Climate Change

The Shinko Group is engaged in a variety of activities to fulfill the responsibility of a manufacturing company to reduce environmental impact. Among these, the greatest priority is given to responding to climate change, based on our understanding that it is essential for realizing a sustainable society, and related activities are conducted throughout the company.
International frameworks such as the Paris Agreement, together with the strengthening of global regulations and expanded application of carbon taxes, are accelerating the trend toward decarbonization in many countries throughout the world. The Shinko Group is working to respond to climate change by clarifying its goals in accordance with its Environmental Policy and Environmental Vision 2050 and by setting medium- to long-term environmental targets. We are strengthening our activities to achieve carbon neutrality as soon as possible and contribute to the realization of a decarbonized society.

Information Disclosure Based on TCFD Recommendations

TCFD TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

The Financial Stability Board (FSB) has established the Task Force on Climate-related Financial Disclosures (TCFD) to reduce the risk of instability related to climate change in financial markets. Responding to the TCFD recommendations in 2017, the Shinko Group has committed to making disclosures in line with the recommendations, and as SHINKO ELECTRIC INDUSTRIES CO., LTD., we expressed our support for the TCFD recommendations in May 2022.
The Shinko Group actively discloses information on climate change to various stakeholders.

Governance and Promotion System

We have established the Environmental Committee chaired by the Representative Director of Board, President, and the Environmental Measures Execution Committee as a subordinate organization under the Committee, as a framework for promoting environmental management. Furthermore, at each of our plants in Japan and SHINKO R&D Center, we have established Green Factory Promotion Subcommittees consisting of manufacturing divisions and related divisions to implement specific climate change measures, including the promotion of energy conservation and the introduction of high-efficiency equipment in manufacturing processes and plant utility equipment.
Our overseas manufacturing subsidiaries are also working to reduce their environmental impact, including climate change, under their own sustainability promotion systems.
The Risk Management Committee, chaired by the Representative Director of Board, President, has been established as a company-wide risk management system, including responses to climate change risk, to promote risk management for the entire group. To fully understand and respond to risks that could impact our business operations, including climate change, we analyze and respond to risks Groupwide. The Board of Directors receives regular reports on the important risks that have been identified, analyzed, and evaluated.

Climate Change Promotion Structure (in Japan)

Strategy

Evaluation of the Importance of Risks and Opportunities

In initiating scenario analysis, we identify the risks and opportunities arising from climate change that our Group faces, define the target period, and evaluate importance based on the magnitude of qualitative impacts on our business.

Evaluation of the Importance of Risks

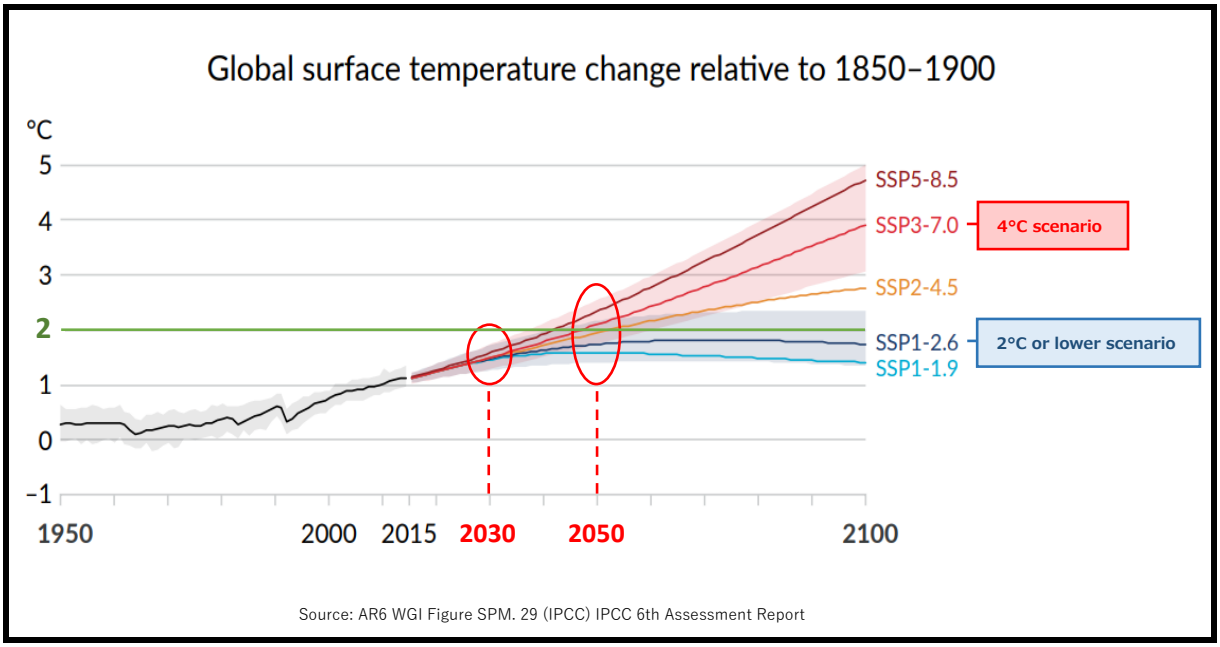
Classification	Broad category	Narrow category	Content	Period covered			Importance
				Short-term ~2025	Mid-term ~2030	Long-term ~2050	
Transition	Policy and regulatory risks	Introduction of carbon pricing	Increase in raw material procurement costs due to the introduction of a carbon tax		→	→	High
		Not reaching emissions targets	Decline in corporate value due to negative evaluations from stakeholders reflecting delays in responding to climate change and environmental initiatives	→	→	→	Medium
	Market risks	Increase in energy and raw material prices	Rising energy prices due to the promotion of renewable energy (investment, etc.); increased raw material procurement costs accompanying increased demand for low-carbon products and environmentally friendly services	→	→	→	High
		Changing customer behavior	Missed business opportunities due to delays in responding to growing demand for low-carbon products and environmentally friendly services	→	→	→	High
	Reputation risks	Not reaching emissions targets	Decline in corporate value due to negative evaluations from stakeholders reflecting delays in responding to climate change and environmental initiatives	→	→	→	Medium
Physical	Physical risks	Extremely severe disasters due to climate change	Risks such as suspension of operations due to disasters such as storm and flood damage; delays in procurement of materials and goods and shipment of products due to damage to suppliers and disruption of supply chains	→	→	→	High

Evaluation of the Importance of Opportunities

Classification	Broad category	Narrow category	Content	Period covered			Importance
				Short-term ~2025	Mid-term ~2030	Long-term ~2050	
Transition	Resource Efficiency Opportunities	Realization of high-efficiency manufacturing processes Reduction of energy use	Realization of low-carbon manufacturing processes by reducing energy use through more efficient manufacturing processes, the promotion of energy-saving design in manufacturing facilities, and improvement of the efficiency of utility facilities, and by introducing and creating renewable energy	→	→	→	High
	Product and Service Opportunities	Development and manufacture of energy-saving products Changing customer behavior	Increasing sales by providing products and services with high environmental value that match market needs, and by providing energy-saving products such as semiconductor packages that contribute to energy saving	→	→	→	High

Defining Scenario Groups

Based on the sixth assessment report released by the Intergovernmental Panel on Climate Change (IPCC), the Shinko Group has established a "2° C or lower scenario" and a "4° C scenario." We are using external information such as the International Energy Agency's (IEA) STEPS (Stated Policies Scenario), APS (Announced Pledges Scenario), and NZE (Net Zero Emissions by 2050 Scenario) as references up to the year 2050.



Source: AR6 WGI Figure SPM. 29 (IPCC) IPCC 6th Assessment Report

In the 2° C or lower scenario, we expect tighter regulations, such as the introduction of a carbon tax, and the risk of higher prices for electricity and raw materials like metal. We also expect opportunities in the form of increased sales of low-carbon, energy-saving products thanks to efficiency improvements in manufacturing facilities achieved by meeting the decarbonization needs of markets and customers, and stabilization of costs associated with the creation of renewable energy. Under the 4° C scenario, physical risks are projected to be greater than under the 2° C or lower scenario. This is due to the intensification of disasters caused by extreme weather, leading to increased frequency and scale of disasters such as wind and water damage and floods.

Business impact assessment

Based on the scenario analysis, the business impact assessment of transition risk in the 2° C or lower scenario is as follows.
In the below 2° C scenario, the financial impact of the introduction of a carbon price in 2050 is significant. Based on these results, we will take measures to respond to future risks.
The 4° C scenario and other risks and opportunities will be evaluated in the future.

2° C or Lower Scenario					
Classification	Broad category	Narrow category	Calculation Details	Business Impact	
				FY2030	FY2050
Transition	Policy and regulatory risks	Introduction of carbon pricing	Annual cost increase due to introduction of carbon tax	Medium	Large
	Market risks	Increase in energy and raw material prices	Annual cost increase due to higher electricity prices	Medium	Medium
			Annual cost increase due to increase of renewable energy charges	Small	—

Evaluation Criteria and Assumptions
(1) Business impact is defined as small for less than 1 billion yen, medium for 1 billion yen to less than 5 billion yen, and large for 5 billion yen or more.
(2) Calculated based on results for the FY2022.
(3) Outlook for carbon prices is based on IEA WEO2022.
(4) Outlook for electricity prices is based on IEA WEO2018.
(5) Outlook for renewable energy charges is based on data from Central Research Institute of Electric Power Industry.
(6) The business impact of the annual cost increase resulting from the rise in the renewable energy charges in 2050 is not included due to the lack of projected pricing data.

Countermeasures and Transition Plans

For risks expected to have a significant business impact, we are reviewing countermeasures and transition plans such as the following.

We will review and update them regularly, considering scientific progress, changes in laws and regulations, etc.

Countermeasures and Transition Plan for Achieving Carbon Neutrality

Risk items		Considered countermeasures	2025-2030	2031-2040	2041-2050
Transition risk	●Introduction of carbon pricing ●Increase in energy and raw material prices	Procurement of renewable energy	Deployment to overseas sites → Expansion		
			Considering the introduction of corporate PPAs	Introduction and expansion	
			Expansion of the introduction of on-site power generation facilities		
		Capital investment aimed at reducing environmental impact	Fuel Switching (1) (Electrification)		
				Fuel Switching (2) (hydrogenation and methanation)	
			Considering converting company vehicles to electric vehicles	Introduction and expansion	
			Considering introducing CO_2 absorption technology, etc.	Introduction and expansion	
		Environmentally conscious product design	Expanding equipment introduction using internal carbon pricing		
			Making the products more energy efficient / Developing low-carbon products		
			Considering calculating the carbon footprint of the product and introduction	Reducing emissions using carbon footprint	

Risk Management

Risk Management Process

To fully understand and respond to risks that could affect the business operations of the Shinko Group, including climate change, we identify, assess, and manage risks across the Group. In order to conduct regular company-wide risk assessments, each division and group company conduct assessments on risk threats, such as the impact and likelihood of the occurrence of risks, and the status of countermeasures. For the risks related to climate change, we use information collected from across the Group to assess policies, reputation, natural disasters, the supply chain, products and services, etc. The results of the assessments, answered by each division, are conducted using a centralized matrix analysis to investigate the possible impact and likelihood of occurrence, then high-priority risks are identified at the company-wide level. In addition, the Environmental Committee shares business risks, opportunities, and countermeasures related to climate change and manages the progress of countermeasures. In addition, the Shinko Group has established an environmental management system based on ISO 14001. Under this system, we monitor risks on compliance, etc.

Adaptation to Climate Changes

As part of our efforts to adapt to climate change, we are strengthening our internal countermeasures to reflect the increasing severity and frequency of typhoons and floods caused by extreme weather events. Specifically, in addition to taking preliminary measures based on hazard maps and other information at each site, we are working to minimize damage by establishing a "Typhoon and Flood Damage Timeline" for each site and division that defines action criteria and outlines of actions to take in the event of a disaster, and by conducting training on an ongoing basis.

Metrics and Targets

The Shinko Group, recognizing the importance of reducing greenhouse gas emissions and adopting renewable energy for countering climate-related risks, uses greenhouse gas emissions and renewable energy adoption rates as key metrics. With regard to the reduction of net greenhouse gas emissions, we aim to achieve carbon neutrality with net-zero emissions by FY2050. Backcasting from that, we have established a target for FY2030 and are conducting activities to help us meet it. In the area of renewable energy utilization, we have set a target of 100% utilization by FY2030 and are working toward that target. We have also set annual targets in the "Environmental Action Program (Stage 11)" which serves as the short-term targets for achieving the "Medium- to Long-Term Environmental Targets", and are monitoring metrics to manage the progress of our strategy and associated risks.

Note: Boundary of the targets is Scope 1 and Scope 2 at all business sites in Japan.

Medium- to Long-term Environmental Targets

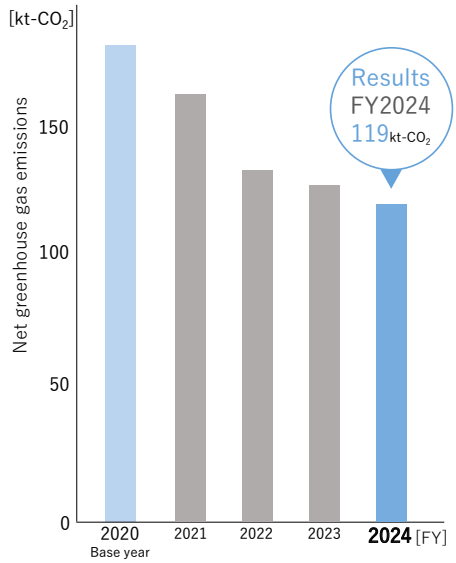
Target items	FY2030 Targets	FY2050 Targets
Net reduction in greenhouse gas emissions (Base year: FY2020)	56% reduction	Net-zero emissions
Rate of renewable energy use	100%	100%

Results

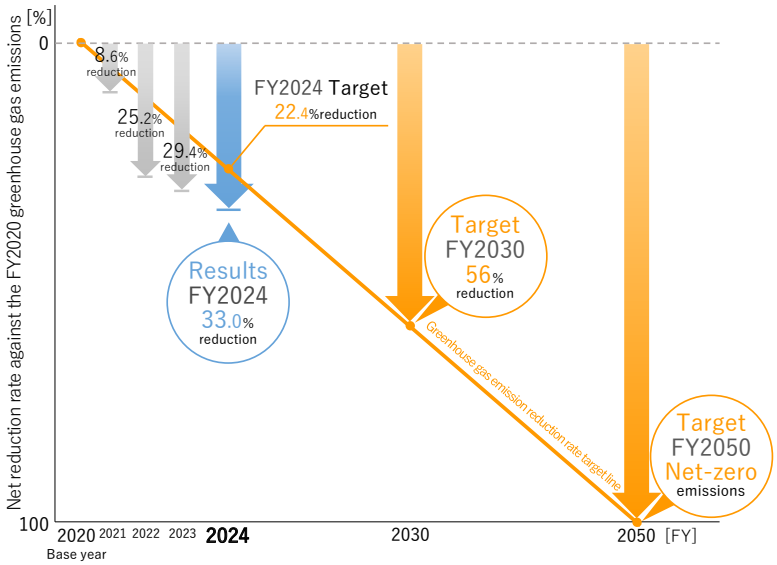
Yearly Targets and Results

Target items	FY2022		FY2023		FY2024	
	Targets	Results	Targets	Results	Targets	Results
Net reduction in greenhouse gas emissions (Base year:FY2020)	11.2% reduction	25.2% reduction	16.8% reduction	29.4% reduction	22.4% reduction	33.0% reduction
Rate of renewable energy use	8.0% or more	30.1%	34.1% or more	45.9%	49.9% or more	50.2%

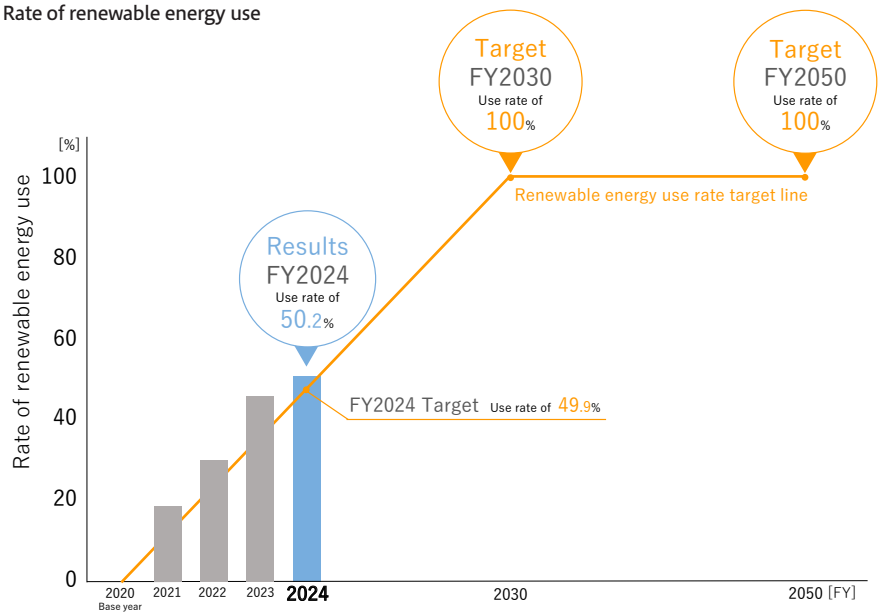
Net greenhouse gas emissions



Net reduction rate of greenhouse gas emissions



Rate of renewable energy use



Activities

Reduction of CO_2 emissions by promoting energy conservation and improving efficiency

At plants in Japan and SHINKO R&D Center, the Green Factory Promotion Subcommittee, in which manufacturing divisions, facilities management divisions, and related divisions participate, is central to promoting the reduction of CO_2 emissions through energy conservation and energy efficiency improvements in manufacturing and utility facilities. Furthermore, by implementing various measures, including consolidation of equipment, reduction of standby power, and the switch to LED lighting, we are strengthening company-wide efforts to realize low-carbon manufacturing processes and facilities through efficient energy use.

In addition, we have introduced the concept of internal carbon pricing (ICP)*, which converts CO_2 emissions from capital investments into monetary amounts and uses them as a basis for making investment decisions, and we are using it to reduce CO_2 emissions.

Although energy consumption is expected to increase in the future due to the construction of a new plant and buildings and the expansion of production facilities in line with the strengthening of the production system, we will further strengthen various measures to reduce CO_2 emissions.

* Internal Carbon Pricing (ICP): A mechanism whereby companies set their own price for CO_2 emissions and use it to make investment decisions

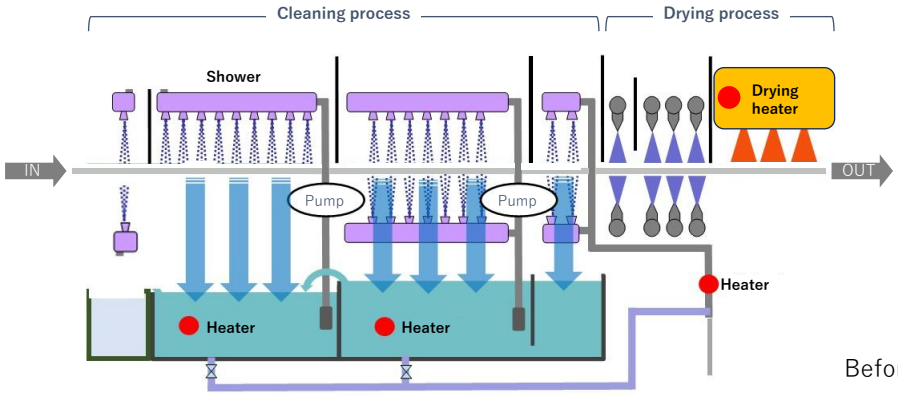
＜Examples of Activities＞

Arai Plant（Myoko City, Niigata Prefecture）has focused on cleaning equipment within manufacturing processes that consume relatively large amounts of energy. By implementing energy-saving measures—such as temporarily halting conveyors, showers, heaters, and air knives during idle periods—and optimizing operating conditions, the plant has significantly reduced energy consumption, leading to lower CO_2 emissions and cost savings.

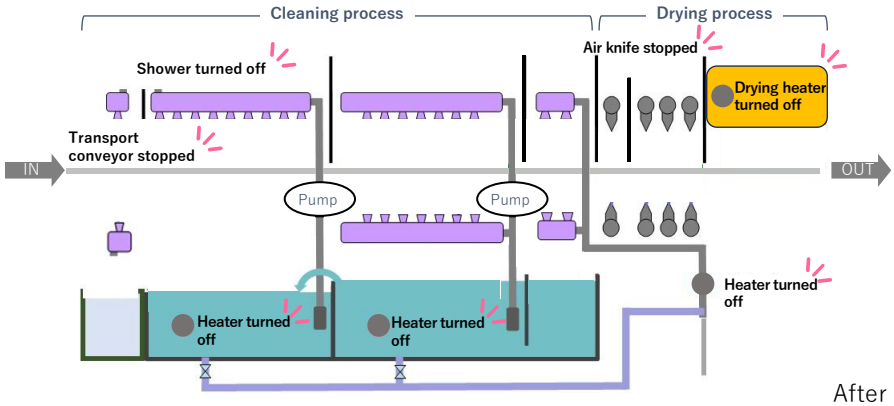
Effect of Cleaning Equipment Measures（FY2024）

Items	Effect
Reduction in Power Consumption	624 MWh
CO_2 emissions reduction	294 t-CO_2
Cost cutting	13 million yen

Schematic diagram of the equipment during idle periods



Before improvement



After improvement

Creation and introduction of renewable energy

CO_2 from electricity purchased from external sources accounts for a large proportion of the CO_2 emitted in the course of the Shinko Group's business activities. We have been installing photovoltaic power generation equipment at our business sites to expand the use of renewable energy.
The amount of electricity generated by solar power generation facilities in FY2024 was 692 MWh. At the same time, CO_2 emissions were reduced by approximately 290 t-CO_2.

Solar power generation equipment (example)

(Takaoka Plant (Nakano City, Nagano Prefecture) Building E)

(Chikuma Plant (Chikuma City, Nagano Prefecture))

We are also working to expand the use of renewable energy through the purchase of CO_2-free electricity from power companies and the utilization of non-fossil certificates, contributing to higher renewable energy usage rates.
The procurement of renewable energy through the purchase of CO_2-free electricity and the use of non-fossil certificates in FY2024 amounted to 174,515 MWh, resulting in a reduction of approximately 73,000 t-CO_2 in CO_2 emissions.

Aiming to achieve a 100% renewable energy use rate, we will continue to focus on the creation and increased use of renewable energy by expanding the installation of solar power generation facilities at existing plants and newly constructed plants/buildings, as well as by purchasing CO_2-free electricity and utilizing non-fossil certificates.

We will continue to contribute to the achievement of carbon neutrality and the realization of a decarbonized society by strengthening and accelerating various company-wide initiatives.