formulation of NDCs by each country.

- **2024 Japan's Domestic Climate Policy Focus**

With regard to domestic trends in 2024, the focus will be on establishing Japan's NDC targets for 2035 and the review of policies to secure it. In light of the 1.5°C goal reduction pathways based on IPCC AR6, presented in the GST decision adopted at COP28, the key questions are what level to set Japan's targets at, and which areas to strengthen measures in. If Japan were to set ambitious targets, it will be necessary to mobilize all policies. On the other hand, in order to realize efficient reductions, it will be necessary to conduct a review based on an organization and review of existing policies.

- **Legislative Developments for Growth-Oriented Carbon Pricing in Japan**

The GX Promotion Act, enforced in May 2023, prescribes the future introduction of growth-oriented carbon pricing. Looking ahead to the full-scale operation of the emission trading system in FY2026, a GX-Surcharge (levy on fossil fuel importers, etc.) will be introduced in FY2028, and a specified business operator contribution (the paid allocation of emission allowances power generation companies) will be introduced in FY2033. The necessary legislative measures will be put in place within the next two years for the operation of these systems under the GX Promotion Act, and assuming that a bill is submitted to the ordinary Diet session in 2025, FY2024 is expected to be a peak period for discussions toward the formulation of operational rules for carbon pricing.

- **The Importance of Public Engagement in Climate Policy**

When using powerful policy tools that could increase energy costs—a vital resource for citizens and a base for industrial activities—or that could significantly change society and lifestyles, it is essential to conduct thorough reviews and provide clear, careful explanations to the public. This is an indispensable process to gain society's support.

28th Conference of the Parties (COP28) to the UN Framework Convention on Climate Change

- Convened from November 30 – December 13, 2023 in United Arab Emirates
- Summary of the first Global Stocktake
 - The Global Stocktake (GST) is a framework for assessing overall progress toward the achievement of the purposes and targets of the Paris Agreement every five years. The outcomes of the GST are used to probe more deeply and expand the next round of NDCs, scheduled for 2025. (*Note, however, that the GST is not a framework for evaluating the targets set by each country.)
 - COP28 marks the final year of the first GST, and work was undertaken to produce the deliverables after carrying out information gathering/preparations and the technical assessment.
 - The first GST focused on the treatment of fossil fuels.
- Losses and damages
 - A decision was adopted early in the session on putting into operation new financing measures, with a view to addressing the damages and losses associated with climate change. There are plans to establish a new fund under the World Bank.
- 2024 session to be convened in Azerbaijan
 - For the second consecutive year, a country whose main industry is fossil fuel production will host the conference.



Held at the site of the Expo 2020 Dubai venue (photograph taken by the presenter)

Global Stocktake – Key Findings for the Mitigation Part –

- These findings will also have an impact on the approach to the review of the next round of NDC targets for 2035, scheduled for 2024.
- The next NDCs will be submitted to the UN by nine to 12 months before COP30 (around February 2025).

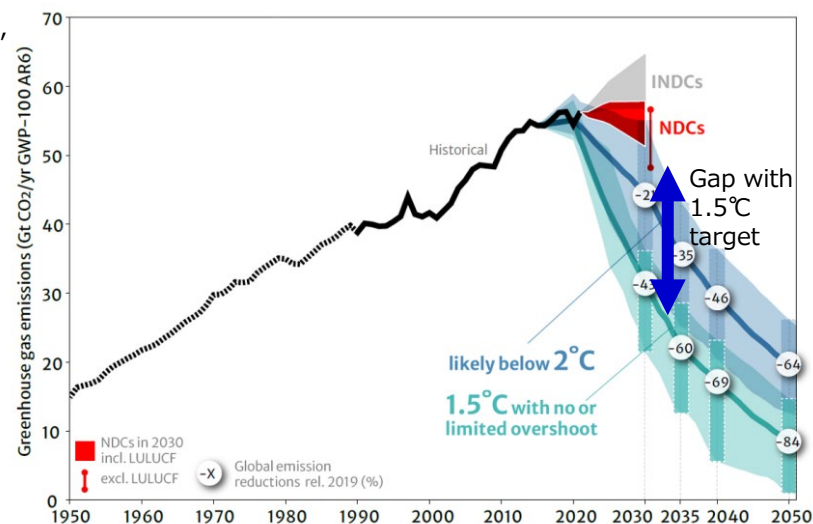
Decision on the Global Stocktake

- The decision recognizes the contents of the IPCC Sixth Assessment Report, which set out the need to reduce global greenhouse gas emissions by 43% by 2030 and 60% by 2035, compared to 2019 levels, and to achieve net zero CO₂ emissions by 2050, in order to keep global temperature rise below 1.5°C (hereafter, "GST pathway"). However, emission reduction pathways are tailored to varying national circumstances, taking into consideration sustainable development, poverty eradication, and equity.

List of countermeasures

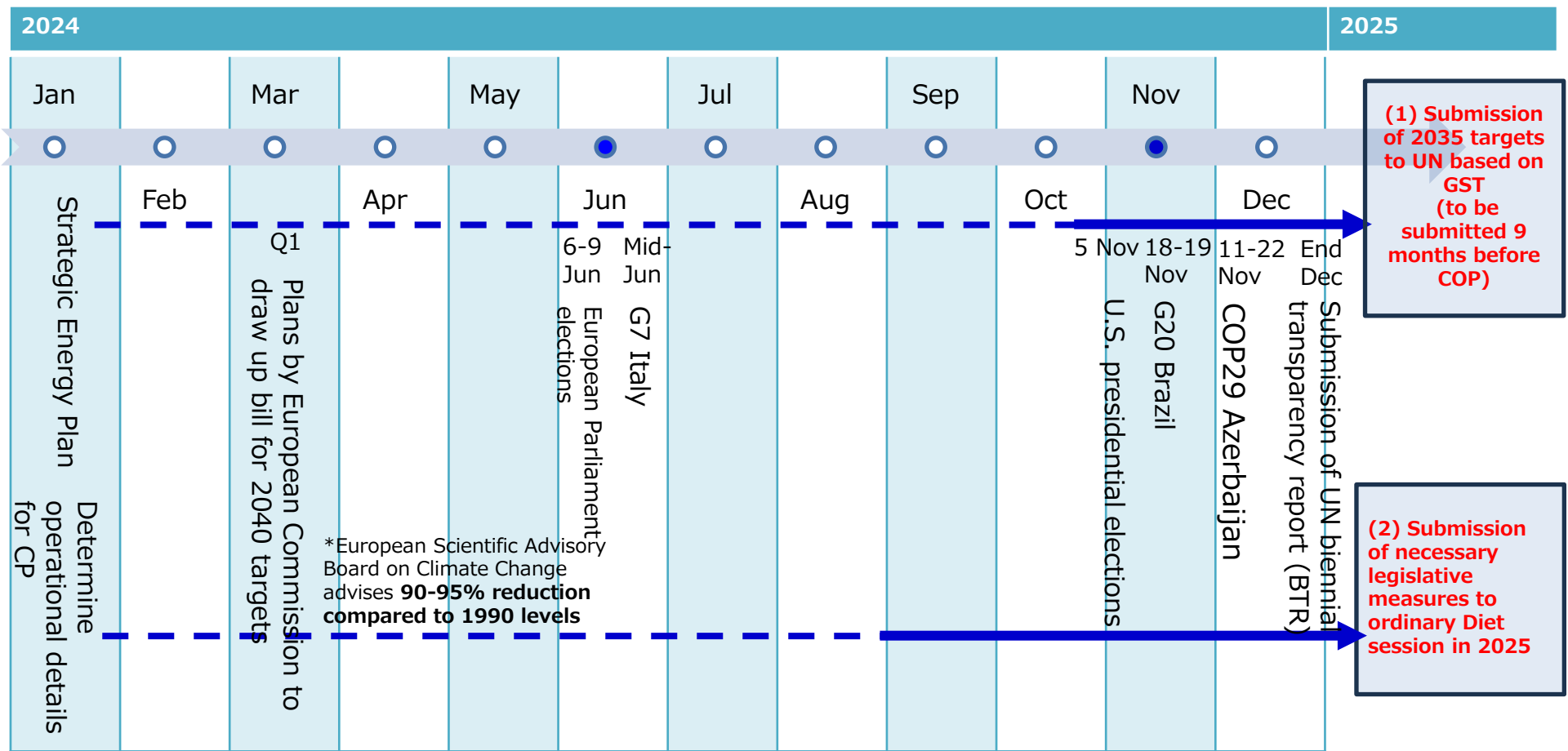
- Triple the capacity of renewable energy facilities and double the improvement rate of energy saving by 2030
- Accelerate efforts to phase down coal-fired power generation, for which reduction measures have not been taken
- Accelerate efforts toward energy systems that use zero or low-carbon fuels (particularly before or around the middle of this century)
- Promote efforts to transition away from fossil fuels in a just, orderly, and equitable manner ("Transitioning away from fossil fuels in energy system") (particularly "in this critical decade" of the 2020s)
- Accelerate reduction/removal technologies such as CCUS in the renewable energy and nuclear energy sectors, and especially in hard-to-abate sectors, as well as zero and low-carbon technologies such as low-carbon hydrogen
- Accelerate and significantly reduce non-carbon dioxide emissions, include methane emissions, globally (by 2030 for methane in particular)
- Develop infrastructure and swiftly introduce zero-emission/low-emission vehicles
- Abolish, as soon as possible, inefficient fossil fuel subsidies that do not address energy poverty or just transition

Comparison of emissions in previous INDCs and latest NDCs, and emissions under the 1.5°C pathway and "well below 2°C" pathway in the IPCC Sixth Assessment Report



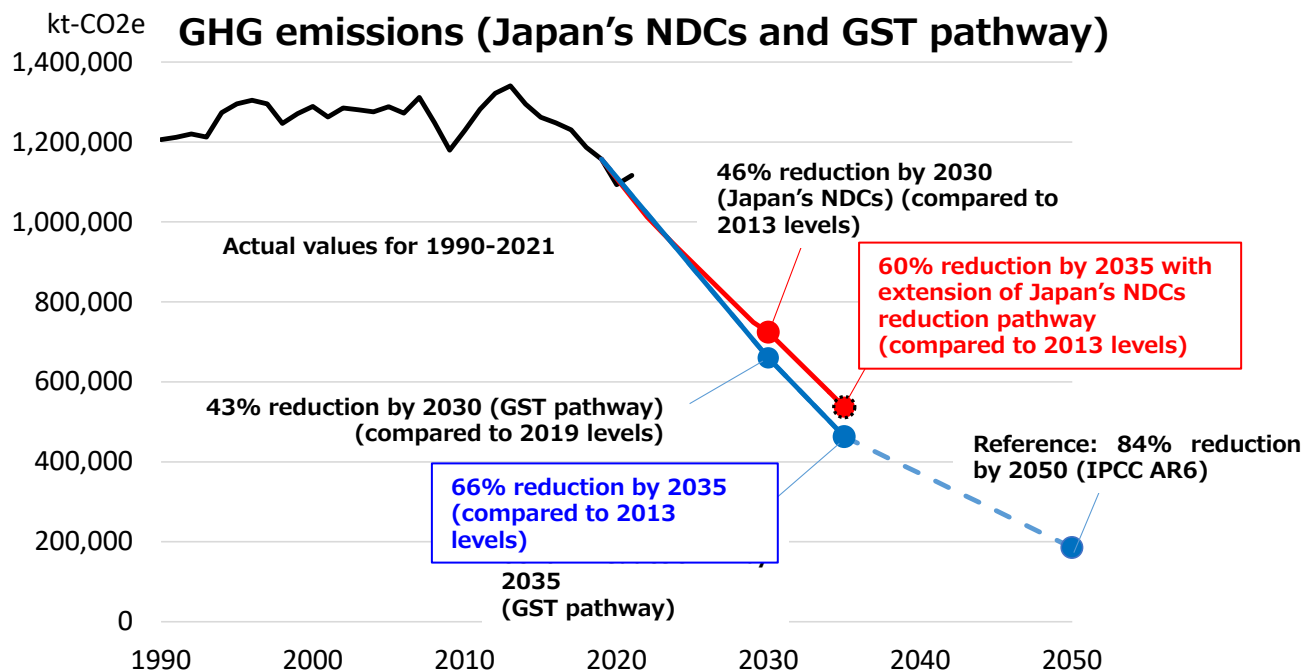
Source: UNFCCC, Technical dialogue of the first Global Stocktake, Synthesis report by the co-facilitators on the technical dialogue, October 2023

Key Political Events in 2024 — Influencing Japan’s climate change policies —



Review of Japan's GHG Emission Reduction Targets (2035) Based on the First Global Stocktake

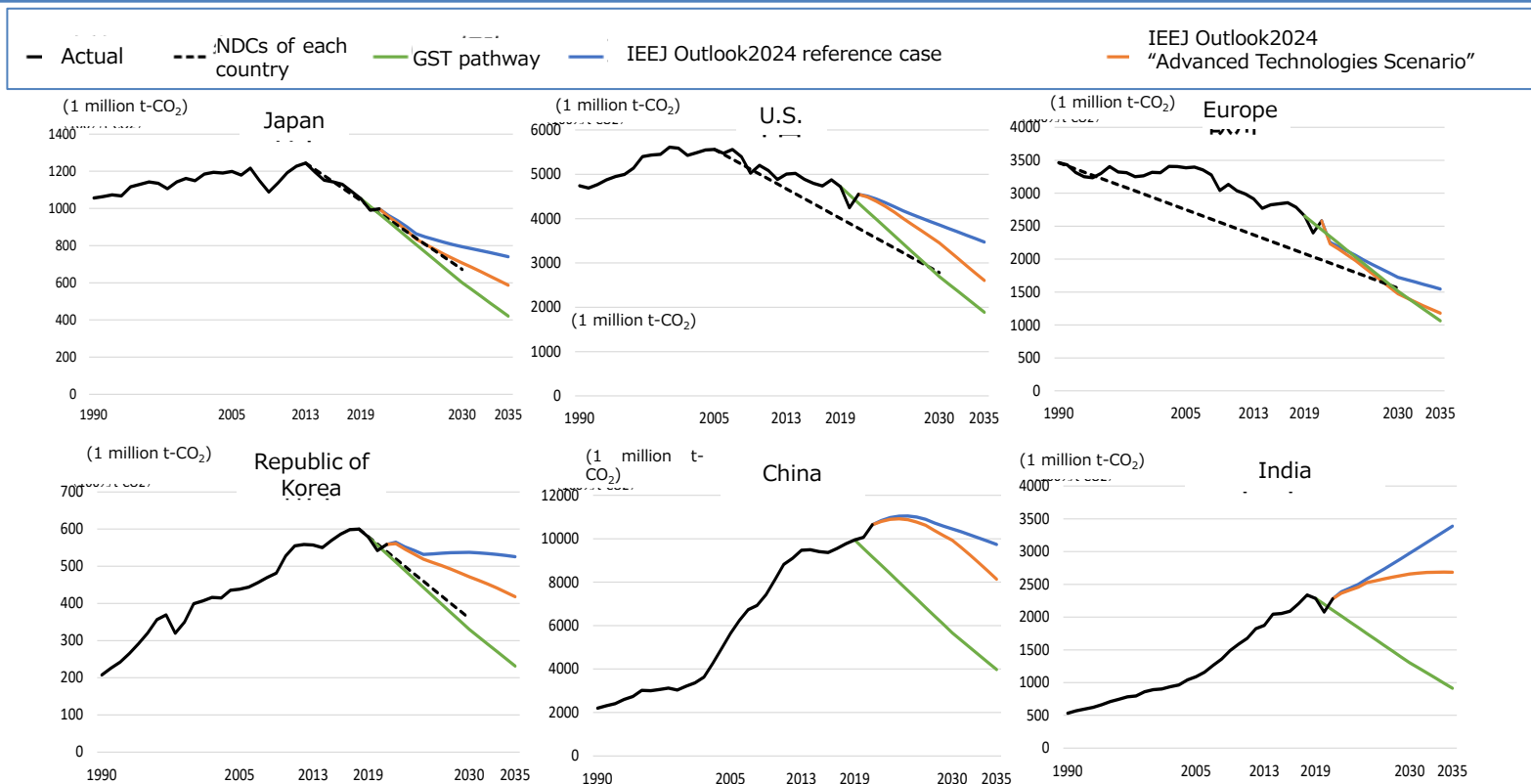
- Under Japan's current NDC target path, it will achieve a 60% reduction by FY2035 (compared to FY2013 levels).
- However, the 60% reduction by FY2035 (compared to FY2019 levels) presented in the GST pathway represents a 66% reduction compared to FY2013 levels. There is still a 6% gap between the GST and Japan's current NDC pathway.



Source: Prepared by the reporter based on UNFCCC, "GHG Inventory"

Gap with the GST pathway

- Although emissions are on a declining trend in developed economies, a gap remains with the GST pathway even under the "Advanced Technologies Scenario" presented in IEEJ Outlook that projects the maximum adoption of technologies and policies
- In China, the gap is even wider despite reaching peak emissions in 2030, and the gap is on an increasing trend in India.



Results of Outlook 2024 by The Institute of Energy Economics, Japan; edited.

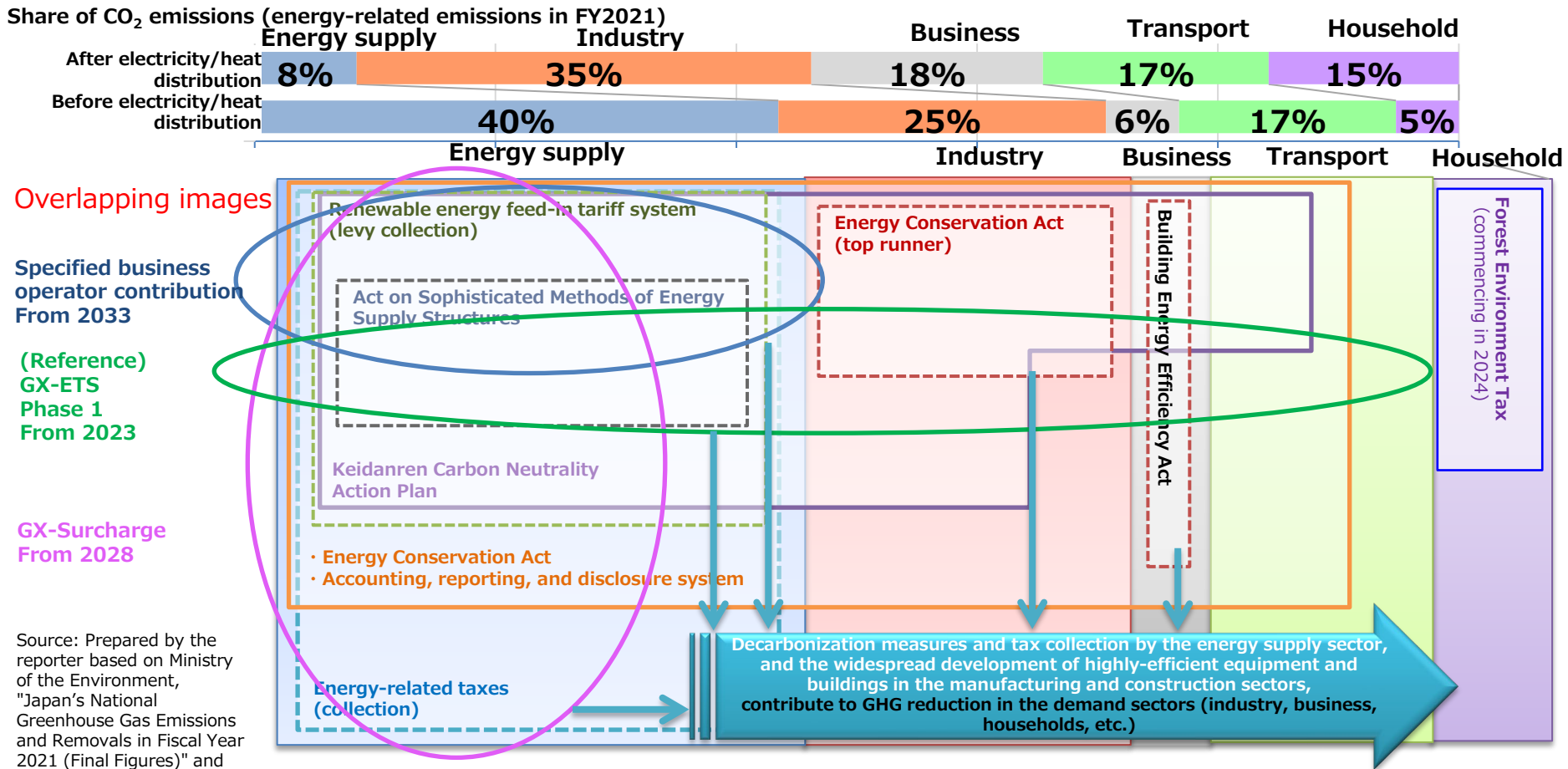
Note: The target values for NDCs and GST are for GHG, but only CO₂ is indicated in this figure. As the figures for China and India are CO₂ intensity targets, the NDC targets have not been included in this figure.

Perspectives on Policy Reviews toward the Next Japan's NDC

- **Organizing the relationship with existing policies**
 - Reviews on the overlap with existing systems and mutual interaction/countervailing effects, as well as policy assessments, are important prerequisites to ensure efficient system design. (Reviewing implicit carbon pricing is essential because making it explicit could ensure compatibility with the Carbon Border Adjustment Mechanism (CBAM))
- **Alternative means of energy and technologies**
 - If alternative energy and technologies do not exist, it could become an excessively heavy burden on specific sectors/business operators. When introducing carbon pricing systems, it is vital to secure alternative means at an appropriate price and appropriate volume at the same time.
- **Addressing international competitiveness and burden on the public**
 - The burden on industry subsectors and households varies by region. In addition to considering which decarbonization technologies to invest in, ensuring the fairness of the system is also important.
 - As the use of energy, which is a lifeline for the people, imposes a burden at least in the short term, it is essential to consider systems that incorporate measures to alleviate the burden.
- **Option of overseas reduction**
 - It is difficult to achieve CN targets by 2050 through domestic reduction alone. It is necessary to put early effort into mechanisms and initiatives that contribute to reduction overseas, which will make it possible to achieve greater reductions and reduce costs at the same time.
 - The treatment of overseas credits in the domestic carbon pricing system is an important matter to consider.
- **Cost pass-through/Price signals**
 - It is important to understand the extent to which the carbon costs/reduction costs of new carbon pricing policies are passed through to end users, as well as how reduction will be promoted. Understanding the extent of cost pass-through is also essential for efficient system design.
 - Mechanisms that function as signals to end users are necessary.
- **Transparency/Accountability**
 - Appropriate, honest, realistic, and easy-to-understand explanations about the effects and burden of systems to the public are important prerequisites when reviewing the system.

Bird's-Eye View on Current Policies that Contribute to Climate Change Measures (Explicit/Implicit carbon pricing)

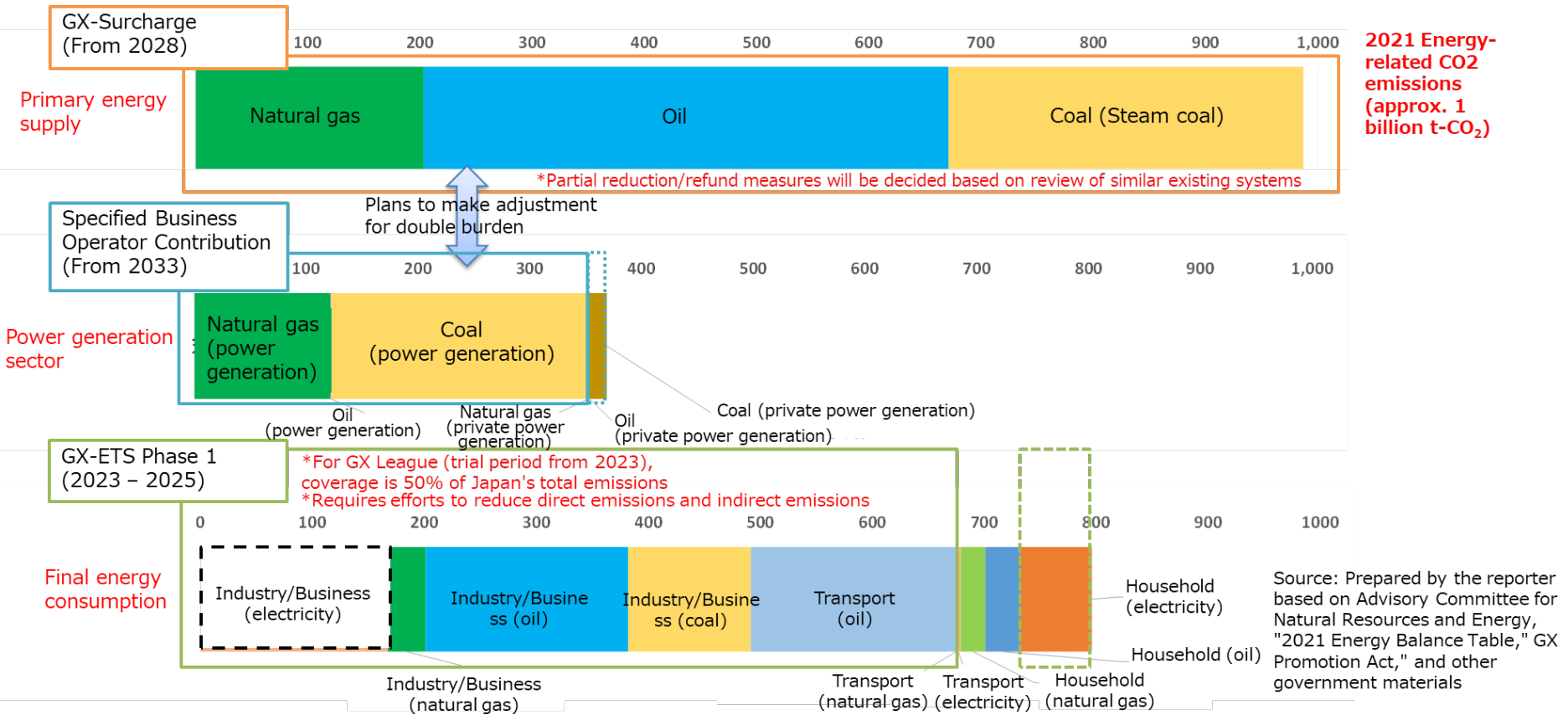
- Japan's current policy mix is designed to ensure the effectiveness of measures across all sectors including energy supply, industry, transport, and household sectors. However, prior to the introduction of new measures, it is crucial to examine the differences in impact and the potential for duplication among these target groups. Moreover, evaluating potential overlaps with existing measures is essential to ascertain their synergistic or countervailing effects.



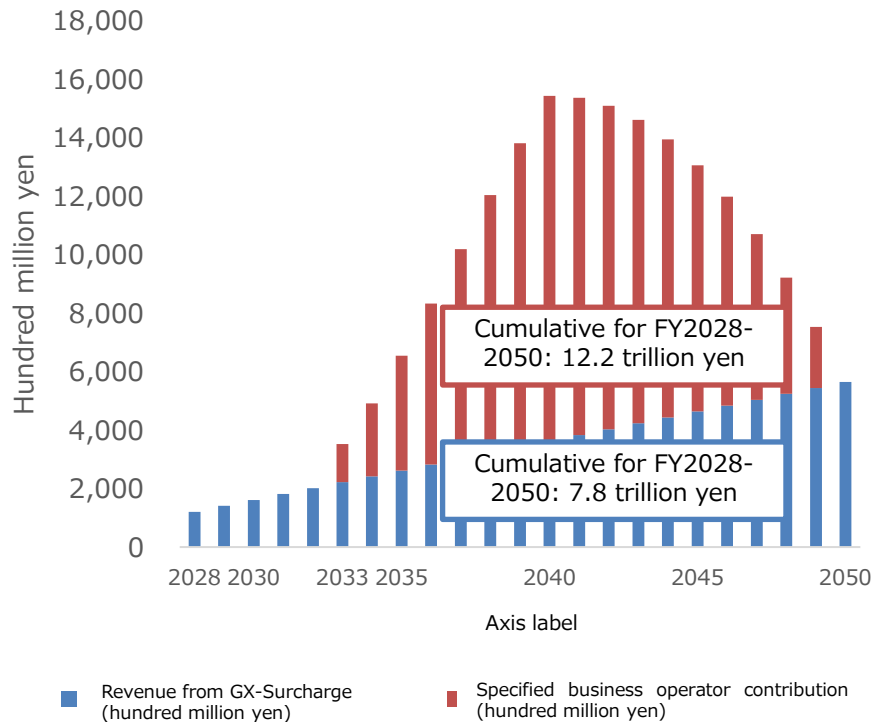
Source: Prepared by the reporter based on Ministry of the Environment, "Japan's National Greenhouse Gas Emissions and Removals in Fiscal Year 2021 (Final Figures)" and other materials

Energy Use Coverage by Growth-Oriented Carbon Pricing

- There are plans to introduce GX-ETS (2026 with trial in 2023), GX-Surcharge (2028), and specified business operator contribution (2033).
- The design of these systems will be a major challenge in 2024.



Reference: Estimated Revenue from GX-Surcharge and Specified Business Operator Contribution



Source: Shimizu and Sakamoto, "Carbon Pricing that will Generate 20 Trillion Yen in Revenue," August 2023

[Assumptions for trial calculations]

- Estimated that revenue from GX-Surcharge and specified business operator contribution from FY2028 to FY2050 will be 20 trillion yen.
- Energy-derived CO₂ emissions: The following scenarios were set based on the estimation of residual emissions in the long-term scenario to 2050 by RITE and NIES
 - ✓ FY2030: Achievement of NDC targets
 - ✓ FY2031 – 2050: 90% linear reduction compared to FY2013 levels
- Energy-derived CO₂ emissions from the electricity sector, which will be subject to specified business operator contribution from FY2033
 - ✓ FY2030: Achievement of energy mix set out in the current Strategic Energy Plan (62% reduction compared to FY2013 levels)
 - ✓ FY2031 – 2050: Setting of decarbonization (zero emissions) in 2050
 - ✓ Paid allocation ratio: In FY2033, power generation companies will be required to procure 20% of their emissions through auction, and it is assumed that this ratio will be gradually raised to 100% by FY2040.
- The unit prices of GX-Surcharge and specified business operator contribution are not linked and are estimated independently.

[Results of trial calculations]

- Unit prices are as follows based on the assumption that total revenue from FY2028 – 2050 is approximately 20 trillion yen.
 - ✓ GX-Surcharge from FY2028 – 2050: Gradual increase from 220 yen to 6,100 yen
 - ✓ Specified business operator contribution from FY2033 – 2050: Gradual increase from 1,000 yen to 24,000 yen
- Cumulative revenue from FY2028 - 2050
 - ✓ GX-Surcharge: 7.8 trillion yen
 - ✓ Specified business operator contribution: 12.2 trillion yen

Discussions on the Design of the Growth-Oriented Carbon Pricing Scheme will be Intense in 2024

Main points considered in system design

- **GX-Surcharge (from 2028)**

- While this is also dependent on operational rules in the future, the unit price of surcharge will change every year to secure 20 trillion yen in revenue (the unit price of surcharge is the amount obtained by dividing the total required amount for the fiscal year in question, by the emissions volume expected for the fiscal year in question). It is necessary to take measures to ensure predictability.
- It is necessary to design systems that promote cost pass-through to the end users and serve as a signal for reducing emissions.

- **Specified business operator contribution (from 2033)**

- Range of upper/lower price limits in auctions
- Setting a period for the gradual transition to paid allowances

- **GX-ETS**

- Positioning of upper and lower price limits. A wide price range will lead to weak stabilization measures, while an excessively narrow range will lead to rigid measures. Therefore, it is important to set an optimal price band. It is important to form prices that encourage more companies to create excess emissions quotas.

(From 2026)

- Build fair and transparent frameworks between sectors and companies
- Details of operational rules
 - Measures for attracting more participants
 - Private third-party certification to verify if targets are aligned with government guidelines
 - Considering strengthening discipline (guidance and supervision, duty of compliance, etc.)

(From 2033)

- Treatment of sectors other than power generation sector