



# JAPAN'S GREEN TRANSFORMATION (GX) PLANS

- UPDATES -

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GR Japan  
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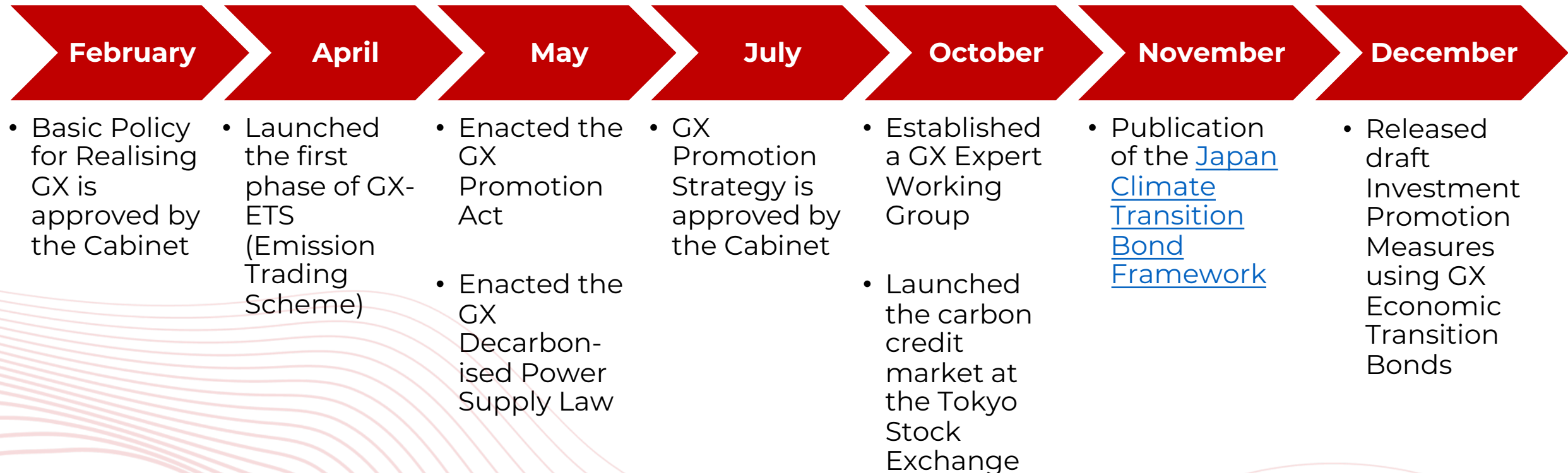
This report summarises the key developments in 2023 relating to Japan's Green Transformation (GX) Basic Plan. It builds on a [previous report by GR Japan on GX](#) published in January 2023. The content of the report is as follows:

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# Timeline of major GX developments in 2023

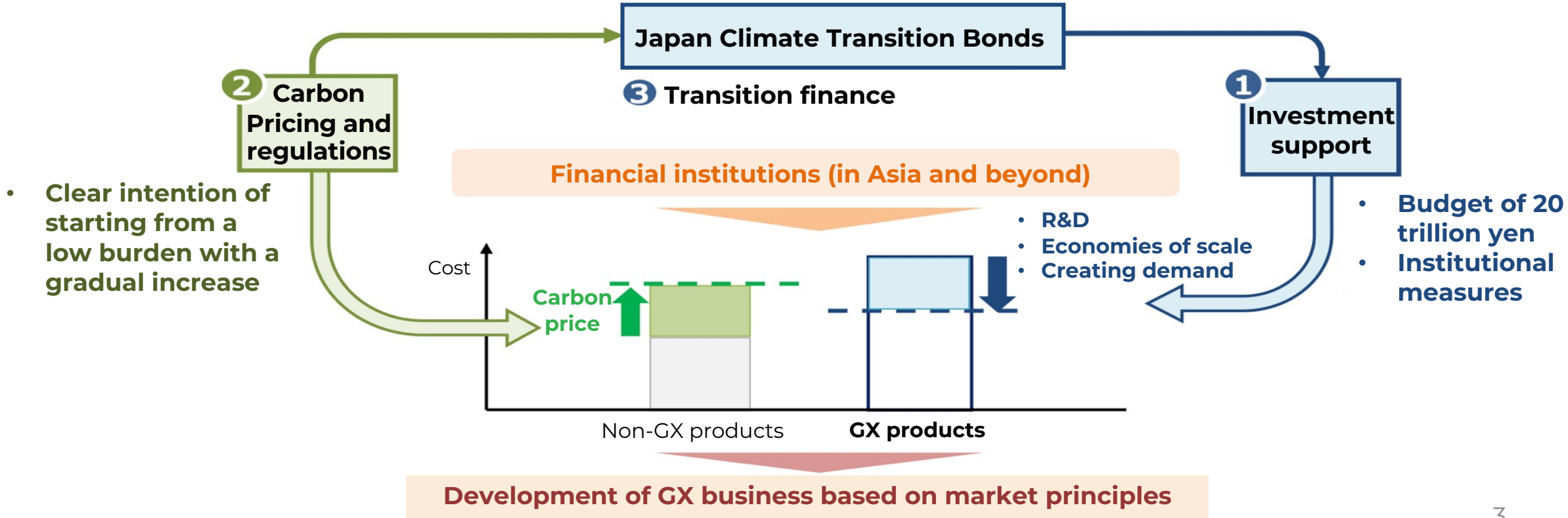
Since January 2023, there have been several noteworthy developments in relation to legislation, policies, carbon pricing, and GX Economic Transition Bonds.



# Key components of Japan's GX Promotion Strategy



- Throughout 2023 the government has focused on **two key pillars** to achieve its GX plans:
  - Issuing **Japan Climate Transition Bonds** (previously called 'GX Economic Transition Bonds')
  - Introduction of **Growth-Oriented Carbon Pricing**
- The combined aim of these two pillars is that the resources obtained through carbon pricing schemes will serve to repay the bonds. The revenue raised by the bonds will be invested into GX products and services to create a level playing field for next-generation low-carbon products and to accelerate the promotion of GX businesses.





# Investment Promotion Measures using Japan Climate Transition Bonds

- The government plans to issue **JPY 20 trillion of sovereign Japan Climate Transition Bonds** over the next ten years as a market catalyst to achieve JPY 150 trillion (approx. USD 1 trillion) of private-public investments to realise its GX goals.
- In November 2023, the government issued its **Japan Climate Transition Bond Framework** in line with the International Capital Market Association (ICMA) transition handbook and also obtained a Second Party Opinion (SPO) from two external reviewers, the Japan Credit Rating Agency and the international organisation, DNV.
- An **inagural issue totalling JPY 1.6 trillion yen with 5 and 10-year tenors** (around JPY 800 billion each) will take place in **Feburary 2024**.
- Proposed **priority investment areas were published in December 2023**. This set out how the government will allocate **JPY 13 trillion** of government funding for GX initiatives in **16 sectors**, alongside other tax incentives and cross-sectoral measures. Details of how the remaining JPY 7 trillion will be used are still being considered.
- Some of the **highest financial support to be directly provided by the government** is for **decarbonisation of the energy sector** (particularly for hydrogen and next-generation renewables) and the **hard-to-abate industries** (e.g. steel and chemicals). The Contract for Difference scheme is a key support mechanism for development of hydrogen. Alongside this in the energy sector, the government is focused on supply chain development for perovskite solar cells, floating offshore wind, water electrolysis equipment, and introduction of perovskites (“next-generation renewables”).
- Priority areas ranked by the investment amount the government is hoping to catalyse with its pump priming are the **automotive industry** (JPY 34 trillion~), **next-generation renewables** (JPY 20 trillion~) and **housing and buildings** (JPY 14 trillion~).
- The principles used to decide the use of proceeds places most weight on the **commercial viability and level of mass implementation** of new GX products/ technologies.
- *Further details on the announced areas for investment are set out in the tables in the Annex.*



# Growth-oriented Carbon Pricing

- Carbon pricing is to be implemented in two forms:
  1. A **carbon levy** to be imposed on fossil fuel importers from FY2028
  2. A **GX Emission Trading Scheme (ETS)** that began operations in FY2023
- The ETS started in 2023 with **voluntary participation by member companies of the GX League**. The plan is for it to be fully operational from FY2026. A paid auction will be implemented for the power sector through the ETS from FY2033.
- The carbon levy imposed on fossil fuel importers will start at an **initial low rate that will gradually increase over time** and will be announced in advance to encourage companies to accelerate GX investments.
- The government has stated it will consider Japan's emissions reductions status, overseas carbon prices, and organisational projections when setting a **reference price range** for carbon pricing. Projections by McKinsey and IEEJ are mentioned in METI materials.

Institution	Projected carbon price per tonne of CO2 in 2050
McKinsey	Approx. <b>36USD</b>
Institute of Energy Economics, Japan (IEEJ)	Carbon levy: Approx. <b>14-42USD</b>
	ETS paid auction: Approx. <b>83-131 USD</b>

## GX Promotion Organisation

- In FY2024, a GX Promotion Organisation will be established to oversee:
  - Provision of **financial support to companies** engaged in GX investments
  - Administration of the **carbon levy** and **operation of the ETS**
- To enhance the Organisation's financial support operations, the government will formulate support standards, establish a steering committee including experts, and will set regulations via prior consultations with METI.



Established in April 2022, the GX League is a network of **550+ Japanese companies** (accounting for more than 50% of Japan's emissions) committed to voluntary emissions reduction, decarbonising the supply chain, and creating green markets.

## **GX-ETS**

- In April 2023, Japan launched the first phase of the GX-ETS on a trial basis. Since then, participating companies have developed their emission reduction targets and submitted them to METI.
- From October 2024, companies in the GX League will begin trading their surplus emission reduction allowances.

## **Tokyo Stock Exchange carbon credit market**

- In October 2023, the Tokyo Stock Exchange (TSE) launched a new carbon credit market for trading existing carbon credits, known as J-Credits.
- As of 10 January 2024, there were 249 participants in TSE carbon credit market and of these, 82 were GX League members.

## **Three new working groups**

- In October 2023, the GX League announced the formation of three working groups focused on: (1) developing market rules for carbon credits; (2) management; and (3) human resources.



# New proposal on Tax Credits

- The GX Implementation Council began discussing new tax credits in December 2023. This **aims to support domestic production** in strategic sectors.
- The government plans to utilise proceeds from the Japan Climate Transition Bonds to introduce tax credits in strategic sectors, including **EVs, green steel, green chemicals and Sustainable Aviation Fuel (SAF)**.
- The proposed tax credits, once approved, will be applicable for **ten years**.

## Overview of proposed tax credits in strategic sectors

Strategic sectors		Proposed tax credit
EVs	EVs and FCVs	400,000 yen/vehicle
	Light EVs and PHEVs	200,000 yen/vehicle
Green steel		20,000 yen/tonne
Green chemicals		50,000 yen/tonne
SAF		30 yen/litre

# Support measures for SMEs and start-ups

- A menu of supportive measures, amounting to a total of **JPY 700 billion** over the next three years, will be implemented to assist the low carbon transition of SMEs, particularly to **improve energy efficiency** and **achieve zero-emissions for buildings**.
- Noting that Japan is behind other major economies in the number of GX/ cleantech startups, **JPY 200 billion** will also be allocated over the next five years to foster **start-up incubation**.





# Final remarks

- Overall, the government remains serious about implementing its GX plans in accordance with the GX Roadmap released in February 2023. These plans **involve huge investments into industrial and economic transformation**.
- The GX Plan is one of the main overarching policy frameworks of the Kishida administration. The **policy was created primarily to stimulate economic growth**, however, with a somewhat secondary focus on environmental aims and emissions reduction. The government is therefore focused on **supporting new green industry** and greening existing Japanese industry **to secure international competitive advantage**. This can be seen in the provision of **tax credits for key strategic sectors**, including EVs, green steel, green chemicals and sustainable aviation fuel.
- The sector level investment strategies published in December are focused on the provision of subsidies and support for R&D rather than any penalties or regulations to be enforced if emissions reduction targets are not met - i.e. the **policy in its current form is "all carrot and no stick"**. This raises the question of how much emissions reduction will be realistically achieved under this policy.
- Now the sector level investment strategies have been published, the **lead on GX will move from the Cabinet Office GX Implementation Council to ministries and agencies in charge of each area**. They will take forward work on individual bills and specific support programmes. Progress on this is unlikely to be uniform across ministries and sectors.
- The voluntary nature of the Emission Trading Scheme and the low initial carbon price has thrown some **doubt on the effectiveness of the planned carbon pricing schemes**, particularly whether voluntary participation and voluntary emissions caps will reduce emissions. To address these concerns, the government is currently reviewing how to ensure greater private sector participation in the ETS. For example, it may mandate companies that receive public GX funding to join the ETS and it is considering setting industry-specific guidelines for emission cut targets.
- Japan's GX plans cover the whole economy but there is still **concern that Japan may not be moving fast enough to ensure their decarbonisation plans are aligned with a 1.5-degree pathway**. 2024 will be an important year for GX as the bonds are launched and various schemes continue to be developed.

# Annex

## Investment Promotion Measures using Japan Climate Transition Bonds

(METI draft, December 2023)

# Investment Promotion Measures using Japan Climate Transition Bonds (METI draft, Dec 2023) (1/4)



	Public and private investment the government is looking to catalyse	Investment Promotion Measures using GX Economic Transition Bonds	Funding from 2022 & 2023 supplementary budgets [Appx. 3 trillion yen]	Financial support from FY2024 onwards	Notes *Subsidy rate for capital investment support is in principle 1/2 for SMEs, 1/3 for large enterprises
Manufacturing	<b>Iron/Steel</b> <b>Chemicals</b> <b>Paper pulp</b> <b>Cement</b> 3 trillion yen~ 3 trillion yen~ 1 trillion yen~ 1 trillion yen~	Capital investment support for production process conversion (innovative electric furnaces, ammonification of decomposition furnace heat sources, conversion to chemical recycling, biochemicals, CCUS, biorefineries etc.)	N/A	<b>5 years: 484.4 billion yen</b>	<ul style="list-style-type: none"> <li>Total support amount for capital investment in 4 sectors (iron/steel, chemicals, paper, cement) is <b>approx. 1.3 trillion yen over 10 years.</b></li> <li>Separate R&amp;D support for hydrogen reduction via Green Innovation Fund (GI Fund), as well as tax credits for green steel/green chemical production.</li> </ul>
Transportation	<b>Automobile</b> 34 trillion yen~	<ul style="list-style-type: none"> <li>Support for introduction of personal EVs</li> <li>Support for introduction of commercial EVs</li> </ul>	219.1 billion yen 54.5 billion yen	N/A	Separate R&D support via GI Fund for next-gen storage batteries/motors, synthetic fuels, as well as tax credits according to EV production volume.
	<b>Storage battery</b> 7 trillion yen~	Support for introduction of production equipment Support for introduction of stationary storage batteries	597.4 billion yen  N/A	<b>230 billion yen</b>  <b>3 years: 40 billion yen</b>	<ul style="list-style-type: none"> <li>230 billion yen allotted to Economic Security Fund</li> <li>Separate R&amp;D support for all-solid-state batteries via GI Fund</li> </ul>

# Investment Promotion Measures using Japan Climate Transition Bonds (2/4)



	Public and private investment the government is looking to catalyse	Investment Promotion Measures using GX Economic Transition Bonds	Funding from 2022 & 2023 supplementary budgets [Appx. 3 trillion yen]	Financial support from FY2024 onwards	Notes
Transportation	Aircraft	Support for next-gen aircraft core technology development	N/A	N/A	*Subsidy rate for capital investment support is in principle 1/2 for SMEs, 1/3 for large enterprises  ▪ To be considered based on the Next Generation Aircraft Strategy to be formulated within FY2023 ▪ Separate R&D support for SAF and next-gen aircraft via GI Fund, as well as tax credits according to SAF production volume  ▪ Separate R&D support for ammonia-powered ships via GI Fund
	Sust. Airline Fuel (SAF)	Support for SAF manufacturing and supply chain development	N/A	<b>5 years: 336.8 billion yen</b>	
	Ships	Support for introduction of production equipment for zero emission ships etc.	N/A	<b>5 years: 60 billion yen</b>	
Lifestyle	Lifestyle	<ul style="list-style-type: none"> <li>Support for home upgrades to insulated windows</li> <li>Support for high efficiency water heater installation</li> <li>Support for renovating commercial and educational facilities</li> </ul>	235 billion yen 58 billion yen 33.9 billion yen	N/A	<ul style="list-style-type: none"> <li><b>Approx. 2 trillion yen of support</b>, including automobiles, to be implemented <b>over 3 years</b> (including other than GX Economic Transition Bonds)</li> </ul>
	Resource Circulation	Support for building circular business models	N/A	<b>3 years: 30 billion yen</b>	<ul style="list-style-type: none"> <li>Separate R&amp;D support for thermal anaerobic conversion technologies via GI Fund</li> </ul>
	Semi-conductors	<ul style="list-style-type: none"> <li>Support for introduction of production equipment for power semiconductors etc.</li> <li>Support for technology development of AI semiconductors, photonics integration etc.</li> </ul>	432.9 billion yen 103.1 billion yen	N/A	<ul style="list-style-type: none"> <li>Separate R&amp;D support for power semiconductors via GI Fund</li> </ul>

# Investment Promotion Measures using Japan Climate Transition Bonds (3/4)



	Public and private investment the government is looking to catalyse	Investment Promotion Measures using GX Economic Transition Bonds	Funding from 2022 & 2023 supplementary budgets [Appx. 3 trillion yen]	Financial support from FY2024 onwards	Notes *Subsidy rate for capital investment support is in principle 1/2 for SMEs, 1/3 for large enterprises
Energy	Hydrogen 7 trillion yen~	Support focused on Contract for Difference (CfD)	N/A	<b>5 years: 457 billion yen</b>	<ul style="list-style-type: none"> <li>▪ <b>Approx. 3 trillion yen in support for CfD over 15 years</b>, from start of supply</li> <li>▪ Separate R&amp;D support for supply chains via GI Fund</li> <li>▪ Hub development to be considered based on separate feasibility studies</li> </ul>
		Development of supply hubs for hydrogen	N/A	N/A	
	Next-generation renewables 31 trillion yen~	Support for supply chain development of perovskite solar cells, floating offshore wind, water electrolysis equipment, and introduction of perovskites	N/A	<b>5 years: 421.2 billion yen</b>	<ul style="list-style-type: none"> <li>▪ Total support amount for capital investment is about <b>1 trillion yen over 10 years</b></li> <li>▪ Separate R&amp;D support for perovskites via GI Fund</li> </ul>
	Nuclear 1 trillion yen~	Development and construction of next-gen innovative reactors	89.1 billion yen	<b>3 years: 164.1 billion yen</b>	N/A
CCS 4 trillion yen~	Support for building CCS value chains (developing suitable sites, etc.)	N/A	N/A	<ul style="list-style-type: none"> <li>▪ To be considered based on results of feasibility studies on advanced CCS projects</li> </ul>	

# Investment Promotion Measures using Japan Climate Transition Bonds (4/4)



	Investment Promotion Measures using GX Economic Transition Bonds	Funding from 2022 & 2023 supplementary budgets [Appx. 3 trillion yen]	Financial support from FY2024 onwards	Notes *Subsidy rate for capital investment support is in principle 1/2 for SMEs, 1/3 for large enterprises
<b>Cross-sectoral measures</b>	Promoting investment via energy efficiency subsidies incl. SMEs	340 billion yen	N/A	• Support of approx. <b>700 billion yen over 3 years</b>
	Support for nurturing deep tech startups	N/A	<b>41 billion yen</b>	• Support of approx. <b>200 billion yen over 5 years</b> (incl. GX Implementation Organisation's finance support)
	R&D via the GI Fund	806 billion yen	N/A	• 2 trillion yen (general account) allotted in FY2020 third supplementary budget
	Financial support from GX Implementation Organisation for GX implementation	N/A	<b>120 billion yen</b>	• Envisage financing support via debt guarantees
	Regional Decarbonisation Grants (microgrids for private railways etc.)	3 billion yen	<b>6 billion yen</b>	N/A
<b>Tax measures</b>	Newly establish <b>tax credits</b> according to production volume of green steel, green chemicals, SAF, EVs, etc.			

**Expected direct financial support from FY2024 onward: **Approx. 2.4 trillion yen (total of red amounts)****  
**Total of approx. 13 trillion yen financial support** (red figures plus 2022-23 support already provided and future planned support figures in blue) - METI implies that **most of this will come from revenue generated by the bonds.**



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