



経済産業省

Ministry of Economy, Trade and Industry

Japan's Policies toward Achieving Green Transformation

Yuto OTA

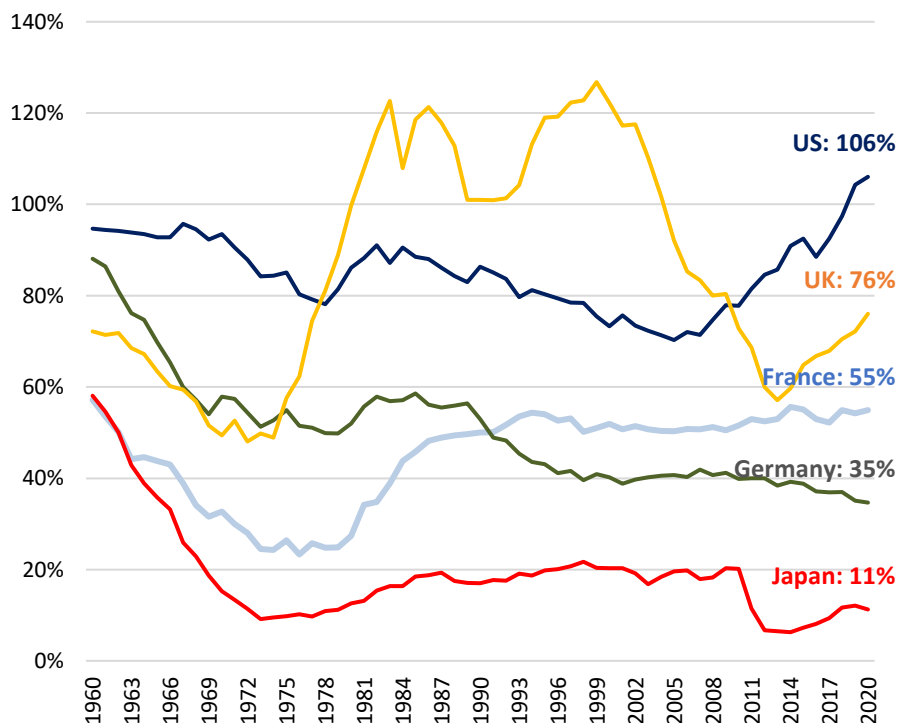
Environmental Policies Division,

Ministry of Economy, Trade and Industry

Purpose of Achieving Green Transformation in Japan

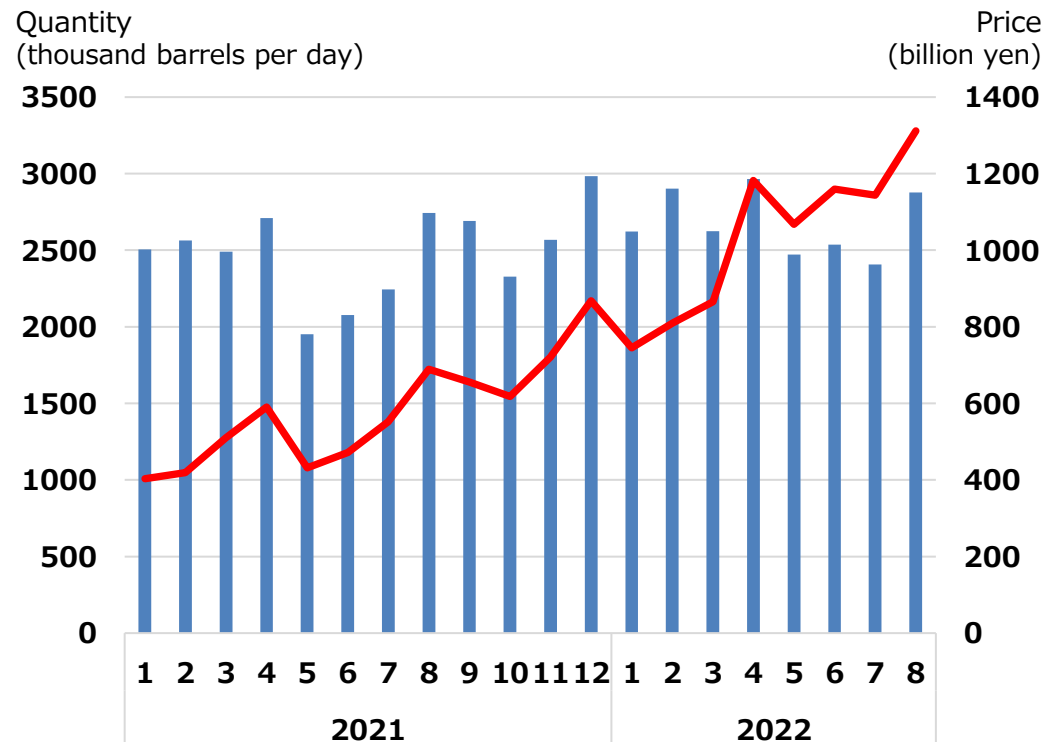
- Economies headed to achieving carbon neutrality have reached **94% of the world's GDP** as of 2023. It is important to promote investments towards this global trend.
- In addition, **Japan is heavily dependent on imported fossil fuels**. The risks associated with this structure has especially become apparent under Russia's invasion of Ukraine.
- To achieve **long-term sustainable growth**, it is important for Japan to transform its economic and industrial structure based on clean energy (= **Green Transformation**).

Comparison of Energy Self-Sufficiency Rate



(Ref) IEA database

Soaring Imports of Crude Oil



(Ref) Ministry of Finance

Increasing Worldwide Government Support toward GX

- Economies are implementing **large-scale, long-term measures to promote investment**.
 - The **EU** has set a goal of achieving **1 trillion euros of investment in 10 years**.
 - The **US** has passed the **Inflation Reduction Act** in August 2022 that provides **369 billion dollars of government support** over the next 10 years.
- Promoting GX investment is now a decisive factor of national and business competitiveness.

Examples of Worldwide GX Investment Promotion by Governments

Area	Goals/Measures	Reduction Target	GDP
EU 2020.1.14	1 Trillion Euros of public and private investments in 10 years	▲55% in 2030 (base year: 1990)	\$17.9 Trillion
US 2022.8.16	369 Billion Dollars of government support in 10 year (Inflation Reduction Act)	▲50-52% in 2030 (base year: 2005)	\$23.0 Trillion
Germany 2020.6.3	190 Billion Euros of government support mainly in 4 years	▲55% in 2030 (base year: 1990) ※EU-wide goal	\$4.2 Trillion
France 2020.9.3	30 Billion Euros of government support in 2 years	▲55% in 2030 (base year: 1990) ※EU-wide goal	\$2.9 Trillion
UK 2021.10.19	26 Billion Pounds of government support in 8 years	▲68% in 2030 (base year: 1990)	\$3.2 Trillion

(Ref) Disclosures by each government, exchange rate as of October 2022

GX Promotion Strategy of Japan

- Based on the **GX Promotion Act** (enacted May 2023), the Japanese government has adopted the **“GX Promotion Strategy”** in July 2023 (cabinet decision).
- To promote GX (green transformation) which enhances transition from a fossil fuel-oriented economic and industrial structure since the Industrial Revolution to a clean energy-oriented one, the **Strategy sets forth necessary policies to be implemented.**

1. Green Transformation based on the Steady Supply of Energy

- ① **Efforts to promote energy saving**
- ② **Renewable energy as a major source**
 - Grid development
 - Next generation solar panels and offshore wind
- ③ **Utilization of nuclear energy**
 - Replacement to next generation plants
 - Extension of operation periods of existing plants with safety as a premise and under specific terms
- ④ **Other efforts**
 - Support towards hydrogen and ammonia
 - Research & development, investment promotion and demand creation in carbon recycle fuel, batteries and other areas

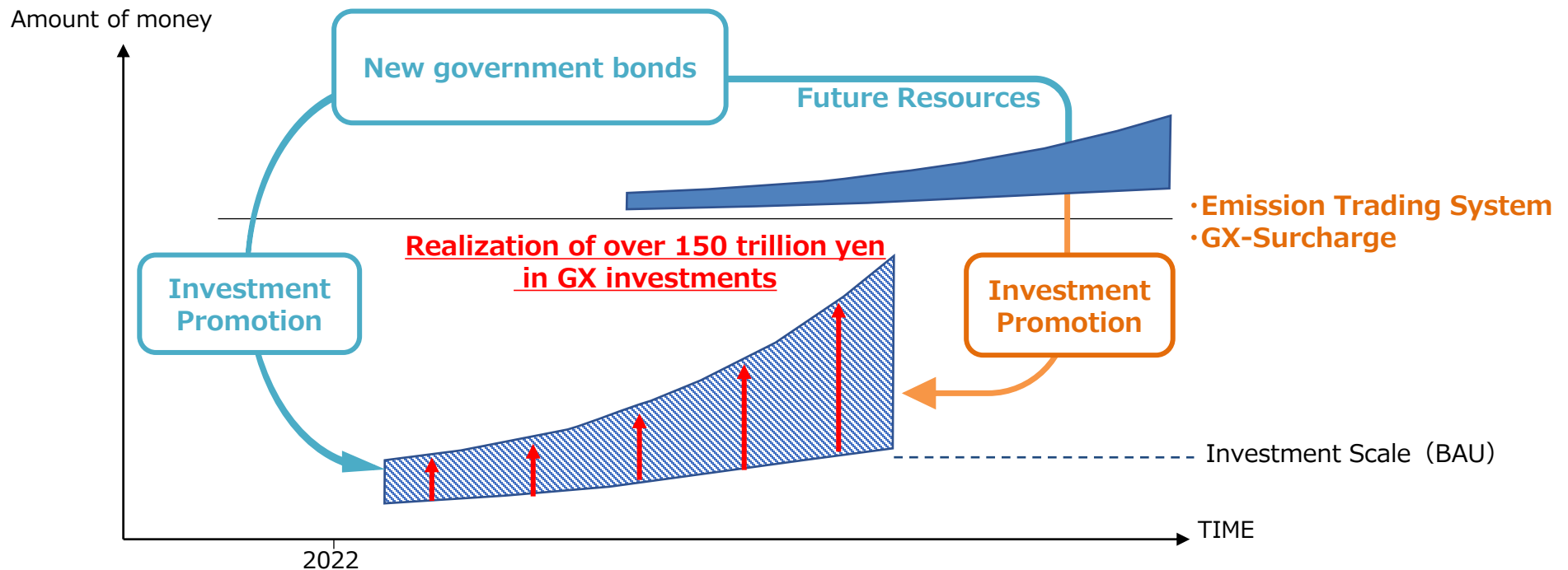
2. Implementation and realization of “Pro-Growth Carbon Pricing Concept”

- ① **Upfront investment support provided through issuing GX Economy Transition Bonds (20 trillion yen in 10 years)**
- ② **Adoption of Pro-Growth Carbon Pricing**
 - i. Emission Trading System 【FY2026~】
 - ii. Auction of emission quotas by power producers 【FY2033~】
 - iii. Carbon surcharges for fossil fuels 【FY2028~】
- ③ **Utilization of new financial measures**
- ④ **International cooperation**
- ⑤ **Social measures to promote GX (just transition, demand creation, SMEs)**

Pro-Growth Carbon Pricing Concept

To promote the GX investment as described above, a "Pro-Growth Carbon Pricing Concept" will be embodied and implemented.

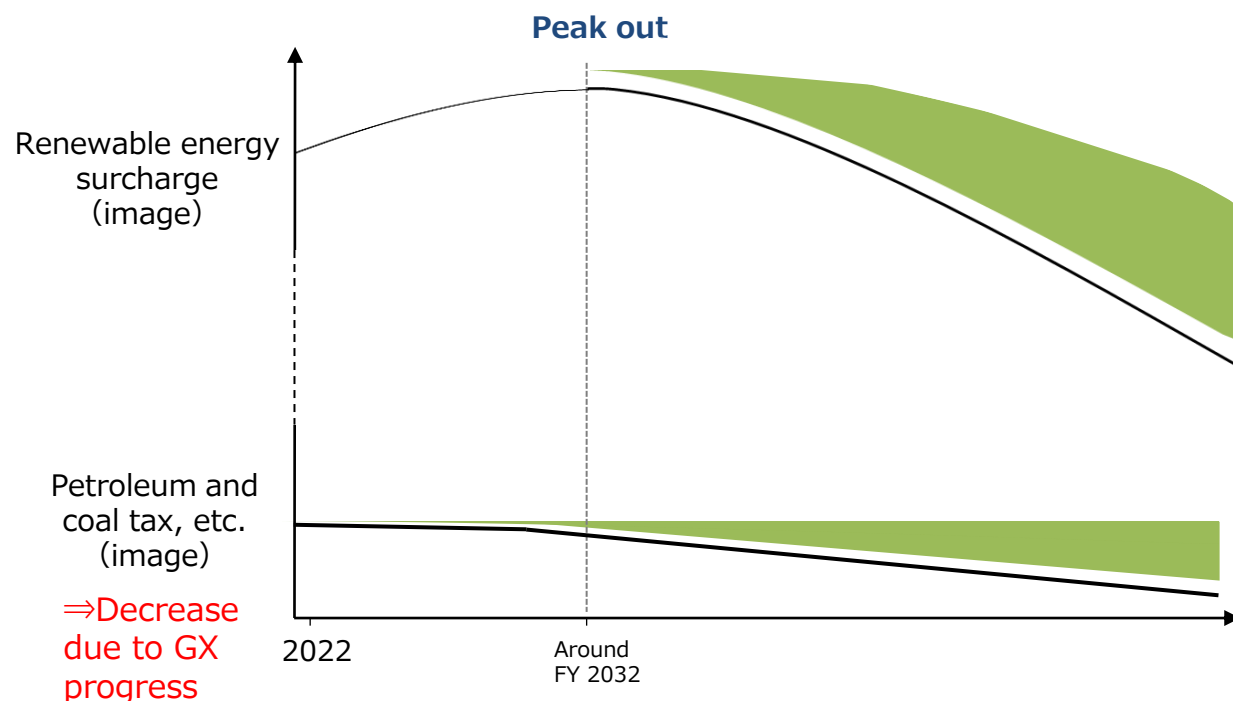
- ① **Government support for bold upfront investment** by issuing **new government bonds** (20 trillion yen over the next 10 years)
- ② **Introduction of carbon pricing to give incentives for GX investment**
 - (1) Full-scale operation of **emissions trading system** in high emission industries [**from FY2026**].
+ Auctioning to be phased in gradually to **power generation companies** [**from FY2033**]
 - (2) Introduction of a **Surcharge** on fossil fuel supply [**from FY2028**]
- ③ Strengthen financial support through public-private partnership



Medium- to Long-Term Image of Pro-Growth Carbon Pricing

- The principle for introducing these carbon pricing schemes is that they will be **synchronized with medium- to long-term reductions in total energy costs.**
- To be specific, their introduction will be planned to align with the **expected decrease in petroleum and coal tax** as a result of the GX evolution and the **decrease in total renewable energy surcharge revenues** after it peaks as a result of falling renewable energy purchasing prices.

Medium- to long-term transition image



Gradual introduction to the extent that the amount of the burden decreases
(Measures totaling 20 trillion yen)

Auctioning for power generation utility (from FY 2033)
+
GX Surcharge (from FY 2028)

Image of investments to be realized through government support

Breakdown of government support over the next decade funded by new government bonds

20 trillion yen

Expansion of non-fossil energy

6~8 trillion yen

Research and development of new technologies related to renewable energy
Support for demand expansion of hydrogen and ammonia

Transformation of industrial structure on both supply and demand sides & Drastic reinforcement of energy saving

9~12 trillion yen

Energy conservation and fuel conversion for structural reform and improving profitability in the manufacturing industry
Achieve drastic energy savings
Nationwide domestic demand measures

Resource recycling and carbon fixation technologies etc.

2~4 trillion yen

R&D and implementation of new technologies

Overall public and private investment over the next decade

150 trillion yen

60 trillion yen~

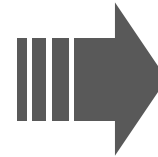
Massive introduction of renewable energy
Nuclear energy (R&D of innovative reactors, etc.)
Hydrogen and ammonia

80 trillion yen~

Energy saving and fuel conversion in the manufacturing industry (e.g., steel, chemicals, cement)
Digital investment for decarbonization
Establishment of battery industry
Structural transformation of ship and aircraft industries
Next-generation automobiles
Zero-emission Housing and Buildings

10 trillion yen~

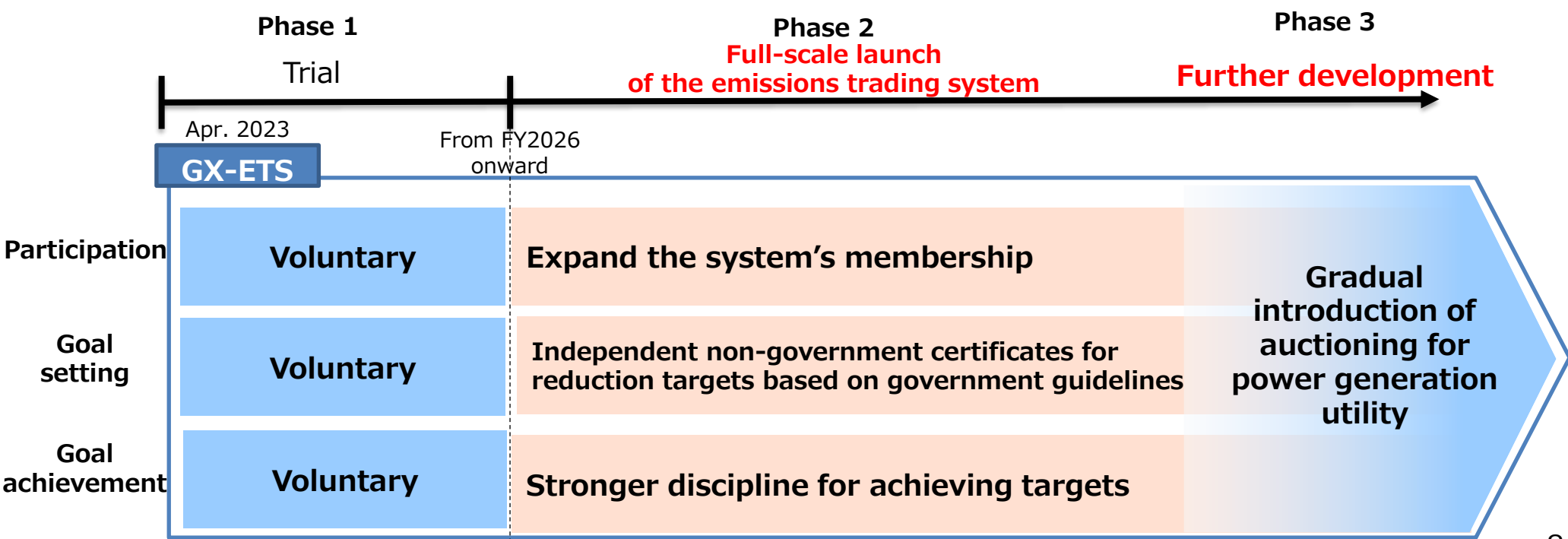
Resource recycling industry
Bio manufacturing
CCUS, CCS



Gradual Development of GX-ETS

- The **emissions trading system** is to be experimentally launched in FY 2023 and steered by the **GX League**. The GX League is a **voluntary scheme** based on member companies' leadership, with **participation of 568 companies accounting for about 53% of Japan's emissions**.
- Its further development will be discussed in line with the system's evolution and international developments.

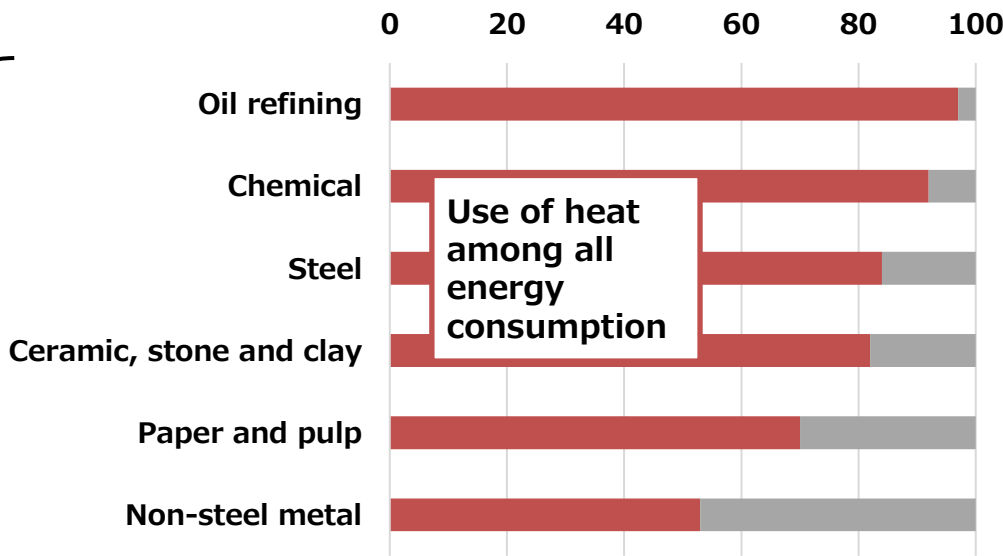
Gradual development of GX-ETS (image)



The Importance of Transition in Achieving Decarbonization

- To achieve decarbonization, **decarbonization of both electricity and other energy sources is important**. Japan's materials industry (accounting for approx. 30% of total emissions) has a **high ratio of heat use** among all energy utilization, and decarbonization of such areas (apart from decarbonization of electricity) is important as well.
- Such areas require the **development of new technology, which is a time-consuming and costly process**. **Transition finance that finances technologies that enable gradual emission reduction** of GHG intensive sectors is crucial, in addition to green finance that provides funds to efforts with zero or low emission (such as renewable energy).

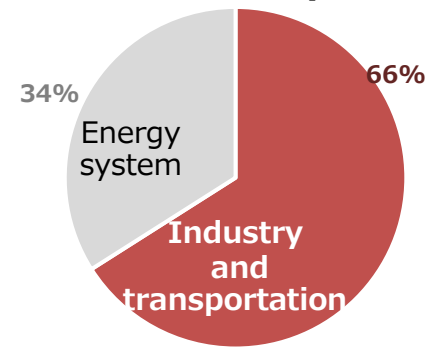
Heat use % among energy consumption (Japan)



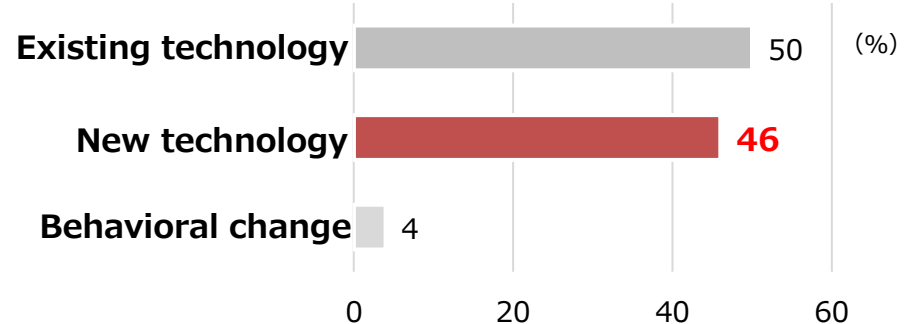
Accounting for approx. 30% of all emissions in Japan

Necessity of new technology for decarbonization

<CO2 Emission by sector>



<Contributing factors for carbon neutrality>

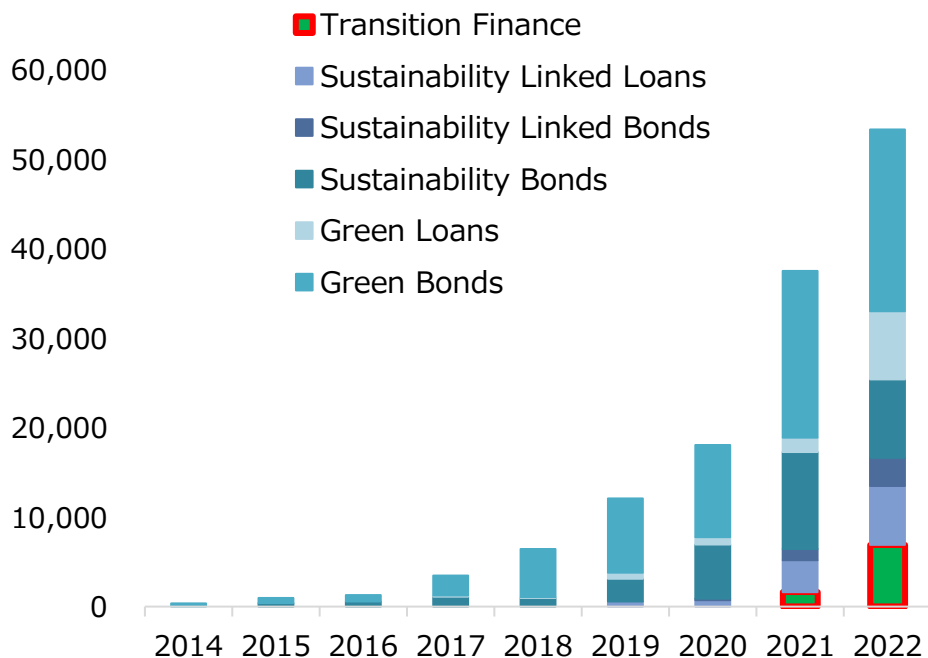


Enhancing International Understanding of Transition Finance

- To expand transition finance, the Japanese government will issue the **GX Economy Transition Bond** (1.6 trillion yen in 2023). It is to be **the first transition bond in the world to be issued by a national government**.
- The importance of transition finance is starting to be understood globally. In the G7 Hiroshima Summit held in 2023, **the G7 highlighted the importance of transition finance** for the first time.

Expansion of Green and Transition Finance

(hundred million yen)



G7 Climate, Energy and Environment Ministers' Communiqué

We also highlight that transition finance, in line with keeping a limit of 1.5°C temperature rise within reach, avoiding carbon lock-ins and based on effective emissions reduction, has a significant role in advancing the decarbonization of the economy as a whole.

“Future Milestones” for GX related areas

- To improve predictability of GX investments and create demand, **future milestones** have been created in 22 areas. **Both supportive and regulative measures** are shown.

