IETA

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CARBON MARKETS & EMISSIONS TRADING IN JAPAN:

UNLEASHING THE GREEN TRANSFORMATION

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EXECUTIVE SUMMARY

JAPAN IS ONE OF THE WORLD'S LARGEST ECONOMIES AND AN IMPORTANT LEADER IN THE INTERNATIONAL CLIMATE SPACE. THE COUNTRY HAS A LONG HISTORY OF VOLUNTARY EMISSIONS TRADING AND ENGAGEMENT WITH CARBON MARKETS, INCLUDING ITS EARLY ESTABLISHMENT OF THE JOINT CREDITING MECHANISM (JCM) AND ITS CONTINUED COMMITMENT IN PROMOTING ARTICLE 6 OF THE PARIS AGREEMENT.

GX-ETS MARKS A MAJOR STEP FORWARD—SCALING JAPAN'S CARBON MARKET TO DRIVE ECONOMY-WIDE EMISSIONS REDUCTIONS.

Building on more than a decade of voluntary corporate action, Japan launched the GX League in 2023, a voluntary organization of companies to reduce and report their GHG emissions, driven by the Government of Japan. The GX League also set the stage for domestic compliance markets by trialling the GX Emissions Trading Scheme (GX-ETS Phase 1). With the system now moving into its mandatory phase in April 2026, this represents a significant advancement for Japan's domestic climate policy.

The GX-ETS will cover roughly 60 percent of national emissions (600 million tCO_2e) across all major industrial sectors, making it one of the world's largest emissions trading systems. As a fixed cap compliance market, with a government-regulated price corridor, this is expected to drive significant emission reductions across Japan's economy to support the achievement of its Nationally Determined Contribution (NDC). Compliance entities covered by the GX ETS will be able to use carbon credits, consisting of domestic J-Credits and international JCM credits, to offset up to 10% of their emissions, to reduce compliance costs in the scheme. This is likely to make Japan one of the leading Article 6 carbon credit buyers globally.

To meet this demand, there is an urgent need to scale up high-integrity supply of both J-credits and JCM credits. This will require deliberate efforts in streamlining processes, advancing bilateral Article 6 negotiations, strengthening methodologies and supporting private-sector engagements.

This paper, developed by IETA's Japan Working Group, aims to present a coherent overview of the history, current state and possible future trajectories of Japan's voluntary and compliance carbon markets. It has been informed by key corporate leaders, investors, carbon market experts and policy advisors in Japan and globally.

The report also presents key considerations to ensure a strong, effective and well-functioning carbon market in Japan. This includes examining rules around banking, price stability mechanisms and allocation of allowances in the GX-ETS, ways of expanding JCM supply and scaling up effective carbon market approaches.

IETA and our members welcome Japan's leadership and continued engagement in carbon markets and looks forward to supporting the development of a credible, well-functioning GX-ETS.

01

INTRODUCTION

Japan is entering a new phase in its climate transition, moving from voluntary action toward a mandatory carbon market. Building on its experience in international carbon mechanisms and domestic initiatives, the country is advancing its Green Transformation (GX) strategy to align decarbonization with economic growth and energy security. Central to this shift is the introduction of carbon pricing from FY2026, centered on the mandatory operation of the GX-ETS, which has already begun as a trial.

1.1 BACKGROUND

JAPAN HAS LONG BEEN A GLOBAL LEADER IN CARBON MARKETS. FROM HOSTING THE ADOPTION OF THE KYOTO PROTOCOL IN 1997, ACTIVE PARTICIPATION IN THE CLEAN DEVELOPMENT MECHANISM (CDM), SIGNING ON THE FIRST JOINT CREDITING MECHANISM (JCM) AGREEMENT WITH MONGOLIA IN 2013 AND PARTNERING WITH OVER 30 COUNTRIES, JAPAN HAS SHAPED INTERNATIONAL EMISSIONS TRADING FOR DECADES. TODAY, IT IS ESTABLISHING ITS OWN DOMESTIC COMPLIANCE MARKET AND DEEPENING ITS COOPERATION UNDER ARTICLE 6 OF THE PARIS AGREEMENT THROUGH THE JCM.

As Japan now has launched its first mandatory cap-and-trade system, the GX Emissions Trading Scheme (GX-ETS), in April 2026, this marks a significant new chapter in the country's long-standing engagement with carbon markets.

Due to its scale, ambition and importance, the GX-ETS has attracted significant international interest. Covering roughly 60 percent of national emissions (around 600 million tCO_2e) across all major industrial sectors, it will play a key role in the country's green transformation. With its international linkage through the JCM, it will also play a key role in shaping the international Article 6 market under the Paris Agreement, and in decarbonization activities around the world. With the system now in place, there is a need to unpack what this means for stakeholders in Japan, and globally.

This report aims to provide a comprehensive overview about the newly established GX-ETS, along with the two eligible offsetting mechanisms: J-Credits and the JCM. It also presents several scenarios of potential future developments of the GX-ETS, identifies key issues that may arise, and offers considerations for addressing them.

Through this work, IETA looks to support the development of effective, trustworthy markets of high-integrity that can deliver on the dual objectives of green growth and sustainable development.

ACKNOWLEDGMENTS

This report has been developed by the IETA Japan Working Group, convened by Björn Fondén, International Policy Manager – APAC Lead at IETA, and Manabu Kido, Japan Representative at IETA, co-chaired by Takashi Hongo, Mitsui & Co. Global Strategic Studies Institute, and Sami Isutzu, Sumitomo Corporation, in their personal capacities.

The report is the outcome of an inclusive process involving more than 50+ IETA member companies and participants of the Japan Working Group. It reflects valuable inputs and recommendations from a wide range of individual experts and practitioners. The final content does not reflect the opinions of any individual member company, and responsibility and liability for the content rests solely with IETA.

We are especially grateful to the following chapter leads who have dedicated significant time and effort to the development of this report (listed in no particular order):

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1.2 JAPAN'S CLIMATE TARGETS (NDC) AND EMISSIONS PROFILE

JAPAN IS CURRENTLY THE WORLD'S FOURTH-LARGEST ECONOMY, AND ONE OF THE TEN LARGEST GREENHOUSE GAS EMITTERS, WITH ANNUAL EMISSIONS EXCEEDING 1 BILLION TONNES OF CO_2E, ACCOUNTING FOR 2.0% OF GLOBAL CO_2 EMISSIONS IN 2024[1].

As an advanced industrial nation with a large manufacturing base, Japan's emissions profile reflects the scale of its power generation, transport activity, and energy-intensive industries, including steel, chemicals and cement.

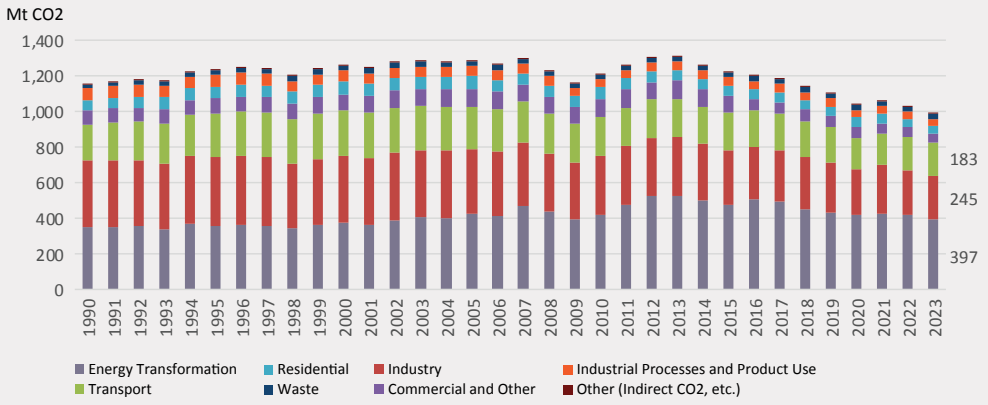
In FY2023, CO_2 accounted for 92.3% of Japan's total GHG emissions. Before allocating emissions from electricity and heat, energy transformation activities such as power generation represented around 40% of national emissions, followed by industry at 25% and transport at 19% in FY2023[2].

Japan's primary energy supply in 2023 was made up by 80.7% of fossil fuels, with 97.0% being imported. Nuclear power contributed 4.1%, while renewable energy including hydropower accounted for 15.1%[3].

The structure of Japan's energy system has been significantly shaped by the aftermath of the Fukushima accident in 2011, which led to the prolonged shutdown of most nuclear reactors. To secure sufficient electricity supply and reducing emissions, national energy policy has stressed the importance of energy efficiency improvements and fuel switching from coal to gas, as well as use of renewable energy sources.

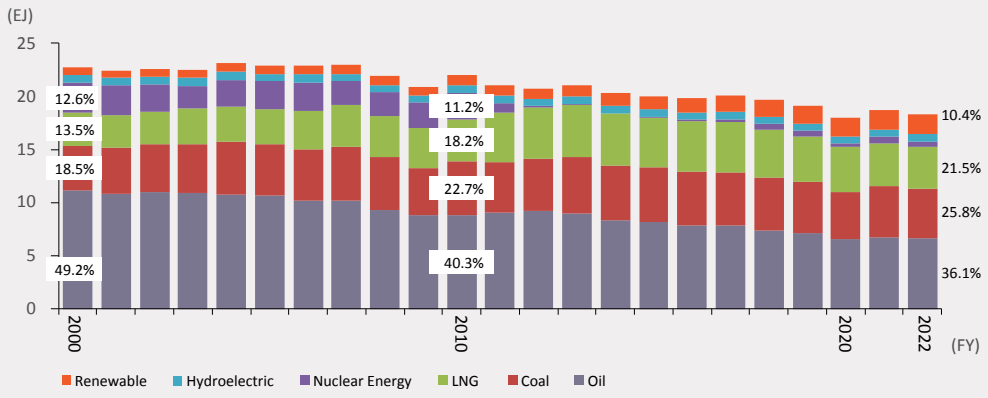
JAPAN'S INDUSTRIAL BASE AND ENERGY MIX DEFINE BOTH THE SCALE OF EMISSIONS AND THE CHALLENGE AHEAD.

FIGURE 1: JAPAN CO_2 EMISSIONS BY SECTORS*



*At source, based on NIES data (http://www.nies.go.jp/gio/archive/ghgdata/index.html)

FIGURE 2: JAPAN'S PRIMARY ENERGY SUPPLY*



*Based on ANRE data (http://www.enecho.meti.go.jp/statistics/total_energy/)

JAPAN'S CLIMATE TARGETS ARE AMBITIOUS—BUT ACHIEVING THEM WILL REQUIRE A SIGNIFICANT ACCELERATION OF ACTION.

The Seventh Basic Energy Plan, released in February 2025, outlines Japan's long-term energy strategy[4]. It targets reducing the share of thermal power generation from 70% in 2023 to 30–40% by 2040, increasing nuclear power from 8.5% to 20%, and expanding renewable energy from 23% to 40–50%.

Meeting these goals face several challenges. Nuclear progress requires both restarting existing reactors and constructing new ones, but public opinion is still divided. Solar deployment, as well as offshore wind expansion, could have significant potential, but remains relatively small in scale, and is limited by land availability, environmental impacts, and grid connection.

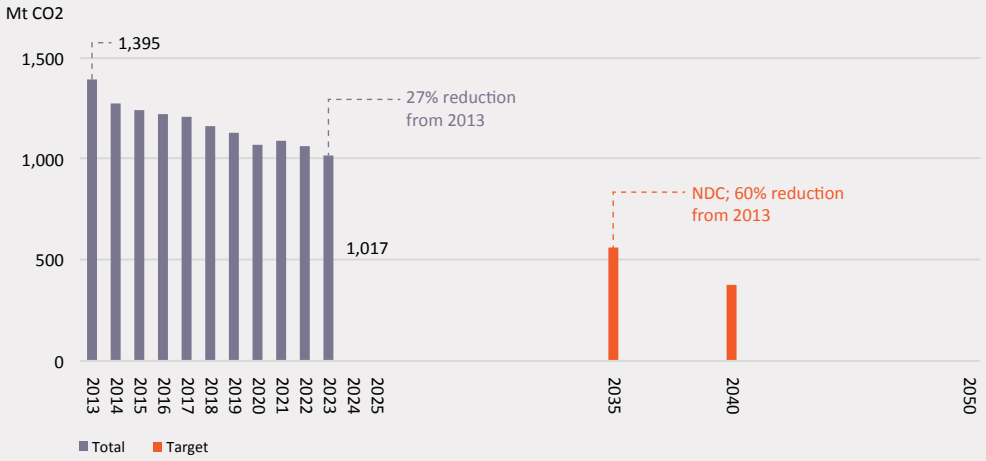
In its new Nationally Determined Contribution (NDC), submitted in 2025, Japan commits to reducing greenhouse gas emissions by 60% by FY2035 and 73% by FY2040 relative to FY2013 levels[5]. This translates to a reduction from 1,395 million tonnes CO_2e in 2013 to 560 million tonnes by FY2035 and 380 million tonnes by FY2040.

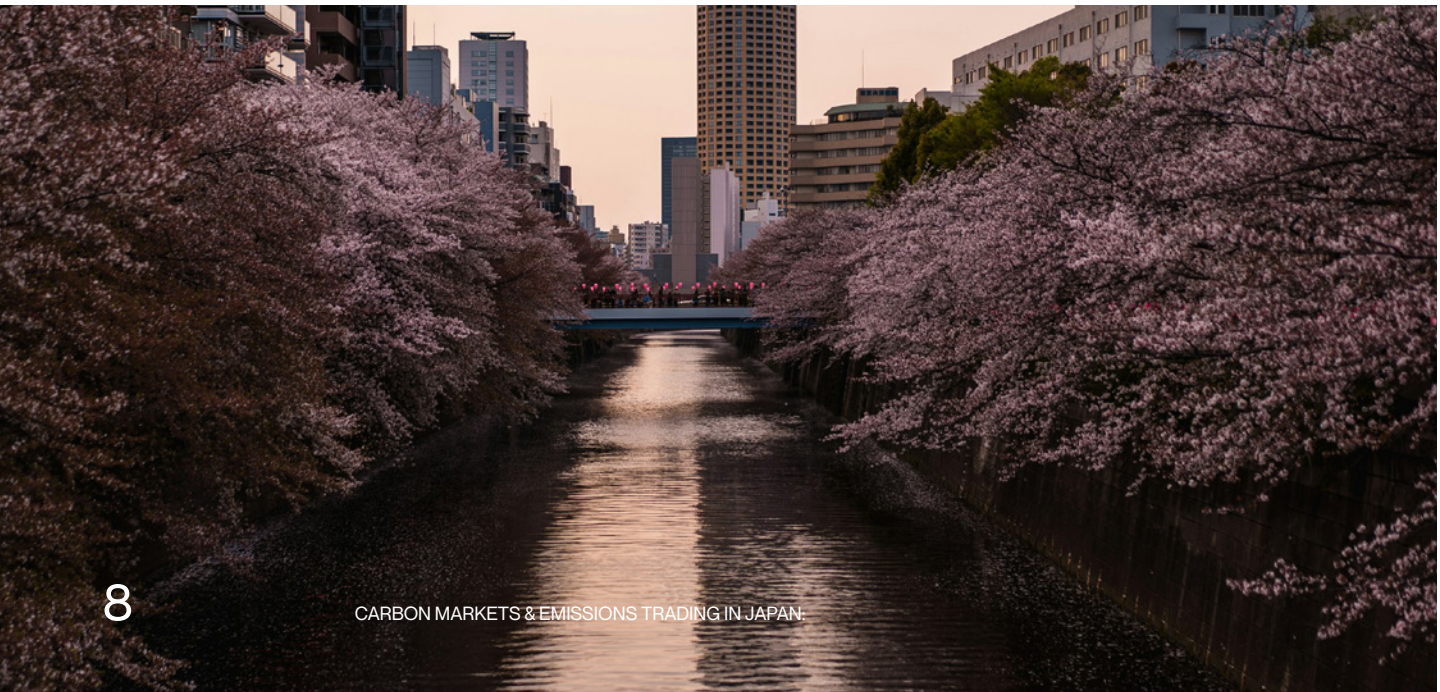
Japan also aims to contribute to achieving its NDC by international emission reductions through the JCM, targeting cumulative reductions of around 100 million tonnes of CO_2 by FY2030 and 200 million tonnes by FY2040 via public-private cooperation.

As of FY2023, national emissions had fallen to 1,017 million tonnes[6], a 27% reduction from the base year. This progress, achieved without a national compliance ETS, indicates that Japan has been broadly on track for its NDC targets. While this reduction (more than 2.5% per year) is significant, achieving the remaining 33 percentage point reductions by 2035 to meet Japan's NDC target will require an even steeper annual reduction rate of 2.8%.

This illustrates the ambition of Japan's decarbonisation, and the scale of the challenge ahead. The introduction of the GX-ETS therefore represents an important step, adding a mandatory market-based climate policy instrument to support the achievement of Japan's climate targets, together with project-based mitigation through JCM and J-credits.

FIGURE 3: JAPAN GHG EMISSION REDUCTION AND NDC TARGETS*





02

JAPAN'S GREEN TRANSFORMATION (GX) AND ETS

Japan's Green Transformation (GX) strategy aims to integrate decarbonization with economic growth and energy security. One of the measures to achieve this is the growth-oriented carbon pricing concept. Specifically, to address GX, the government will issue ¥20 trillion yen in GX economic transition bonds, which will be used as leverage to attract public and private investments of ¥150 trillion yen over 10 years. The strategy also calls for the introduction of carbon pricing from FY2026, centered on mandatory operation of the GX-ETS, which has already begun as a trial.

2.1 THE DESIGN OF JAPAN'S GREEN TRANSFORMATION (GX) STRATEGY

ENSURING ENERGY SECURITY HAS BECOME AN INCREASINGLY IMPORTANT PRIORITY FOR COUNTRIES WORLDWIDE FOLLOWING RUSSIA'S FULL-SCALE INVASION OF UKRAINE IN FEBRUARY 2022. IN RESPONSE, THE GOVERNMENT OF JAPAN ADOPTED THE "BASIC GUIDELINES FOR REALIZING GREEN TRANSFORMATION"[7] IN FEBRUARY 2023 AT A CABINET MEETING TO SIMULTANEOUSLY ACHIEVE DECARBONISATION, A STABLE ENERGY SUPPLY, AND ECONOMIC GROWTH THROUGH GREEN TRANSFORMATION (GX).

JAPAN'S GX STRATEGY INTEGRATES CLIMATE POLICY, ECONOMIC GROWTH, AND ENERGY SECURITY INTO A SINGLE FRAMEWORK.

The government also passed the GX Promotion Act and the GX Decarbonized Power Source Act in May 2025, operationalising new policies such as the "Growth-oriented Carbon Pricing Initiative." The current Takaichi administration, inaugurated in October 2025, has inherited the basic policies of the GX strategy including the GX-ETS.

To implement these policies, the "GX Promotion Strategy" was approved by the Cabinet in July 2023[8]. The GX strategy seeks to balance energy security, economic growth, and significant emission reductions by linking climate action with industrial competitiveness[9]. Over the next decade, more than ¥150 trillion (~0.95 trillion USD) will be invested in sectors like hydrogen, automobile and battery industries, next-generation reactors, and CCS technology[10]. These investments are expected to accelerate Japan's decarbonisation, drive technological innovation, and generate new employment opportunities.

Enacted in 2023, the GX Promotion Act formalises the strategy as national policy and introduces new financial instruments, including "GX Economic Transition Bonds"[11]. Approximately ¥20 trillion (~0.13 trillion USD) in bonds are due to be issued over a 10-year period starting in FY2023. These bonds will support innovative technology development and capital investment that contribute to decarbonising energy sectors and raw material industries, while improving profitability.

The bonds will be repaid by FY2050 through "fossil fuel levies" and "specified business contributions". Starting in FY2028, fossil fuel importers and others will be subject to a fossil fuel levy based on the amount of CO_2 derived from fossil fuels. Starting in FY2033, power generation companies will be allocated CO_2 emission allowances, partially at a cost (through auctioning), and specified business contributions will be collected based on the allocated amount.

The GX Acceleration Agency began operations in July 2024 and is responsible for managing funding, overseeing the emissions trading system (ETS), ensuring transparent operation of financial schemes, monitoring progress toward long-term greenhouse gas reduction targets and collecting levies[12]. Japan's approach prioritises subsidising green innovation before implementing stricter penalties, aiming to foster globally competitive industries. The GX-ETS as well as the levy on fossil fuel importers are to be operationalised in a measured manner to minimise adverse economic effects[13].

TABLE 1: INVESTMENT STRATEGY BY SECTOR (DRAFT TARGETS AND MEASURES)[14]

Category		Public-Private Investment Amount (trillion JPY)	Major Investment Promotion Measures via GX Bonds
Manufacturing	Steel	3~	Support for facility investment toward process conversion
	Chemicals	3~	
	Pulp and Paper	1~	
	Cement	1~	
Transportation	Automobiles	34~	Support for introduction of electric vehicles etc.
	Batteries	7~	Support for production facility investment and stationary battery introduction
	Aircraft	4~	Development of core technologies for next-generation aircraft
	SAF	1~	Support for production and supply chain development of SAF
	Watercraft	3~	Support for introduction of zero-emission ship production facilities
Lifestyle, etc.	Lifestyle	14~	Renovating houses to insulate windows etc.
	Resource Circulation	2~	Support for building circular business models
	Semiconductors	12~	Support for production facility investment for semiconductors, chipmaking etc.
Energy	Hydrogen, Ammonia, synthetic methane etc.	7~	Support focused on narrowing the price gap to existing fuels
	Next-gen Renewables	31~	Support for supply chain development
	Nuclear Power	1~	Development and construction of next-generation innovative reactors
	CCS	4~	Support for CCS value chain development

2.2 GX LEAGUE: MOBILIZING JAPANESE COMPANIES FOR DECARBONIZATION

THE GX LEAGUE WAS INITIATED BY THE MINISTRY OF ECONOMY, TRADE AND INDUSTRY (METI) IN 2022 AND OPERATIONALISED IN 2023 TO FUNCTION AS A COLLABORATIVE PLATFORM FOR VOLUNTARY PARTICIPATING COMPANIES LEADING JAPAN'S GREEN TRANSFORMATION[15]. IT ENABLES COOPERATION AMONG INDUSTRY, GOVERNMENT, AND ACADEMIA ON DECARBONISATION. THE NUMBER OF PARTICIPATING COMPANIES INCREASED FROM 440 IN APRIL 2022 TO 747 IN MARCH 2024, ACCOUNTING FOR OVER 50% OF JAPAN'S TOTAL CO_2 EMISSIONS[16].

The GX League has focused on two main activities:

- Voluntary GX-ETS participation: Participating companies set their own goals and put GX investment, GHG reduction, and disclosure into practice.
- Rulemaking: The public and private sectors come together to form rules for creating new markets, taking into account future business opportunities.

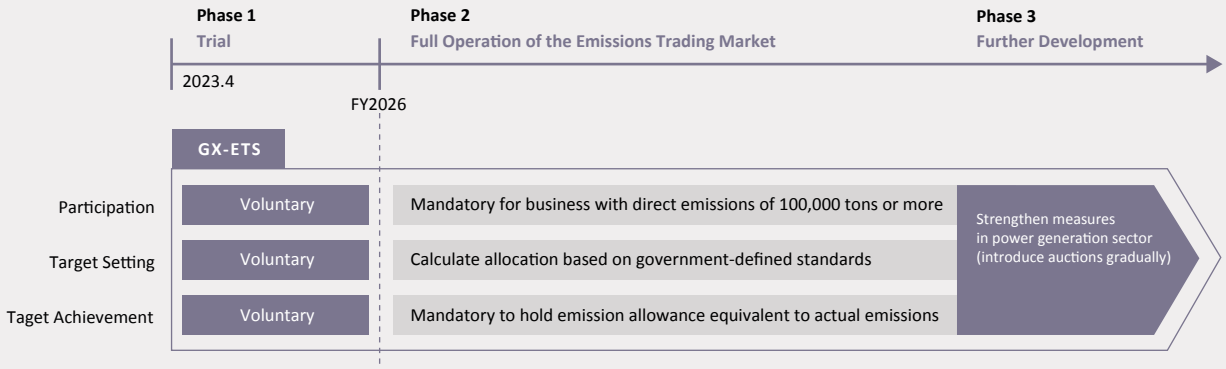
The initial phase of GX-ETS from April 2023 to March 2026 was a trial period for companies to prepare for the mandatory system. Participation was voluntary, with each company setting its own emissions reduction targets. This voluntary phase prioritises consensus-building and capacity development over short-term reductions, aiming to facilitate a smooth transition to the mandatory phase starting in April 2026.

Since the start, the GX League has functioned as a voluntary precursor to the GX-ETS, improving corporate GHG reporting and familiarising companies with market-based approaches. Participating companies have self-reported steady emissions reductions and increased the use of J-Credits. This experience has helped establish the institutional and data frameworks needed for a smoother transition to the mandatory GX-ETS.

Alongside participation in the domestic GX League, the number of Japanese companies pursuing voluntary certification by the Science Based-Targets initiative (SBTi) has been increasing rapidly in recent years. As of January 2026, Japan has more than 2,000 companies committed to or certified under SBTi, marking a twenty-fold increase over five years and putting Japan as the top-ranked SBTi country in the world[18]. Whilst not directly connected to Japan's GX policy framework, it highlights the general trend of corporate decarbonisation efforts.

THE GX LEAGUE LAID THE FOUNDATION — PREPARING COMPANIES FOR JAPAN'S TRANSITION TO A MANDATORY CARBON MARKET.

FIGURE 4: IMAGE OF THE STEPWISE DEVELOPMENT OF GX-ETS[17]



2.3. TRANSITION TO THE GX-ETS COMPLIANCE MARKET

TO ACCELERATE DECARBONISATION EFFORTS AND SUPPORT PROGRESS TOWARD THE ACHIEVEMENT OF JAPAN'S NDC, A MANDATORY EMISSIONS TRADING SCHEME (GX-ETS PHASE 2) IS NOW STARTING OFF IN APRIL 2026 UNDER THE AMENDED GX PROMOTION ACT.

THE GX-ETS MARKS JAPAN'S SHIFT FROM VOLUNTARY ACTION TO A MANDATORY, ECONOMY-WIDE CARBON MARKET.

To support development of the GX-ETS, a carbon pricing expert working group[19] was established in the Cabinet Secretariat in August 2024, and the draft GX-ETS framework[20] was compiled in December of the same year. Several key points were incorporated into the revised GX Promotion Act[21], which was enacted in May 2025.

Targeting large emitters with annual direct CO_2 emissions above 100,000 tonnes, estimated at 300-400 companies, the system will cover major industrial and energy sectors such as power generation, steel, cement, chemicals, oil and gas, industrial fuels, and other energy-intensive manufacturing sectors. Together, this accounts for roughly 60% of Japan's national greenhouse gas emissions, making the GX-ETS an important instrument for achieving long-term mitigation goals.

Based on this draft framework, the ETS Subcommittee and two task forces, newly established under METI, began examining further technical details and the method of setting industry-specific allowances in July 2025[22]. The results were compiled and published in December 2025, as the "Interim Report: Matters Concerning Implementation Guidelines for Emissions Allowance Allocation"[23]. The key design features of the ETS are summarised in Table 2.

Allowance allocation in the GX-ETS will follow a bottom-up approach, with no total cap on economy-wide emissions in GX-ETS Phase 2. Companies in high energy consumption industries will receive free allowances based on benchmarks, and companies in the industries where benchmarks are difficult to apply will receive them based on grandfathering method using historical emissions with an annual reduction factor. Figure 5 shows those two allocation methods.

Offsets using J-Credits and JCM credits will be permitted for compliance within a set usage limit (10% of the direct emission of a company). The use of other correspondingly adjusted overseas voluntary credits beyond the JCM will not be permitted to meet GX-ETS obligations.

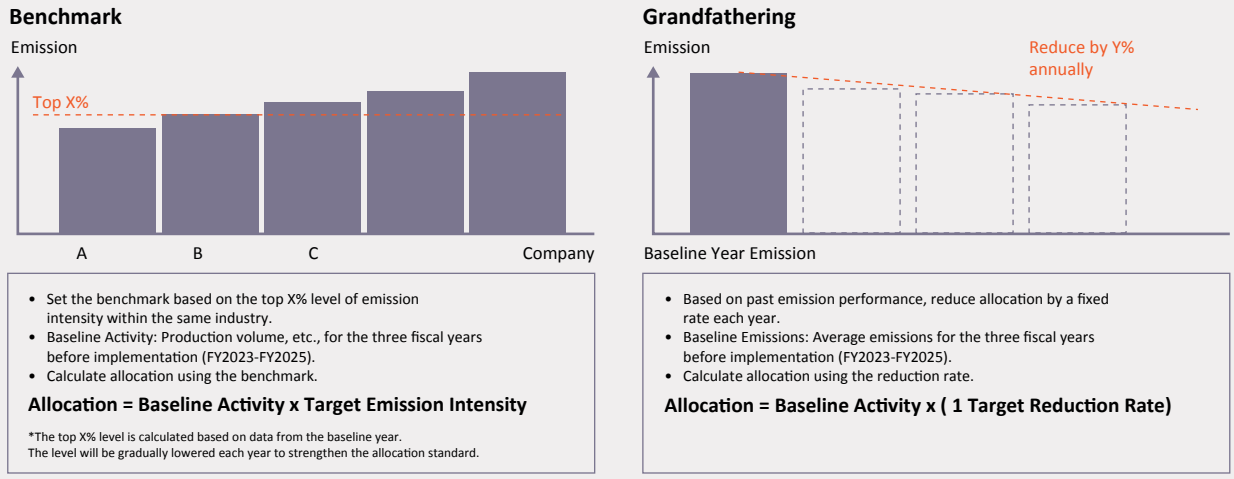
Regarding the trading of allowances, the market will be established and operated by the GX Acceleration Agency[24]. In addition to compliance entities, other limited businesses such as market makers, will also be able to participate in trading, although the requirements for participation are yet to be determined.

Auctioning of allowances will be introduced in the power sector from FY2033.

TABLE 2: KEY DESIGN FEATURES OF THE GX-ETS COMPLIANCE MARKET

Design Parameters	**Mandatory GX-ETS (2026 onwards) Explanation/Rules**
Start Date	FY2026 (1 April 2026)
Participation	Mandatory for companies exceeding annual direct CO_2 emissions above 100,000 tonnes.
Cap Setting Method	Allocations to individual companies will be aggregated using a "bottom-up" approach. In the initial phase, no absolute, legally binding cap will be set for the economy.
Allocation Method	Free allocation based on either industry-specific benchmark (e.g., t-CO_2 per unit of production) or grandfathering, which allocates allowances based on historical emissions with an annual reduction factor applied.
Use of Auctions	Initially, no auctions will be conducted. Auctions will be introduced in FY2033 to the power generation sector.
Eligible Offsets	J -Credits and JCM credits are eligible. Usage cap is 10% of the annual direct CO_2 emissions.
Price Stabilization	The system sets upper (¥4,300) and lower (¥1,700) limits on transaction prices. If the market price exceeds the upper limit price, it will be possible to fulfill obligations by paying the price. If the market price remains lower than the lower limit price, intervention (e.g., reverse auctions) will be introduced.
Penalty for non-compliance	Payment will be required for the unfulfilled portion of the obligation multiplied by 1.1 times the upper limit price.
Market Operator	The GX Acceleration Agency will establish and operate the allowance market.
Banking of allowances	No restriction (this is a point of discussion for the ETS subcommittee in FY2026)

FIGURE 5: ALLOCATION METHOD IN GX-ETS[26]



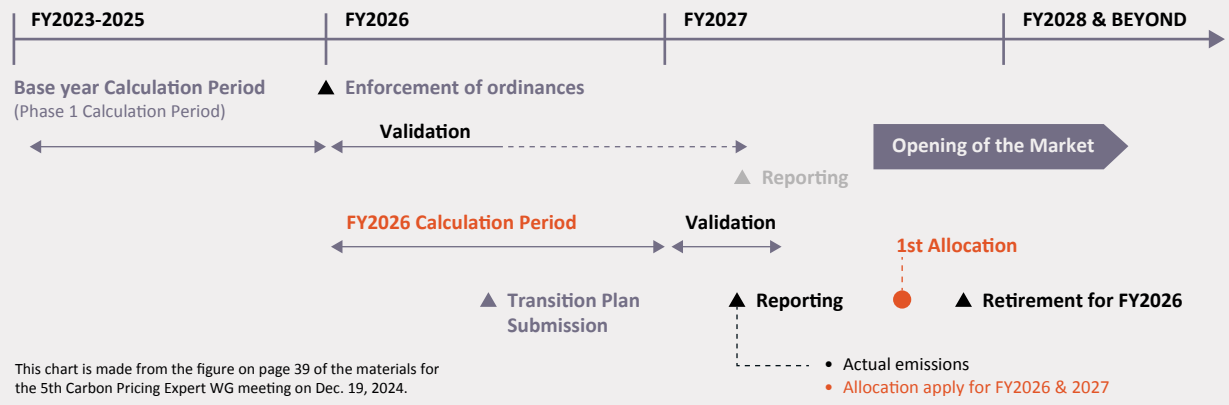
As a way of stabilising trading prices, the GX-ETS has introduced a price corridor , which will be managed through a price cap on the upside and, possibly, government interventions such as reverse auctions on the lower side. On 19 December 2025, the ETS subcommittee submitted to METI its opinion for the reference trading price of emission allowances, setting the upper limit price at ¥4,300 Japanese yen (~$28 USD) per ton of CO_2 and the lower limit price at ¥1,700 Japanese yen (~$11 USD) for FY2026. Prices are intended to increase by 3% each year until FY2030[25] based on current understanding, but legally the price limits are not specified until official announcements the year before. The price corridor beyond FY2030 will be decided in FY2028.

There are currently no rules on banking, and this issue will be discussed by the subcommittee for a decision later in FY2026.

Timeline for implementation:
As the law will come into effect in April 2026, procedures for FY2026 and FY2027 will be irregular. FY2026 will be the year for measuring emissions based on guidelines and other preparations. FY2027 will be the year for submitting this data, applying for and receiving allocations of FY2026 and FY2027 emission allowances, starting market trading, and retiring FY2026 emission allowances. This timeline is explained in Figure 6. The standard procedures for FY2028 and beyond are listed in table 3.

GX-ETS BEGINS WITH CONTROLLED PRICING, BUT LONG-TERM MARKET DYNAMICS ARE STILL TAKING SHAPE.

FIGURE 6: IMPLEMENTATION TIMELINE[27]



This chart is made from the figure on page 39 of the materials for the 5th Carbon Pricing Expert WG meeting on Dec. 19, 2024.

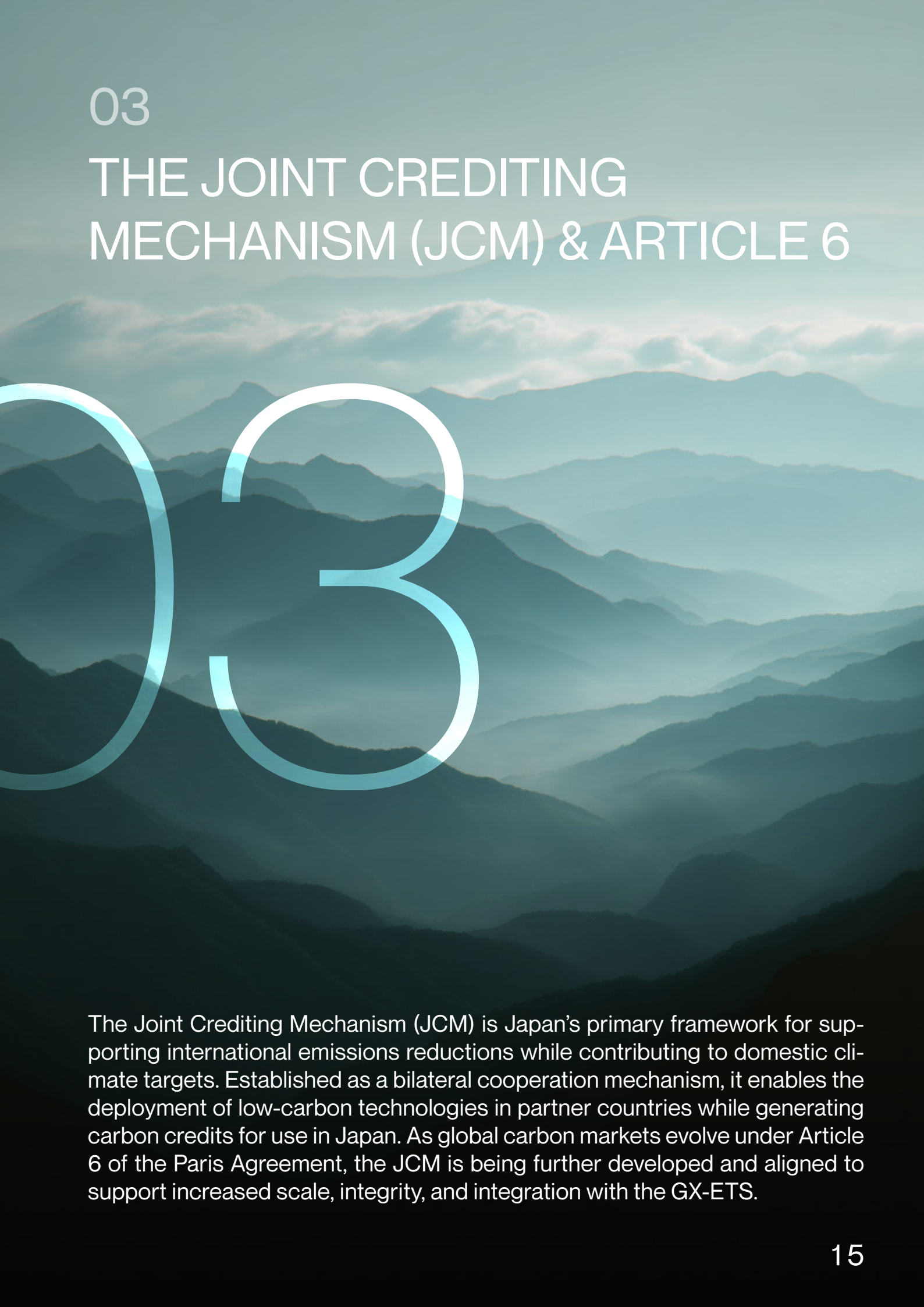
TABLE 3: OVERVIEW OF THE EMISSION ALLOWANCE PROCEDURE IN FY2028

Stage	Time	Activity
Preparation for reporting	Beginning of FY 2028 (April 2028)	Companies have already received the allowance allocation for FY2027 in FY2027. They start compiling their FY2027 direct CO_2 emissions data.
Submission of emissions data & Determination of the obligatory amount	By the end of September of 2028 (ref. Article 10 of the GX-ETS guideline)	Companies submit their finalised FY2027 emissions report to METI along with required documentation and third-party verification (if applicable). If their direct CO_2 emissions are greater than their allowance allocation for FY2027, they may purchase carbon credits and submit adjusted emissions that offset their emissions by the number of credits purchased. The companies now know how much allowance they need to fulfill their obligations for FY2027.
Allowance allocation for the year	On the last day of November 2028 (ref. Article 15 of the guideline)	METI communicates each company's allowance allocation based on the submitted data and the approved rules. A company receives its assigned allowances for the year (FY2028), which should be retired in FY2029.
Retirement / surrender	31, January 2029 (ref. Article 36.3 of the GX-ETS Act)	Companies must hold allowances at least equivalent to their reported and verified emissions for FY2027 at this day. Excess amount of allowance can be kept for the next year.
Penalty payment	After 1 February 2029	If a company have any outstanding emissions, METI will notify the company of the amount of the payment and the payment deadline (ref. Article 41 & 42 of the Act).

For further discussion around the possible trajectories and key design considerations of the GX-ETS, please see Chapter 5.

03

THE JOINT CREDITING MECHANISM (JCM) & ARTICLE 6



The Joint Crediting Mechanism (JCM) is Japan's primary framework for supporting international emissions reductions while contributing to domestic climate targets. Established as a bilateral cooperation mechanism, it enables the deployment of low-carbon technologies in partner countries while generating carbon credits for use in Japan. As global carbon markets evolve under Article 6 of the Paris Agreement, the JCM is being further developed and aligned to support increased scale, integrity, and integration with the GX-ETS.

3.1 SUMMARY OF THE JCM

THE JCM IS JAPAN'S KEY MECHANISM TO SUPPORT DECARBONISATION AND TECHNOLOGY DISSEMINATION OVERSEAS, WHILST ISSUING CARBON CREDITS TO SUPPORT THE ACHIEVEMENT OF DOMESTIC CLIMATE TARGETS. IT WAS ESTABLISHED ALREADY IN 2010, AS A BILATERAL COOPERATION FRAMEWORK FOR LOW-CARBON DEVELOPMENT. AT THE TIME OF WRITING, THE JCM HAS BEEN AGREED UPON BETWEEN JAPAN AND 31 PARTNER COUNTRIES. AS MANY BILATERAL AGREEMENTS AND PROJECTS BEGAN IMPLEMENTATION BEFORE THE FINAL AGREEMENT ON ARTICLE 6.2 GUIDELINES AT COP26 WHICH REGULATE INTERNATIONAL CARBON MARKET COLLABORATION UNDER THE PARIS AGREEMENT, SIGNIFICANT WORK HAS BEEN UNDERTAKEN IN RECENT YEARS TO ALIGN THE JCM WITH THESE NEW RULES AND UPDATE BILATERAL FRAMEWORKS.

JCM credits have long been permitted for use as offsets under Japan's GHG emissions reporting system (SHK) and will now also be permitted for use as offsets under the GX-ETS system. Together with Japan's new NDC targets, this is expected to significantly increase demand for JCM credits, requiring improved and streamlined processes to unlock the necessary volume of supply.

3.2 ORIGINS AND EVOLUTION OF THE JCM

AS THE CHAIR OF COP3 HELD IN KYOTO IN 1997, JAPAN WAS INSTRUMENTAL IN THE ADOPTION OF THE FIRST BINDING MULTILATERAL CLIMATE TREATY, THE KYOTO PROTOCOL (KP)[28]. AS PART OF THE KP, PARTIES ALSO INTRODUCED THE FIRST INTERNATIONAL MARKET-BASED CLIMATE POLICY INSTRUMENTS THROUGH THE CLEAN DEVELOPMENT MECHANISM (CDM) AND JOINT IMPLEMENTATION (JI). IN THE EARLY DAYS OF THE CDM, JAPAN WAS ALREADY AN ACTIVE PARTICIPANT; SUPPORTING MORE THAN 400 CDM PROJECTS AND PROCURING A CUMULATIVE TOTAL OF 120 MILLION TONNES OF CERTIFIED EMISSION REDUCTIONS (CERS) UNTIL 2008[29].

However, as the first commitment period of the Kyoto Protocol was coming to an end, deliberations around an extension ended in failure at COP15 in Copenhagen. With several major emitters unwilling to join in for the second commitment period, the Government of Japan (GoJ) announced its intent to abstain, citing its inability to establish binding targets without broader international alignment[30].

As a result, rather than stepping back from climate cooperation, Japan sought to advance a new, more practical form of international mitigation partnership. In 2010, the GoJ proposed what would become the JCM as an addition to the CDM[31], and in 2010, Japan concluded the first JCM agreement with Mongolia.

Initiated as a bilateral cooperation framework, the JCM aims to finance and accelerate the deployment of low-carbon technologies in partner countries, leveraging Japanese technologies and best practices; allowing for benefits to both Japan and partner countries.

To support the development of the JCM, the GoJ has provided several grants and subsidies throughout the years, cooperating with international development partners such as the ADB, JICA and UNIDO. Companies awarded with JCM subsidies have been eligible to finance up to half of the investment costs of approved projects[32], and in exchange, the JCM credits allocated to Japan will be obtained by the government.

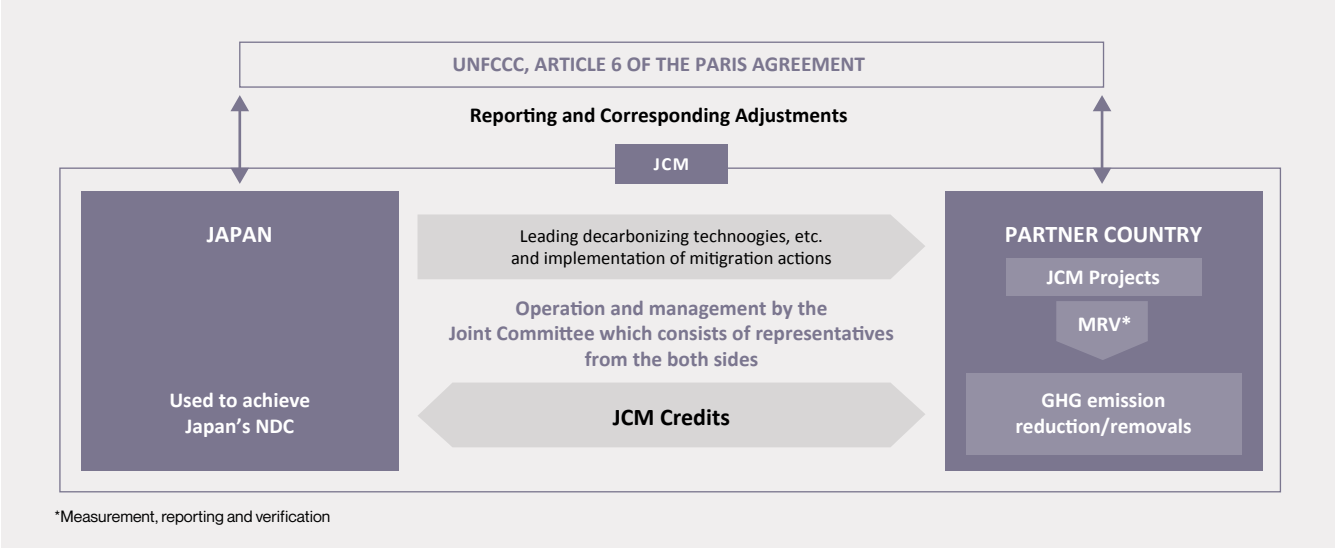
Since its inception 15 years ago, the JCM has steadily expanded its network of partner countries, methodologies and project types, offering a stable, mechanism for developing mitigation activities around the world.

As of March 2026, Japan had concluded bilateral agreements with 31 partner countries and there were 94 registered JCM projects[33]. In total, 817,247 JCM credits had been issued.[34]

BASIC CONCEPT OF THE JCM:

"The JCM facilitates diffusion of leading decarbonization technologies, products, systems, services, and infrastructure as well as implementation of mitigation actions, and contributes to sustainable development of partner countries. It appropriately evaluates contributions from Japan to GHG emission reductions or removals in a quantitative manner, and Japan uses them to achieve its Nationally Determined Contribution (NDC). The JCM contributes to the ultimate objective of the UNFCCC by facilitating global actions for GHG emission reductions or removals".

Source: JCM Website. https://www.jcm.go.jp/



However, as the JCM was launched prior to the adoption of the Paris Agreement and the finalisation of the Article 6 rulebook which now governs international carbon markets, a challenge in recent years has been aligning the JCM procedures and partner country agreements with Article 6 requirements. This includes new provisions around authorisation of Internationally Transferred Mitigation Outcomes (ITMOs), application of corresponding adjustments to avoid double-counting and updated infrastructure and reporting requirements.

Given Japan's limited land area, industrial base and energy mix, it would be difficult to meet Japan's NDC targets of 60% emission reduction in FY2035 and 73% in FY2040 through domestic mitigation efforts alone. The JCM is therefore intended to play a key role in meeting Japan's NDC targets and support the GX ETS net-zero strategy.

By 2030, the GoJ aims to secure emission reductions and removals of 100 million t-CO_2 by public and private cooperation under the JCM, and by 2040, that number increases to 200 million t-CO_2. This would represent a huge increase in the JCM activity. Although there are no official estimations published, the expected mitigation outcomes from current projects are far short of these numbers. Therefore, the government has initiated significant work to scale, speed up and streamline the JCM process.

One of those measures, launched in 2023, is the 'Private-sector JCM'[35], where private Japanese companies will invest in projects upfront (instead of being government-funded) and the JCM credits generated will be primarily allocated to those companies according to their contributions to the project. All credits thus generated will become eligible for compliance use in the GX-ETS once they have undergone the corresponding adjustment.

SCALING THE JCM IS ESSENTIAL FOR JAPAN TO MEET ITS CLIMATE TARGETS BEYOND DOMESTIC LIMITS.

JCM CONTRIBUTION TO THE IMPLEMENTATION OF THE GX STRATEGY:

- It will deliver compliant international supply of carbon credits (aligned with the PA)
- Crowds-in private capital and accelerates technology diffusions in JCM partner countries
- Anchors integrity for international credit use in the ETS
- Serves industrial policy and energy-security goals
- Creates a structured pathway for private-sector participation

3.3 JCM PARTNER COUNTRIES

IN MARCH 2026, THERE WERE 31 JCM PARTNER COUNTRIES. MOST RECENTLY, THE GOJ SIGNED AGREEMENTS WITH TANZANIA IN MAY 2025 AND WITH INDIA IN SEPTEMBER 2025. THE GOJ IS ACTIVELY NEGOTIATING WITH MORE POTENTIAL JCM PARTNER COUNTRIES, IN ORDER TO SCALE UP THE DEVELOPMENT OF PROJECTS AND VOLUME OF CREDIT SUPPLY. BRAZIL, MALAYSIA, SOUTH AFRICA AND TURKEY ARE BEING CONSIDERED AS THE NEXT POTENTIAL CANDIDATES[36].

AN EXPANDING NETWORK OF PARTNER COUNTRIES IS KEY TO SCALING THE REACH AND IMPACT OF THE JCM.

As highlighted above, the JCM was established before the adoption of the Article 6 rulebook under the Paris Agreement was reached at COP26 in 2021. As a result, JCM agreements concluded before COP26 did not include alignment with Article 6.2, and the government has since had to amend and renegotiate the deals with JCM partner countries. As the rulebook introduces significantly strengthened provisions around infrastructure, accounting and reporting, including corresponding adjustments which impacts the host country's NDC, this amendment process is still ongoing with multiple countries.

As of March 2026, 20 countries have signed fully Article 6 aligned JCM agreements with Japan[37].

Below is a table of the JCM partner countries classified by agreement on Article 6.2 alignment and by continent, however, this information is subject to uncertainty and frequent updates.

JCM PARTNER COUNTRIES

(# of countries)	Signed before COP26 and has not yet been amended (11)	Signed before COP26, but has amended (6)	Signed after COP26 (14)
Asia (15)	Cambodia, Lao PDR, Mongolia, Myanmar, Viet Nam	Bangladesh, Indonesia, Maldives, Thailand, Philippines	India, Sri Lanka, Kazakhstan, Kyrgyz Republic, Uzbekistan
Europe (4)			Azerbaijan, Georgia, Moldova, Ukraine
Africa (5)	Ethiopia, Kenya		Senegal, Tanzania, Tunisia
Latin America (3)	Costa Rica, Mexico	Chile	
Middle East (2)	Saudi Arabia		United Arab Emirates
Oceania (2)	Palau*		Papua New Guinea

*Although the JCM related guidelines have not been amended yet, Palau has authorized JCM as a cooperative approach under Article 6.2 and submitted the initial report regarding JCM with Japan to UNFCCC on 16 September 2025

3.4 GOVERNANCE ARCHITECTURE: WHO DOES WHAT?

TO IMPLEMENT THE JCM, JAPAN ESTABLISHED THE JCM PROMOTION AND UTILIZATION COUNCIL BASED ON THE PLAN FOR GLOBAL WARMING COUNTERMEASURES[38]. THE COUNCIL'S MISSION IS TO CONTRIBUTE TO THE ULTIMATE OBJECTIVES OF THE PARIS AGREEMENT, BY CARRYING OUT DUTIES RELATING TO THE AUTHORISATION OF THE JCM CREDITS[39], THE DETERMINATION OF A METHOD TO APPLY CORRESPONDING ADJUSTMENTS AS PART OF JAPAN'S IMPLEMENTATION OF ARTICLE 6.2, TO PREVENT DOUBLE COUNTING, AND THE REVISION OF THE GUIDELINES FOR THE IMPLEMENTATION OF THE JCM[40].

The Council is composed of the Ministry of the Environment (MOEJ), Ministry of Economy, Trade and Industry (METI), Ministry of Foreign Affairs (MOFA), Ministry of Agriculture, Forestry and Fisheries of Japan (MAFF) and Ministry of Land, Infrastructure, Transport and Tourism (MLIT).

In April 2025, the GoJ established and designated the JCM Implementation Agency (JCMA) to centralise and streamline the administrative processes of the JCM. It functions as one-stop operational focal point for JCM activities on the Japanese side.

The JCMA plays a critical role in carrying out the operationalisation of the JCM, from project registration to credit issuance. This includes consulting with partner countries on behalf of the competent ministers and taking action to ensure the effective implementation of the JCM projects:

1. Carrying out administrative management of the JCM scheme
2. Operation of the JCM Registry
3. Supporting procedures for JCM projects and operation of the JCM management platform
4. Management of the information dissemination website
5. Consultation and public relations for project development

However, it is imperative to emphasise that the bilateral JCM agreements are governed through each Joint Committee (JC), composed of government representatives from Japan and each individual host country. JCs are responsible for the approval of methodologies, registration of projects, issuance of notifications, etc. in all JCM schemes, including the Private-sector JCM scheme.

From the project implementation, at least a Japanese participating entity and a counterpart in the host country are needed. They are responsible for the design, planning, and implementation of the project. The Japanese entity is the representative participant for the project and remains the official point of contact. Other stakeholders such as technology providers, consultants, financial entities, and EPC contractors are typically involved externally with the participants.

A MULTI-LAYERED GOVERNANCE SYSTEM ENSURES THE JCM OPERATES WITH CLARITY, CONTROL, AND ACCOUNTABILITY.

3.5 THE JCM PROJECT CYCLE (FROM CONCEPT TO ISSUANCE)

THE FIRST STAGE OF THE JCM PROJECT CYCLE IS TO SUBMIT A PROJECT IDEA NOTE (PIN) TO THE JC THROUGH THE JCM IMPLEMENTATION AGENCY. AFTER CONSULTATION WITH THE GOJ, THE PROJECT DEVELOPER WILL THEN RECEIVE A CONFIRMATION OF NO OBJECTION FROM THE JC[41]. THIS PROCESS WAS PROPOSED IN CONJUNCTION WITH THE INTRODUCTION OF THE PRIVATE-SECTOR JCM IN MARCH 2023 AND IS CURRENTLY BEING IMPLEMENTED WITH THE CONSENT OF EACH HOST COUNTRY.

A DISCIPLINED PROCESS TURNS PROJECT CONCEPTS INTO VERIFIED, TRADABLE CARBON CREDITS.

As of January 2026, 14 partner countries had adopted PIN in their JCM project cycle[42] and the number is expected to increase. GoJ requests the creation of the PIN for project proposals to countries that have not yet adopted the PIN process[43]. New Application Criteria for the JCM was published by the Government in December 2025[44].

The key steps are as shown in the table below:

TABLE 3: PROJECT CYCLE OF THE JCM[45]

Stage	In Charge
Submission of Project Idea Note (PIN)	Project participant
Confirmation of no objection	Joint Committee (JC)
Submission of methodology	Project participant/ Governments or JC
Approval of methodology	JC
Project Design Document (PDD) formulation	Project participant
Validation	Third Party Entities (TPEs)
Registration	JC
Monitoring	Project participant
Verification	Third Party Entities (TPEs)
Credit issuance	JC: Allocation decision Governments: Credit issuance

CREDIT ALLOCATION AND SHARING ARRANGEMENTS:

The allocation of JCM credits will be decided by the JC, taking into consideration the respective contributions of the project participants and both governments to the project, as well as the applicable principles and guidelines in JCM rules. To increase the foreseeability of the project, in Private-sector JCM, the participants can propose a preliminary percentage of credit allocation in the PIN between Japan and the host country.

It is expected that the credits allocated to Japan through the project will be acquired mainly by private participants in accordance with their contribution. After the confirmation of no objection to the PIN by the JC, participants may presume the preliminary percentage of credit allocation is accepted. Nevertheless, irrespective of this preliminary indication, the final allocation is decided by the JC.

3.6 THE JCM AND ARTICLE 6: WHAT "ALIGNMENT" MEANS IN PRACTICE

ALTHOUGH ARTICLE 6 AND ITS MARKET-BASED APPROACHES UNDER 6.2 AND 6.4 WERE INCLUDED IN THE PARIS AGREEMENT IN 2015, PARTIES REQUIRED MORE THAN SIX YEARS TO FINALISE THE CORE RULEBOOK AT COP26 IN GLASGOW, FOLLOWED BY A FURTHER THREE YEARS OF NEGOTIATIONS TO COMPLETE THE ADDITIONAL GUIDANCE ON ACCOUNTING, REPORTING, AND CREDIT TRANSFERS AGREED AT COP29 IN BAKU IN 2024. THIS PROLONGED PROCESS HAS DELAYED THE FULL OPERATIONALISATION AND SCALING OF INTERNATIONAL CARBON MARKETS UNDER THE PARIS AGREEMENT.

As the first JCM agreement was signed with Mongolia in 2013, the JCM played an important role in shaping Article 6 discussions. Still, once the final Article 6.2 rules were adopted – the JCM also had to make adjustments to align with Paris Agreement requirements regarding authorisation, corresponding adjustments, accounting and reporting. For the JCM in particular, this includes:[46]

1. **Establish and maintain registry functionality & transparency:** JCM registry features must meet 6.2 requirements (unique unit IDs; states for authorisation/issuance/first transfer/holding/use/cancellation) and publish required information via the UNFCCC Centralized Accounting and Reporting Platform (CARP).
2. **Ensure authorisation before any first transfer:** Ensure that every project intended to generate ITMOs has received host Party authorisation (scope, use, quantities/vintages, revocation terms) before first transfer, and that this is reflected in the initial report and subsequent submissions.
3. **Apply CA consistently:** Keep applying CA for all authorised JCM credits transferred/used, using Japan's 2022 CA procedures and host country's rules aligned to NDC structures.
4. **Deliver the full 6.2 reporting package:** For each bilateral approach, submit/update the initial report (2/CMA.3), and provide annual information by the deadline through the Agreed Electronic Format (AEF), including biannual reporting via the Biennial Transparency Reports (BTR), for the application of CA.
5. **Clarify sequencing in JC decisions & contracts:** State explicitly in JC rules and Emission Reductions Purchase Agreement (ERPAs) when "issuance" occurs vs. when "first transfer" happens, and tie delivery obligations to the authorisation status to avoid any pre-authorisation transfers.
6. **Keep methodological integrity strong:** Use robust JCM methodologies with conservative baselines, leakage treatment, third-party validation/verification, and publication of allocation logic between Parties/participants in line with 6.2 transparency.
7. **Use-case clarity for domestic systems (e.g. GX-ETS):** When JCM units are retired domestically, disclose whether they are authorised as ITMOs and whether CAs were applied, to avoid double claiming with the host country's NDC (consistent with Japan's public JCM guidance).

Japan has already established procedures for the authorisation and CA linked to the JCM registry and is currently in the process of agreeing with each partner country on the revised JCM rules and guidelines, to align with Article 6.2.

A6IP | Paris Agreement Article 6 Implementation Partnership

To further promote international cooperation under Article 6 and accelerate capacity building and implementation in partner countries, Japan also played a leading role in forming the Paris Agreement Article 6 Implementation Partnership (A6IP) at COP27 in 2022[47]. In 2023, the A6IP Centre was established within The Institute for Global Environmental Strategies (IGES) to serve as a hub for capacity building, coordination, and operationalisation of Article 6 implementation worldwide. A6IP works closely with several countries, as well as private sector associations such as IETA, to support the establishment of domestic Article 6 frameworks, registry infrastructure, and reporting and accounting procedures. Recently, business matching forums in India, Thailand and the Philippines have been organised to help to drive progress and private sector investments in key JCM partner countries, together with local stakeholders.

ALIGNING THE JCM WITH ARTICLE 6 IS ESSENTIAL TO UNLOCKING SCALE, TRANSPARENCY, AND INTERNATIONAL CREDIBILITY.

FIND IETA AND A6IP'S JOINT REPORT "ARTICLE 6 IN ACTION: BUSINESS INSIGHTS & IMPLEMENTATION TRENDS" LAUNCHED AT COP29 IN BAKU, WITH FURTHER DETAILS ON PRIVATE SECTOR CHALLENGES AND OPPORTUNITIES IN ARTICLE 6.

RED MORE: WWW.IETA.ORG

3.7 JCM METHODOLOGIES AND MRV

3.7.1 JCM Project Categories

As of January 2026, the JCM has 107 approved methodologies across power, industrial energy efficiency, waste and wastewater, fuel switching, transport and buildings[48]. It should be noted that most of them are for projects funded by the Japanese government, and as the number of private sector JCM projects increases in the future, the composition may change.

Below is a list of main methodologies approved and grouped by categories:

Sectoral Scopes by JCM[49] (No. of Methodologies)	Number of Methodologies
1. Energy Industries (42)	Solar PV (19), Hydro power (6), Biomass Boiler (6), Heat Recovery (5), Cogeneration (3)
2. Energy distribution (5)	Energy-efficient transformers (2), Energy-saving conductors (1)
3. Energy Demand (52) 3. & 4. Manufacturing Industries (2)	Chiller (9), LED lighting (6), Refrigerator (5), Air Conditioning (4), Heat pump (4), Boilers (4), Air jet looms (3), Other energy efficient machines (10)
5.-15. (total 6)	Waste Handling (2), Transport (2), REDD+ (2)

For each bilateral country agreement, the joint committee will have to approve the eligible methodologies. The table below shows the top 5 countries with the most approved methodologies and their main project types:

Country	Approved methodologies	Main methodology types
Indonesia	29	Industrial & commercial energy efficiency (chillers, boilers, motors, lighting), renewable energy (Solar PV, hydro, biomass), cooling, cogeneration, waste/water
Thailand	20	Industrial efficiency (chillers, compressors, WHR, grid optimisation, cogeneration, lighting), Solar PV
Viet Nam	15	Industrial efficiency (pumps, drives, kilns, chillers, heat pumps/AC controls), Solar PV
Cambodia	5	Energy efficiency, Solar PV, REDD+
Myanmar	5	Energy efficiency, Waste to energy generation

In recent years, significant efforts have also been underway from METI to scale up Carbon Capture and Storage (CCS) activities under the JCM, by supporting feasibility studies of potential CCS projects in Indonesia and Thailand, and revising JCM rules and guidelines to include CCS[50].

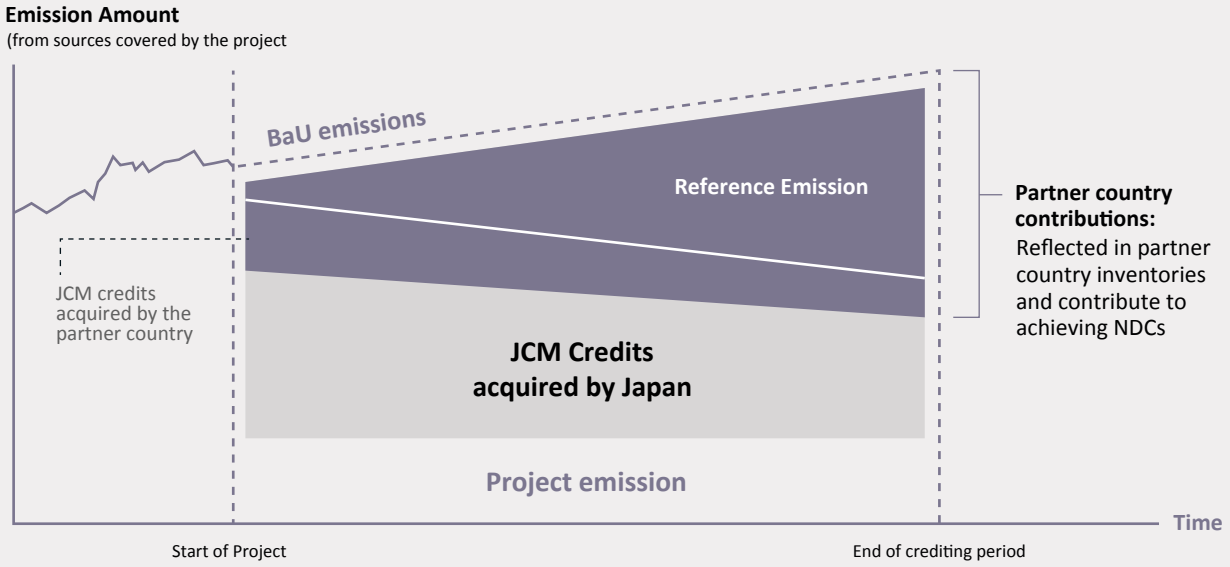
3.7.2 MRV Requirements

MRV is embedded in the JCM rules and procedures from methodology approval through project registration, monitoring, verification, and credit issuance. Documents such as PDD, Monitoring Plan/Structure, and the standardised Monitoring Report/Spreadsheet, ensure ex-ante parameters are measured ex-post with traceable data. Roles and controls (project participants, Third Party Entities (TPEs), JCs, emphasise conservativeness, uncertainty reduction, and rigorous archiving.

TPEs[51] are entities designated by the JC that are qualified to validate proposed JCM projects and verify emission reductions or removals of registered JCM projects. They need to be accredited under ISO 14065 by an accreditation body that is a member of the International Accreditation Forum (IAF) based on ISO 14064-2, or be Designated Operational Entities (DOEs) accredited by the Executive Board of the CDM. They are also required to have sufficient knowledge of the JCM, which entails a thorough understanding of all applicable rules and guidelines. JCM MRV relies on project-specific monitoring plans, TPE verification, and standardised report forms.

A key aspect of the JCM methodology is to define the Reference Scenario which represents the emissions that would have occurred if the JCM project had not been implemented. Under the JCM, GHG emissions are calculated based on the assumption that GHG emissions will be lower than the current level, taking into account current efforts to reduce environmental impacts in relevant sectors in partner countries. Therefore, Reference emissions will be lower than BaU (Business as Usual) emissions[52]. The key point of this approach is that emission reductions by investments under the JCM will be shared by both Japan and the host country.

FIGURE 7: THE CONCEPT OF REDUCTIONS AND REMOVALS AND CREDITS UNDER THE JCM[53]



JCM methodologies frequently adopt a simplified and conservative approach, in which the Reference emission factor is based on prevailing common practices or standardised values.

JCM projects apply a structured MRV system that defines monitoring parameters, measurement procedures, and QA/QC processes to ensure reliable emission reduction data, which are compiled in the Monitoring Report. The report is then verified by the TPEs before being submitted to the JC, who decides on credit issuance.

A BROAD AND EVOLVING SET OF METHODOLOGIES UNDERPINS THE JCM, SUPPORTED BY RIGOROUS MRV TO ENSURE CREDIBILITY.

3.8 ENHANCING AND EXPANDING THE IMPACT OF THE JCM

TO FURTHER STRENGTHEN AND ENHANCE THE IMPACT, SUPPLY AND INTEGRITY OF THE JCM CREDITS, THE FOLLOWING CONSIDERATIONS MAY BE EXPLORED IN THE FUTURE:

SCALING THE JCM WILL DEPEND ON LEVERAGING EXISTING SYSTEMS WHILE MAINTAINING INTEGRITY.

EXPLORING THE FEASIBILITY OF DUAL PROJECT REGISTRATION

Under this approach, projects located in JCM partner countries but which are currently registered with independent crediting programs could pursue a dual registration pathway with the JCM.

Additional requirements (e.g. selected technologies or project activities and technology transfer from Japanese corporates) or safeguards (e.g. project review by the joint JCM panel) deemed necessary may be imposed prior to a project's registration under the JCM. Following verification, dual-registered projects may request credit issuance and elect to convert the credits into JCM credits, which are subsequently recorded and tracked in the JCM registry.

This approach could offer several potential benefits:

a. Allow JCM projects to leverage existing methodologies while still adhering to the JCM framework and open more opportunities in international climate cooperation;
b. Existing market infrastructure and procedures may be utilised, subject to the establishment of connectivity;
c. Reduce time and resource requirements, as eligible JCM credits can be unlocked and supplied to the GX-ETS; and
d. Improved market access enhances project financial viability and attractiveness, encouraging additional project development.

The JCM maintains control over what projects may be accepted or registered, requiring projects to adhere to its governance and operational framework.

INTEGRATION OF EXISTING METHODOLOGIES INTO THE JCM

To increase the list of eligible methodologies and open more opportunities in international climate cooperation, the JCM could also consider partially using existing methodologies, with appropriate adjustments to ensure consistency with the JCM, thereby enabling projects to move forward without developing entirely new methodologies from scratch. In particular, consideration could be given to leveraging methodological approaches that have already undergone rigorous technical assessment under programmes recognised by the aviation sector, including those approved by the ICAO TAB under the CORSIA programme. Methodologies that have already been reviewed for additionality, baseline setting and monitoring could serve as useful reference points for expanding JCM methodological coverage across sectors such as renewable energy, energy efficiency, waste management and certain nature based solutions.

This approach would allow for:

a. Reduced time and resources: Use of proven methodologies can significantly shorten the time required for methodology development, review and approval, while reducing the technical and administrative resources needed.
b. Lower project development barriers: Borrowing elements from existing methodologies simplifies the design and implementation of projects, making it easier for developers to participate and for projects to reach financial viability.
c. Access to tested and operational methodologies: Existing and tested methodologies have already been validated and applied in real projects, ensuring technical reliability and credibility, and reducing risks associated with untested approaches.

To ensure practical feasibility, this approach could begin with a pilot program. The pilot would allow the JCM to assess the effectiveness, operational challenges, and potential benefits of using and adapting existing methodologies before scaling up. During the pilot phase, the dual project registration approach could be considered as an interim arrangement, allowing projects to operate under both the existing JCM framework and the adapted methodologies, ensuring continuity and compliance while the pilot is underway.

Collaboration with registries whose methodologies and governance frameworks have been assessed against emerging international integrity benchmarks could further strengthen confidence in JCM credits among market participants. For example, registries whose methodologies have been evaluated by the ICVCM to be CCP eligible provide examples of high integrity methodologies and infrastructure designed to support transparent and credible credit issuance. Rather than relying on external registries, the JCM could draw on proven best practices demonstrated in these systems, selectively incorporating relevant elements that support transparency, credibility and operational efficiency. Referencing such best practice approaches—without adopting external registry structures—would allow the JCM to enhance its own processes while preserving its distinctive governance model and bilateral cooperation principles of the JCM.

With the Article 6.4 Paris Agreement Crediting Mechanism (PACM) under the UNFCCC also becoming fully operational in 2026, potential comparison and alignment could present another important opportunity for scaling up high-integrity supply of Article 6 credits to Japan, enhancing international standardisation and liquidity.

04

J-CREDIT SCHEME

The J-Credit Scheme is Japan's domestic carbon crediting mechanism, designed to support emissions reductions and removals within the country. It enables the certification and issuance of credits from projects such as renewable energy, energy efficiency, and forest management, which can be used for both voluntary and compliance purposes. As the GX-ETS comes into effect, the role of J-Credits is expected to expand, requiring increased supply, stronger integrity, and closer alignment with market needs.

4.1 SUMMARY OF THE J-CREDIT SCHEME

THE J-CREDIT SCHEME IS A MECHANISM UNDER WHICH THE GOVERNMENT OF JAPAN CERTIFIES AND ISSUES CARBON CREDITS BASED ON GHG REDUCTIONS OR REMOVALS FROM PROJECTS WITHIN JAPAN. THE SCHEME HAS BEEN JOINTLY OPERATED BY THE MINISTRY OF ECONOMY, TRADE AND INDUSTRY (METI), THE MINISTRY OF THE ENVIRONMENT (MOE), THE MINISTRY OF AGRICULTURE, FORESTRY AND FISHERIES (MAFF), AND THE FORESTRY AGENCY SINCE 2013.

J-CREDITS TURN EMISSIONS REDUCTIONS INTO TRADABLE VALUE.

It is one of the key carbon market mechanisms to support Japan's NDC achievement, with a cumulative issuance target for 2030 of 15 million J-credits, as set out by the Cabinet's 2021 Plan for Global Warming Countermeasures[54].

As of March 2025, a total of 757 J-credit projects had been registered, with approximately 10.16 million tonnes of credits certified under 76 methodologies. These figures indicate a steady progress in project registration and credit issuance towards achieving the 2030 target.

J-Credits have long been permitted for use as offsets under Japan's GHG reporting system (SHK) and have now been approved for use as offsets under the GX-ETS system. They have been traded on the carbon credit market at JPX since October 2023, in addition to OTC and other transactions.

4.2 J-CREDIT SUPPLY TRENDS

UNDER THE J-CREDIT SCHEME, CREDIT ISSUANCE HAS TRADITIONALLY FOCUSED ON RENEWABLE ENERGY GENERATION (MAINLY SOLAR POWER) AND ENERGY EFFICIENCY MEASURES (PRIMARILY BOILERS AND COGENERATION), WITH AN ANNUAL ISSUANCE OF 800,000 TO 1,000,000 TONNES OF CREDITS. IN RECENT YEARS, HOWEVER, ACTIVITIES RELATED TO THE DEVELOPMENT OF LARGE-SCALE FOREST MANAGEMENT PROJECTS AND OTHER PROJECTS, SUCH AS PADDY FIELD IRRIGATION MANAGEMENT, HAVE EXPANDED.

Since 2023, the issuance of credits from forest management projects in particular has been rapidly increasing. In 2024, of the approximately 1.7 million tonnes of credits issued, those originating from forest management accounted for the largest share, at around 770,000 tonnes.

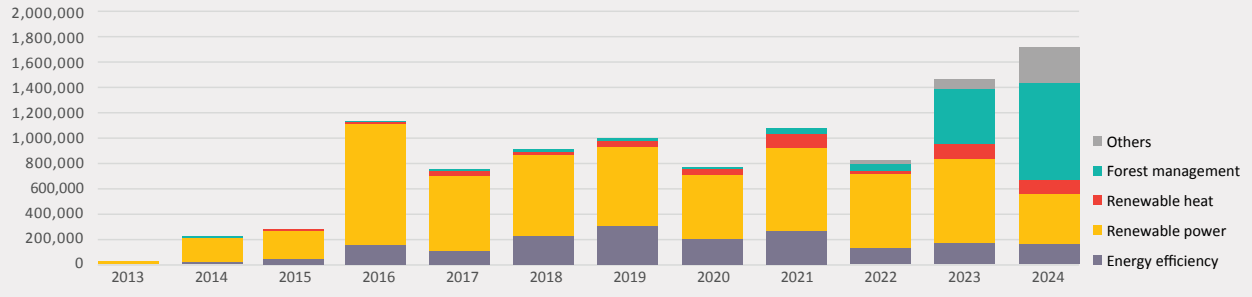
In this way, future J-credit supply is becoming diversified, extending beyond renewable energy generation and energy efficiency to include forest management and similar activities.

In addition to these existing methodologies, the Climate Change Countermeasures Plan, approved by the Cabinet in February 2025, proposes several measures to further revitalise the J-credit Scheme. These include initiatives to promote the creation and utilisation of credits from carbon removal activities, which are becoming increasingly important for achieving net zero by 2050 - such as expanding the creation and use of J-credits derived from forest management and exploring the J-credit potential of CO_2-absorbing concrete. There has also been significant efforts to encourage the development of direct air capture (DAC) projects as a key measure to address residual emissions. The plan also covers measures such as further expansion of subsidies and the promotion of group projects led by equipment manufacturers, leasing companies, and trading firms.

THE GROWTH OF FOREST AND REMOVAL-BASED PROJECTS IS RESHAPING THE FUTURE OF J-CREDIT SUPPLY.

Through these new initiatives, it is expected that the development of new methodologies and the establishment of more flexible credit issuance approaches will also be encouraged.

FIGURE 8: J-CREDIT ISSUANCE VOLUME TREND[55]



4.3 J-CREDIT DEMAND TRENDS

J-CREDITS HAVE PRIMARILY BEEN USED FOR TWO MAIN PURPOSES: SO-CALLED VOLUNTARY INITIATIVES AND ADJUSTMENTS OF EMISSIONS UNDER SHK. THE BACKGROUND AND TRENDS FOR EACH PURPOSE ARE AS FOLLOWS:

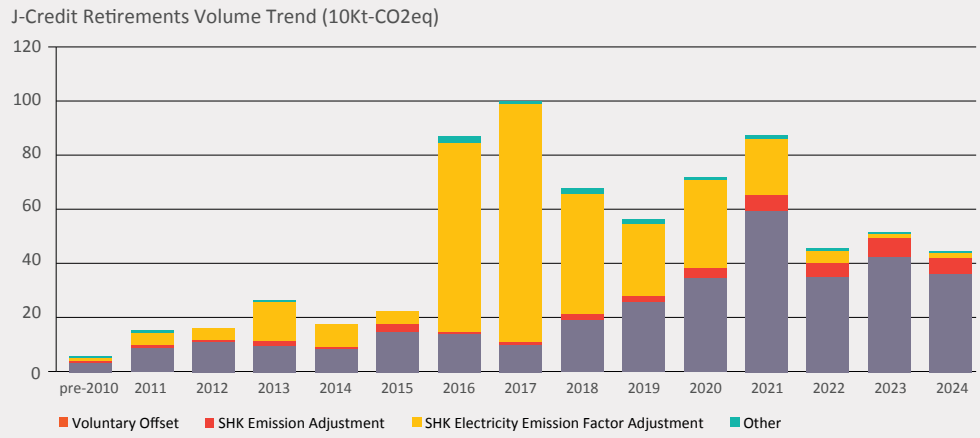
Voluntary carbon credit use: Since 2017, J-credits derived from renewable energy have become eligible as renewable energy certificates under the GHG Protocol Scope 2 (market-based), and it has been confirmed that they can be recognised as part of renewable energy procurement under international initiatives such as CDP and SBT. As a result, there has been steady demand for voluntary J-credits, primarily those derived from renewable energy since that time.

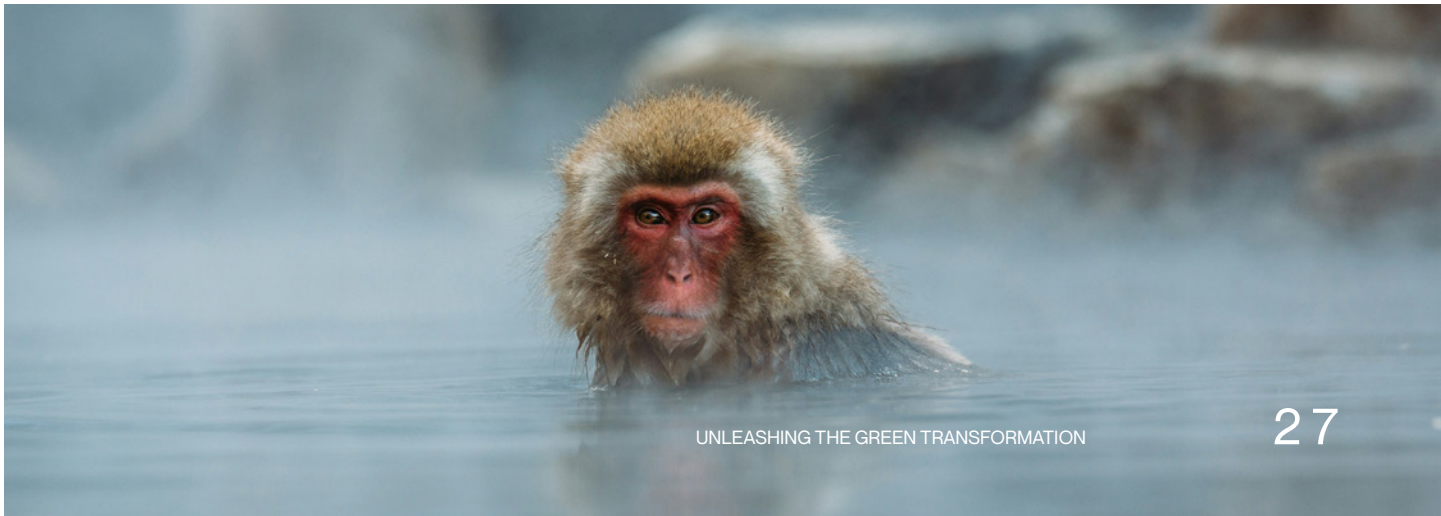
Use for SHK emissions adjustments: Following the full liberalisation of the electricity market in Japan in 2016, retail electricity suppliers concentrated on using J-credits to design and report electricity supply plans with low emission factors. Initially, J-credits were effectively the only external credits that could be used under SHK; however, subsequently, non-fossil certificates also became eligible, and electricity consumers themselves began procuring renewable energy certificates directly. Consequently, demand for J-credits by retail electricity suppliers for SHK emissions adjustment purposes has been gradually declining.

In addition to these historical demand trends, the METI has indicated that under Phase 2 of the GX-ETS, to be introduced from FY2026 onwards, up to 10% of direct emissions can be offset using J-credits and JCM credits. This suggests an increased demand from FY2026 onwards, which has not been reflected in previous retirement volumes. In the Carbon Credit Market at JPX, as discussed in section 4.6, price increases had been observed until the announcement of the GX ETS price floor and ceiling. Central Research Institute of Electric Power Industry (CRIEPI) analysed it is likely reflected by pre-purchase demand from entities to be covered by GX ETS Phase 2.[57].

J-CREDIT DEMAND IS SHIFTING FROM VOLUNTARY USE TOWARD COMPLIANCE—DRIVEN BY THE ARRIVAL OF GX-ETS.

FIGURE 9: J-CREDIT RETIREMENTS VOLUME TREND[56]





4.4 STRUCTURE AND DRIVERS OF J-CREDIT SUPPLY

AGAINST THIS BACKDROP OF POTENTIAL DEMAND GROWTH AND THE NEED TO EXPAND SUPPLY, THE CURRENT SUPPLY STRUCTURE AND KEY POINTS FOR SUPPLY EXPANSION FOR THE MAIN CREDIT TYPES—RENEWABLE ENERGY GENERATION, ENERGY EFFICIENCY, AND FOREST MANAGEMENT—ARE SUMMARISED AS FOLLOWS.

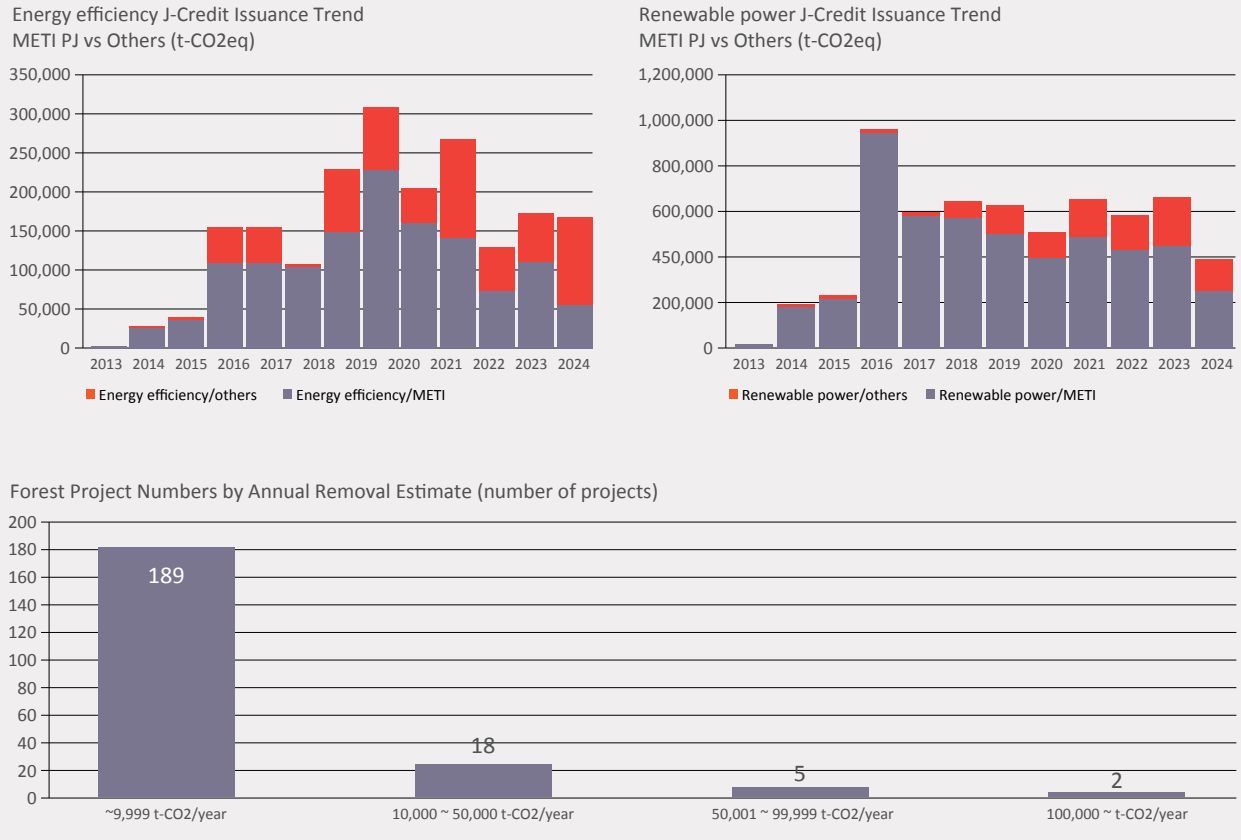
GROWTH IS COMING—BUT ONLY CREDIBLE, SCALABLE PROJECTS WILL DEFINE THE FUTURE OF J-CREDIT SUPPLY.

Renewable energy generation and energy efficiency credits have historically been supplied primarily through programme-based or group projects led and operated by the government/METI, with METI-led projects accounting for 83% of cumulative supply in renewable energy generation and 66% in energy efficiency. In recent years, supply from non-METI-led projects has gradually increased, with energy companies, real estate firms, equipment manufacturers and leasing companies, and local governments beginning to promote new project development. On the other hand, from FY2025, the mandatory introduction of solar power in some regions is expected to accelerate such initiatives; however, from the perspective of additionality, a growing number of these efforts may not qualify for credit issuance. In light of these considerations, the development of new methodologies and government support for non-METI-led projects will likely remain important for securing new project opportunities and ensuring a stable supply from these main credit types.

Forest management: As noted above, since FY2023, the issuance of J-credits from forest management projects has increased sharply. One factor contributing to this trend is the emergence of large-scale forest management projects in Japan. Whereas most projects previously involved annual carbon sequestration of less than 10,000 tonnes, in recent years, more extensive forest areas have been included, with some projects now expected to sequester up to 100,000 tonnes of CO_2 per year.

Although the number of such large-scale projects remains limited, the J-credit Programme has continuously updated its framework—including the use of remote sensing—to simultaneously promote these large-scale projects and enhance credit quality. Looking ahead, further updates to enable rational and flexible project development and credit issuance procedures are expected to continue supporting the expansion of supply.

FIGURE 10: ENERGY EFFICIENCY AND RENEWABLE POWER J-CREDIT ISSUANCE TREND FROM METI PROJECTS AND OTHER SOURCES[58]



4.5 INTEGRITY

ALONGSIDE REVITALISING THE SCHEME AND ENSURING FLEXIBILITY, SECURING THE QUALITY AND INTEGRITY OF CARBON CREDITS REMAINS A CRITICAL ISSUE. THE J-CREDIT SCHEME HAS SO FAR ESTABLISHED A ROBUST MRV SYSTEM IN ACCORDANCE WITH ISO 14064-2, 14064-3, AND 14065, AND ENSURED GOVERNANCE AND INTEGRITY THROUGH CERTIFICATION AND MANAGEMENT COMMITTEES COMPOSED OF EXTERNAL EXPERTS.

However, as J-credits will increasingly start being used for compliance under the GX-ETS, the need for strengthened criteria around additionality, leakage, permanence, and other safeguards is expected to grow. Other international approaches, such as the new Article 6.4 PACM standards under UNFCCC and the Core Carbon Principles (CCPs) of the Integrity Council for Voluntary Carbon Markets (ICVCM), may serve as useful reference for future improvements.

4.6. PRICE TRENDS: FROM VOLUNTARY USE TO GX-ETS

HISTORICALLY, J-CREDITS HAVE PRIMARILY BEEN TRADED OVER THE COUNTER (OTC), BUT FROM OCTOBER 2023, EXCHANGE TRADING WAS ALSO LAUNCHED ON THE TOKYO STOCK EXCHANGE (JPX). INITIALLY, AS VOLUNTARY DEMAND FOR J-CREDITS PREDOMINATED, TRADED PRICES ON THE CARBON CREDIT MARKET AT JPX SHOWED DIFFERENCES BY CREDIT TYPE. IN PARTICULAR, J-CREDITS FROM FOREST MANAGEMENT (FOR LOCAL CONSUMPTION AND PR PURPOSES) AND RENEWABLE ENERGY GENERATION (FOR RENEWABLE ENERGY PROCUREMENT PURPOSES) COMMANDED MATERIAL PREMIUMS OVER OTHER CREDIT TYPES.

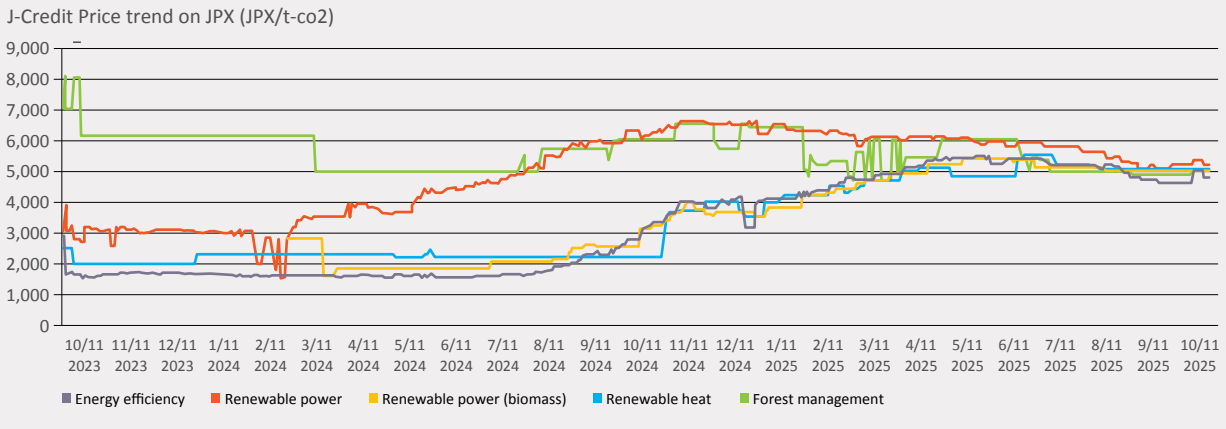
However, from around September 2024, discussions on the detailed design of GX-ETS Phase 2 began, which appears to have triggered increased demand and rising prices for other J-credits, previously trading at relatively low levels, likely in preparation for future compliance use. Although price differences between credit types still exist, the gap has begun to narrow gradually between 5,000-6,000 Japanese yen. While voluntary demand is expected to persist, the demand associated with GX- ETS Phase 2 may further reduce these price differences, potentially converging closer towards a single price level for use towards compliance purposes.

On 19 December 2025, the ETS subcommittee submitted its opinion to METI for the reference trading price of emission allowances, setting the upper limit price at 4,300 yen ($28 USD) per ton of CO_2 and the lower limit price at 1,700 yen ($11 USD) for FY2026, The suggested upper limit price is about 20% less than the average J-credit price in December 2025, but this announcement does not appear to have had a much impact on the trading price of J-credits in the carbon credit market of 23 January.

However, an examination of market developments through the end of March shows that a downward trend emerged from January to February for the two most traded contracts on JPX, namely the energy-efficiency and renewable-energy J-Credits. Specifically, compared to the prices on 19 December—5,190 yen for energy-efficiency credits and 5,800 yen for renewable-energy electricity credits—the lowest prices recorded by 31 March were 4,600 yen and 5,000 yen, respectively, representing declines of approximately 11% and 14%. Accordingly, the published upper and lower price bounds can be assessed as having exerted a certain influence on J-Credit market prices. Thereafter, by the end of March, the downward trend had stabilized, and the market has entered a wait-and-see phase following the launch of the GX-ETS.

This has led to further convergence and stability of J-credit prices. As of March 2026, we can see most J-credit activity prices on JPX converging slightly above the upper limit price for GX-ETS.

FIGURE 11: J-CREDIT PRICE TREND ON TSE[59]



05

FUTURE SCENARIOS AND CONSIDERATIONS

As the GX-ETS begins operation and evolves over the coming decade - with allocation rules tightening, benchmarking becoming more precise, auctions being phased in, and offset mechanisms scaling up - there is a growing need to understand the key parameters and variables that will shape future market dynamics. This section examines the possible scenarios and main factors that are likely to influence allowance prices as well as the supply, demand and price levels of offsets.

Given that the GX-ETS remains in an early phase, with no clear long-term emissions trajectory and many technical elements still under development, future market outcomes remain inherently uncertain. The demand and price of allowances will depend largely on the economic growth of Japan, in addition to industry-specific targets, benchmarks, price settings and banking restrictions introduced by the government.

To explore how the system might develop, this chapter presents three indicative scenarios for the period up to 2035. These scenarios are designed to illustrate different market conditions that could emerge under reasonable assumptions about economic activity, technological progress, corporate mitigation behavior, and the speed of policy implementation.

To simplify the scenarios, we will assume that the market functions properly and that there is no shortage of trading allowances in the market due to excessive banking of allowances, which is allowed indefinitely under the current rules. In the scenarios, we also try to assess how each pathway could influence the demand for JCM and J-Credits, both of which are expected to play a key role in the GX-ETS, particularly as reductions become more costly and difficult toward the mid-2030s.

It is important to note that these scenarios are not to be seen as forecasts, but rather exploratory illustrations based on simplified assumptions to support consideration of various options, initiate conversations and identify possible future challenges and opportunities. Given these uncertainties, the scenarios below should be interpreted with due caution.

IN AN EVOLVING SYSTEM, FUTURE GX-ETS OUTCOMES WILL DEPEND ON THE BALANCE BETWEEN POLICY, MARKETS, AND ECONOMIC REALITIES.

THEORETICAL TRAJECTORIES FOR THE GX ETS:

	Scenario 1: Oversupply	Scenario 2: Balanced	Scenario 3: Shortage
Allowance allocation	Oversupply	Balanced	Shortage
Allowance market price	Price at floor	Price between the corridor	Price at ceiling
Description	Allocation of allowances is higher than cost-effective industry reduction potential. Large amounts of excess allowances will be held by market participants.	Allocation is challenging but not overly stringent – meaning that most entities will reduce in line with targets, utilizing offsets only if they are cheaper than the average allowance price, which remain between the ceiling and floor prices.	Allocation is stringent, making it challenging for compliance entities to meet their caps. This creates a shortage in the market, leading to high demand for offsets.
Demand for offsetting using JCM and J-Credits	Low	Medium	High
Average offset price	Floor price or below	Between the corridor	Anywhere below the ceiling price x 1.1
Comments	Without any restrictions on banking and overly lax targets, the incentive for entities to participate in the market is weak. This may lead to low liquidity, limited price transparency, a long-term oversupply of allowances and failure to meet climate commitments if not effectively managed. The demand for offsets will be basically non-existent, driving down prices and reducing incentives for project development, potentially causing negative long-term supply issues.	Ideal scenario where supply meets demand and emissions reductions are effectively incentivized, both domestically and abroad, at the lowest cost.	With offset prices at/or close to the ceiling, incentives for JCM and J-credit project developers is relatively high. However, if caps are set overly stringent, there is a risk that corporates cannot meet targets, even with the use of eligible offsets. This scenario puts strong emphasis on overseas emissions reductions and risks political pushback if not well managed due to rising compliance costs.

DISCUSSION AND CONSIDERATIONS

1. ALLOCATION OF ALLOWANCES

As can be seen in the above scenarios, the key parameter shaping the GX-ETS market will be how the stringency and allocation of allowances aligns with compliance entities' cost-effective abatement opportunities and the economic growth of Japan. With GHG emissions historically linked to variations in industrial output as a factor of economic development, a high economic growth scenario could likely result in a shortage of allowances and a higher reliance on project-based credits to meet compliance targets. To achieve NDC commitments, it will therefore be critical to achieve a clear decoupling of emissions from economic output.

At the same time, with emissions trading systems largely being policy-driven instruments, further global pushback against climate action and geopolitical considerations may impact the future stringency of GX-ETS targets. Initial free allocations conducted through a mix of benchmarking and grandfathering are expected to reflect the circumstances of early implementation and begin at a modest level. As the system matures, there is an expectation to start transitioning towards paid allocation (auctioning) in 2033 – which may have significant impacts on market pricing and emissions trajectories. Once auctioning is introduced, it will be vital to examine how revenues can be recycled to further support emissions intensive and trade exposed (EITE) sectors and strengthen green competitiveness.

2. FLOOR AND CEILING PRICES

In addition to the allocation of allowances, the establishment of a floor and ceiling price for the GX-ETS will significantly shape the market dynamics in the years to come. In the initial stage, with companies facing a floor price of JPY 1,700 (approx. USD $11) and a ceiling of JPY 4,300 (approx. USD $27) in FY2026, prices will be confined within the 3% annual increase.

Whilst the introduction of a price corridor can be justified in the early stages of an ETS to support market stability and confidence, evidence suggests that long-term efficiency is best achieved by transparent market-based price formation determined by supply and demand. This allows market participants to effectively allocate capital, hedge risks and invest in necessary climate interventions aligned with long-term emissions reductions trajectories, avoiding policy-driven volatility and uncertainties.

The current price ceiling for FY 2026 is lower than the prices of most JCM and J-credits, which could indicate a lower demand for offsets in the first years of the market. However, if caps become more stringent and/or the price corridor is expanded, this may drastically change the market dynamics. For high-cost credit types such as from many Carbon Dioxide Removal (CDR) projects, demand arising from the GX-ETS is likely to be very marginal, as participants can comply by paying 110% of the upper-limit price instead.

3. BANKING & TRADING RULES

It is important to also highlight the possibility of temporary perceived shortages in the market which may be a result of compliance entities banking their allowances instead of putting them up for trading. Whilst unrestricted banking allows flexibility for entities in the early stage to save for future, stricter emission caps, it may negatively impact market liquidity and price discovery, as seen in other ETSs globally, unless well managed. In the future, certain restrictions on time or volumes of banking may be considered to support increased market activity.

To enhance price transparency and liquidity, the role of trading entities also plays a key role. Specialised intermediaries such as financial institutions, brokers, and trading desks support continuous price discovery by aggregating demand and supply and consistently providing bids and offers to the market. Even if the market evolves in a gradual and managed manner, such activities can contribute to increasing market depth, reducing transaction costs, and enabling compliance entities to hedge risk and adjust positions efficiently. Over time, even under a phased approach to market opening, the presence of active trading entities contributes to a more robust, transparent, and investable ETS, supporting efficient market functioning and long term abatement incentives.

In addition to physical (spot) transactions, futures and derivatives may prove increasingly useful when emissions trading schemes mature, as they enable greater price discovery and allows participants to hedge compliance and investment risk over time. Whilst not currently being considered as key instruments for the GX ETS market, forward curves derived from futures trading provide signals on expected scarcity, supporting investment and abatement decisions. Derivatives also enhance liquidity by attracting financial institutions and trading entities to participate. As an example from the EU ETS, futures comprised about 89% of all EUA trading volume in 2025, with spot and auctions only representing the remaining 11%.[60].

4. ADDRESSING EMISSIONS LEAKAGE & COMPETITIVENESS

As the GX-ETS matures and carbon prices rise, the risk of emissions leakage and production displacement becomes an increasingly important concern. The EU's Carbon Border Adjustment Mechanism (CBAM) entered its definitive stage on 1 January 2026, becoming the first fully operational border carbon adjustment policy to begin charging costs based on the emissions intensity of imported goods, covering sectors including steel, aluminum, cement, fertilisers, and hydrogen. Other countries, such as the UK, Canada, the United States, Australia, and Turkey are all now exploring the implementation of CBAMs of their own[61].

At the same time, other ideas around carbon pricing alignment and carbon market clubs continue to emerge, including the recently announced Open Coalition on Compliance Carbon Markets launched at COP30 in Brazil. As the carbon price in Japan develops and the gap with key trading partners potentially widens, the case for exploring border carbon adjustment measures will strengthen. It is therefore appropriate for the Japanese government to follow international developments in this area and to consider, where relevant, the feasibility of such instruments, both to safeguard the competitiveness of domestic industry in carbon intensive sectors and to preserve the environmental integrity of the GX ETS.

5. SUPPLY OF THE JCM AND J-CREDITS

As compliance needs grow and prices potentially increase over time, the demand for project-based JCM and J-credits is expected to play a growing importance.

As seen in Chapter 4, the domestic J-Credit supply is likely to continue its gradual expansion, though it may face constraints due to limited land availability, a narrow set of eligible project types, and increased stringency of methodologies (e.g. around additionality, leakage and permanence). Efforts to broaden the supply of J-Credits, e.g. through methodological updates, streamlined processes, or expanded project categories, may help ease future pressure on the market.

By contrast, JCM credit supply has stronger long-term potential, supported by partner countries' strengthened climate commitments, expanded listing of methodologies including for high-quality mitigation and removal projects and the establishment of private-sector driven JCM. At the same time, JCM faces its own challenges in scaling up supply – particularly in receiving the necessary Article 6 authorisations and corresponding adjustments from host countries. To enhance the reliability of the JCM credits as a viable option under the GX-ETS, public sector actors, as well as private sector actors must work closely together to streamline the JCM development process, accelerate credit issuance, provide additional capacity-building support for host country governments and identify new potential partner countries. This can help scale up supply and lower JCM credit costs. Nevertheless, given the limited resources available to expand JCM supply, it may become necessary at a certain stage to concentrate those resources on selected partner countries and specific project types. That said, project development and overall supply are likely to be significantly influenced by prevailing price levels in the GX ETS. For this reason, JCM participants will have to pay strong attention to future price trends in the GX ETS market.

Also deserving close attention are the rules governing the banking of Article 6 credits beyond 2030. As ITMOs cannot be carried over e.g. from pre-2030 to be used in the next NDC period according to the rules of the Paris Agreement, there is a risk of price distortion as the first phase draws to a close. These may rules may require additional clarification and communication from the GoJ to ensure market participants are not caught by surprise.

6. LEVERAGING EXISTING MARKET INFRASTRUCTURE FOR THE JCM

Using established platforms such as carbon rating agencies, independent crediting programmes, and verification bodies can accelerate the scaling of high-integrity offset supply to the GX-ETS. These organisations already possess mature evaluation frameworks, due-diligence processes, and credibility with investors. Integrating their functions where appropriate — either through the JCM or independently — can reduce administrative burdens, enhance transparency, and help project developers navigate the market more efficiently.

As discussed under Chapter 3.8, there are several opportunities available to expand the impact of the JCM using established market infrastructure, such as the use of existing platforms. There is a significant accumulated body of knowledge and experience from the voluntary carbon market that could be utilised to scale up high-integrity JCM supply, broaden opportunities for developers and facilitate a more liquid international market. At the same time, with the Article 6.4 Paris Agreement Crediting Mechanism (PACM) under the UNFCCC becoming operational, this presents another important opportunity for potential comparison and alignment.

Regarding the role of carbon rating platforms, there are still diverging views on their importance in compliance emissions trading systems with the principle of a single, uniform price for units (allowances) – however, in project-based carbon crediting markets, they are playing an increasingly prominent role. By being able to assess the likelihood of projects living up to environmental integrity criteria, particularly before issuance of credits, rating platforms can play a valuable complementary role in strengthening the integrity and consistency of credit development.

While decisions on whether to utilise the existing infrastructure ultimately rest with public-sector stakeholders, dramatically scaling the JCM is in the interest of all participants. Therefore, it is desirable to explore ways to make effective use of this infrastructure without compromising the principles of the Joint Crediting Mechanism.

7. CLEAR GUIDANCE ON VOLUNTARY CORPORATE USE OF CARBON CREDITS

In addition to the compliance market, many Japanese corporates have set voluntary net-zero corporate targets, including through the Science-Based Targets initiative (SBTi) and other approaches. To support such voluntary climate action and the use of high-integrity carbon credits, it will be important for the Japanese government to clearly outline their stance on corporate use of voluntary carbon credits, and the claims companies can make. Usefully, this can lean on guidance already developed by IETA, the Voluntary Carbon Market Integrity Initiative (VCMI) and the Coalition to Grow Carbon Markets, to help instil trust in the market.

06

CONCLUSION

Japan stands at a pivotal moment in its climate journey. With the GX-ETS entering its mandatory phase this year, the country is transitioning from decades of voluntary action to a binding, large-scale compliance carbon market - one that will cover approximately 60 percent of national emissions and position Japan as a global leader in emissions trading and Article 6 implementation.

CONCLUSION

The analysis presented in this report highlights both the significant opportunities and the material challenges that lie ahead. It has discussed Japan's long engagement with international carbon markets through CDM, JCM and current Article 6 alignment. It has delved into the depth of the new compliance GX-ETS market and its design elements, as well as the importance and expected role of J-credits as eligible offsets in the scheme.

Finally, three key scenarios have illustrated how the trajectory of the GX-ETS will be shaped by the interplay of allowance allocation stringency, economic growth, technological progress, and the pace of policy implementation.

KEY FINDINGS

The GX-ETS is launching on a strong foundation, but its long-term effectiveness will hinge on several critical design and implementation choices. Allowance allocation remains the central variable: targets that are too lax risk market oversupply and weak abatement incentives, while overly stringent caps without sufficient offset supply could undermine compliance and invite political backlash. The gradual transition to auctioning from 2033 represents a significant structural shift that will require careful management, particularly with regard to the treatment of emissions-intensive and trade-exposed (EITE) sectors.

Short-term, the introduction of a price corridor may prove useful for market stability and investment predictability, and over time, the extent to which price formation can be cautiously entrusted to market-based supply and demand dynamics should be considered. Banking rules, while providing flexibility, may require careful calibration moving forward, to prevent excessive allowance banking from undermining market liquidity. The potential consideration of futures and derivatives markets, drawing on the experience of other mature ETS markets globally, may also play an increasingly important role in the future to support liquidity, enable effective risk hedging and long-term investment signals.

THE ANALYSIS IN THIS REPORT HIGHLIGHTS BOTH THE OPPORTUNITIES AND CHALLENGES SHAPING THE FUTURE OF JAPAN'S CARBON MARKET. IT BRINGS TOGETHER INSIGHTS ON GX-ETS DESIGN, CARBON CREDIT SUPPLY, AND INTERNATIONAL ALIGNMENT UNDER ARTICLE 6. AS THE SYSTEM MOVES INTO OPERATION, ITS SUCCESS WILL DEPEND ON KEY POLICY CHOICES, MARKET DYNAMICS, AND THE ABILITY TO SCALE HIGH-INTEGRITY SOLUTIONS EFFECTIVELY.

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On the supply side, both J-Credits and JCM credits will play a critical role in cost-effective compliance, particularly as domestic abatement opportunities become more constrained. While domestic J-Credit supply faces structural limitations, the JCM has strong long-term potential - provided that challenges around bilateral Article 6 authorisations, methodology expansion, and private sector engagement are addressed proactively. Leveraging existing market infrastructure, including the consideration of partnerships with independent crediting programmes or standards, can support scaling without compromising integrity.

Ultimately, as the GX-ETS now moves from design to operation, the real work begins. Equipping industry with the tools to decarbonise, plan and manage risk, expanding and streamlining credit supply, and building the capacity needed to support Japan's green transition while safeguarding competitiveness, will require sustained, collaborative effort. Over the coming years, government, academia, and the private sector must all work closely together to build this into a high-integrity market which can incentivise cost-effective mitigation at scale. Done well, the GX-ETS can serve as both an engine for achieving Japan's climate targets and a model for carbon market development across the Asia-Pacific region and beyond.

IETA stands ready to support Japan in this endeavor - bringing together the expertise, networks, and global perspective of its members to help build a credible, efficient, and ambitious carbon market that delivers for both the climate and the economy.

JAPAN'S GX-ETS MARKS A DEFINING SHIFT FROM AMBITION TO EXECUTION—TRANSFORMING CLIMATE COMMITMENTS INTO A FUNCTIONING, LARGE-SCALE CARBON MARKET. ITS SUCCESS WILL DEPEND ON DISCIPLINED POLICY DESIGN, CREDIBLE PRICE SIGNALS, AND THE ABILITY TO SCALE HIGH-INTEGRITY CREDIT SUPPLY WHILE MAINTAINING COMPETITIVENESS. IF IMPLEMENTED EFFECTIVELY, THE GX-ETS WILL NOT ONLY ACCELERATE JAPAN'S DECARBONIZATION, BUT ALSO SET A BENCHMARK FOR HOW CARBON MARKETS CAN DRIVE REAL, ECONOMY-WIDE TRANSFORMATION.

CARBON MARKETS & EMISSIONS TRADING IN JAPAN:

UNLEASHING THE GREEN TRANSFORMATION

ENDNOTES

1. JRC Science for Policy Report GHG EMISSIONS OF ALL WORLD COUNTRIES p11: https://edgar.jrc.ec.europa.eu/report_2025
2. GHG emissions and removals in fiscal year 2023 (details), MOEJ: https://www.env.go.jp/content/000310279.pdf
3. FY2023 Energy Supply and Demand Results (Final), April 25, 2025, Agency for Natural Resources and Energy (ANRE): https://www.enecho.meti.go.jp/statistics/total_energy/pdf/gaiyou-2023fykaku.pdf
4. The 7th Strategic Energy Plan, February 2025, ANRE: https://www.enecho.meti.go.jp/en/category/others/basic_plan/pdf/7th_outline.pdf
5. Japan's Nationally Determined Contribution (NDC): https://unfccc.int/sites/default/files/2025-02/Japans%202035-2040%20NDC.pdf
6. https://www.nies.go.jp/gio/en/archive/ghgdata/index.html
7. "Basic Policy for Realizing GX" Approved by Cabinet, February 10, 2023: https://www.meti.go.jp/press/2023/07/20230728002/20230728002.html
8. https://www.meti.go.jp/press/2023/07/20230728002/20230728002.html
9. METI GX Policy Overview: https://www.meti.go.jp/policy/energy_environment/global_warming/index.html
10. METI GX Strategy PDF: https://www.meti.go.jp/policy/energy_environment/global_warming/transition/pathways_to_green_transformation.pdf
11. "Basic Policy for Realizing GX" approved by the Cabinet, February 10, 2023: https://www.meti.go.jp/policy/energy_environment/global_warming/transition/pathways_to_green_transformation.pdf
12. METI ETS Design Policy: https://www.meti.go.jp/shingikai/sankoshin/sangyo_gijutsu/emissions_trading/pdf/001_03_00.pdf
13. 10th Industrial Structure Council Green Innovation Project Subcommittee Document 2, page 4 "Growth-oriented Carbon Pricing Concept" February 2, 2023: https://www.meti.go.jp/shingikai/sankoshin/green_innovation/pdf/010_02_00.pdf
14. "Sector-Specific Investment Strategies", December 22, 2023: https://www.cas.go.jp/jp/seisaku/gx_jikkou_kaigi/pdf/kihon1222.pdf & GX Home at METI HP: https://www.meti.go.jp/policy/energy_environment/global_warming/index.html
15. GX League Official Site: https://gx-league.go.jp/
16. Press release by METI on 27 March 2024: https://www.meti.go.jp/press/2023/03/20240327003/20240327003.html
17. METI ETS Design Policy: https://www.meti.go.jp/shingikai/sankoshin/sangyo_gijutsu/emissions_trading/pdf/001_03_00.pdf
18. Science Based Targets Initiative (2026): Corporate climate action momentum builds as SBTi reaches 10,000 companies with validated targets https://sciencebasedtargets.org/news/sbti-celebrates-10000-company-validations
19. Carbon Pricing Experts WG: https://www.cas.go.jp/jp/seisaku/gx_jikkou_kaigi/carbon_pricing_wg/kaisai.html
20. https://www.cas.go.jp/jp/seisaku/gx_jikkou_kaigi/carbon_pricing_wg/dai5/siryou2.pdf
21. Law search site: Act on Promotion of Smooth Transition to a Carbon-Free Growth Economic Structure (GX Promotion Act): https://laws.e-gov.go.jp/law/505AC0000000032/20260401_507AC0000000052#Mp-Ch_4-Se_2
22. ETS subcommittee: https://www.meti.go.jp/shingikai/sankoshin/sangyo_gijutsu/emissions_trading/index.html
23. 3rd materials at 6th ETS subcommittee meeting at METI on 9 December 2025: https://www.meti.go.jp/shingikai/sankoshin/sangyo_gijutsu/emissions_trading/pdf/006_03_00.pdf
24. https://www.gxa.go.jp/carbon-trade-levy/
25. https://www.meti.go.jp/shingikai/sankoshin/sangyo_gijutsu/emissions_trading/pdf/20251219_2.pdf
26. METI ETS Design Policy: https://www.meti.go.jp/shingikai/sankoshin/sangyo_gijutsu/emissions_trading/pdf/001_03_00.pdf
27. 5th Carbon Pricing Experts Working Group Meetings: https://www.cas.go.jp/jp/seisaku/gx_jikkou_kaigi/carbon_pricing_wg/dai5/index.html
28. COP3 website at MOFA: https://www.mofa.go.jp/mofaj/gaiko/kankyo/kiko/cop3/index.html
29. "CDM: Principle and Current Status" by Kazuhisa Koakutsu and Yuji Mizuno, IGES: https://www.jstage.jst.go.jp/article/mcwmr/20/4/20_149/_pdf/-char/ja
30. KAINOU, K. (2021). RIETI: Collapse of the CDM Scheme under the Kyoto Protocol and its Spillover: Consequences of "Carbon Panic". Retrieved from: https://www.rieti.go.jp/en/columns/a01_0659.html#:~:text=In%20case%20of%20Japan%2C%20as,government%20would%20not%20purchase%20CERs.
31. The Bilateral Offset Credit Mechanism (BOCM)—the precursor to the JCM—was proposed by Japan in 2010 as mentioned in IGES (2012). Y. Ninomiya: Development and implementation of alternative market mechanisms: BOCM proposed by Japan.

32. In the case of Financing Programme for JCM Model Projects
33. JCM Home: https://www.jcm.go.jp/
34. JCM Home, Issuance of credits; https://www.jcm.go.jp/projects/issues
35. https://www.env.go.jp/annai/kaiken/files/r04/cop26%206jou.pdf & https://www.env.go.jp/press//110916.html
36. JCM-Carbon Markets Newsletter Secretariat Webpage by OECC: https://www.oecc.or.jp/JCM_CarbonMarket/index_CarbonMarket.html
37. The list was made by checking one by one at JCM Home (https://www.jcm.go.jp/).
38. https://www.env.go.jp/press/110430.html & https://www.env.go.jp/earth/Establishment%20of%20the%20JCM%20Promotion%20and%20Utilization%20Council_20220401.pdf
39. GoJ stated that the amount of emissions reduction and removal acquired by Japan under the JCM will be appropriately counted as Japan's reduction consistent with the guidance on cooperative approaches, referred to in Article 6, paragraph 2 of the Paris Agreement (Decision 2/CMA.3)
40. Establishment of the JCM Promotion and Utilization Council. Retrieved from https://www.meti.go.jp/policy/energy_environment/global_warming/jcm/pdf/en_JCM_Promotion_and_Utilization_Council.pdf
41. Guidance on the formulation of Private Sector JCM projects; https://www.env.go.jp/content/000123179.pdf
42. On 9 December 2025, Project Idea Note (new format) guidelines and examples were shared by JCMA: https://gec.jp/jcm/agency/news/pin_251209/
43. Page 8 of the revised Guidance for formulating Private Sector JCM projects: https://www.meti.go.jp/policy/energy_environment/global_warming/jcm/pdf/private_secor_JCM_guidance_all_202403.pdf
44. Application Criteria of the JCM: https://gec.jp/jcm/agency/JCM_application_criteria_en.pdf
45. 45Recent Developments of the JCM, Nov 2023 by Government of Japan: 202311_JCM_goj_eng.pdf
46. JCM Promotion and Utilization Council (2022). Procedures for Corresponding Adjustments regarding the Joint Crediting Mechanism. (Revised on Mar 31, 2025). https://www.env.go.jp/content/000060562.pdf
47. Article 6 Implementation Partnership, A6IP Centre HP, 2026: https://a6partnership.org/
48. JCM Home Page. Retrieved from https://www.jcm.go.jp/methodologies/all
49. JCM Home Methodologies Search(Advanced): https://www.jcm.go.jp/methodologies/advanced_all
50. Ministry of Economy, Trade and Industry (METI), Shioimi, K., 2023 https://www.jogmec.go.jp/content/300382142.pdf
51. See "Joint Crediting Mechanism Guidelines for Designation as a Third-Party Entity" of any JCM partner countries: https://www.jcm.go.jp/rules_and_guidelines
52. Page 5 of the JCM Methodology Guidebook: https://www.iges.or.jp/jp/pub/jcm-methodology-guidebook/ja
53. https://gec.jp/jcm/agency/%E3%80%90%E5%85%AC%E9%96%8B%E3%80%91JCM%E3%81%AE%E6%A6%82%E8%A6%81%E3%81%A8%E6%9C%80%E6%96%B0%E5%8B%95%E5%90%91(%E6%8A%9C%E7%B2%8B)_20251212.pdf
54. "62. Activation of J- Credit Scheme" on page 214 of "Plan for Global Warming Countermeasures": https://www.env.go.jp/content/000249336.pdf
55. J-credit Home Page, J-credit issuance records (as of March 11, 2025). Retrieved from https://japancredit.go.jp/credit/ on December 15, 2025.
56. J-credit Home Page, retirement records (as of March 11, 2025), including retirements of legacy domestic credits (Domestic Credits and J-VER credits). Retrieved from https://japancredit.go.jp/data/pdf/credit_002.pdf on December 15, 2025.
57. https://criepi.denken.or.jp/jp/serc/research/publications/view?indexId=1686
58. J-credit Home Page, J-credit issuance records (as of March 11, 2025). Retrieved from https://japancredit.go.jp/credit/ on December 15, 2025.
59. Tokyo Stock Exchange JPX Carbon Credit Market Page, daily reports (as of October 29, 2025). Retrieved from https://www.jpx.co.jp/equities/carbon-credit/daily/index.html on October 29, 2025.
60. Veyt, 2025 EU ETS Year in Review; Nordeng, A., https://veyt.com/2025-eu-ets-year-in-review-turnover-reaches-all-time-high/
61. IETA (2025): Global Reactions To The EU CBAM https://www.ieta.org/global-reactions-to-the-eu-cbam-2025-report

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