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, 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 investors and other 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. They deliberate on environmental issues, including Environmental Policy, specific environmental targets, and environmental management systems, etc. (assessments, monitoring, and management of business risks and opportunities due to climate change), while sharing and managing the progress on activities addressing climate change and other environmental issues. Furthermore, at each of our plants in Japan, 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. The results of these measures are reported regularly (twice a year) to the Board of Directors by the Environmental Committee, so that appropriate supervision by the Board of Directors is ensured.
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.
In addition, our Group has established an environmental management system based on ISO 14001 certification, and the results of activities are reported to the Board of Directors.

Climate Change Promotion Structure (in Japan)

Strategy

Evaluation of the Importance of Risks and Opportunities

To begin our scenario analysis, we identify the current and future climate change risks and opportunities facing our group and assess their importance based on the magnitude of their impact on our business.

Evaluation of the Importance of Risks

Classification	Broad category	Narrow category	Period covered			Content	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	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	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

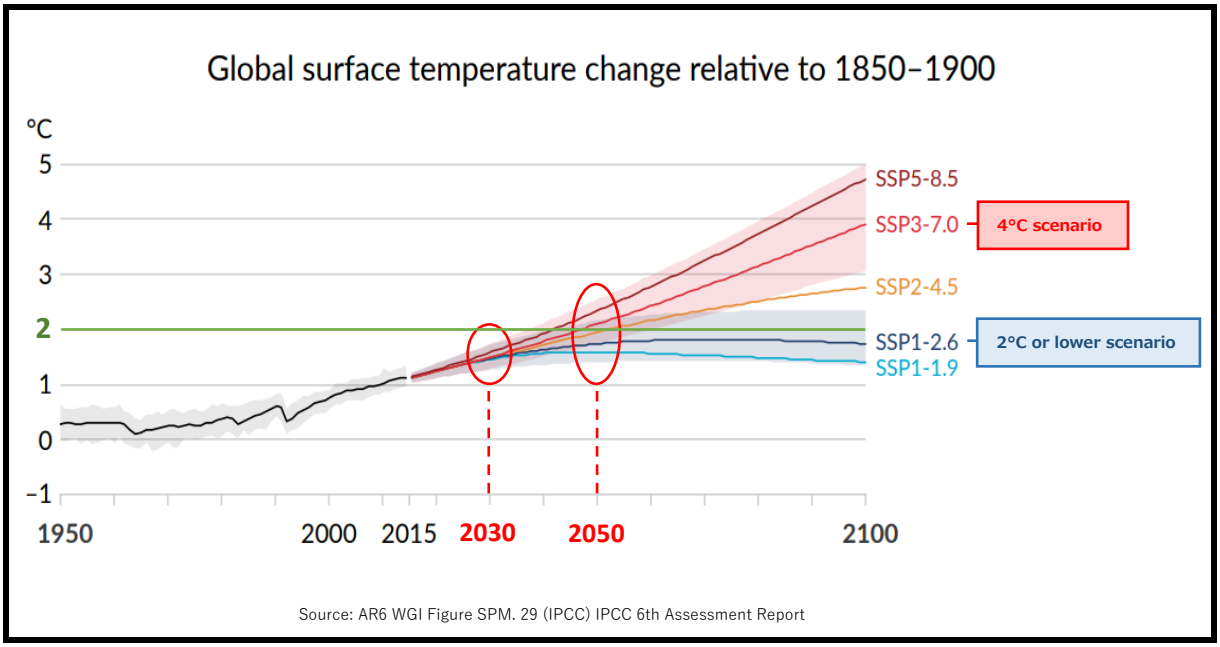
Evaluation of the Importance of Opportunities

Classification	Broad category	Narrow category	Period covered			Content	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.



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. In the 4° C scenario, physical risks are assumed to increase due to an increase in the frequency and scale of disasters such as windstorms and floods, resulting from the intensification of disasters caused by extreme weather events.

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) Outlook for renewable energy charges in 2050 is omitted due to lack of such data.

In order to respond to risks and realize opportunities based on these assessments and analyses, we are working to achieve carbon neutrality, which means virtually zero greenhouse gas emissions by 2050, in line with our medium- to long-term environmental targets established in 2021.

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. The results of these analyses are reported to the Board of Directors.
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 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

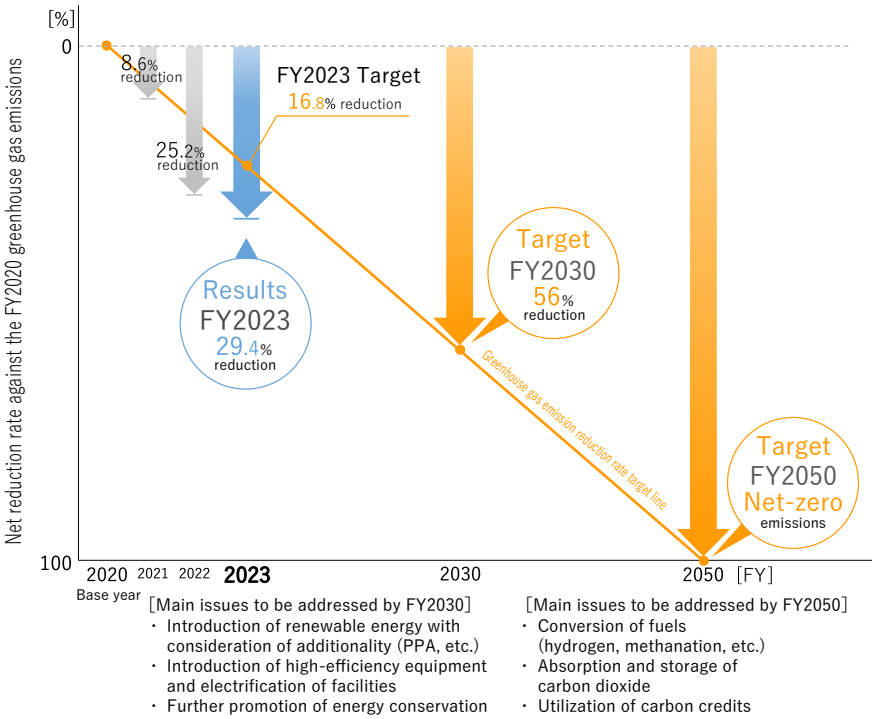
Target items	FY2030 Targets	FY2050 Targets
Net reduction in greenhouse gas emissions (Base year: FY2020)	56% reduction	Net-zero emissions
Rate of renewable energy use	100%	100%

Results

Yearly Targets and Results

Target items	FY2021		FY2022		FY2023	
	Targets	Results	Targets	Results	Targets	Results
Net reduction in greenhouse gas emissions (Base year:FY2020)	4.2% reduction	8.6% reduction	11.2% reduction	25.2% reduction	16.8% reduction	29.4% reduction
Rate of renewable energy use	4.0% or more	19.5%	8.0% or more	30.1%	34.1% or more	45.9%

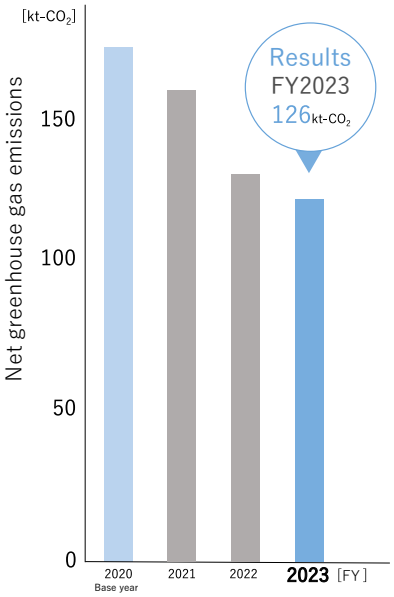
Net reduction rate of greenhouse gas emissions



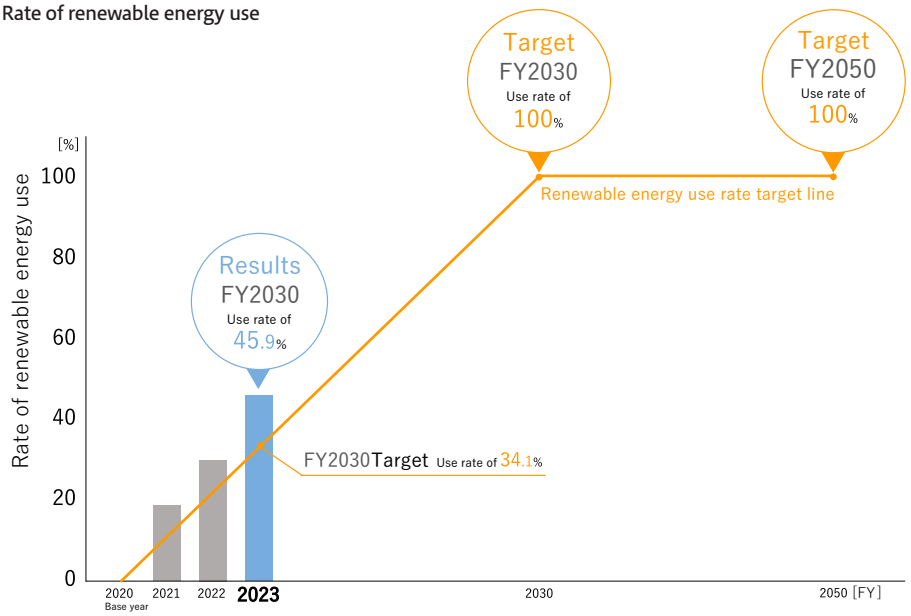
[Main issues to be addressed by FY2030]
- Introduction of renewable energy with consideration of additionality (PPA, etc.)
- Introduction of high-efficiency equipment and electrification of facilities
- Further promotion of energy conservation

[Main issues to be addressed by FY2050]
- Conversion of fuels (hydrogen, methanation, etc.)
- Absorption and storage of carbon dioxide
- Utilization of carbon credits

Net greenhouse gas emissions



Rate of renewable energy use



Activities

Reduction of CO_2 emissions by promoting energy conservation and improving efficiency

At each plant, the Green Factory Promotion Subcommittee, in which all 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.
By implementing various measures at plants in Japan, 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>
At the Takaoka Plant (Nakano City, Nagano Prefecture) and Arai Plant (Myoko City, Niigata Prefecture), hot exhaust air of several hundred degrees Celsius was constantly generated in the electric furnace process. In an effort to reduce energy loss, a system was adopted to return a portion of this exhaust back into the electric furnace and reuse it for heating.
This system significantly reduced the amount of electricity required for heating, leading to a reduction in CO_2 emissions and costs.

Effects of using waste heat from the electric furnace (FY2023)
- Power savings: 218 MWh
- CO_2 reduction: 92 t-CO_2
- Cost reduction: 5.7 million yen

(Equipment Using Waste Heat from Electric Furnaces)

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.
In FY2023, we installed a photovoltaic power generation system on the roof of the Chikuma Plant (Chikuma City, Nagano Prefecture), which was newly established in December 2023, and are using the power generated for part of the electricity used at the plant.
In addition, through the purchase of CO_2-free electricity from electric power companies and the use of non-fossil certificates, we were able to procure approximately 149 GWh of renewable energy, resulting in a use rate of approximately 45.9%, which significantly exceeded our target. At the same time, CO_2 emissions were reduced by approximately 69,000 t-CO_2.
Aiming to achieve a 100% renewable energy use rate, we will continue to focus on the creation and introduction 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 expanding the use of 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.

Topic

Measures to Reduce Environmental Impact at the New Chikuma Plant

In December 2023, we opened the Chikuma Plant in Chikuma City, Nagano Prefecture, as our sixth plant in Japan.
As an environmentally friendly plant, the Chikuma Plant has introduced equipment and measures to reduce its environmental impact.

100% renewable energy plant

The plant uses 100% renewable energy sources, including solar power generation equipment, purchase of CO_2-free electricity from power companies, and the use of non-fossil fuel certificates, making it a plant with virtually zero CO_2 emissions from electrical power.

(Solar power generation system on rooftop)

Resource circulation

The water recycling rate at the Chikuma Plant is expected to be 1.3 times that of our existing plants. Separate collection of wastewater enables the amount of wastewater collected by contractors to be reduced to about 1% of water use, which will greatly contribute to the reduction of waste.

(Wastewater treatment area)

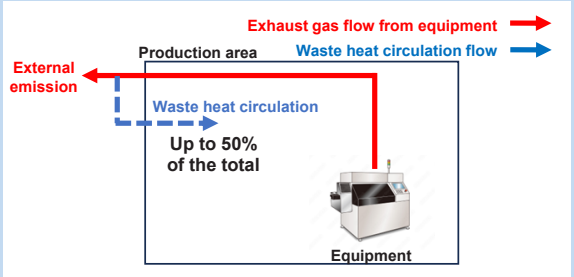
Conversion of all lighting facilities to LED

All lighting facilities use LED lighting.
In addition, motion sensors are installed to conserve energy.
Number of LEDs: approximately 5,000 units
CO_2 reduction: 211 t-CO_2/year (compared to fluorescent lamps)

(Manufacturing area)

Waste Heat Utilization

We are reducing environmental impact by reusing heat exhaust from equipment instead of discarding it.
CO_2 emissions reduction: 167 t-CO_2/year (estimate)



(Waste heat utilization flow)