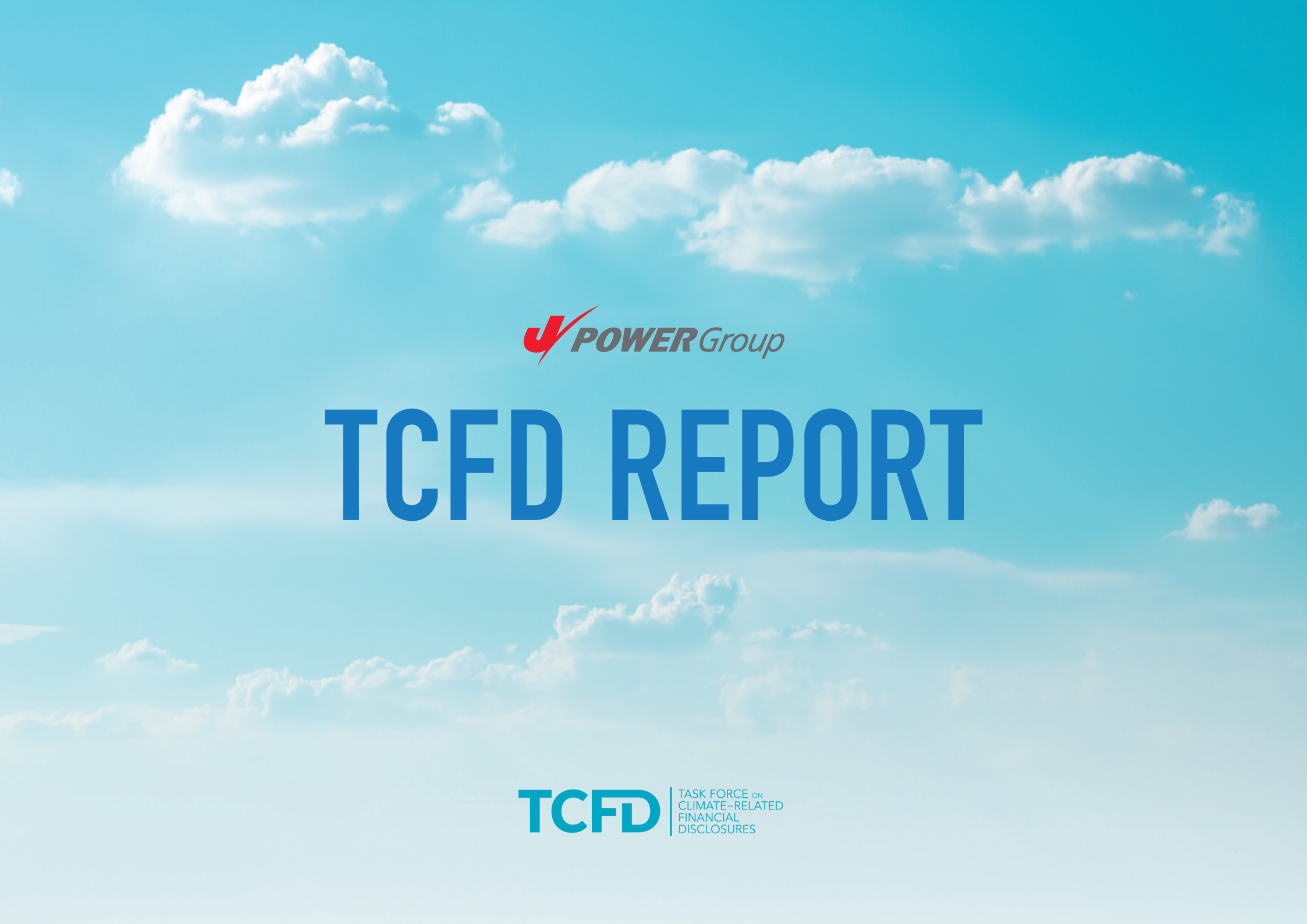

J-POWER Group
TCFD REPORT
TCFD
TASK FORCE ON
CLIMATE-RELATED
FINANCIAL
DISCLOSURES

Climate Change Scenario Analysis (Disclosure Based on TCFD Recommendations)

TCFD TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

The figures in this scenario analysis have the potential to fluctuate due to various conditions that include the state of operation of power generation facilities and the external environment. As such, they have been simplified and calculated under certain suppositions solely for the purpose of ascertaining the sense of scale of the impact involved.

Governance: Framework

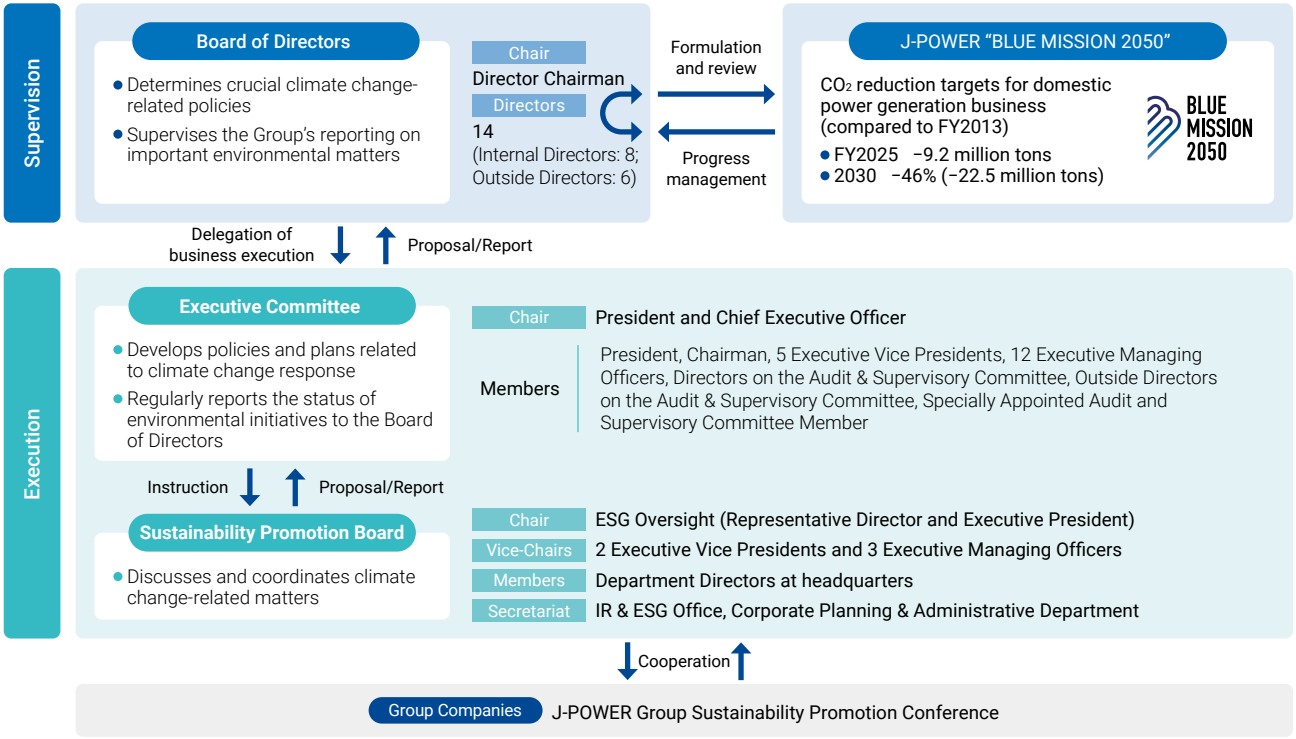
The Group has identified "response to climate change" as one of its material issues, which is overseen by the Board of Directors. Important matters such as policies and plans related to climate change response are determined by the Board of Directors.

With respect to execution, the Group has established a sustainability promotion framework supervised by the ESG Oversight (currently the President and Chief Executive Officer), who is appointed by the Board of Directors. We have established the Sustainability Promotion Board as an executive body and the J-POWER Group Sustainability Promotion Conference at the Group-wide level to work towards promoting sustainability, including climate change-related initiatives.

The Sustainability Promotion Board convenes three or more times a year to deliberate areas such as strategy, planning and measures related to sustainability in general and risk management. Important matters out of those deliberated are proposed and reported to the Board of Directors and the Executive Committee, and the Board of Directors oversees its progress.

The Board of Directors formulates and reviews management strategies and makes important decisions based on these proposals, reports, and other matters, taking into account risks and opportunities associated with sustainability.

Governance framework related to climate change



Governance: Skills of Directors

We have identified "general management and sustainability" as essential skills required for our Directors. This ensures that our Board of Directors is appropriately structured for the decision-making and oversight of climate change response policies.

The Board of Directors reviews and analyzes the latest edition of the World Energy Outlook, published annually by the International Energy Agency (IEA), reports its findings to engage in in-depth discussions. This helps deepen the Board's understanding of current trends in energy supply and climate change measures.

Definition of "General Management and Sustainability"

This refers to the ability to present the Group's overall direction, including management strategy; contribute to solving climate change and other social issues through energy supply; realize sustainability through continuous enhancement of corporate value, achieved in part through human capital development; and possess the experience and knowledge necessary to supervise such initiatives as a corporate manager.

Please see the 2026 "Notice of the Ordinary General Meeting of Shareholders" at the link below for information on the skill matrix of Directors.

https://www.jpower.co.jp/english/ir/stock/meeting.html

Climate Change Scenario Analysis (Disclosure Based on TCFD Recommendations)

Governance: Deliberation Status of Board of Directors

Since the establishment of J-POWER "BLUE MISSION 2050" in February 2021, the Board of Directors of J-POWER has been monitoring the progress of initiatives by management, receiving feedback through dialogues with shareholders and other stakeholders, and appropriately identifying changes in the business environment (including policy and international conditions), and discussing updates and revisions to the contents of the plan as appropriate.

Matters (related to climate change) determined at the Board of Directors

FY2020	• Formulation of J-POWER "BLUE MISSION 2050"
FY2021	• Formulation of Basic Policy on Sustainability and identification of material issues
FY2022	• Setting of CO_2 reduction target for FY2025
FY2023	• Raising of CO_2 emission reduction target for 2030 • Introduction of non-financial targets (material issues) in the evaluation of performance-linked compensation for executives
FY2024	• Disclosure of transition direction of thermal power operations in Japan • Decision on the suspension and discontinuation of Matsushima Thermal Power Plant • Formulation and disclosure of the vision for the business portfolio in the 2030s
FY2025	• Decision on the discontinuation of Takasago Thermal Power Plant

Matters reported to the Board of Directors

- Domestic and overseas trends on climate change issues (Strategic Energy Plan, IEA WEO, etc.)
- Basic policy regarding Green Transformation (GX) League
- Disclosure policy based on TCFD Recommendations
- Actual CO_2 emissions (Scopes 1–3)
- Dialogue with external stakeholders regarding climate change and ESG evaluation

Governance: Officers' Compensation

From the viewpoint of sustainability management, we introduced five material issues including response to climate change as non-financial targets for the evaluation of performance-linked compensation.

The Company's five material issues, which are the benchmarks for performance-linked compensation, are supply of energy, response to climate change, respect for people, engagement with local communities, and enhancement of our business foundation. KPIs for addressing climate change include numerical targets for renewable energy development and CO_2 reduction targets.

Officer compensation system

	Compensation type	Compensation details	Percentage (estimate) in the compensation package
Fixed compensation	Fixed monthly salary	Fixed monthly salary is a fixed amount of monetary compensation calculated based on the position of each Director	70%
Variable compensation	Performance-linked remuneration	① First indicator Evaluation factor: Degree of achievement of consolidated ordinary income Range: 0% minimum to 200% maximum ② Second indicator Evaluation factor: Comprehensive evaluation of material issues (KPIs)* Range: 0% minimum to 120% maximum ③ Payment calculation Weight of evaluation factors: Evaluation factor for first indicator × 90% + Evaluation factor for second indicator × 10%	20%
	Stock-based compensation	Introduced as an incentive for the Company's long-term growth based on the characteristics of the Company's business content and business development	10%

Please see PP.18–19 of the Integrated Report 2025 for details of the targets (KPIs) for material issues and results of initiatives.

Column

Engagement with policies, etc.

Policies and regulations related to climate change significantly impact the Company's medium- to long-term business environment as well as risks and opportunities. J-POWER will pay close attention to government policy trends and, by expressing its views as an individual company and through affiliated organizations, seek to secure investment predictability, while contributing to the realization of policies that help to balance the response to climate change with the stable supply of energy.

Examples of engagement

We submitted public comments to the government for the formulation of the Seventh Strategic Energy Plan. While endorsing the plan's greenhouse gas reduction targets for FY2040 and the direction to maximize the use of renewable energy and aim for a balanced power generation mix, we also expressed our view about the need to carry out further discussions on the nature of the public burden and for policy support to secure investment predictability.

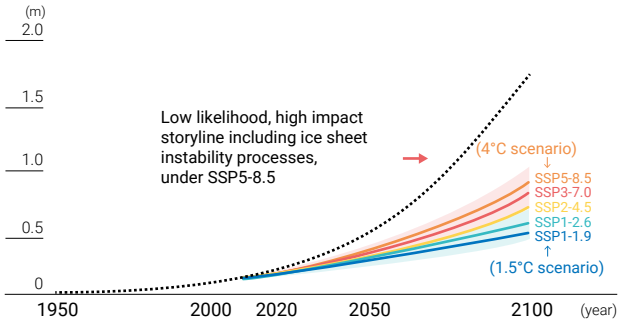
Climate Change Scenario Analysis (Disclosure Based on TCFD Recommendations)

Strategy: Risk and Opportunities

The J-POWER Group regards the variety of risks and opportunities that arise from environmental issues as material management issues. By identifying and assessing these factors, we are pushing forward its initiatives as it strives to bolster competitiveness. We understand that climate change in particular will require measures in the utilization of new technology and a number of other domains, including measures for addressing regulatory reinforcement by national governments. These factors may exert considerable impact on J-POWER's business domains and could create business-based risk. However, we believe that the ability to appropriately handle that risk will link to the bolstering of our competitiveness and the acquisition of new business opportunities. We have detailed risks related to climate change based on this understanding, and identified risks with a particularly high degree of importance after also factoring in that degree of importance and concern on the part of stakeholders.

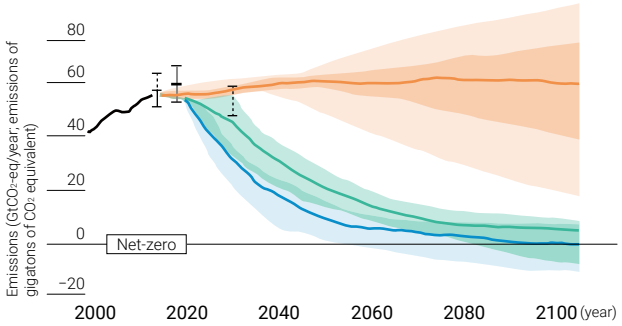
In our analysis of risk and opportunities, we assumed two cases: one where temperatures rise by 1.5°C and another by 4°C, and conducted analysis for both. In the former case, we assume that formidable measures and regulations will be enacted, and that in Japan as well, the renewable energy ratio will grow by a wide margin, and the decarbonization of electric power will progress at a rapid pace. Also, in the case where temperatures rise by 4°C, where it is assumed that global warming countermeasures will not be thoroughly enforced, it is projected that by the year 2100, the average ground temperature across the globe will rise by at least 4°C, and that average sea levels will rise nearly one meter. There are concerns that if measures to combat climate change are not sufficiently taken, the physical risks of climate disasters in 2050 and beyond in particular will become prominent. Taking these analysis results into account, we have organized the main risks and opportunities related to climate change as follows.

Sea level rise by scenario



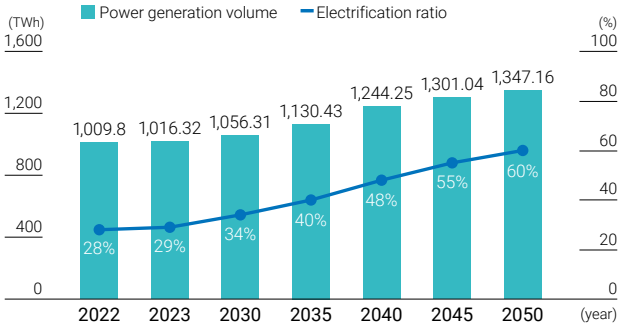
Source: Compiled from the Sixth Assessment Report by IPCC

Greenhouse gas reduction pathways by scenario



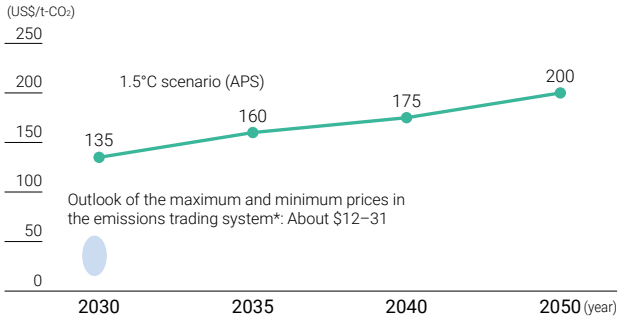
Source: Compiled from the Sixth Assessment Report by IPCC

Power generation volume in Japan, changes in electrification ratio (1.5°C scenario)



Source: Compiled from IEA WEO2024

Japan's carbon price outlook



*The 2030 outlook for the maximum and minimum prices in the emissions trading system (¥1,913–4,840) is converted at ¥155 per dollar. The scenario analysis for 2035 uses $39 from the WEO2025 STEPS.

Configured scenarios	Reference scenarios	Scope and period covered	Scenario description	Results of scenario analysis
1.5°C scenario	• "World Energy Outlook 2024 (WEO2024)" by the International Energy Agency (IEA) Net Zero Emissions by 2050 Scenario (NZE Scenario), Announced Pledges Scenario (APS), WEO2025 Stated Policies Scenario (STEPS) • Sixth Assessment Report by IPCC, etc.	Japan, in 2050 *For overseas scenarios, please see the Column on P.9.	Scenario in which formidable measures and regulations are enacted, carbon neutrality is achieved by 2050, and the rise in surface temperature is kept to 1.5°C	• Development of technologies involving hydrogen, ammonia and other energy sources and CCS will be promoted, and thermal power plants using these technologies will continue to operate to some extent to provide supply and adjustment capacity from the perspective of stable supply • Maximum introduction of CO_2-free power sources such as renewable energy and nuclear power • Electrification of the demand side and diffusion of distributed power sources will progress. Total power generation volume will increase with the growth of electrification • No significant increase in extreme weather events
4°C scenario	• SSP5-8.5 Scenario of the Sixth Assessment Report by IPCC		Maximum emission scenario in which climate policies are not introduced due to fossil fuels dependence-based developments	• Distributed generation becomes widespread, but thermal power plants remain to some extent due to lack of technological alternatives • Despite progress in energy conservation and electrification, which are cost-effective with existing technologies, a significant portion of the energy system still relies on fossil fuels

Climate Change Scenario Analysis (Disclosure Based on TCFD Recommendations)

Strategy: Risk and Opportunities

	Division	Risk and opportunity category	Specific examples from the Company	Timing of occurrence: Short term	Timing of occurrence: Medium term	Timing of occurrence: Long term	Response strategies
1.5°C scenario	Transition risk	Policy, legal system, and regulation risk	• Introduction of carbon pricing (FY2026: full-scale implementation of emissions trading system, FY2033: paid auctions to power producers) • Regulatory measures aimed at phasing out inefficient coal (book value of aging thermal facilities: ¥43 billion at the end of FY2025)	●	●	●	• Introducing an internal carbon price and utilizing it to assess the impact on revenue and expenditure over the next 10 years and make investment judgments • 1,913–4,840 yen/t in 2030 (outlook for the maximum and minimum prices in the emissions trading system) • For 2035, approx. ¥6,000 ($39) is assumed based on the WEO2025 STEPS • Competitiveness assessment and phase-out policy development for power plants based on regulatory measures
		Technology risk	• Thermal power generation facilities that have not taken steps to reduce CO_2 emission becoming stranded assets		●	●	• Reducing or discontinuing the operation of coal-fired thermal power plants, starting with aging plants, while considering their importance in maintaining a steady energy supply; Progressive adoption and extension of emission reduction strategies including mixed combustion of biomass and ammonia and CCS, etc.; Eventual transition to CO_2-free hydrogen power generation
		Market risks	• Changing preference for CO_2-free electricity		●	●	• Formation of a balanced power supply portfolio (hydroelectric, wind, geothermal, solar, nuclear, CO_2-free hydrogen power generation) • Accelerate business expansion by leveraging the strengths as a top runner of renewable energy (Hydroelectric: No. 2, Wind: No. 2 in Japan)
		Reputation risk	• Corporate image is affected due to CO_2 emissions • Divestment and/or active engagement by investors	●	●	●	• Steady progress and timely updates of J-POWER "BLUE MISSION 2050" • Enhancement of information disclosure regarding climate change and continuous dialogue with stakeholders
	Opportunities	Resource efficiency	• Developments in low carbon/decarbonization technologies and expansion of opportunities • Improvement of existing asset value	●	●	●	• Creation of new value through existing assets (upcycling) Short- to medium-term: Promotion of GENESIS Matsushima Plan and NEXUS Sakuma Plan, increase in kWh output through the replacement of wind power facilities • Initiatives to reduce CO_2 emissions Short- to medium-term: Expanded introduction of biomass, introduction of mixed combustion with ammonia, realization of CCS Long-term: Development of hydrogen mono-fuel combustion technology, conversion to CO_2-free hydrogen power generation through CCS
		Energy sources	• Realization of new businesses pertaining to hydrogen, ammonia, and other energy sources	●	●	●	• Challenges with CO_2-free hydrogen manufacturing and initiatives geared toward supply Australian brown coal hydrogen project, joint examination of green ammonia manufacturing and negative emission hydrogen manufacturing, etc.
		Products and services	• Increase in revenues due to expansion of renewable energy • Provision of services that correspond to consumer and end user needs • Realization of the environmental value of CO_2-free electricity through the introduction of carbon pricing	●	●	●	• Increase renewable energy power generation in FY2030 by 4.0 billion kWh/year (compared to FY2022) • Construction and operation of Ohma Nuclear Power Plant • Direct sales of CO_2-free electricity and associated environmental value to customers who need CO_2-free electricity • Provision of the renewable energy aggregation service and development of a platform to supply non-fossil power on an hourly basis, etc.
		Markets	• Increase in electricity sales volume due to progress in electrification • Growing need for sustainable finance		●	●	• **Allocation of investment funds toward transition** Strategic investment up to FY2030: ¥700 billion • **Diversification of financing** FY2025 results: ¥16.5 billion from issuance of 6th J-POWER Green Bonds Results to date: ¥93.5 billion from issuance of J-POWER Green Bonds ¥60.0 billion from transition-linked loan FY2025 investment results: About ¥190 billion — Renewable energy Power network Nuclear Thermal power transition — About 55% FY2026 investment forecast: About ¥350 billion — Renewable energy Nuclear Power network Thermal power transition — About 75%
		Resilience	• Expansion of renewables, distributed power sources, and businesses on the consumer side • Diversification of low-carbon fuels • Expansion of opportunities for network development conducive to renewable energy introduction	●	●	●	
4°C scenario	Physical risk	Acute risk	• Facility damage caused by extreme weather such as torrential rain disasters, forest fires, cold waves and heat waves. Water shortage in power plants Negative impact on sales of ¥240 million per day should operation of a thermal power plant (1 million kW) be obstructed		●	●	• Carrying out revisions of BCP based on updated knowledge as appropriate • Response to water risk Risk assessment and management utilizing WRI Aqueduct (3.0)* *A global standard assessment tool for water risk developed by the World Resources Institute (WRI).
		Chronic risk	• Assumes negative impact on facilities caused by prolonged rises in average temperatures, changes in rainfall and rises in sea surface Thermal power generation facilities: ¥103 billion, Hydroelectric power generation facilities: ¥76 billion *Calculated by multiplying the current book value of thermal and hydroelectric facilities with the rate of 0.296 for damage by 0.5 m sea-level rise and 0.189 for flooding damage, respectively.			●	

Short term: Up to 2030 Medium term: Up to 2040 Long term: Up to 2050

Climate Change Scenario Analysis (Disclosure Based on TCFD Recommendations)

Strategy: Scenario Analysis toward Carbon Neutrality in 2050: Japan as a Whole

The J-POWER Group performed climate change scenario analysis for Japan as a whole, based on the 1.5°C scenario advocated in the Paris Agreement, which pursues efforts to limit the average temperature increase at the end of this century to less than 1.5°C above pre-industrial levels (For the main scenario for the energy mix in Japan, which is assumed to have achieved carbon neutrality by 2050, please refer to APS under WEO2024). The power source compositions for FY2030 and FY2040 are based on the Japanese government's Sixth Strategic Energy Plan and Seventh Strategic Energy Plan, respectively.

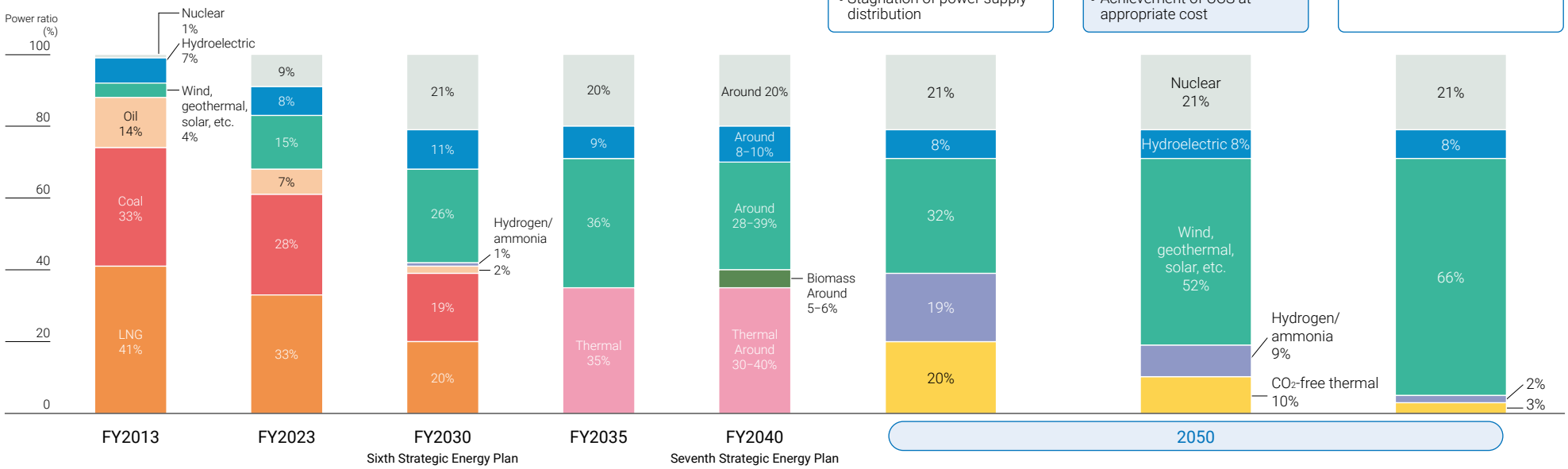
According to IEA projections, by the year 2050, total variable renewable energy (VRE) as represented by solar and wind power will be 70% of total power in the EU and the U.S. Conversely, in 2050 Japan, VRE and total renewable energy are projected at 40% and 60%, respectively, with nuclear power accounting for 20% and the remaining 20% comprised of hydrogen/ammonia and thermal power + CCS. We believe this is because electric power systems in Japan are interconnected in tandem rather than mesh-shaped like their Western counterparts, leaving them with weak cross-regional interconnection capacity and poor versatility and flexibility. In addition, there are also constraints on the introduction of VRE due to the lack of appropriate sites for it, and therefore from the perspective of stable supply, making it necessary to provide supply and adjustment capacity through CO_2-free thermal power generation. The actual environment in the year 2050 may not take the shape of the assumptions under this main scenario, as there are many uncertainties involved including progress of innovation. Given that, we also analyzed scenarios in which preconditions related to renewables and thermal power generation were modified, which are believed to be areas where the Group will be particularly impacted.

Scenario in which introduction of hydrogen expands
- Development in hydrogen power generation technology
- Stagnation of enhancement of power grid
- Rise in development cost of renewables
- Stagnation of power supply distribution

Main scenario
- Progress of distribution of small-scale demand (solar power + storage batteries)
- Enhancement of power grid
- Sufficient locations for siting of renewables
- Achievement of CCS at appropriate cost

Scenario in which expansion of renewables accelerates
- CCS unachieved/costly
- Insufficient CO_2 storage sites
- Powerful policy incentives for renewables
- High carbon pricing

Energy mix in Japan



Climate Change Scenario Analysis (Disclosure Based on TCFD Recommendations)

Strategy: Scenario Analysis toward Carbon Neutrality in 2050: J-POWER Group

Power generators, including the J-POWER Group, will need to focus on developing renewable energy sources to achieve carbon neutrality in 2050, while also converting coal- and gas-fired power generation eventually to CO_2-free hydrogen from the perspective of stable supply. We believe it to be economically sound to convert to CO_2-free hydrogen by making gradual capital investments (upcycling) in the latest innovations while utilizing existing power plant infrastructure that is being depreciated. We also believe that upcycling is an important means of sustainably using developed renewable energy.

The Group has formed and operated a well-balanced power source portfolio consisting of renewable energies (hydroelectricity, wind, geothermal, and solar) and thermal power, and has also accumulated a wealth and wide range of technologies and expertise in nuclear power construction and the development of CO_2-free hydrogen production and generation technologies. Therefore, by accelerating the expansion of renewable energy and flexibly upcycling existing power generation facilities while keeping an eye on the progress of innovation and economic trends, we can respond to not only the main scenario of Japan's energy mix in 2050, but also the scenario in which expansion of renewables accelerates and the scenario in which introduction of hydrogen expands.

The extensive and wide-ranging technologies and knowledge of the J-POWER Group

- Thermal → CO_2-free hydrogen power generation
- Nuclear power under construction
- Power network
- Renewable energies Hydroelectric, wind, geothermal, solar

Adaptable to any scenario

Scenario in which introduction of hydrogen expands

- We monetize business opportunities for CO_2-free hydrogen, which are greater than in the main scenario, through the expansion of J-POWER GENESIS
- Business opportunities for renewables become smaller than in the main scenario, but we leverage our considerable competitive strength to expand market share

Main scenario

- Expansion of renewable energies
- Expansion of distributed energy service
- Start of operation of the Ohma Nuclear Power Plant
- By commercializing CO_2-free hydrogen power generation (J-POWER GENESIS) ahead of other companies, we expand our market share even as the role of coal shrinks in Japan, and further increase our profit margin through the manufacturing of hydrogen and chemical products

Scenario in which expansion of renewables accelerates

- Expand earnings through growth of renewable energies
- Expand earnings by providing the adjustment capacity necessary for the expansion of renewable energies through pumped storage and CO_2-free hydrogen power generation, etc.
- We withdraw from thermal power if CCS proves impractical in terms of feasibility and cost

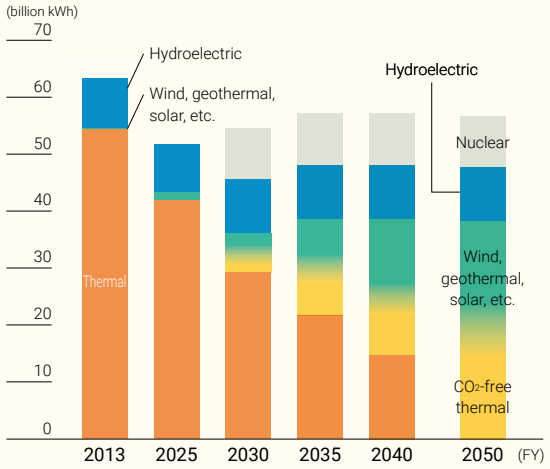
Column

Projected electricity generation

Based on the scenario analyses and our transition strategy, J-POWER "BLUE MISSION 2050," we have projected the transition of our power generation volume to carbon neutral by 2050 with certain assumptions. 2050 will see the expansion of renewable energy*, which is a priority for development, as well as the addition of nuclear power generation. We will continue to reduce or eliminate thermal power generation, while taking into consideration its role in ensuring a stable supply. We will gradually introduce and expand measures to reduce CO_2 emissions, such as mixed combustion (biomass and ammonia) and CCS, and eventually convert to CO_2-free hydrogen power generation.

*Our wind power generation capacity is assumed to expand in pace with the expansion of wind's share in Japan's overall generation capacity under the APS.

J-POWER Group's electricity generation trends and forecasts



Climate Change Scenario Analysis (Disclosure Based on TCFD Recommendations)

Transition Plan to Achieve Goal of Carbon Neutrality in 2050: J-POWER "BLUE MISSION 2050"

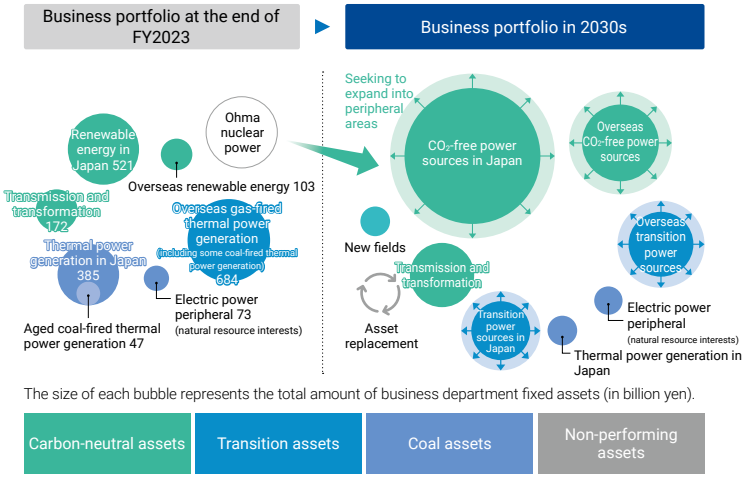
The J-POWER Group has formulated the J-POWER "BLUE MISSION 2050" to accelerate its efforts to address climate change. We are steadily working toward carbon neutrality in 2050 by promoting the three pillars of expanding CO_2-free power sources; push for zero-emission power sources; and stabilization and enhancement of the electric power network.

As our CO_2 reduction quantitative targets, we will take on the challenge of incrementally achieving carbon neutrality in our domestic power generation business. As a milestone, we aim to reduce CO_2 emissions by 9.2 million tons in FY2025 and 46% in 2030 compared to the FY2013 level. Actual CO_2 emissions for FY2025 were 35.77 million tons (a decrease of 13.00 million tons compared to FY2013), achieving CO_2 reductions exceeding the interim target.

In addition, under the J-POWER "BLUE MISSION 2050," we have formulated the vision for business portfolio in the 2030s and are making investments to achieve it.

Please also see P.25 of the Integrated Report 2025 for further details on J-POWER "BLUE MISSION 2050."

Vision for the Business Portfolio in the 2030s



The size of each bubble represents the total amount of business department fixed assets (in billion yen).

Carbon-neutral assets | Transition assets | Coal assets | Non-performing assets

J-POWER "BLUE MISSION 2050" roadmap

CO_2 emission reduction target of domestic power generation business (compared to FY2013)

Target achieved
−9.2 million tons
(Actual emissions: −13.0 million tons)

−22.5 million tons
−46%

Realization of carbon neutrality
Net-zero emissions

		2025	2030	2040	2050
Expanding CO_2-free power sources	Renewable energy	Increase of domestic power generation volume by 4.0 billion kWh Global development of new renewable energy projects	Additional new developments, upcycling of existing facilities, and maximum use of existing assets		
	Nuclear	Construction and start of operations at Ohma Nuclear Power Station			
Push for zero-emission power sources	Domestic coal-fired thermal power	Gradual phase-out of aging power plants	CO_2 reduction initiatives (Expansion of biomass mixed combustion, introduction of ammonia mixed combustion, etc.)		
	CCS	Development of business environment, design and construction of facilities	Injection and storage	Achievement of CO_2-free thermal power generation (Hydrogen, ammonia, IGCC+CCS, biomass mixed combustion +CCS, etc.)	
	Hydrogen power generation	Demonstration tests in Japan	Upcycling (adding gasifiers to existing assets)		
	Fuel production (CO_2-free hydrogen)	Feasibility study on overseas production	Utilization in other industries		
Power network	Stabilization	Hydroelectric power generation, improvement of load tracking performance by upcycling (adding a gasifier to existing assets), and expansion of distributed energy service			
	Reinforcement*	Completion of reinforcement of the New Sakuma Frequency Converter Station, etc.	Contribution to power network enhancement		

*Strengthening the power network is an initiative of J-POWER Transmission Network Co., Ltd.

Column

CO_2 reduction efforts across the value chain

J-POWER is implementing initiatives in collaboration with maritime transportation companies to reduce fuel consumption in maritime transportation and CO_2 emissions, including the installation of wind propulsion auxiliary systems (the Rotor Sail*1 and Wind Challenger*2) and trial voyages*3 using biofuels.

In addition, leveraging our extensive experience in renewable energy development and operation, we will promote the creation of services that meet a wide range of needs, including provision of an aggregation service that centralizes and manages renewable energy electricity*4 and development of an environmental value platform that enables the supply of non-fossil power on an hourly basis*5, thereby contributing to greenhouse gas reduction across the value chain.

A transport vessel equipped with the Wind Challenger

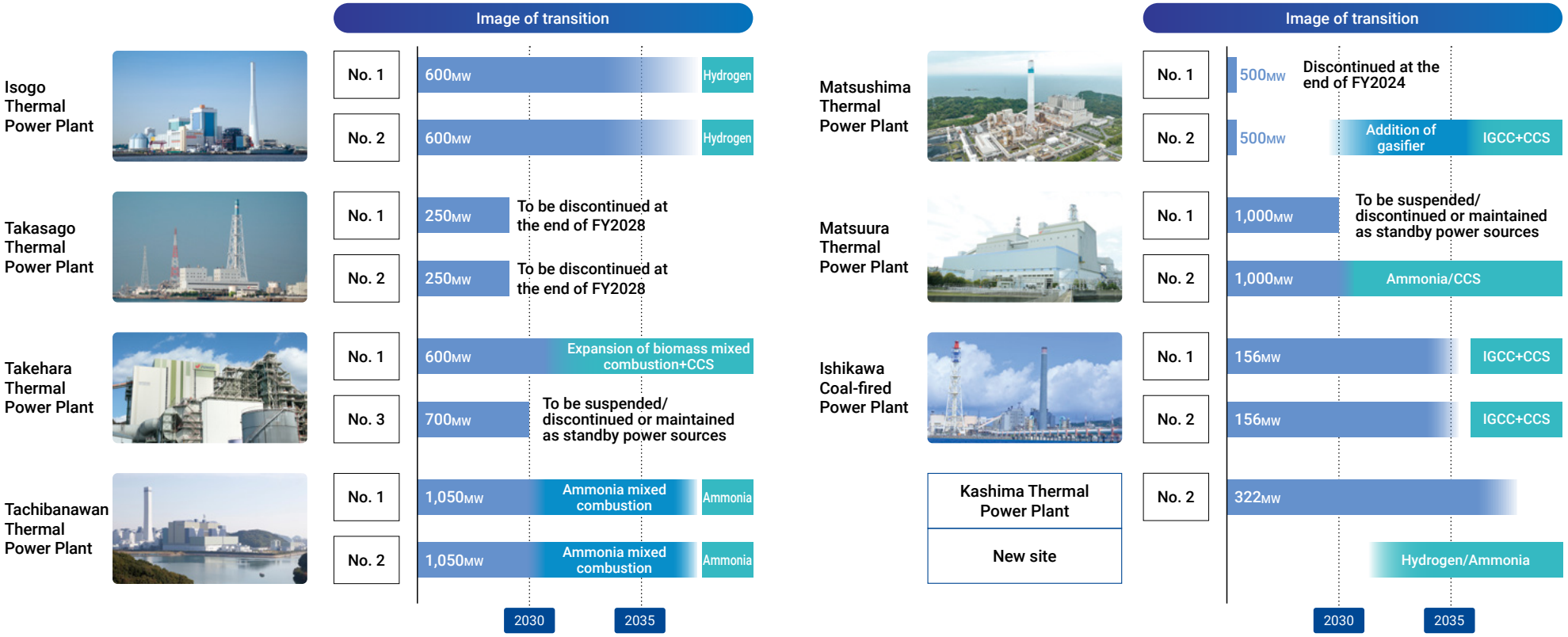
*1 https://www.jpower.co.jp/english/news_release/pdf/news250129e.pdf
*2 https://www.jpower.co.jp/english/news_release/pdf/news260420e.pdf
*3 https://www.jpower.co.jp/english/news_release/pdf/news260309_2e.pdf
*4 https://www.jpower.co.jp/news/2025/03/news250318.html (Japanese only)
*5 https://www.jpower.co.jp/english/news_release/pdf/news251106_1e.pdf

Climate Change Scenario Analysis (Disclosure Based on TCFD Recommendations)

Direction for Thermal Power Transition in Japan

Based on our "BLUE MISSION 2050" roadmap, the J-POWER Group will advance its CO_2 reduction and decarbonization initiatives, while contributing to a stable power supply. This includes phasing out inefficient coal-fired power plants and converting high-efficiency thermal power plants using the optimal technology according to the local characteristics of the site.

*The plan will be updated, reviewed, and refined as needed based on changes in the assumptions including the Japanese government's GX policy (Strategic Energy Plan, global warming countermeasures, NDC, etc.), power demand-supply situation, power system design, and progress of industry development, etc.



Column

Concept of "just transition"

Please see P.79 of the Integrated Report 2025 for details on the Cross-Group CDP.

Thermal power plants, where a large number of the J-POWER Group employees work, play an important role in the local economy. For that reason, when discontinuing power plants, we make sure to provide prior and thorough explanations to as many stakeholders as possible, including local governments where the plants are located, employees, and partner companies.

In addition, we have prepared an employment measures package for Group employees, agreed upon with union ship-based labor unions. We will make every effort to provide employment within the Group: In accordance with our basic policy of ensuring fairness and sufficient lead time, we will provide reskilling opportunities and offer employment options through multiple measures, including secondment and transfer to Group companies and reassignment to nearby business sites. Furthermore, we have also prepared support measures for employees seeking employment outside the Group.

In addition, under the Cross-Group CDP, a program for sharing human resources among Group companies, which has already been implemented, we have built a track record of seconding technical employees of thermal Group companies. We will work on the transition on a Group-wide basis by maximizing the utilization of our existing human capital so as to respond flexibly to changes in the business environment.

Column

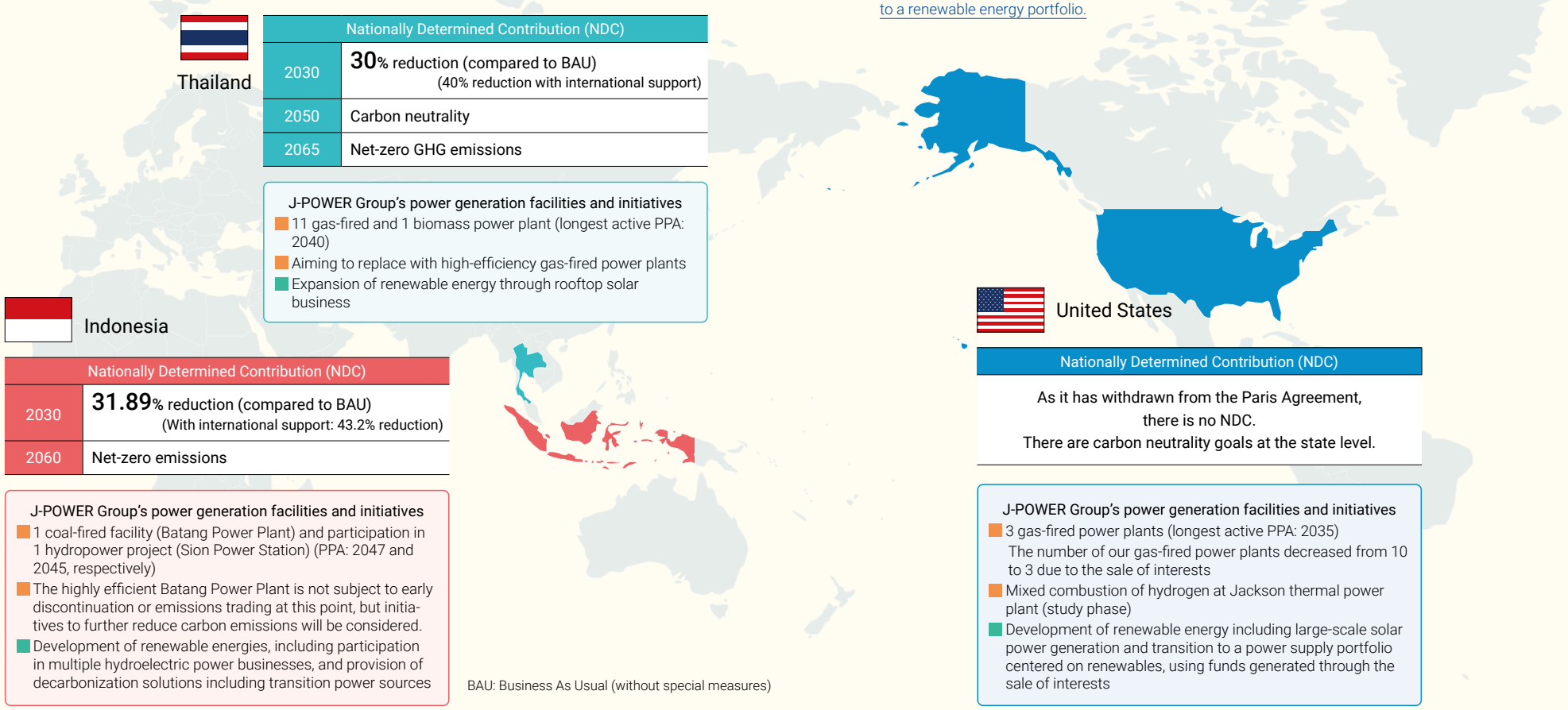
Scenario Analysis toward Carbon Neutrality in 2050: J-POWER Group's Major Overseas Thermal Power Generation Facilities

In its international business, the J-POWER Group is working to improve the investment efficiency of existing assets and advancing into new business segments, conscious of profit scale and profitability and to build a profit base on a short-, medium- and long-term perspective.

Countries have announced their Nationally Determined Contributions toward carbon neutrality. None of them, however, have committed to a single path, and instead presented multiple scenarios. They share other commonalities in their vision such as further promotion of renewable energy, electrification, hydrogen use, utilization of CCS and that they all rely on future innovations.

The Company is promoting the development of renewable energy such as solar power and hydropower, in parallel with its consideration of the CO_2 reduction of existing thermal power plants. Going forward, we will continue to make investments in line with decarbonization policies while contributing to supply of electricity in each country we operate.

Please see P.27–28 of the Integrated Report 2025 for details of the Company's initiatives for the transition to a renewable energy portfolio.



Thailand

Nationally Determined Contribution (NDC)	
2030	**30**% reduction (compared to BAU) (40% reduction with international support)
2050	Carbon neutrality
2065	Net-zero GHG emissions

J-POWER Group's power generation facilities and initiatives
- 11 gas-fired and 1 biomass power plant (longest active PPA: 2040)
- Aiming to replace with high-efficiency gas-fired power plants
- Expansion of renewable energy through rooftop solar business

Indonesia

Nationally Determined Contribution (NDC)	
2030	**31.89**% reduction (compared to BAU) (With international support: 43.2% reduction)
2060	Net-zero emissions

J-POWER Group's power generation facilities and initiatives
- 1 coal-fired facility (Batang Power Plant) and participation in 1 hydropower project (Sion Power Station) (PPA: 2047 and 2045, respectively)
- The highly efficient Batang Power Plant is not subject to early discontinuation or emissions trading at this point, but initiatives to further reduce carbon emissions will be considered.
- Development of renewable energies, including participation in multiple hydroelectric power businesses, and provision of decarbonization solutions including transition power sources

BAU: Business As Usual (without special measures)

United States

Nationally Determined Contribution (NDC)

As it has withdrawn from the Paris Agreement, there is no NDC.
There are carbon neutrality goals at the state level.

J-POWER Group's power generation facilities and initiatives
- 3 gas-fired power plants (longest active PPA: 2035)
  The number of our gas-fired power plants decreased from 10 to 3 due to the sale of interests
- Mixed combustion of hydrogen at Jackson thermal power plant (study phase)
- Development of renewable energy including large-scale solar power generation and transition to a power supply portfolio centered on renewables, using funds generated through the sale of interests

Climate Change Scenario Analysis (Disclosure Based on TCFD Recommendations)

Strategy: 2030 Scenario Analysis: J-POWER Group

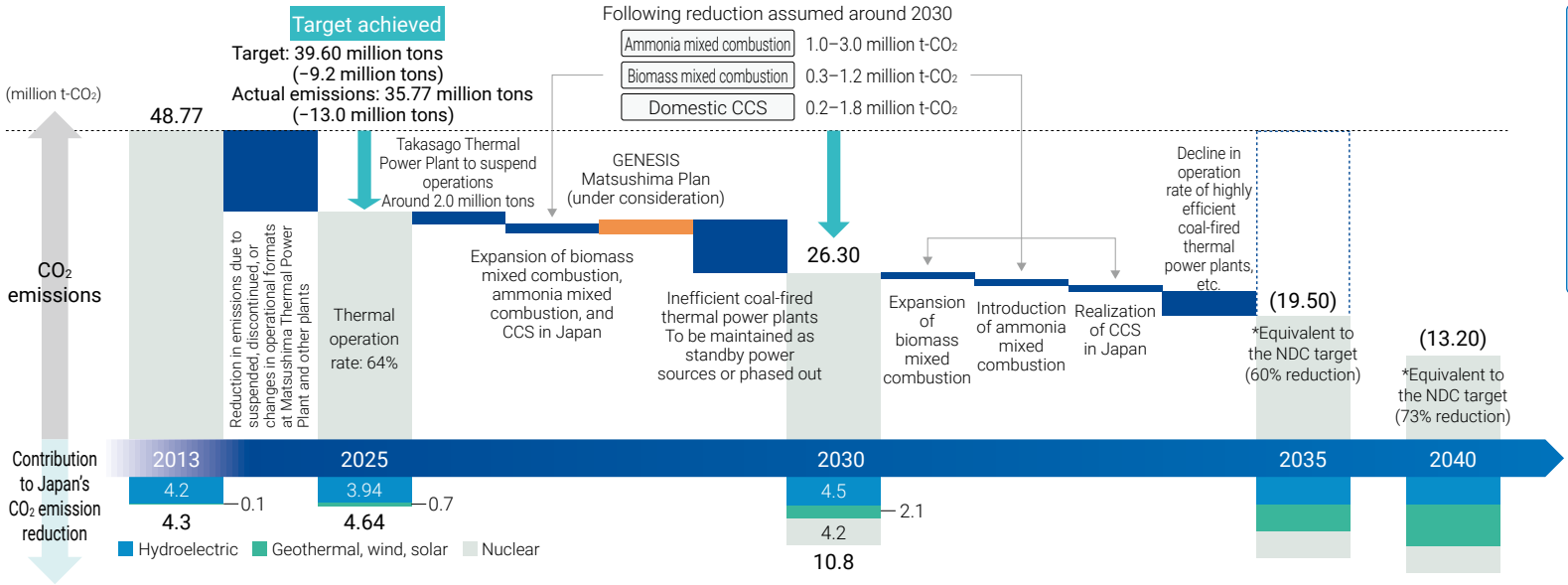
The J-POWER Group has set a target of a 46% reduction in CO_2 emissions by 2030, which is in line with the Nationally Determined Contribution (NDC) made by Japan for the Paris Agreement, as a milestone toward achieving carbon neutrality by 2050, and has estimated specific initiatives for a 46% reduction and the financial impacts in the 2030 scenario analysis. The Group's emissions levels assumed for 2035 and 2040 are also shown in the chart, based on a scenario in which emissions are reduced in accordance with Japan's NDC targets.

Toward 2030, along with reducing the use of thermal power and pushing forward biomass mixed combustion, we will consider and prepare for mixed combustion of ammonia, upcycling of existing facilities, and CCS in Japan, while steadily pursuing initiatives to reach our CO_2 reduction target. Looking ahead to 2035 and 2040, we aim to reduce CO_2 emissions to levels equivalent to the NDC targets by advancing initiatives aligned with the thermal power transition in Japan.

Contribution to CO_2 emission reduction

We have established a target to increase renewable energy by 4.0 billion kWh compared to FY2022 by FY2030. If J-POWER develops CO_2-free power sources like renewable energy, it will replace other thermal power sources in Japan as a whole and help the country lower its CO_2 emissions overall. By 2030, we predict that our CO_2-free power sources will have contributed to reducing 10.8 million tons of emissions, growing from 4.64 million tons in 2025. Looking beyond 2030, we will build on our contribution to the development of sustainable societies worldwide by supplying electricity generated from renewable energy sources across global markets.

Contribution to Japan's overall CO_2 emission reduction brought by J-POWER's initiatives to achieve CO_2 reduction targets and its CO_2-free power sources



Initiatives after 2030

Select an optimal decarbonization technology according to the local characteristics of the site toward achieving CO_2-free thermal power generation.

- Expansion of biomass/ammonia mixed combustion
- Further expansion of IGCC+CCS
- Hydrogen/ammonia power generation
- Biomass mixed combustion+CCS, etc.

Contribution to reduction

=

Power generation capacity

×

Annual operating hours

×

Facility utilization rate

×

Emission factor for JEPX FY2025 (0.472 kg-CO_2/kWh)

Investing cash flow

Strategic investments: **¥700** billion (up to 2030) (Domestic and overseas renewable energy, power network enhancement, and zero-emission power sources)

2024 to 2026: **¥350** billion

Domestic and overseas renewable energy ¥250 billion; power network enhancement ¥95 billion; transition of thermal power ¥5 billion

Financing

Financing results

Green Bond ¥93.5 billion; transition-linked loan ¥60 billion

Financing results and the fund-purpose, reporting, and environmental improvement effects of Green Bonds are posted on the Company's website: https://www.jpower.co.jp/sustainability/finance/ (available only in Japanese)

Climate Change Scenario Analysis (Disclosure Based on TCFD Recommendations)

Strategy: 2030 and 2035 Scenario Analysis: Estimated Financial Impact

As a result of several steps—the implementation of carbon pricing, support for the development and introduction of CO_2 emission reduction measures, and more—to reach carbon neutrality in 2050, it is anticipated that Japan's energy costs would rise in the future. CO_2 emissions quota trading became mandatory in FY2026 following the full-scale operations of the emissions trading system (GX-ETS), while paid auctions for power producers are scheduled to commence in FY2033. While these developments may result in cost increases, they are also expected to lead to an expansion of revenue opportunities through the enhancement of the environmental value of our CO_2-free power sources. The J-POWER Group will work to control rising energy bills and mitigate the financial impact of our response to climate change through methods that are economically sound, such as offsetting the effects of the decrease in thermal power sales with the expansion of renewable energy.

Financial impact (1/2)

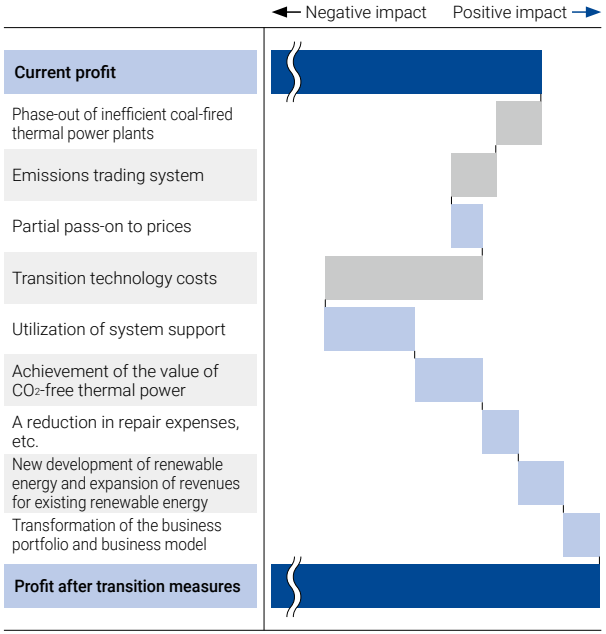
	Factors	Calculation details	Impact in value
Thermal power	Phase-out of inefficient coal-fired thermal power plants	• An estimated ¥10 billion decrease in ordinary profit mainly due to the closure of inefficient coal-fired thermal power plants *In cases where such coal-fired plants are maintained as standby power sources, no additional impact was assumed based on the assumption that institutional support will be provided.	Decrease in profits of approx. ¥10 billion
	Carbon pricing (CP)	• 2030: The cost of procuring emissions quotas is estimated based on the outlook for the maximum and minimum prices for the emissions trading system of ¥1,913–4,840* ··· An increase in costs of approx. ¥4–10 billion • 2035: As the outlook for the maximum and minimum prices beyond 2030 has not been disclosed, CP under the WEO2025 STEPS (approx. ¥6,000) is used ··· Approx. ¥30–40 billion • Impact on carbon pricing will be regularly reconsidered paying close attention to Japan's energy policies to achieve Green Transformation. 2030: Impact on CP = Emissions trading prices (1,913–4,840 yen/t-CO_2) × Additional procurement of emissions quotas (assumed) (Approx. 2 million t-CO_2)	2030: An increase in costs of approx. ¥4–10 billion 2035: An increase in costs of approx. ¥30–40 billion *However, predicting the degree of impact on ordinary profit is challenging due to the potential for part of the cost to be passed on to power charges as a social cost.
	Biomass/ammonia mixed combustion	• When reducing CO_2 emissions, the application of decarbonization options is deemed beneficial if the following formula holds. 2030: Reduction measures to be applied to CO_2 emissions around 3 million tons: **CO_2 reduction cost** is assumed at ¥30–54 billion. 2035: Reduction measures to be applied to CO_2 emissions around 9.8 million tons: **CO_2 reduction cost** is assumed at ¥84 billion or more. *Prepared by the Company based on materials from government advisory committees, the Power Generation Cost Verification Working Group, and the CCS Long-Term Roadmap Review Committee • Reduce impact using policy support, etc. Work to make the CO_2 reduction cost to be lower than the CO_2 cost. CO_2 price > CO_2 reduction cost − Support system Biomass/ammonia mixed combustion: Emissions trading prices (yen/t-CO_2) × CO_2 reduction achieved by using carbon-neutral fuel > Power generation volume using carbon-neutral fuel (kWh) × (Cost of mixed combustion with carbon-neutral fuel (yen/kWh) − Power generation cost using coal only (yen/kWh)) − Policy support Introduction of CCS: Emissions trading prices (yen/t-CO_2) > Separation and capture expenses (yen/t-CO_2) + Transportation expenses (yen/t-CO_2) + Storage expenses (yen/t-CO_2) − Policy support	–
	Introduction of CCS		
	GENESIS Matsushima Plan	• By adding gasification facilities and other equipment to the existing Matsushima Thermal Power Plant and "upcycling" it, we aim to reduce CO_2 emissions by 10% as soon as possible while contributing to a stable supply. We will pursue CO_2-free hydrogen power generation in the future. • Use the Long-Term Decarbonization Power Source Auction to recoup capital expenditures and other fixed costs.	0
	Reduction in coal-fired thermal power repair expenses and renewal investment	• Constrain repair expenses and renewal investment for coal-fired thermal power plants prior to reduction of operations anticipated from 2030. • Actual repair costs for, as well as investments to replace, coal-fired thermal power will require about ¥35 billion per year, while investment for renewal will require about ¥20 billion per year. We will work to reduce some of these expenses.	+α

Climate Change Scenario Analysis (Disclosure Based on TCFD Recommendations)

Financial impact (2/2)

	Factors	Calculation details	Impact in value
CO_2-free power sources	New development of renewable energies	• Estimated from the power generation value from new development of renewable energy and non-fossil value Power generation volume of renewable energies: FY2022 → +4.0 billion kWh → FY2030 **(Reference) Examples of non-fossil value sales and an increase in the added value of existing renewable energy** ① Signed a virtual PPA for an onshore wind farm with KDDI https://www.jpower.co.jp/english/news_release/pdf/news260421e.pdf ② Long-term agreement for environmental value derived from energy generated at hydroelectric power plants https://www.jpower.co.jp/english/news_release/pdf/news250624e.pdf ③ Local revitalization–type PPA by JR East and J-Power https://www.jpower.co.jp/news/2026/03/news260327.html (Japanese only)	Profit increase of ¥10 billion and above
	Expansion of revenues for existing renewable energy	• Enhance the non-fossil value of existing renewables (10 billion kWh) With the full-scale launch of Japan's emissions trading system in 2026, carbon pricing is expected to gain momentum. As a result, rising carbon prices will likely enhance the environmental value of our renewable energy with no CO_2 emissions, contributing to greater profits. Quantifying the impact remains challenging at this stage, as it depends on the specific details of the system under consideration.	
	Ohma Nuclear Power Station (under construction)	• The impact of the project has not been included in the financial impact estimation as it is currently under review based on the new regulatory criteria.	–

Financial impact at a glance



Risk scenario: If aligned with the 1.5°C target of the IPCC Sixth Assessment Report

We also analyzed the GHG emissions in the 1.5°C pathway as outlined in the IPCC Sixth Assessment Report (AR6). According to the IPCC AR6, the global model pathway for limiting global warming to 1.5°C (> 50%) with no or limited overshoot requires emissions reduction of 43% by 2030 and 60% by 2035 against 2019 levels. These targets are equivalent to 51% reduction against FY2013 levels in Japan, and when translated to reduction targets of the J-POWER Group, it would require an additional 2.4 million tons of reduction on top of our current 2030 target. Similarly, for 2035, it is equivalent to a 65% reduction compared with FY2013, and an additional reduction of 2.4 million tons will be required beyond Japan's NDC level.

IPCC Sixth Assessment Report

2030 43% reduction compared to 2019
2035 60% reduction compared to 2019

↓ Converted to our "BLUE MISSION 2050" standard (compared to FY2013)

2030 51% reduction compared to 2013 (24.9 million-ton reduction)
An additional reduction of 2.4 million tons beyond the Company's target
2035 65% reduction compared to 2013 (31.7 million-ton reduction)
An additional reduction of 2.4 million tons beyond Japan's NDC

Financial impact of the risk scenario

Additional CO_2 reduction measures for approx. 500 MW of coal-fired thermal power are needed

With respect to the estimates for 2030 and 2035 presented on the previous page, although costs are expected to increase by about ¥10–44 billion, we will try to reduce the impact by making maximum use of an optimal combination of options, policy support, etc.

Transition costs

	Base scenario	Risk scenario
2030	¥30–54 billion →	¥40–98 billion
2035	¥84 billion or more →	¥94–128 billion or more

Additional costs ¥10–44 billion

Climate Change Scenario Analysis (Disclosure Based on TCFD Recommendations)

Risk Management

To identify and address various risks associated with corporate activities, the J-POWER Group has established executive bodies and dedicated departments, and has put risk management systems in place, including reporting and monitoring mechanisms.

The Sustainability Promotion Board, Compliance Action Committee, Business Strategy Subcommittee, and other executive bodies manage the risks. The Board of Directors monitors them and comprehensively manages the risks from a Group-wide perspective, reflecting them in investment decisions and business operations.

The Sustainability Promotion Board analyzes and assesses sustainability issues, including natural capital such as climate change, and discusses mitigation strategies. Furthermore, under the Sustainability Promotion Board, the Global Environmental Strategy Subcommittee has been established to evaluate climate change threats. The Sustainability Promotion Board deliberates on the evaluation results, and makes recommendations or reports to the Executive Committee and Board of Directors.

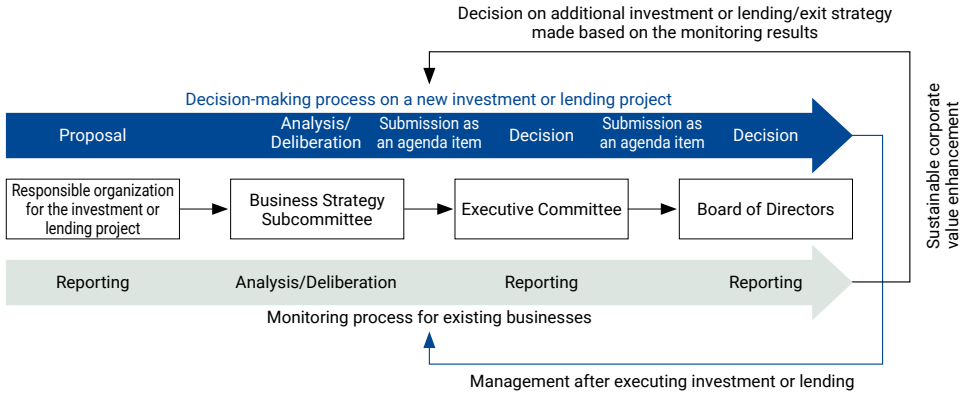
The Board of Directors works to identify risks at an early stage by receiving regular reports on the status of business execution. It also strives to fully understand and prevent risks, while aiming to minimize the impact when they occur, through a crisis management system, established in accordance with internal regulations, as well as discussions and mutual checks and balances at various meetings.

Risk Management Related to Investment Projects

In managing new investments and lending as well as existing projects, the J-POWER Group makes decisions and conducts monitoring through multiple meetings, on the premise of alignment with the overall corporate strategy, ensuring control from both profitability and risk management perspectives. Taking into account that external changes, including those related to climate change, such as regulations, support and other policy changes as well as changes in the international situation and global supply chains, may affect the profitability and risk profile of our business, we make investment decisions under an appropriate governance framework.

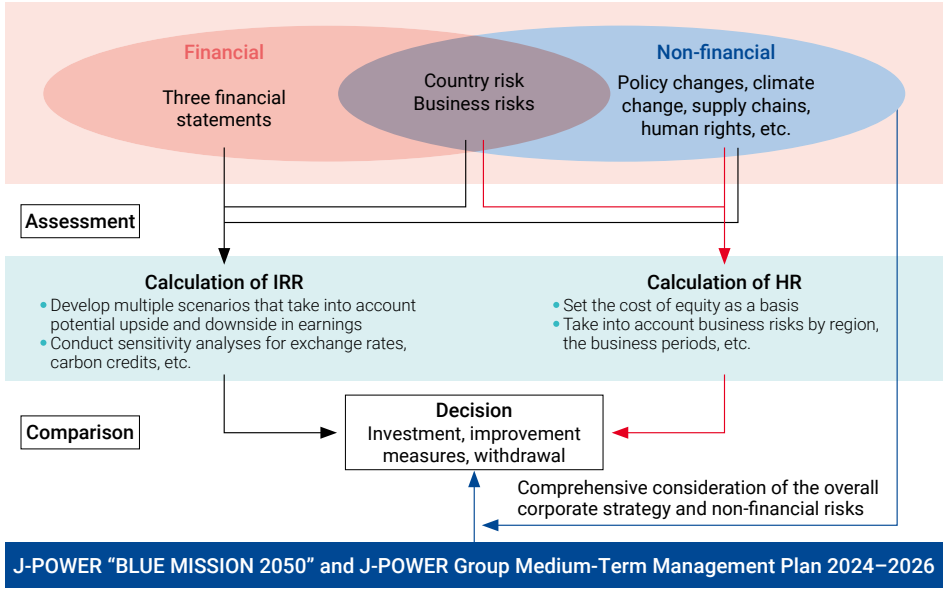
With respect to new investments, we make strict decisions on whether to proceed with investments after comprehensively evaluating the significance of the initiatives, profitability, and risks (policy changes, climate change, human rights, supply chains, etc.) at each stage of the Business Strategy Subcommittee, the Executive Committee, and the Board of Directors. As for profitability, we use the internal rate of return (IRR) as a key indicator based on cash flow plans that incorporate assumptions regarding demand outlook, electricity prices, and fuel prices. The IRR of each project is evaluated by comparing it with the hurdle rate (HR: set based on the cost of equity, taking into account business risks by region, the business periods, etc.), which represents the expected rate of return exceeding the cost of equity.

We also confirm the profitability and the status of various risks materializing for existing investment projects on a semi-annual basis. If any impairment in the profitability or in the significance of the initiative is identified, we will implement improvement measures and consider taking other measures, including withdrawal, and report the results to the Executive Committee and the Board of Directors. In the event of a sudden change in the business environment, we will assess the situation and consider measures in a timely manner without waiting for the regular monitoring. Furthermore, beyond the evaluation of individual projects, management deliberates on the optimization of investment allocation from an asset allocation perspective, with a view to the future business portfolio, and seeks to improve capital efficiency.



Please see P.96 of the Integrated Report 2025 for an overview of the Company's risk management.

Image of investment project evaluation



J-POWER "BLUE MISSION 2050" and J-POWER Group Medium-Term Management Plan 2024–2026

Climate Change Scenario Analysis (Disclosure Based on TCFD Recommendations)

Indicators and Targets

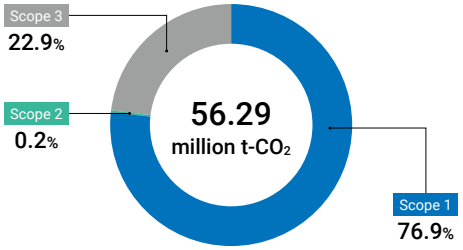
The J-POWER Group has obtained third-party certification for all of Scopes 1–3 GHG emissions since FY2022. We plan to continue to obtain third-party certification for FY2025 data.

GHG emissions 3-year results

(million t-CO_2)

	FY2023	FY2024	FY2025 (preliminary figures)
Scope 1	**44.39**	**45.94**	**43.31**
Domestic power generation business	33.68	35.84	35.77
Overseas power generation business	10.27	9.78	7.26
Other	0.43	0.32	0.28
Scope 2 (Location criteria)	0.14	0.14	0.11
Scope 3	13.31	13.51	12.87
Total	**57.84**	**59.59**	**56.29**

FY2025 breakdown by Scope



Scope 1
Direct greenhouse gas emissions by business operators themselves
(burning fuel and industrial processes)

Scope 2
Indirect emissions accompanying use of electricity and heat/steam from other companies

Scope 3
Indirect emissions other than Scope 1 and Scope 2
(emissions by other companies related to the activities of the business)

Target Push for zero-emission power sources

Indicators ① A reduction of 9.2 million tons* in FY2025 **Target achieved**
② 2030: A reduction of 46% (22.5 million tons)*

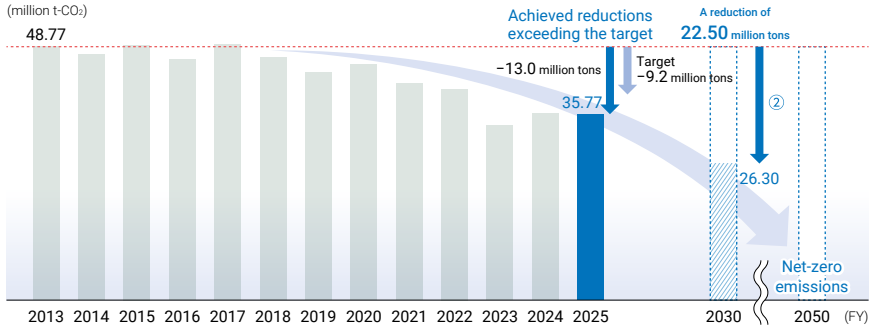
*Compared to FY2013

② 2030: A reduction of 46% (22.5 million tons) of emissions

- Expansion of biomass mixed combustion
- Introduction of ammonia mixed combustion
- Realization of CCS in Japan
- Reducing or discontinuing the operation of aging coal-fired thermal power plants

*Book value of aged coal-fired thermal power plants is approx. ¥43 billion.

Changes in CO_2 emissions in domestic power generation business



Target Expansion of CO_2-free power sources

Indicator FY2030 Power generation volume of renewable energy +4.0 billion kWh/year*

*Compared to FY2022

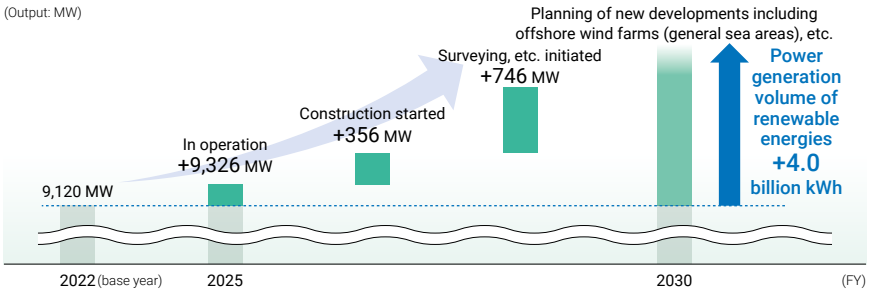
Major CO_2-free power sources in operation (since FY2025)

Kitakyushu Hibikinada Solar Power Station, Fukuoka Pref.
Owned capacity: 29 MW

Okutadami Power Station, Fukushima Pref.
Owned capacity: 566 MW
(An output increase of 6,000 kW due to water turbine runner replacement)

Kitakyushu Hibikinada Offshore Wind Farm, Fukuoka Pref.
Owned capacity: 88 MW

Trends in the development of renewable energy (domestic)



Column

Relationship between the J-POWER Group's CO_2 reduction results and SBT indicators

The Science Based Targets initiative (SBTi) calls for companies in the power sector to set intensity-based emission targets. The J-POWER Group has set its target based on actual emission volume and is working toward its achievement.

The rate of our Group-wide emissions reduction for the period from FY2022 (40.64 million tons) to FY2030 (target of 26.30 million tons) is 4.4%, exceeding the annual reduction rate of 4.2% required by SBTi for a 1.5°C trajectory alignment.