

Environmental Initiatives

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*¹) and carbon neutrality*², as well as initiatives to realize a circular economy*³.

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.

In the field of climate change, we recognize the 1.5°C target*⁴ outlined in the Paris Agreement, and aim to achieve carbon neutrality in terms of CO₂ emissions from our own activities. As well as promoting the spread and further use of clean energy-related products and services, we are also working to reduce quantities of greenhouse gases emitted by our products and services.

In the field of resource recycling, we will take upon us the challenge of using recycled materials for all

parts in our products, and aim to eliminate the generation of waste from our activities—both measures towards achieving a circular economy.

In the field of safety and security, we will eliminate risks of adverse effects by ensuring full management as well as reduced consumption of chemical substances that can impact people, the environment, and ecosystems.

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.

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 aimed at realizing our long-term environmental vision.

*1 17 social goals adopted by the United Nations in 2015 that international society needs to achieve by 2030 in order to ensure sustainable development.

*2 A state of net zero CO₂ emissions.

*3 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.

*4 The Paris Agreement sets long-term objectives of keeping the rise in global average temperatures to no more than 2°C above levels prior to the industrial revolution, and pursuing efforts to limit this rise to 1.5°C.

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

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 effects that chemical substances cause human health, the global environment, or ecosystems.

Goals

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

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

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Disclosure of Information Regarding Climate Change

Addressing TCFD Proposals

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

1. Governance

The President and Representative Director, who chairs the Sharp SER Committee* has the responsibility for monitoring and supervising climate-related issues. The Sharp SER Committee has the President and Representative Director as its chair, with officers responsible for environmental affairs, administration, and human resources all serving as vice chairs. The committee also has as members the general managers of each business division and the presidents of affiliated companies, and this has relevant head office functional divisions as a support team. The committee deliberates climate change and

other ESG-related issues, as well as implementation of policies and visions, and important measures to take. This also confirms and reviews measures taken by each business division and affiliated company, thereby overseeing climate change and other issues faced by society.

* Please refer to P.8.

2. Strategy

Risks related to climate change can be ascribed to transition, including stricter regulations, technical advancements, and market changes that occur in the move towards a decarbonized economy, and to physical changes such as acute and extreme weather phenomena and persistent temperature increases attributable to ongoing climate change. Opportunities, however, include products and services related to the production of energy-saving products, and resource efficiency related to the efficient utilization of resources in our factory operations. We recognize the risks and opportunities presented to Sharp's business are as follows.

Business risks in our operations

Type	Time frame	Risks	Main responses
Transition (2°C scenario)	Policy	Our production bases in Japan are responsible for 70% of our total emissions of greenhouse gas emissions, with the remainder being from China and the ASEAN region. Strengthened regulations in Japan will mean increased energy costs as well as the increased burden of carbon taxes based on emitted greenhouse gas quantities.	We are making improvements to production processes and improving management of facilities so that we can reduce greenhouse gas emissions in operations at each production base. In fiscal 2020, we installed high-efficiency equipment to increase our energy efficiency, as well as adding new sensors and switches to existing facilities to monitor wasted energy consumption.
	Regulations	We predict that there will be an accelerated introduction of regulations, as well as stricter regulations regarding energy conservation in each country as a solution put forth to combat climate change-related issues. If products do not meet energy-saving standards or regulations in each country, or fail to do so fully, then there is the possibility that these will not be sold, or that they will not be selected by customers. This may mean sales of products and services may fail to increase, or may even decrease.	We are using the "Green Product/Device System," and have created a system to comply with environmental laws and regulations, and to maintain and improve the environmental friendliness of our products. We are also using Guidelines that summarize policies regarding laws and regulations as well as environmentally friendly design at the product development stage, and have continued to achieve zero violations of environmental laws and regulations in fiscal 2020.
Physical change (4°C scenario)	Acute	Disasters due to larger typhoons and heavier rainfall impact our production sites and suppliers. Using the AQUEDUCT tools from the World Resource Institute (WRI), we have identified 10 sites (approximately 24% of our total production sites) that are at particular risk of flood damage. This has the possibility of not only shutting down operations and impacting employees' livelihoods, but also of interrupting the supply of parts from suppliers. This would increase management costs due to costs required for recovery and delays in deliveries, resulting in decreased sales.	So that we can prepare for the emergence of physical risks, it is essential that we rapidly restore business operations after a disaster, and that we prevent damage before it occurs. Sharp is appropriately formulating, maintaining, and managing our BCP in accordance with the "Sharp Group Business Continuity Plan (BCP) Action Guidelines." These were formulated on the assumption that our production bases, suppliers, and employees would be affected by a natural disaster. In addition, we have clarified systems and roles in order to avoid interruption of important business operations, and to enable early recovery even if such an interruption is inevitable. Even given the destructive typhoons that battered Japan in 2020, there were no events that posed any threat to business continuity.

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Disclosure of Information Regarding Climate Change

Business opportunities in our operations

Type	Time frame	Opportunities	Main responses
Products/services	Medium-term	Increased society-wide interest in renewable energy. Increase revenue by providing new services with which anyone can choose a life using renewable energy.	By providing a service to install solar power generation systems at zero initial cost, we are proposing a lifestyle using renewable energy not only for corporations, but also for individual households. In fiscal 2020, we launched a solar power generation service for corporations, that requires zero initial investment. From June 2021, we started offering COCORO POWER, a fixed-price PPA* service for new residential builds. * Abbreviation of the Power Purchase Agreement model
Products/services	Short-term	Increase product value and revenue by creating energy saving products that help mitigate climate change and bring about a decarbonized society.	Certify products that offer especially high levels of environmental performance, particularly energy-saving performance as Super Green Products (SGP), and implement internal systems that promote their creation. In fiscal 2020, we have created 25 SGP models (net sales: ¥142.6 billion).
Resource efficiency	Short-term	Looking towards making our own activities carbon neutrality by 2050, our focus is on reducing energy consumption by introducing energy-saving operations at our production sites. Cost reductions through resource efficiencies in direct operations.	Substituting high-efficiency equipment for mainly old equipment, and constant energy-saving diagnostics in the workplace to monitor for energy wastage. In fiscal 2020, so that we could improve production processes and enhance management of facilities, we installed high-efficiency equipment to increase our energy efficiency, as well as adding new sensors and switches to existing facilities to reduce energy consumption.

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.

4. Indicators/goals

Sharp has set corporate targets for fiscal 2031 in order to promote the reductions of greenhouse gas emissions throughout the supply chain. These science-based targets have been certified by the SBT (Science Based Targets) initiative as being compliant with the Paris Agreement.

Regarding greenhouse gas emissions from our business activities (Scope 1 and 2), by striving to use energy more efficiently in operations at all of our plants, we aim to reduce greenhouse gas emissions by 33% over fiscal 2018 levels.

For indirect greenhouse gas emissions from our non-business activities (Scope 3), given that greenhouse gas emissions from the use of products we sell (Category 11) account for more than 80% of our Scope 3 emissions, we have narrowed down this target to Category 11. In the same way, this aims to reduce emissions by 33% over fiscal 2018 levels.

Results as of fiscal 2020 are as in the following table. We managed to reduce Scope 1 and 2

emissions by 12% over fiscal 2018 (base year) levels by closing old factories and consolidating production bases. However, Scope 3 emissions rose by 8% over fiscal 2018 (base year) levels because of an increase in the number of products shipped.

With our sights on fiscal 2031, we are taking the challenge of achieving these goals by further promoting energy-saving measures in our plants, and expanding usage of Super Green Products (SGP) and other energy-saving products.

SBT progress (FY2020 results)

Category	Base year (FY2018 results)	FY2031 targets (33% reduction over FY2018)	FY2020 results	Vs. base year
Scope 1+2	1,077 thousand tons CO ₂	772 thousand tons CO ₂	951 thousand tons CO ₂	12% reduction
Scope 3 (Category 11)	27,489 thousand tons CO ₂	18,418 thousand tons CO ₂	29,593 thousand tons CO ₂	8% increase