

Environmental Initiatives



See the following for more information on Sharp's environmental activities.
<https://global.sharp/corporate/eco/environment/>

The SHARP Eco Vision 2050, Our Long-Term Environmental Vision

Global environmental issues such as climate change, resource depletion, and the problems presented by plastic waste are becoming more serious and are recognized as important issues among the international community. Under these circumstances, global movements aimed at resolving social issues are accelerating, such as those designed to respond to Sustainable Development Goals (SDGs) and carbon neutrality^{*1}, as well as initiatives to realize a circular economy^{*2}.

In 2019, Sharp established its long-term environmental vision *SHARP Eco Vision 2050* based on its principal environmental philosophy of "Creating an Environmentally Conscious Company with Sincerity and Creativity," which was established in 1992. Our aim is to realize a sustainable global environment by setting long-term goals for 2050 in the three areas of climate change, resource recycling, and safety and security.

Furthermore, in order to realize our long-term environmental vision, we are formulating "medium-term environmental goals" that set specific initiatives and quantitative goals for each area^{*3}. With respect

to climate change, we set a target of reducing CO₂ emissions by 40% by 2030 and 60% by 2035. Our aim is to achieve net zero CO₂ emissions arising from our own business activities by 2050^{*4}.

Sharp is engaged in initiatives to solve social issues and sustainably raise corporate value. We are doing so by working more closely with our stakeholders through corporate and environmental conservation activities.

*1 A state in which the total amount of greenhouse gas emissions minus the absorption volume is effectively zero.

*2 An economic system in which discarded products and raw materials are considered as new resources and in which resources are circulated without generating waste products.

*3 See below for more about our medium-term environment goals.
https://global.sharp/corporate/eco/environment/climate_change/#anc01

*4 Compared with fiscal 2021. Includes post-2021 emissions of Sakai Display Products Corporation (SDP), which became a wholly owned subsidiary in June 2022.

Long-Term Environmental Targets

Toward achieving the *SHARP Eco Vision 2050*, we have defined long term goals in the three following areas to generate clean energy in excess of energy consumed and minimize the environmental impact of corporate activities on the global environment.

Climate Change



Throughout our history, Sharp has endeavored to reduce the energy we use as an organization, while making more energy-efficiency products to help reduce the amount of energy consumed in the home and by society.

As our founder, Tokuji Hayakawa, said, "Everything we produce uses electricity. As we become a bigger company, we will be responsible for using more electricity, so I propose that we also begin making electricity." Following this course, Sharp began development of solar cell, striving to popularize photovoltaic power generation for more than 50 years.

As a company that makes products that use electricity, we must take responsibility for the environmental impact of this electricity usage.

Sharp supports the global goal of achieving carbon neutrality, and we have set ourselves the challenge of meeting the following two goals by 2050 in our own activities and throughout the supply chain as a whole, so that we can achieve a decarbonized society.

Goals

- Achieve net zero CO₂ emissions due to our own business activities
- Generate clean energy in excess of the energy consumed throughout our supply chain

Resource Recycling



Sharp has created new products that offer a variety of value to the world. At the same time, we have used many of the world's resources.

Our desire is to continue to offer a variety of value to our stakeholders amid the constraints of limited resources.

Sharp intends to reach new levels of effective resource use, maximizing value from minimal resources and constructing a circular economy. We have defined two goals to achieve by the year 2050 in efforts to create a recycling-oriented society.

Goals

- Eliminate the use of new mined resources* in products
- Eliminate final disposal of waste products generated through our business activities

*Excludes those items not suitable for recycling from an environmental standpoint

Safety and Security



Sharp factories use a variety of chemical substances in the product manufacturing process. Our products also contain a variety of chemical substances. Chemical substances include substances that have a negative impact on the human body, the environment, and ecosystems. Accordingly, these chemicals must be managed in a careful and detailed manner.

Sharp corporate activities must not do harm to human health, the global environment, or ecosystems.

Sharp follows current international standards, as well as our own standards oriented toward the future, for the strict management of these relevant chemical substances. We are striving to eliminate any chemicals that harm human health, the global environment, or ecosystems.

Goals

- Conduct proper management of chemical substances to protect human health, the global environment, and ecosystems

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Information Disclosure based on TCFD

Addressing TCFD Recommendations

The Task Force on Climate-Related Financial Disclosures (TCFD) formed by the Financial Stability Board (international body that works toward financial systems stability) put forth recommendations that companies disclose information on the risks and opportunities presented by climate change in 2017. Sharp declared its support for the recommendations of the TCFD, and intends to expand disclosure of information regarding climate change in accordance with the TCFD framework.



1. Governance

The Representative President and CEO, who chairs the Sustainability Committee^{*1}, has the responsibility for monitoring and supervising climate-related issues. The Sustainability Committee consists of the committee chair, senior management, headquarters functional divisions, business units, and subsidiaries. The Committee is responsible for the thorough implementation of policies and vision on ESG, including those on climate change. They also deliberate and promote measures and share the latest trends in social issues.

Through monitoring and review by management at committee meetings, Sharp continuously strengthens climate change action to play a part in making society sustainable.

2. Strategy

Sharp considers climate change as one of our medium- to long-term risks and opportunities. We explore strategies and organizational resilience in light of related risks and opportunities. We conducted a scenario analysis referring to climate change scenarios (1.5°C scenario^{*2} and 4°C scenario^{*3}) by the International Energy Agency (IEA) and Intergovernmental Panel on Climate Change (IPCC) to consider long-term impacts up to the year 2050.

Details of each risk and opportunity, as well as the measures taken to address them, are summarized on the following page, P.13.

3. Risk Management

Based on the Business Risk Management Guidelines which defines the basic concept of business risk management, Sharp manages and assesses risks, including climate-related risks, in an integrated manner. We identify high-probability climate risks by analyzing projected future climate scenarios. We report the details of the analysis to senior management and the Internal Control Planning Division (secretariat of the Risk Management Office) as necessary. Measures for improvement are discussed among the related departments.

4. Metrics and Target

Sharp set a medium-term environmental target of reducing CO₂ emissions by 60%^{*4} by 2035 to achieve its long-term environmental vision *SHARP Eco Vision 2050*, which includes “net zero CO₂ emissions arising from our own business activities. This target is in compliance with the SBT 1.5°C target and aims to reduce CO₂ emissions by 4.2% or more per year.

Progress towards Reducing of Greenhouse Gas Emissions (Fiscal 2022)

Base year (Fiscal 2021 results ^{*4})	Fiscal 2035 targets (60% reduction over fiscal 2021)	Fiscal 2022 results	Vs. base year
1,365 thousand tons CO ₂	546 thousand tons CO ₂	1,125 thousand tons CO ₂	17.6% reduction

*1 Please refer to P.9.

*2 Referenced the IEA Net Zero Emission 2050 Scenario and the IPCC Sixth Assessment Report (AR6) SSP1-1.9 scenario, etc.

*3 Referenced the IPCC Fifth Assessment Report (AR5) RCP8.5 scenario

*4 Compared to fiscal 2021. To ensure comparability, Sharp retroactively included emissions from Sakai Display Products Corporation to the fiscal 2021 base year since the company became a subsidiary in June 2022.

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Disclosures Based on the TCFD Recommendations

Business Risks and Opportunities; Sharp's Response

Scenario	Factors	Changes	Impact on Sharp	Risks and opportunities	Degree of influence	Time frame of impact*	Sharp's response	
1.5°C	Introduction of carbon pricing	Increase in procurement costs of raw materials	Pass on of purchase prices resulting from an introduction of a carbon tax on our purchased products	Risks	Large	Short term	<ul style="list-style-type: none"> ● Explore raw materials with low greenhouse gas (GHG) emissions ● Develop suppliers that strive to reduce their environmental impact ● Optimize purchase volume (further control inventories) 	
		Increase in cost of direct operations	Increase in expenditures resulting from an introduction of a carbon tax on our Scope 1 and 2 emissions	Risks	Large	Short term	<ul style="list-style-type: none"> ● Reduce GHG emissions by saving energy ● Pursue investment in low-carbon emission facilities through the introduction of internal carbon pricing 	
	Pressure to decarbonize and pursue environmental friendliness in the supply chain	Reduced competitiveness through inability to meet users' environmentally-friendly needs	Decrease in sales due to failure to meet users' expectations regarding environmental friendliness	Risks	Medium	Short term	<ul style="list-style-type: none"> ● Understand market needs through continuous communication with users ● Continue research and development on saving energy 	
		Increase in cost of switching to environmentally-friendly materials	Increase in costs accompanying the switch to low-carbon electric furnace materials, recycled plastics, biomass plastics, and other materials	Risks	Medium	Medium Term	<ul style="list-style-type: none"> ● Find sources of low-cost, environmentally friendly materials ● Maintain consumer price elasticity through external disclosure of company use of environmentally friendly materials 	
		Increase in energy procurement costs due to the switch to renewable energy	Increase in costs due to in-house power generation, Power Purchase Agreements (PPAs), the switch to renewable energy, and purchase of environmental value certificates	Risks	Small	Medium Term	<ul style="list-style-type: none"> ● Reduce GHG emissions by saving energy ● Explore partners to pursue low-cost PPAs and renewable energy 	
	Market expansion for renewable energy	Growing demand for solar power-related products and systems from renewable energy power generation providers and users	Increased potential for revenue growth through expanding Sharp products and systems	Opportunities	Medium	Short term	<ul style="list-style-type: none"> ● Continue to develop solar power-related products and systems in response to market demand 	
		Growing demand for net zero energy houses (ZEHs)	Increased potential for revenue growth through strengthening the provision of fixed-price solar power generation services and home energy management systems (HEMS) for residential use	Opportunities	Medium	Short term	<ul style="list-style-type: none"> ● Provide energy solutions (systems and services) that meet market demand 	
	Expansion of our environmental protection business	Expansion of circular economy business models	Increase in customer support through the establishment of a waste-free circular economy business model amid growing social efforts to decarbonize	Opportunities	Small	Medium Term	<ul style="list-style-type: none"> ● Encourage recycling of waste plastics through the use of self-circulating material recycling technologies and other methods ● Proactively create new business opportunities through ongoing information collection of solar cell recycling 	
	4°C	Intensifying weather disasters	Supply chain disruptions	Loss of sales opportunities from damaged suppliers and sites, as well as impacts to our supply chain due to intensifying weather disasters	Risks	Medium	Long Term	<ul style="list-style-type: none"> ● Make multiple purchases from multiple suppliers ● Survey the status of business continuity plans (BCPs) at major suppliers and strengthen their countermeasures ● Further improve BCPs at our own sites

* We expect manifestations to begin in the following time frames:

Short term: three years or less; medium term: by around 2030; long term: by around 2050