JAPAN CLIMATE INITIATIVE

WE MEAN BUSINESS COALITION

Japan's second NDC: An opportunity to boost economic growth, improve energy security, and strengthen industrial competitiveness

December 2025

Forewords

We are proud to partner with We Mean Business Coalition on this report, highlighting the important role Japanese companies will play in implementing Japan's second NDC. As we declared in our statement to the Japanese government in November 2024,[1] the 7th Strategic Energy Plan and the second NDC are extremely important documents that will determine Japan's near-term future. As the UN warns that decarbonization efforts must accelerate to keep the 1.5°C goal within reach, Japan's climate policies and the state of energy supply and demand will not only have a strong impact on ensuring a safe and healthy future - they will also shape the future of Japan's industry and economy, as well as its competitiveness and position in the international community.

Now is the time for Japan to improve energy efficiency and accelerate renewable energy deployment in order to quickly transition away from fossil fuels.

Japan has already agreed to accelerate efforts to scale up renewable energy, improve energy efficiency, and transition away from fossil fuels at COP28, and to phase out coal-fired power generation in the first half of 2030s at the G7 Climate, Energy and Environment Ministers' Meeting in April 2024. Therefore, the phase-out of coal-fired power generation by 2035 and the transition away from other fossil fuels as quickly as possible towards 2050 while maximizing the improvement of energy efficiency and the deployment of renewable energy are international commitments that Japan must fulfil.

Various estimates based on scientific grounds show that Japan has sufficient potential to triple its installed renewable energy capacity, and that it is possible to increase the proportion of renewable energy in electricity to 65-80% by 2035.

To steadily fulfil these international commitments, we call on the Japanese government to urgently create a foundation for the ultimate improvement in energy efficiency in buildings and product development by making full use of already available technologies as well as the acceleration of the renewable energy deployment centered on solar and wind.

We believe that for Japan to achieve sustainable growth and decarbonization, it is necessary for diverse stakeholders to work together and share their knowledge and experience. JCI will deepen its collaboration with domestic and international non-state actors and governments to contribute to the realization of the 1.5°C goal.

Sergio Kato and Takejiro Sueyoshi
Co-Representatives, Japan Climate Initiative

[1] JCI, 2024. Update: 236 Japanese non-state actors call for an ambitious 2035 target that is consistent with the 1.5°C goal.

Japan's second Nationally Determined Contribution (NDC) comes at a pivotal moment for both the country and the global economy. As one of the world's largest advanced economies and a major manufacturing and export hub, Japan's choices on energy and industrial policy will resonate far beyond its borders. The global transition to clean energy is reshaping trade, investment, and competitiveness, and countries that move fastest will capture the benefits of growth, innovation, and resilience in a low-carbon world.

Japan has the technology, capital, and expertise to lead this transformation. By setting ambitious targets and aligning its policies with the 1.5°C goal, Japan can secure its position in emerging global markets for clean technologies and strengthen its role as a trusted partner in the Indo-Pacific and beyond. Strong climate action will not only enhance Japan's energy security but also reinforce its global economic leadership at a time when the world needs greater stability and cooperation.

Leading Japanese businesses are ready to play their part. Many are already investing in innovation and decarbonization, shifting to renewable energy, and electrifying their processes and operations. What they need now is clear and predictable policy direction to unlock further private investment at scale.

We Mean Business Coalition is proud to partner with the Japan Climate Initiative on this report. It highlights how an ambitious and investible NDC can strengthen Japan's global competitiveness and help shape a cleaner, more prosperous future for Japanese businesses and people.

María Mendiluce
CEO, We Mean Business Coalition

Executive Summary

Japan's second Nationally Determined Contribution (NDC), submitted in February 2025, sets new targets to reduce greenhouse gas (GHG) emissions by 60% in 2035 and 73% in 2040 from 2013 levels, while reaffirming its goal to reach net zero emissions by 2050. These targets are less ambitious than the global average reductions required to keep the 1.5°C goal within reach, and are insufficient given Japan's developed country status. Moreover, by setting weak targets, Japan risks missing out on the economic benefits of shifting to cleaner energy sources and losing market share in global markets that are increasingly rewarding low-carbon products and services.

Nevertheless, the NDC provides an opportunity not only to cut emissions but also to stimulate economic growth, enhance energy security, and strengthen Japan's industrial competitiveness as global markets shift towards clean technologies and products.

Japan's emissions fell by 23% between 2013 and 2022. However, it is off track to meet its 2030 goal, and its current targets fall short of a 1.5°C-aligned pathway. To contribute meaningfully to the achievement of globally agreed targets, Japan must significantly accelerate both the phase-out of fossil fuels and the deployment of renewable energy and energy efficiency. This requires a clear roadmap with quantitative targets and timelines, as well as policy measures that reflect the urgency and scale of the global climate challenge. Japan risks losing economic advantage if it does not accelerate the shift from fossil fuels to renewable energy. Business leaders overwhelmingly support stronger action: 96% want Japan to transition to a renewables-based electricity system, with two-thirds wanting this to happen within the next decade. Japanese companies lead the world in terms of numbers setting emissions reduction targets under the Science-Based Targets Initiative (SBTi).

The Government's 7th Strategic Energy Plan projects that renewables will reach 40–50% of the electricity generation mix by 2040, while fossil fuels would still supply 30–40%. In the outcome of the first Global Stocktake, all countries agreed to triple global renewable capacity by 2030 and to accelerate efforts towards the phase-down of unabated coal power. Yet Japan lacks clear domestic targets for renewable energy supply or phasing out coal power. Stronger policies and a clear roadmap are therefore essential.

To maximise investment from the private sector, the second NDC needs to be backed up by clear and predictable policies for implementation. Key priorities include:

- **Accelerating renewable energy deployment** through the Green Transformation (GX) Promotion Act, supported by transition bonds for next-generation technologies such as novel solar cells, floating offshore wind, and advanced geothermal, as well as expanded investment in conventional renewables such as rooftop solar, hybrid solar systems (e.g., agrivoltaics) and onshore wind.
- **Scaling up electrification** of transport, buildings, and industry using clean electricity.
- **Implementing effective carbon pricing** through the forthcoming GX Emissions Trading Scheme (GX-ETS), including a binding emissions cap, adequate carbon price levels, and limits on carbon credit use to incentivize real emissions reductions.
- **Strengthening collaboration** between government and business to co-design solutions and unlock private investment.

Japan's second NDC marks a vital step forward, but to seize the full economic and industrial benefits of the clean energy transition, it must be backed by stronger sectoral targets, clear and predictable policies, and enhanced business–government collaboration. By doing so, Japan can position itself as a leader in the new global economy that is rising.

Introduction and context

As a signatory of the Paris Agreement, Japan must submit a new Nationally Determined Contribution (NDC) every five years. Japan's first NDC, originally submitted in 2015 and updated in 2020, set a target to reduce its total net greenhouse gas (GHG) emissions by 46% by 2030 relative to 2013 levels, and make efforts to reduce emissions by 50%. Japan submitted its second NDC in February 2025 – the fifth G20 country to do so. It set targets to reduce emissions by 60% in 2035 and by 73% in 2040, relative to 2013 levels.

Japan's NDCs are not just about reducing GHG emissions – they are also opportunities to drive new economic growth, increase industrial competitiveness, improve energy security, spur innovation and manage climate risk. The global transition from fossil fuels to clean energy sources is happening faster than many people realize, and it is creating enormous economic opportunities. As a technologically advanced nation with a highly skilled workforce, Japan is well-placed to become a global leader in emerging global markets for low-carbon products and services.

Japanese businesses are committed to climate action. This can be seen in the number of businesses that are members of initiatives such as the Japan Climate Initiative and Japan Climate Leaders' Partnership (JCLP), as well as global initiatives such as RE100, Science-Based Targets Initiative (SBTi) and CDP. Polling shows 96% of Japanese business leaders want Japan to move from fossil fuels to a renewables-based electricity system, with 64% wanting this to happen within the next 10 years.[2]

Japanese companies want the Government to establish clear and credible plans and policies to implement Japan's NDCs. This will help to signal the stability and predictability of the policy environment in Japan over the next decade, which in turn will help to attract domestic and international investment into Japan's energy transition.

This document builds on We Mean Business Coalition's *Business Call to Action for Ambitious and Investible NDCs*.[3] It outlines how robust national targets and sectoral targets, backed by strong and predictable plans and policies for delivery, offer Japan an opportunity to boost economic growth, create jobs, improve energy security, and attract investment.

[2] E3G, Beyond Fossil Fuels, We Mean Business Coalition and Savanta, 2025. Powering up: Business perspectives on shifting to renewable electricity.

[3] We Mean Business Coalition, 2024. Business Call to Action for Ambitious and Investible NDCs.

Box 1: We Mean Business Coalition's Business Call to Action for Ambitious and Investible NDCs

We Mean Business Coalition launched the *Business Call to Action for Ambitious and Investible NDCs* in September 2024. It called for action from governments, led by the G20 countries, across three pillars:

- **Pillar 1**: Put forward ambitious NDCs containing economy-wide emissions reduction targets that are aligned with 1.5°C, as well as sector-specific targets and policy commitments to transition from fossil to clean energy solutions and to restore nature.
- **Pillar 2**: Develop clear and consistent policy frameworks to implement NDCs by unlocking private investment, including national-level strategy and planning, sector-specific policies, and international coordination on policies and implementation.
- **Pillar 3**: Undertake transparent and inclusive dialogue with businesses, including thorough consultations on NDC content, co-creation with business of solutions for implementation, and effective reporting and communication strategies.

Building on the original call to action, the Coalition is now supporting and amplifying business voices in key geographies advocating for robust NDCs together with clear and consistent plans and policies for NDC implementation.

Source: We Mean Business Coalition, 2024. Business Call to Action for Ambitious and Investible NDCs.

Pillar 1

An ambitious target for 2035

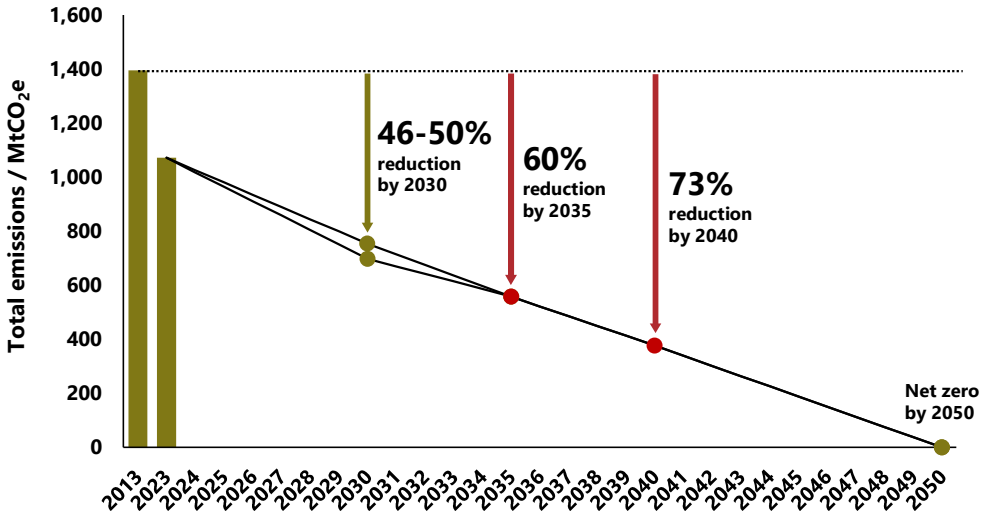
Economy-wide emissions reduction targets

Japan's second NDC sets targets to reduce its total GHG emissions by 60% in FY 2035 and by 73% in FY 2040, compared to FY 2013 levels, and to reach net-zero emissions by 2050. It is the only major emitter to date to have included an emissions reduction target for 2040 (in addition to a target for 2035) in its second NDC. In addition to reducing its domestic emissions, Japan will also use removals from the land sector and carbon credits issued through its Joint Crediting Mechanism to help meet its emission reduction targets.

The outcome of the first Global Stocktake states that limiting global warming to 1.5°C with no or limited overshoot requires reducing global emissions by 43 per cent by 2030 and 60 per cent by 2035 relative to 2019 levels, and reaching net zero carbon dioxide emissions by 2050. Relative to 2019 levels, Japan's targets are equivalent to reductions of 37-41% by 2030 and 53% by 2035.

Japan's targets are therefore less ambitious than the global average reductions required to keep the 1.5°C goal within reach, and are insufficient given Japan's developed country status. Moreover, by setting weak targets, Japan risks missing out on the economic benefits of shifting to cheaper and cleaner energy sources and losing market share in global markets that are increasingly rewarding low-carbon products and services.

Figure 1: Japan's NDCs and GHG emissions reduction pathway to net zero by 2050 (2013 baseline)



Source: Based on Japan's National GHG Inventory 1990-2023 and Japan's first and second NDCs.

Japan has made some progress towards its NDC targets – by 2022, its emissions had been reduced by 23% relative to 2013 levels.[4] Based on current and planned policies ("with measures" scenario), its emissions are projected to be reduced by 42% by 2030 relative to 2013 levels. Japan is therefore off track to meet its 2030 target and strengthened policies will be needed to close this implementation gap.

Sector-specific targets

The Global Warming Countermeasures Plan is the government's comprehensive plan to meet its climate targets based on the Act on Promotion of Global Warming Countermeasures. In February 2025, the Japanese government approved a revised version of the plan at a Cabinet meeting. The revised plan incorporates the emissions reduction targets set out in the second NDC, along with the measures and policies to achieve them.

In addition to its economy-wide targets, Japan has set targets for each greenhouse gas as well as sector-specific emissions of energy-related CO_2 for FY 2030 and FY 2040 (see Table 1). Nearly 90% of Japan's GHG emissions are energy-related CO_2. More than one third of the energy-related CO_2 emissions are from industries such as steel and manufacturing.

[4] Government of Japan, 2025. Japan's First Biennial Transparency Report.

Table 1: Targets for each greenhouse gas and other categories

Gas/category	Actual for FY2013, $MtCO_2e$	FY2030 target, $MtCO_2e$ (change from FY2013 level)	FY2040 target, $MtCO_2e$ (change from FY2013 level)
Total net GHG emissions	1,407	760 (-46%)	380 (-73%)
Energy-related CO_2	1,235	677 (-45%)	Approx. 360-370 (-70-71%)
– Industry	463	289 (-38%)	Approx. 180-200 (-57-61%)
– Commercial/others	235	115 (-51%)	Approx. 40-50 (-79-83%)
– Residential	209	71 (-66%)	Approx. 40-60 (-71-81%)
– Transport	224	146 (-35%)	Approx. 40-80 (-64-82%)
– Energy conversion	106	56 (-47%)	Approx. 10-20 (-81-91%)
Non-energy-related CO_2	82.2	70.0 (-15%)	Approx. 59 (-29%)
Methane	32.7	29.1 (-11%)	Approx. 25 (-25%)
Nitrous oxide	19.9	16.5 (-17%)	Approx. 14 (-31%)
Fluorinated gases	37.2	20.9 (-44%)	Approx. 11 (-72%)
– HFCs	30.3	13.7 (-44%)	Approx. 6.9 (-77%)
– PFCs	3.0	3.8 (+26%)	Approx. 1.9 (-37%)
– SF_6	2.3	3.0 (+27%)	Approx. 1.5 (-35%)
– NF_3	1.5	0.4 (-70%)	Approx. 0.2 (-85%)
GHG removals	-	-47.7	Approx. -84
Carbon credits (from JCM)	-	100	200

Source: Government of Japan, 2025. Global Warming Countermeasures Plan.

The 7th Strategic Energy Plan approved by the Cabinet in 2025, which outlines the direction of Japan's energy policy to 2040, includes projections for Japan's electricity generation mix. The projected increase in the share of renewable energy between 2030 and 2040 is limited to just over ten percentage points, indicating a lack of ambition in scaling up renewable energy.

Table 2: Power generation mix: current (2023) and outlook for 2030 and 2040

Source	Current (2023)	2030 projection	2040 projection
Thermal power	68.6%	42%	30-40%
– Coal	28.4%	19%	
– LNG	32.9%	20%	
– Oil	7.2%	2%	
– Ammonia/Hydrogen	-	1%	
Renewables	22.9%	36-38%	40-50%
– Solar	9.8%	14-16%	23-29%
– Wind	1.1%	5%	4-8%
– Hydro	7.6%	11%	8-10%
– Geothermal	0.3%	1%	1-2%
– Biomass	4.1%	5%	5-6%
Nuclear	8.5%	20-22%	20%

Source: Based on Japan's 6th Strategic Energy Plan and 7th Strategic Energy Plan.

Japan has endorsed the global goal, agreed upon in the first Global Stocktake, to triple renewable energy capacity worldwide by 2030. Despite this commitment, the 7th Strategic Energy Plan contains projections but does not include any domestic targets for renewable energy supply, raising concerns about alignment with international objectives.

Moreover, thermal power generation is expected to remain at 30–40% of the energy mix in 2040, with no detailed breakdown provided. Japan has not committed to stop building new coal power plants, nor has it set a clear timeline for phasing out existing coal-fired power. Furthermore, under the premise of "decarbonizing thermal power generation," the plan assumes a significant reduction in the emission factor of thermal power generation through the use of hydrogen, ammonia, and carbon capture and storage (CCS) - technologies for which the feasibility and cost-effectiveness remain uncertain. With this underlying assumption, it will be difficult to achieve the emission reduction targets pledged in the NDC, and Japan will continue to rely on fossil fuels. This further underscores the need for stronger policy direction.

To contribute meaningfully to the achievement of globally agreed targets, Japan must significantly accelerate both the phase-out of fossil fuels and the deployment of renewable energy. This requires a clear roadmap with quantitative targets and timelines, as well as policy measures that reflect the urgency and scale of the global climate challenge.

In July 2024, the Japan Climate Initiative (JCI) called on the Japanese government to set an ambitious 2035 target that is consistent with the 1.5°C goal.[5] The message was endorsed by 236 of diverse non-state actors in Japan (including 153 companies, 5 local governments, 6 universities and research institutes, and 52 organizations and NGOs). They called for the phase-out of coal-fired power generation by the year 2035. Significantly, they also called for the accelerated deployment of solar and wind power generation, citing figures that show it is possible to increase the share of renewable energy to 65-80% of the electricity supply in 2035. The statement demonstrated that a growing number of domestic stakeholders, including some of the country's leading companies, want Japan to strengthen its targets and policies for scaling up renewable energy.

[5] JCI, 2024. Update: 236 Japanese non-state actors call for an ambitious 2035 target that is consistent with the 1.5°C goal.

Box 2: The role of electrification in reducing Japan's GHG emissions

Electrification is central to Japan's strategy for reducing across all economic sectors. Expanding the use of electricity generated from low- or zero-carbon sources offers a pathway to decarbonize sectors that are currently dependent on fossil fuels, such as transport, buildings, and industry. Japan's 7th Strategic Energy Plan states that "to further promote emission reduction measures toward carbon neutrality by 2050, electrification and shift to non-fossil energy will account for a larger proportion of demand-side efforts, in addition to thorough energy efficiency improvement. In particular, the decarbonization of heat demand will become increasingly important, as non-electric energy accounts for approximately 70% of total demand."

In the transport sector, accelerating the uptake of electric vehicles (EVs) and plug-in hybrid vehicles (PHEVs) is a high priority. Japan has set a goal for all sales of new passenger vehicles to be electrified vehicles by 2035. The Global Warming Countermeasures Plan indicates that the use and expansion of next-generation vehicles including EVs and PHEVs will be promoted, including through support measures as subsidy programs and tax incentives for electrified vehicles and related infrastructure. However, the definition of "electric vehicles" in the plan also encompasses hybrid vehicles, and therefore no specific targets, strategies, or policies focused exclusively on EVs are included. The deployment rate of EVs in Japan remains significantly lower than in other major developed economies, highlighting the need for a fundamental strengthening of EV promotion policies.

In buildings, the 7th Strategic Energy Plan states that measures will be implemented to accelerate the shift to non-fossil-fuel water heaters in the residential sector, which account for about 30% of household energy consumption. However, it does not present a strategic policy to promote electrification through heat pumps—an area in which Japan has world-leading technology and high energy efficiency. To replace conventional fossil fuel-based heating systems, it is essential to promote electrification through the use of heat pumps in combination with the introduction of stricter energy efficiency standards for buildings.

Japan's 7th Strategic Energy Plan also highlights the opportunities of electrifying industrial processes such as low- and medium-temperature heat, while hydrogen and other clean fuels can complement electrification where direct substitution is challenging. To accelerate emission reductions in the industrial sector and achieve them in an economically efficient manner, strong promotion of electrification within the industrial sector is essential.

Sources: Government of Japan, 2025, 7th Strategic Energy Plan; METI, 2024, Subsidies Upgraded for the Purchase of Clean Energy Vehicles toward the Realization of GX in the Automobile Sector.

Stakeholder engagement

The second NDC states that Japan will promote business-led international deployment of technologies and products with high environmental performance. Beyond this, there is limited recognition within the NDC of the critical role Japanese businesses will play in delivering the targets. Climate change measures and energy policies require active implementation by a wide range of actors, so it is essential that many stakeholders - including businesses, local governments, citizens, and NGOs - participate in the policy-making process.

Some positive developments were observed in discussions within the council responsible for developing the NDC and the Global Warming Countermeasures Plan.[6] For example, the composition of the council was changed to better reflect the views of more diverse stakeholders including companies with ambitious climate targets, young business owners, researchers, and civil society organizations. Additionally, the government held additional meetings where the council members could engage in more open discussions. Previously, such interactive discussions had been limited due to the council's formality, but these improvements helped to make the discussions more inclusive and open.

On the other hand, the members of the Basic Policy Subcommittee of the Advisory Committee for Natural Resources and Energy, which deliberated on the 7th Strategic Energy Plan forming the basis of the NDC, did not include representatives from companies with ambitious climate goals, young business leaders, research institutions, or NGOs. The lack of diverse stakeholder representation in the deliberation process is an issue that should be improved.

Pillar 2

Clear and consistent policies for NDC delivery

Policies to promote renewable energy expansion

Japan has declared its intention for renewable energy to become Japan's main energy source. However, Japan's current renewable energy targets and policies do not appear to be aligned with this vision.

The GX Promotion Act, enacted to drive Japan's decarbonization alongside economic growth, establishes the issuance of JPY 20 trillion (~ USD 130 billion) in GX transition bonds over the next decade, with government support already underway for various projects. These public funds are expected to catalyze a total investment of JPY 150 trillion (~ USD 980 billion), including JPY 130 trillion (~ USD 850 billion) from the private sector.

Of the JPY 20 trillion in transition bonds, at least JPY 1 trillion (~ USD 6.5 billion) over ten years is anticipated to be allocated to next-generation renewable energy technologies, such as perovskite solar cells,[7] floating offshore wind, and advanced geothermal. However, support through transition bonds for conventional renewable energy technologies—such as rooftop solar panels and onshore/fixed-bottom wind power—is not explicitly stated. In addition to next-generation technologies, policy and financial support must also be extended to conventional renewable energy solutions, including rooftop solar and agrivoltaics, to ensure a comprehensive and inclusive energy transition.

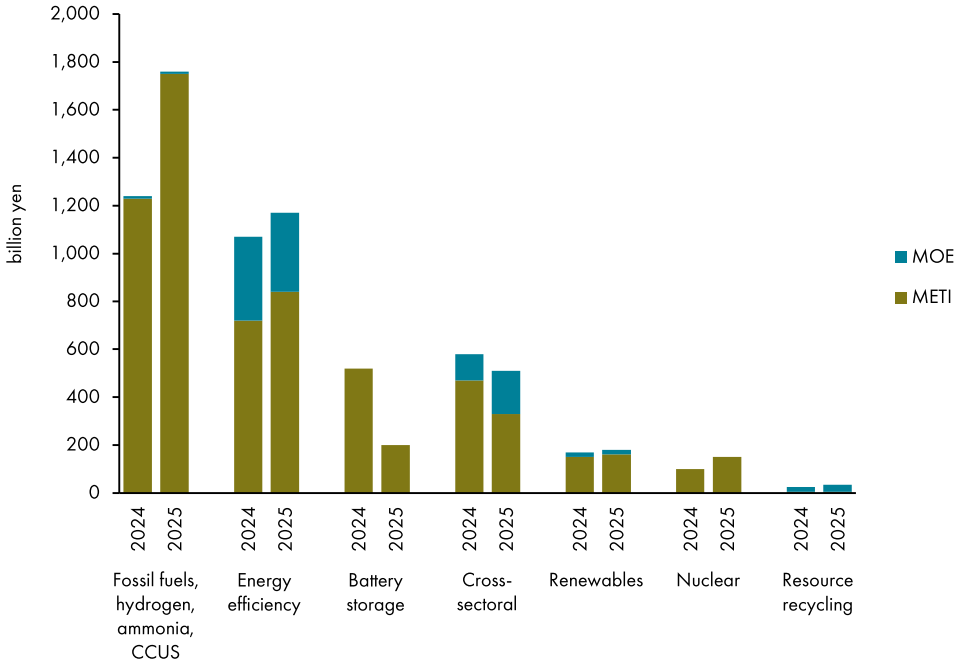
According to analysis by Climate Integrate, the budget for fossil fuels (including hydrogen, ammonia, and CCUS) is particularly large, and expected to increase by about 40% from FY2024 to FY2025, whereas the distribution to renewable energy is quite low.[8]

[6] The NDC and the Global Warming Countermeasures Plan were discussed at joint meetings of the Climate Change Countermeasures towards Net Zero by 2050 Subcommittee of the Global Environment Committee under the Central Environment Council, and the Working Group for Consideration of Mid- and Long-Term Global Warming Countermeasures of the Global Environment Subcommittee of the Committee on Innovation and Environment under the Industrial Structural Council.

[7] Perovskite solar cells are a type of light and flexible solar cell made from a combination of organic ions, metals and halogens.

[8] Climate Integrate, 2025. Japan's Spending Plan for Climate and Energy 2025.

Figure 2: Climate and energy budgets for FY2024 and FY2025



Source: Based on Climate Integrate, 2025. Japan's Spending Plan for Climate and Energy 2025.

As described above, more than a third of the energy-related CO_2 emissions in Japan are from industries such as steel and manufacturing. Rapid expansion of renewable energy together with electrification and shifting to non-fossil energy and green hydrogen production will be necessary to decarbonize these industries by 2050.

Opportunities

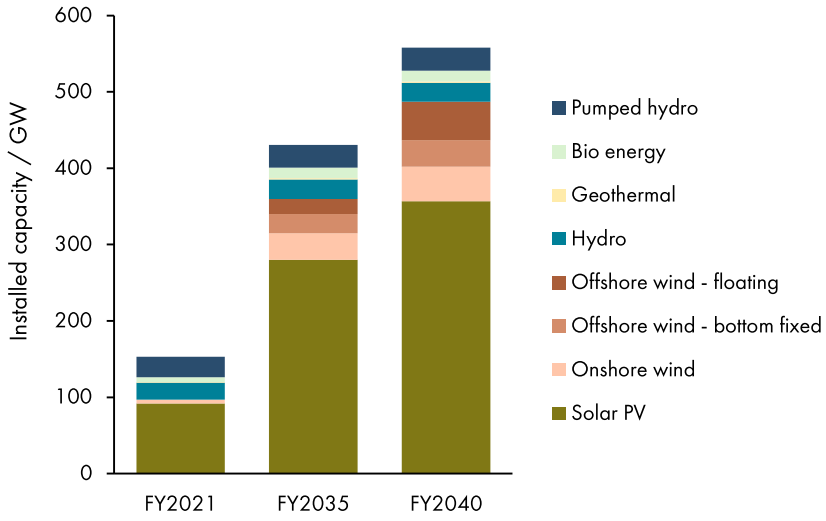
While the government's targets and policies are not ambitious enough to be aligned with a 1.5°C pathway, there are several modelling studies that show Japan can achieve a 1.5°C-aligned emissions pathway through rapidly scaling up renewable energy (see Table 3 and Figure 3).

Table 3: Renewable energy pathways for Japan

Organisation	Gases	Base year	2035 emissions reduction	2040 emissions reduction	2035 share of renewables in electricity supply	2040 share of renewables in electricity supply
Government of Japan	All GHGs	2013	-60%	-73%	-	40-50%
Keidanren	All GHGs	2013	-60%	-73%	-	-
RITE (Renewable Scenario)	All GHGs	2013	-60%	-73%	-	54%
Renewable Energy Institute	Energy-related CO_2	2019	-65%	-80%	80%	95%
WWF Japan	All GHGs	2013	-68%	-81%	77%	90%
Climate Integrate	All GHGs	2013	-70%	-80%	At least 85%	Nearly 100%
JCLP	All GHGs	2013	At least 75%	-	At least 60%	-
IGES (Early Reduction Scenario)	All GHGs	2013	-76%	-89%	61%	79%

Source: Based on each organization's renewable energy scenario.

Figure 3: Projection of renewable energy installed capacity



Source: Renewable Energy Institute, 2024. Energy Transition Scenario through Renewables Prospects Toward 2040: Revised 1st edition.

Solar power

Japan has significant potential to expand solar power, particularly on farmland and abandoned farmland, as well as on rooftops and building facades. By harnessing this potential, Japan can support the level of solar power development needed to align with a 1.5°C pathway.

According to the Renewable Energy Institute, the amount of solar power required to decarbonize 80% of Japan's electricity demand by 2035 can be met with just 12-19% of the installation potential estimated by the Japan Photovoltaic Energy Association and the Renewable Energy Information System (REPOS).[9]

To realize this potential, expanding solar power using conventional silicon-based systems on buildings and on both farmland and abandoned farmland - including agrivoltaic setups - remains the core approach.

Furthermore, perovskite solar cells are an innovative and highly flexible technology developed by Japanese researchers that is expected to be introduced in buildings with high potential for solar power generation. At present, however, challenges remain in terms of durability, cost, and regulatory constraints. Measures such as focused financial support, the relaxation of building-related regulations, and mandatory installation of solar power systems on buildings would help to accelerate the deployment of perovskite solar cells. By creating such an enabling environment, it will be possible to fully utilize perovskite solar cells as a promising option for making the most of the solar energy potential of buildings.

Offshore wind power

The Japanese government aims to formulate 10 GW of offshore wind power projects by 2030, and 30-45 GW by 2040. In June 2025, the revised Renewable Energy Sea Area Utilization

[9] Renewable Energy Institute, 2024. Energy Transition Scenarios for Decarbonization.

Act was enacted, extending the areas available for offshore wind development from territorial waters to include Japan's Exclusive Economic Zone (EEZ). According to the International Energy Agency (IEA), offshore wind has the potential to supply eight times Japan's total electricity demand.[10]

While wind power currently accounts for a relatively small share of Japan's electricity mix compared to solar, leveraging Japan's geographic characteristics as an island nation and working collaboratively with coastal communities engaged in fisheries will be key to expanding offshore wind. This will significantly contribute to the growth of renewable energy, the achievement and enhancement of Japan's NDCs, and the broader energy transition.

Challenges

In order to realize ambitious renewable energy scenarios, there are several challenges that need to be resolved. These include:

- Strengthening interregional power transmission infrastructure to facilitate renewable energy integration.
- Expediting grid connection procedures for newly developed renewable energy projects.
- Accelerating investment flows into renewable energy to support the energy transition.
- Enhancing policy-making processes to ensure that the perspectives of electricity consumers are effectively reflected in renewable energy policy.
- Promoting exemplary renewable energy projects that harmonize with local communities and natural ecosystems.

Implementing a planned and orderly phase-out of coal-fired power generation.

Business voices

Given the significant opportunities for scaling up solar and wind power in Japan as outlined above, domestic and international business groups are calling on the Japanese government to strengthen its targets and policies for expanding renewable energy. These voices show that Japanese companies want the Government to accelerate renewable deployment, particularly wind and solar, commit to no new coal power plants, and set specific timeline for phasing out coal from the power sector. Examples include:

- **RE100**, which the Japan Climate Leaders Partnership (JCLP) supports as a regional partner, released its "Japan Policy Recommendations" in June 2024.[11] The recommendations stated that 94 Japanese companies have committed to use 100% renewable electricity, but due to a shortage of domestic renewable electricity they are unable to procure enough to meet their goals. They called for the 7th Basic Energy Plan to set a target of tripling Japan's renewable energy generation capacity by 2035 at

[10] IEA, 2019. Offshore Wind Outlook 2019.

[11] RE100, 2024. Japan policy recommendations.

the latest. To achieve this goal, the recommendations call for six measures, including transparency and fairness in electricity prices.[12]

- The **Clean Energy Buyers Association (CEBA)**, a business trade association of a community of energy customers and partners, published the "Issue Brief Energy Customer Needs in Japan" in November 2024.[13] It pointed out that the primary challenge for CEBA's members and their more than 1,000 value chain partners located in Japan is limited access to cost effective renewable energy. CEBA encourages Japan's government to consider measures that will expand access to cost-effective renewable energy by 2035, accelerate deployment, and advance carbon-free technologies in future years as Japan develops its GX 2.0 and next Strategic Energy Plan.

Business case study: Ricoh's transition to renewable energy

Ricoh is a leading provider of integrated digital services and print and imaging solutions headquartered in Tokyo. It was the first Japanese company to join the RE100 initiative in 2017. It is now accelerating its transition to renewable electricity as part of its commitments to achieve net zero Scope 1 and 2 emissions by 2040 and net-zero emissions across its whole value chain (Scope 1, 2 and 3 emissions) by 2050. Ricoh has steadily increased its use of renewable energy to 43% in FY2024.

Ricoh has developed a Comprehensive Evaluation System for Renewable Electricity to evaluate its procurement contracts for renewable energy in Japan. The system assesses environmental, social, and economic aspects of renewable energy projects to ensure that they benefit local communities and the environment.

In 2025, Ricoh implemented its first Power Purchase Agreement for power from an agrivoltaics power plant, which combines solar energy generation with agricultural production on repurposed farmland. The plant supports local farmers and rural revitalization, and has been selected as a Model Project Support Program for Agrivoltaics by the Ministry of Agriculture, Forestry and Fisheries.

Carbon pricing

Emissions pricing mechanisms such as emissions trading systems and carbon taxes have been adopted in many countries as effective policy instruments to accelerate decarbonization.

In Japan, the GX Emissions Trading Scheme (GX-ETS) is scheduled to become fully operational in 2026. This represents a major step forward in Japan's approach to climate policy. Until now, the only nationwide carbon pricing mechanism in place has been the Global Warming Countermeasure Tax, set at just 289 yen per ton of CO_2 equivalent (approximately USD 1.9 per tCO_2e).

[12] RE100, 2024. RE100 calls on the Japanese government to urgently grow renewables capacity.

[13] CEBA, 2024. CEBA Issue-Brief: Energy Customer Needs in Japan.

To ensure that GX-ETS truly incentivizes corporate emissions reductions and serves as a robust policy tool for achieving Japan's NDCs, the design of the system is critically important. The following are key areas for improvement to enhance the effectiveness of the current GX-ETS framework.

Emissions cap

The original stated purpose of the emissions trading scheme is to reduce GHG emissions. However, the GX Promotion Act that defines the design of the GX-ETS has no cap as an upper limit on emissions allowances. In addition, it does not mention alignment among the 1.5°C target, the NDCs, or the total emission reductions of companies' emissions reduction goals.

The supplementary resolution related to the revised GX Promotion Act also points out that the total allocation of emission allowances should be verified to ensure it contributes to achieving the 1.5°C target and the NDCs, and that necessary measures should be taken accordingly. To fulfil the intent of the legislation, the government must set an appropriate cap and conduct monitoring and review after the start of the system's operation to ensure that emission allowances are allocated at an appropriate level.

Emissions price

To reduce emissions effectively, the carbon price cap needs to be set high enough, taking into account environmental factors such as the level of ambition of Japan's NDCs and progress made towards meeting them. Modelling by the IEA has estimated that carbon prices in the developed countries of roughly USD 140 per tCO_2e in 2030 to achieve 1.5°C.[14] In the EU, the current carbon price is over USD 100 per tCO_2e. If Japan's carbon price is too low, Japanese companies wishing to export to the EU may be subject to additional fees under the EU's Carbon Border Adjustment Mechanism (CBAM).

Limit carbon credit usage (for quality and quantity)

Under the GX-ETS framework, businesses are allowed to acquire carbon credits to help meet their targets. The use of government-recognized credits such as J-Credits and JCM credits is anticipated. According to the revised GX Promotion Act, the upper limit for the use of carbon credits is set at 10% of a company's total annual emissions.

However, the quality of carbon credits is left to be determined by future discussions on the detailed design of the system. It is essential that these credits meet internationally recognized standards, including high environmental integrity and contributions to sustainable development.

Many existing emissions trading schemes overseas either restrict the use of carbon credits or prohibit their use altogether. These limitations stem from past experiences where the influx of low-cost credits failed to incentivize real emissions reductions, and concerns remained about the permanence and additionality of such credits.

[14] IEA, 2023. Net Zero Roadmap: A Global Pathway to Keep the 1.5°C Goal in Reach.

To ensure that GX-ETS fulfils its primary purpose of driving emissions reductions, Japan must learn from these lessons and establish appropriate limits on both the quantity and quality of carbon credits used within the system. Further, recent developments in the SBTi standards and UN Net Zero Recommendations indicate that the use of carbon credits to offset companies' emissions is likely to come under increasing scrutiny over time.

Limit deductions to fossil fuel levies

Under the GX Promotion Act, in addition to the GX-ETS, the introduction of a fossil fuel surcharge is scheduled to begin in 2028 as part of Japan's carbon pricing policy. To avoid excessive burden, a phased introduction is necessary. However, the carbon prices that can be realized under both systems should be at a sufficient level to drive emissions reductions. At the very least, the effectiveness of the levy as a measure against global warming should be considered when setting the level.

Auctioning

In the GX ETS, allocating emission allowances begins with a free allocation based on the benchmark method, and then auctioning for power sector participants is planned to be launched in FY2033. One of the benefits of an auction system is the revenue. In GX-ETS, the revenue is expected to be used as a source of funds for the redemption of GX economic transition bonds, which focuses on supporting innovative technologies. However, the use of funds should be used to reduce the burden on citizens. The auction system for electricity suppliers should be improved and expanded to other sectors over time.

JCI recommendations for the carbon pricing system

In July 2023, 210 members of the JCI jointly released a policy proposal calling for a carbon pricing system that ensures both the achievement of Japan's NDCs and the enhancement of international competitiveness.[15] This marked the first time that non-state actors, including Japanese companies, publicly advocated for an ambitious and forward-looking carbon pricing system.

The proposal presented six detailed recommendations in response to the carbon pricing framework under discussion at the time, based on the following three perspectives:

- **Ensuring achievement of national GHG emission reduction targets, especially 2030 targets:** There is concern that the voluntary schemes currently proposed will have limited impact on emission reductions, and that the 2030 reduction targets will be missed due to slow implementation. A system is needed to ensure that Japan can achieve the targets it has pledged to the world, and to meet the international trend toward more ambitious emission reductions.

- **A fair system that does not disadvantage companies that are committed to emission reductions:** Voluntary participation in the scheme could put companies that are willing to bear the cost of emission reductions at a competitive disadvantage to

[15] JCI, 2024. JCI's Carbon Pricing Proposal endorsed by 210 Members: Toward Simultaneous Achievement of 2030 GHG Emission Reduction Targets and Enhanced International Competitiveness.

- those that do not participate. A fair system in which all companies that meet certain requirements are required to participate is needed.

- **A system that contributes to strengthening the competitiveness of the Japanese economy**: An inadequate carbon price could result in Japanese companies being subject to the EU's CBAM or being excluded from international supply chains and investments. A system is needed that will allow emission reductions at the international level and the introduction of renewable energy sources to progress, thereby improving Japan's attractiveness as a business location.

The six recommendations were:

1. An effective carbon pricing system should be introduced by 2025.
2. All companies that meet certain criteria should be subject to the system.
3. Future expected carbon prices should be indicated at the globally comparable levels such as the USD 140 per tCO_2e in 2030 indicated by the IEA.
4. The system should be compatible with international rules.
5. Government revenues should support companies in the hard-to-abate sectors and others which have severe difficulty in reducing emissions.
6. Transparency should be ensured in the system planning, evaluation, and updating.

This proposal represents an important step toward advancing Japan's carbon pricing policy in a direction that is both environmentally and economically sustainable, through the collaboration of diverse actors, including businesses, local governments, and civil society.

Pillar 3

Strengthened stakeholder collaboration

In Japan, many companies are actively engaged in initiatives such as RE100 and SBTi. As of October 2025, Japan has the highest number of companies globally that have either committed to setting science-based targets or have had their targets approved by SBTi, with over 2,000 companies participating. Japan also ranks second globally in terms of the number of companies participating in RE100, after the USA.[16]

Given that many manufacturing companies in Japan—characterized by broad and complex supply chains—are participating in SBTi, the number of small and medium-sized enterprises (SMEs) obtaining SBT certification has been rapidly increasing in recent years. This has led to a "domino effect" of decarbonization becoming a reality.

SMEs account for approximately 90% of all companies in Japan, and many are actively pursuing decarbonization or possess innovative solutions and technologies that contribute to it. Promoting collaboration across sectors of various sizes and industries is essential for achieving Japan's NDCs.

[16] RE100, 2024. RE100 Annual Disclosure Report 2024.

Japan has several advanced organizations and initiatives that contribute significantly to these efforts:

- The **Japan Climate Initiative (JCI)** is a network of non-state actors such as companies, local governments, and NGOs/NPOs that play a vital role in supporting and accelerating climate action. JCI collaborates with both domestic and international multi-stakeholder coalitions to accelerate the transition towards decarbonized and climate-resilient societies around the world.

- The **Japan Climate Leaders' Partnership (JCLP)** is a coalition of Japanese companies committed to accelerating the transition to a decarbonized society. Established in 2009, JCLP promotes corporate leadership in climate action by encouraging science-based targets, renewable energy adoption, and sustainable business practices. The partnership actively engages in policy advocacy to align Japan's climate and energy policies with the 1.5°C target and collaborates with global initiatives such as RE100 and the Race to Zero campaign.

- **RE Action – Declaring 100% Renewable** is a Japanese initiative launched in 2019 to support SMEs, local governments, educational institutions, and other non-listed organizations in committing to 100% renewable electricity. The initiative provides a platform for public declarations, promotes knowledge sharing, and encourages concrete steps toward decarbonization. Operated by IGES, JCLP, ICLEI Japan, and the Green Purchasing Network (GPN), RE Action expands the reach of renewable energy use beyond large corporations.

- The **Osaka Zero Carbon Foundation** is a public-private platform established to drive regional decarbonization in Osaka and the Kansai region. It brings together local governments, businesses, and academia to promote renewable energy, energy efficiency, and green innovation. A key initiative is the CO_2 Visualization Promotion Project, which enhances transparency by making emissions data visible and actionable. The foundation contributes to Japan's climate goals by aligning local action with national and global decarbonization pathways.

- The **Business Leaders' Network for Rethinking the Economy through Energy (commonly known as Enekei)** is a voluntary forum of corporate executives who recognize energy policy as a key driver of Japan's economic and industrial transformation. The network facilitates dialogue between the business sector and policymakers, highlights corporate initiatives in decarbonization, and supports policy development that balances climate ambition with economic competitiveness. Enekei aims to shape forward-looking energy policy by amplifying the voices of proactive business leaders.

Furthermore, progress is being made not only among companies but also in sectors such as sports, healthcare, and media in advancing decarbonization efforts. To achieve Japan's NDCs - and ultimately the goals of the Paris Agreement - it is essential to accelerate action and collaboration across all non-state actors.

As a multi-sectoral coalition, the Japan Climate Initiative (JCI) works in partnership with domestic and international stakeholders to expand these collaborations across Japan.

Conclusions

Japan's second NDC marks an important step forward in articulating Japan's climate targets for 2035 and 2040 and signals its continued commitment to achieving net zero emissions by 2050. However, the ambition level of Japan's current targets remains below the average global emissions reductions called for in the outcome of the first Global Stocktake. Without stronger targets and policies, Japan risks falling behind other advanced economies in terms of competitiveness, innovation, and access to global markets.

Clear and consistent policies can help scale up private sector investment to deliver Japan's first and second NDCs. Accelerating the deployment of renewable energy and electrification across all sectors, together with improving energy efficiency, are essential actions for closing Japan's implementation gap. The Government can scale up renewable energy by setting domestic targets for renewable electricity supply, providing stronger support for both next-generation and conventional renewable energy technologies, and committing to a rapid phase-out of coal-fired power generation. In addition, effective carbon pricing through the GX-ETS, with emissions caps aligned with Japan's NDCs, can provide powerful incentives for emissions reductions and low-carbon innovation. Electrification should be clearly positioning as the third pillar of decarbonization, alongside renewable energy deployment and energy efficiency improvement. In particular, Japan should actively advance the use of heat pumps - an area in which it possesses world-class technology - across the residential, commercial, and industrial sectors.

Leading Japanese businesses have demonstrated strong support for more ambitious climate policies and are already decarbonizing their supply chains and investing in clean technologies because it makes good business sense. Harnessing this leadership through structured and inclusive government–business dialogue will be vital to accelerate the implementation of Japan's second NDC.

By strengthening the policies for delivering its second NDC, Japan can increase its competitiveness, enhance its energy security, and secure long-term prosperity for Japanese businesses and people.

About Japan Climate Initiative

Japan Climate Initiative (JCI) is a network of non-state actors such as companies, local governments, NPOs/NGOs and others that are actively committed to strengthening communication, exchange strategies and solutions in order to implement climate actions to meet the Paris Agreement goals. JCI collaborates with both domestic and international multi-stakeholder coalitions to accelerate the transition towards decarbonized and climate-resilient societies around the world.

JCI started with 105 members in July 2018, and has increased to over 850 members over the years. JCI invites companies, local governments, research institutions and civil society organizations to participate in the initiative and help build a decarbonized society in Japan.

japanclimate.org

YouTube: youtube.com/@気候変動イニシアティブ

About We Mean Business Coalition

We Mean Business Coalition (WMBC) works with the world's most influential businesses to take action on climate change. The Coalition is a group of seven nonprofit organisations: BSR, CDP, Ceres, Climate Group, CLG Europe, The B Team and WBCSD. Together, we catalyse business and policy action to halve emissions by 2030 and accelerate an inclusive transition to a net-zero economy.

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