SHARP

Environmental and Social Report 2010

Management

About the Cover
Conceptual rendering of GREEN FRONT SAKAI (when completed). GREEN FRONT SAKAI is a state-of-the-art, environmentally advanced manufacturing complex that mass-produces energy-saving LCD panels and energy-creating solar cells. See pages 12 and 13 for details.

Sharp and the Environment

Technologies

Products

Operations

Relationships

Sharp and Society

For Customers

For Business Partners

For Shareholders and Investors

For Employees

For Local Communities

■ Sharp Environmental and Social Report 2010, and System for Information Disclosure

Information on Sharp's efforts toward corporate social responsibility (CSR), particularly the environmental and social dimensions of CSR is made available in the following three formats to meet the needs of various stakeholders.

Annual Environmental and Social Report, Summary Version

This report outlines the highlights of Sharp's CSR efforts during fiscal 2009 in a highly readable, easy-to-understand way, and is available in hardcopy form as well as being posted to the Sharp website as a downloadable PDF file.

Annual Environmental and Social Report, Detailed Version This report

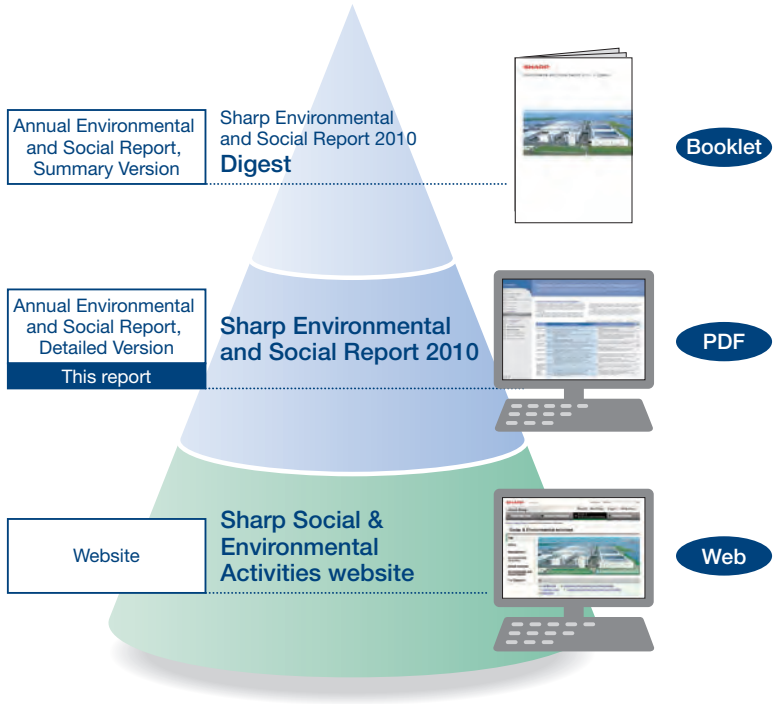
This detailed report and associated data relating to Sharp's CSR efforts in fiscal 2009 are divided into four sections: Special Feature and Special Focus, Management, Sharp and the Environment, and Sharp and Society. In addition, this version is not made available in printed hardcopy form because of environmental considerations, but rather is posted on the Sharp website as a downloadable PDF file.

Relevant information posted to the Sharp website is indicated by this Web icon.

Website

The Sharp website will be redesigned to make the browsing experience smoother and provide better access to the detailed version (this report document), supplementary data, and the latest information.

Sharp Social & Environmental Activities website
http://sharp-world.com/corporate/eco/



■ Referenced Guidelines

- Environmental Reporting Guidelines (2007 Version), Ministry of the Environment, Japan
- Sustainability Reporting Guidelines Version 3.0 (2006, Japanese), Global Reporting Initiative (GRI)
- Environmental Accounting Guidelines 2005, Ministry of the Environment, Japan

Web Environmental Reporting Guidelines content index, GRI content index

■ Period and Items Covered

Period covered:

Fiscal 2009 (April 2009 to March 2010)
However, some actual facts prior to and after this period, as well as subsequent policies, objectives, and plans are also included.

Coverage:

Sharp Corporation, along with its domestic and overseas subsidiaries and affiliates.

See page 77 for the boundary of environmental performance data and pages 78 and 79 for the calculation standards for environmental performance indices.

■ Scheduled Publication Date for Next Report

September 2011 (published annually since 1999)

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Contributing to Achieving a Green Society by Providing Solar Power and Energy-Efficient Products on a Global Basis Based on Proprietary Technologies and Original Product Engineering

GREEN FRONT SAKAI (conceptual rendering)


Katsuhiko Machida, Chairman


Mikio Katayama, President

Sharp's Commitment to Solar Cells Recognized with an IEEE Milestone*1

Recently, Sharp Corporation's achievements in the commercialization and industrialization of solar cells from 1959 to 1983 have been recognized as an IEEE Milestone, an award given by the IEEE, the world's largest professional association for electrical, electronics, information, and telecommunications engineering.

Whenever Sharp founder Tokuji Hayakawa spoke of the future, he would begin by citing the potential of solar energy. He once said, "If we could invent a way to make electricity using the unlimited light of the sun, what it would contribute to humanity would be immense."

Our predecessors at Sharp, starting with our founder, began researching solar cells 51 years ago, and with a large measure of ingenuity and many creative ideas, they succeeded in mass-producing them four years later. From that day forward, even when solar cell applications were limited to lighthouses and space satellites, our predecessors continued their unceasing R&D efforts, working for the stable generation of electricity in harsh environments. That dedication earned high praise from the IEEE.

The dream of contributing to the future of humanity that our predecessors laid out, and the spirit of creativity vigorously pushing them forward to make that dream come true, form the DNA of Sharp, and has most assuredly been passed down even today.

*1 The IEEE Milestone, established in 1983, honors significant technological innovations in the areas of electrical, electronics, information, and telecommunications engineering that have contributed to the betterment of society and the development of industry.

With the Goal to Be an Eco-Positive Company, Sharp Is Expanding Its Global Efforts to Contribute to the Environment

Sharp has established two business visions: "Contribute to the world through environment- and health- conscious business, focusing on energy-saving and energy-creating products" and "Contribute to a ubiquitous society*2 with one-of-a-kind LCDs." In terms of its corporate activities as a whole, Sharp has defined its corporate vision as being an "Eco-Positive Company," the ideal state Sharp aims to achieve.

"Eco-Positive Company" means a company that works with all stakeholders in creating solutions that have a positive impact on the environment. Sharp is pursuing an Eco-Positive Strategy aimed at making this a reality. This strategy has four aspects: Technologies, Products, Operations, and Relationships, and Sharp is proactively deploying this strategy on a global scale as the basis of its efforts toward the environment.

Examples of successes of this strategy in fiscal 2009 include commercializing the LED AQUOS LCD TV and LED lighting products, which deliver significant energy savings, starting mass production of blue LED chips, re-using a total of 5,050 tons of used plastic recycled based on proprietary Sharp technology, achieving targets for percentage of net sales for Super Green Products and Devices for the fifth straight year, achieving Super Green Factory status for 24 plants in Japan and abroad, curbing greenhouse gas emissions and reducing discharges of waste, etc. for the Sharp Group as a whole, and starting operations at its LCD panel and solar cell plants at GREEN FRONT SAKAI.

*2 A "ubiquitous society" refers to how the whole of society will be connected through the rapid development of IT infrastructure and networks will always be accessible to users.

Propagating Product Manufacturing That Contributes to Achieving a Green Society to Countries Around the World from GREEN FRONT SAKAI

GREEN FRONT SAKAI is an environmentally advanced manufacturing complex that brings together the world's most advanced technologies and knowledge, with the goal of making products befitting the green society to come.

Sharp has constructed an LCD panel plant that employs 10th-generation glass substrates, the first in the world to do so, and a solar cell plant with a maximum production capacity of 1 GW per year. The former became operational in October 2009, and the latter went into operation in March 2010. With the participation of many leading companies spanning multiple fields, Sharp is building a revolutionary production system with low environmental impact by gathering together their knowledge and expertise.

In addition, Sharp has begun working with Osaka Prefecture University to carry out joint research at GREEN FRONT SAKAI on plant cultivation and waste recycling, with the goal of creating new technologies and generating new knowledge that will contribute to the coming era.

Up to now, Sharp has constructed plants for front-end processes (initial fabrication and sub-assembly) for LCD panels and solar cells in Japan, but in the future, Sharp intends to make GREEN FRONT SAKAI the mother factory that serves as a model for building plants in consuming regions overseas in cooperation with leading local companies. Sharp has already begun production projects for LCD panels in China and for solar cells in Europe, and will develop product engineering and manufacturing for "local production for local consumption" on a global basis that will contribute to the development of local industry.

In addition, in the solar energy field, Sharp is aiming to be a total solutions company involved in every aspect of the value chain—from production of solar cell materials and solar modules to system integration and even as far as being an independent power producer.

The light of the sun showers down across our whole planet. Energy from solar power generation can be produced for local consumption in every country in the world. There are many newly emerging economies and developing nations in regions where the abundant amount of solar radiation is ideal for solar power generation, and the demand for total solutions for energy and industry in those locations is enormous.

Fulfilling Social Responsibilities as a Member of the International Community Based on Its Business Philosophy and Business Creed of "Sincerity and Creativity"

The balance of power in the international community has undergone a tremendous change in the wake of the collapse of Lehman Brothers. In addition, the need to shift to a green society dedicated to preserving the global environment is becoming more urgent.

In the midst of a rapidly changing business environment, Sharp is focusing on promoting business activities that contribute to development of society by making the achievement of the aforementioned visions its goal, while at the same time ensuring that the Sharp Group as a whole fulfills its social responsibility as a member of the international community.

Sharp is moving ahead with global efforts, taking into account the expectations of and requests from stakeholders, including strengthening its management system, which comprises corporate governance and compliance, product safety and customer satisfaction activities, return of profits to shareholders, human resource development and workplace health and safety, and social contribution activities. In addition, Sharp will continue to support the 10 principles of the United Nations Global Compact related to human rights, labour, the environment, and anti-corruption, which it joined in June of last year, and strengthen related policy measures.

By building on its foundation of manufacturing and technological competence, Sharp's aim in the years to come is to fulfill its proper social responsibility and become a corporate group that has earned the trust of society based on its business philosophy and business creed of "Sincerity and Creativity."

Sharp will work to disclose information concerning its corporate activities, and sincerely consider and make the valued opinions from all of its stakeholders reflected in management activities.

We look forward to hearing your frank comments and opinions.

June 2010

Chairman
Katsuhiko Machida

President
Mikio Katayama

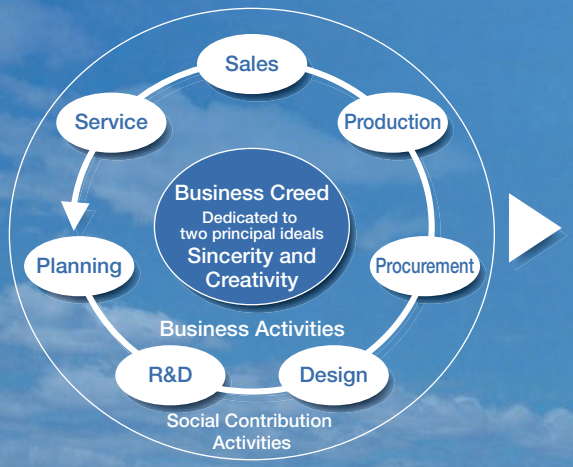
Sharp Contributes to Society Through Its Manufacturing and Technology-Oriented Business

"Make products that others want to imitate." These words, spoken by Sharp founder Tokuji Hayakawa, embody Sharp's management concept. As a manufacturer, Sharp contributes to society by being the first to make products that meet the needs of a new era. Successive generations of Sharp leaders have, in their own way, pursued this concept by making products that contribute to society and in the process created a corporation that is known and trusted by society.

In 1973, Sharp clarified the unchanging spirit of its founder in the company's business philosophy and business creed. The business philosophy states that Sharp aims for mutual prosperity with society and stakeholders—the foundation of CSR today—by "contributing to the culture, benefits and welfare of people throughout the world." The business creed calls for "Sincerity and Creativity" and all employees must hold to it and follow it in order to realize the business philosophy.

The goal that Sharp aims at through its CSR efforts is nothing less than realizing the business philosophy through its business activities, as well as through social contribution activities with a primary focus on these business activities. Endowed with a "gene of creativity" since its founding, Sharp will continue to propose one-of-a-kind products and new lifestyles, as well as fulfill its social responsibility, notably in the environmental and social areas, acting and behaving sincerely as a corporation that is trusted by all.

■ **Achieve the tenets of the business philosophy by promoting "Sincerity and Creativity" in all business practices**



Realization of Business Philosophy

■ Perspective of social contribution through business activities
"Contribute to the culture, benefits and welfare of people throughout the world"

■ Perspective concerning employees
"It is the intention of our corporation to grow hand-in-hand with our employees"

■ Perspective concerning stakeholders
"Prosperity is directly linked to the prosperity of the entire Sharp family"

- The business creed is the central axis of all business activities.
- "Sincerity" means a working attitude mindful of what will offer genuinely useful solutions and happiness to everyone.
- "Creativity" means a working attitude not content with the way things are. An attitude which always seeks to add value, and to make efforts to innovate and improve.

Business Philosophy

We do not seek merely to expand our business volume.
Rather, we are dedicated to the use of our unique, innovative technology to contribute to the culture, benefits and welfare of people throughout the world.
It is the intention of our corporation to grow hand-in-hand with our employees, encouraging and aiding them to reach their full potential and improve their standard of living.
Our future prosperity is directly linked to the prosperity of our customers, dealers and shareholders …indeed, the entire Sharp family.

Business Creed

Sharp Corporation is dedicated to two principal ideals:

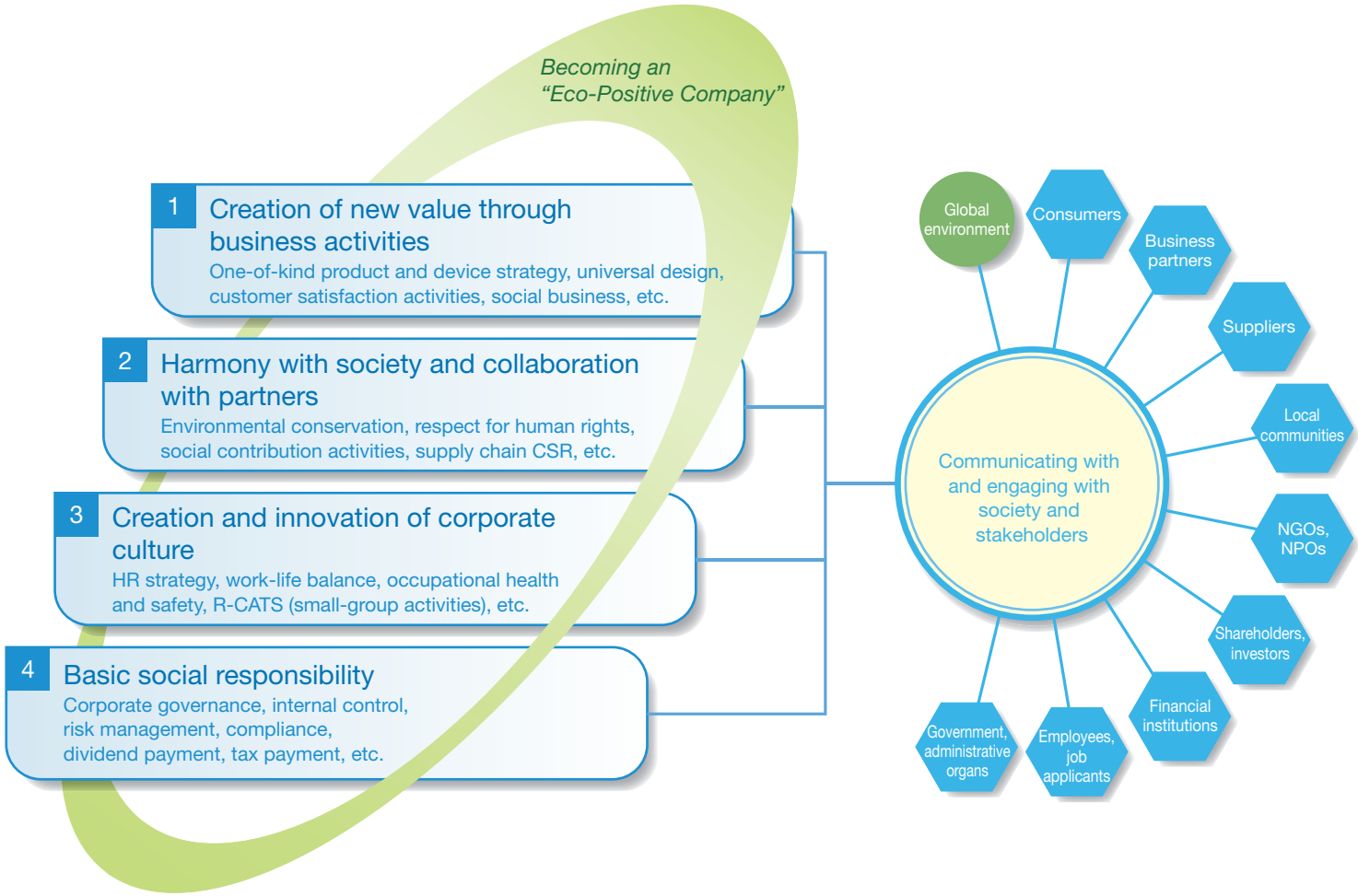
"Sincerity and Creativity"

By committing ourselves to these ideals, we can derive genuine satisfaction from our work, while making a meaningful contribution to society.

Sincerity is a virtue fundamental to humanity ...
always be sincere.
Harmony brings strength ...
trust each other and work together.
Politeness is a merit ...
always be courteous and respectful.
Creativity promotes progress ...
remain constantly aware
of the need to innovate and improve.
Courage is the basis of a rewarding life ...
accept every challenge with a positive attitude.

Approach to CSR Activities

Sharp has sorted its CSR activities by four large categories. While ensuring the process of its activities and balance among the categories, Sharp is promoting CSR activities with an emphasis on communicating with and engaging with society and its stakeholders. Sharp also advances the activities in each category from a standpoint of accomplishing its corporate vision of becoming an "Eco-Positive Company."



Corporate Vision: Eco-Positive Company

Looking ahead to the year 2012, the 100th anniversary of its founding, Sharp has set two business visions. One is "Contribute to the world through environment- and health-conscious business, focusing on energy-saving and energy-creating products." The other is "Contribute to a ubiquitous society* with one-of-a-kind LCDs." The aim of both of these visions is to contribute to the next generation by using the proprietary technologies that Sharp has built up over many years of development. Through actions geared towards achieving these visions—indeed through everything that Sharp does—Sharp is striving to become an Eco-Positive Company, its new corporate vision.

What's an Eco-Positive Company?

By "Eco-Positive Company," Sharp means a company that works with all stakeholders in creating solutions that have significantly more positive impact on the environment than the negative impact caused by company operations.

A particular focus is the reduction of greenhouse gas emissions. By fiscal 2012, Sharp's goal is to have emission reductions that result from customer use of Sharp energy-creating and energy-saving products be more than double the total greenhouse gas emissions from business activities. To this end, Sharp is developing and promoting the use of solar cells and energy-saving products as well as reducing its emissions.

In fiscal 2009, Sharp emitted 1.55 million t-CO_2, but use of Sharp energy-creating and energy-saving products contributed to emission reductions of 2.41 million t-CO_2, approximately 1.6 times the amount of Sharp's emissions.

Eco-Positive Strategy

Sharp's Eco-Positive Strategy of environmental measures is geared to achieving its corporate vision.

While building on the environmental protection know-how gained through its Super Green Strategy, which ran from fiscal 2004 to 2008, Sharp is working with all stakeholders on new activities in four aspects of its Eco-Positive Strategy across the entire value chain.

■ Corporate Vision: Eco-Positive Company

Fiscal 2009 greenhouse gas emissions:
1.55 million t-CO_2
(See page 63.)

Fiscal 2009 greenhouse gas emission reductions:
2.41 million t-CO_2

Web Method used for calculating greenhouse gas emission reductions

■ The Four Aspects of the Eco-Positive Strategy

EP = Eco-Positive

Eco-Positive Technologies
Generate new business through one-of-a-kind environmental technologies

Eco-Positive Products
Expand contributions to protecting the environment through products and services

Eco-Positive Operations
Reduce environmental impacts in product engineering and manufacturing

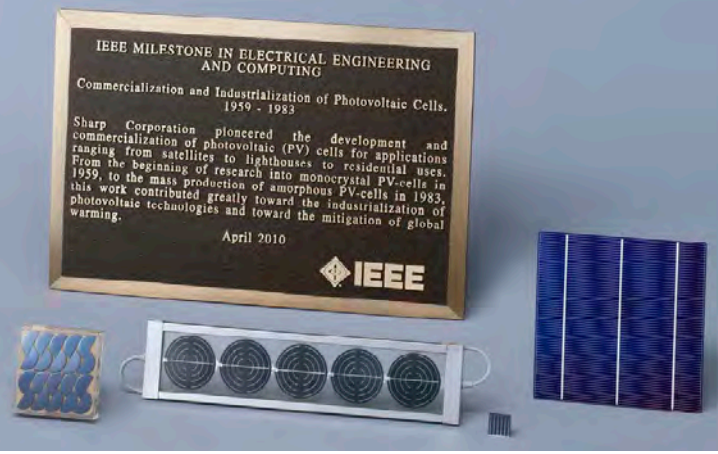
Eco-Positive Relationships
Enhance corporate value through involvement with the community

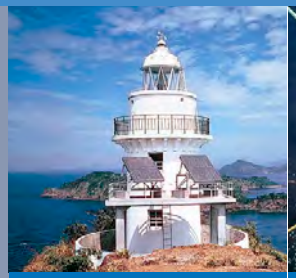
* A "ubiquitous society" refers to how the whole of society will be connected through the rapid development of IT infrastructure and networks will always be accessible to users.

Sharp's Activities in Solar Power Generation

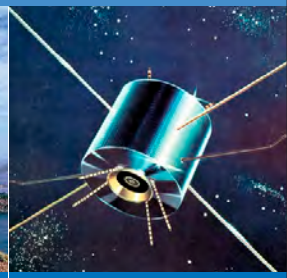
Aiming to Achieve a Green Society

Sharp first began R&D on solar cells in 1959, and four years later, in 1963, succeeded in mass-producing them. Since then, Sharp has been constantly engaged in product commercialization and in pushing forward with application development.
Looking ahead to the green society that is to come, Sharp is working to provide total solar energy solutions and promote the wider use of solar power around the world.





Lighthouse on Ogami Island, Nagasaki Prefecture, Japan (installed in 1966) (Photo: Japan Coast Guard)



Ume application satellite (launched in 1976) (Photo: JAXA [Japan Aerospace Exploration Agency])

Web IEEE Milestone recognition

Sharp's Commercialization and Industrialization of Solar Cells Recognized as IEEE Milestone

Sharp's achievements in the commercialization and industrialization of solar cells from 1959 to 1983 have been recognized as an IEEE Milestone from the IEEE, the world's largest professional association for electrical, electronics, information, and telecommunications engineering.

The IEEE Milestone honors significant technological innovations in the areas of electrical, electronics, information, and telecommunications engineering that have created unique solutions and contributed to the betterment of society and the development of industry. To earn IEEE Milestone recognition, the achievement must have been accomplished at least 25 years ago.

This recognition represents high praise for Sharp's efforts to bring solar cells into practical use and to contribute to the solar cell industry with products for applications ranging from lighthouses and space satellites to housing. This is Sharp's second IEEE Milestone, having been awarded one in 2005 for leading the industry in the development of electronic calculators from 1964 to 1973. It is also the 14th IEEE Milestone for a Japanese company.

Sharp's History of Solar Cell Commercialization and Industrialization 1959 to 1983

1959 Starts R&D in solar cells
1963 Succeeds in the mass production of single-crystal solar cells
1966 Installs a 225W solar module (the world's largest, at the time) on the Ogami Island Lighthouse in Nagasaki Prefecture, Japan
1967 Starts development of solar cells for outer space
1976 Sharp solar cells installed on the Ume application satellite (Sharp is the only solar cell manufacturer in Japan certified by JAXA [Japan Aerospace Exploration Agency])
1983 Starts development of amorphous solar cells

High Expectations for the Development of Technologies That Will Expand the Use of Clean Energy Derived from Solar Power

I was deeply impressed by all of Sharp's tireless efforts related to solar cells. Looking at their initial applications, it would never have been a very profitable business just from the likes of lighthouses and space satellites, but they persisted and never gave up. In addition, I admire the fact that Sharp is the only manufacturer in Japan certified by the Japan Aerospace Exploration Agency (JAXA) to supply solar cells for satellite use. Plus, given that they are used in lighthouses and on satellites, the quality and reliability demanded is extremely high, and I imagine dealing with that was also no easy matter.

We can say that the steady development and accumulation of such technologies have led to the development of today's solar power generation, and this is perfectly reflected in the evaluation that accompanies the recognition with this IEEE Milestone.

As for my hopes for Sharp, I would very much like to see Sharp make AC/DC power distribution systems that can use the DC electricity generated by solar power systems directly in the home without suffering losses from the need to convert to AC power. I would like to see this become the standard in the industry in cooperation with homebuilders.

Further, I would like Sharp to resolutely take up the challenge of developing technologies that make practical use of solar power even for global problems such as desalination and agriculture.

Isao Shirakawa, Ph.D.
IEEE Life Fellow and Member of IEEE Kansai Section Executive Committee;
Professor Emeritus, Osaka University


Winery, California, US


Expo '70 Commemorative Park, Osaka, Japan


Central Bank of the Netherlands, Amsterdam, The Netherlands


Football stadium, Mainz, Germany


Environment Agency, Oxford, UK


Solar power plant, Sonnen, Bavaria, Germany


Salzburg Airport, Austria


CIS Tower, Manchester, UK

R&D and Initiatives to Expand the Use of Solar Energy Spanning Half a Century

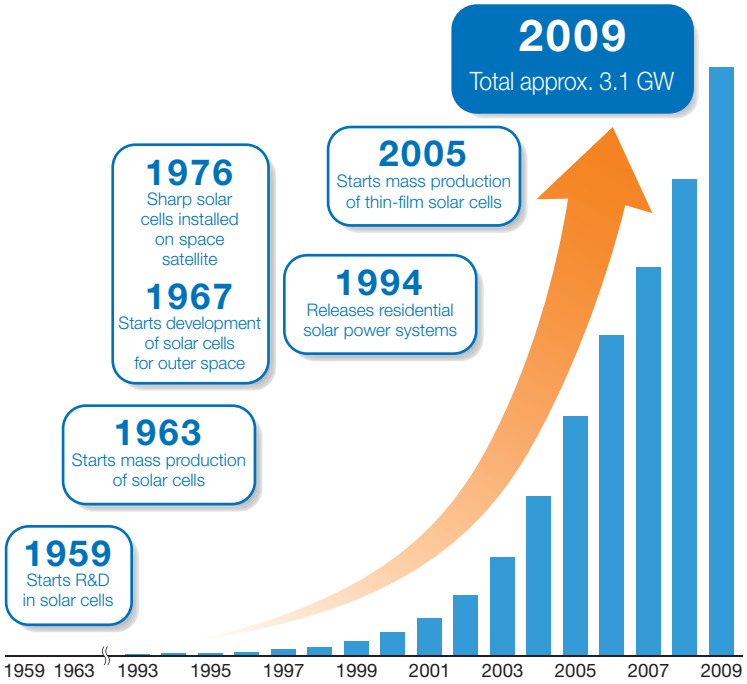
The year was 1959 when Sharp began R&D on solar cells. Sharp saw the potential of clean energy early on, and with the strong determination of successive company heads, Sharp has been working on the development of solar power generation and promoting its widespread use for half a century.

After four years of trial and error following the start of research, Sharp succeeded in mass-producing solar cells in 1963. When development first began, costs were still high, and the main application was stand-alone power generation in locations where the electric power grid did not reach, for example, remote lighthouses. In 1966, Sharp completed a 225-watt solar power system for a lighthouse on Ogami Island in Nagasaki Prefecture, at the time, the world's largest such installation. And in 1967, the company began development of solar cells for use in outer space, which were installed on the application satellite Ume, launched in 1976. As of March 2010, Sharp solar cells are in use on more than 160 space satellites and at lighthouses in more than 2,500 locations.

Sharp solar cells continue to serve as a valuable source of energy, and have been proven reliable even in harsh environments such as lighthouses exposed to intense wind and rain, and in outer space where they are subject to severe temperature fluctuations. Since then, Sharp has made the most of this technology in developing residential solar power systems in 1994 and for the mass production of thin-film solar cells in 2005, which are being actively used around the globe.

As a result of these efforts that span over half a century, Sharp's cumulative production of solar cells reached 3.1 GW (gigawatts)* by the end of 2009, estimated to be the equivalent of approximately one-sixth of the total global solar cells in use, based on data published by organizations such as the International Energy Agency (IEA).

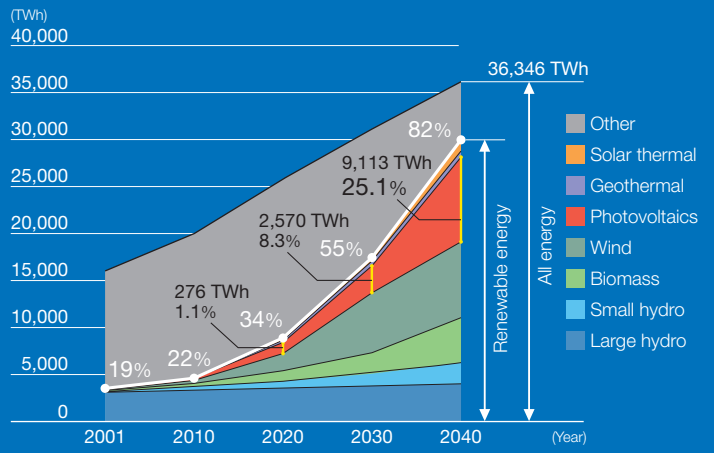
■ **Sharp's Cumulative Solar Cell Production Volume**



* 1 GW = 1,000 MW = 1,000,000 kW

Solar cell plant at GREEN FRONT SAKAI that began operations in March 2010

■ Forecast for World Electricity Demand



Source: Created by Sharp based on *Renewable Energy Scenario to 2040*, published by the European Renewable Energy Council (EREC) and reports of the German Advisory Council on Global Change (WBGU)
1 TWh = 1,000 GWh = 1,000,000 MWh = 1,000,000,000 kWh
% is the percentage of all energy.

Strengthening Development of Both Crystalline and Thin-Film Solar Cells

Up to now, Sharp has been expanding its solar energy business focusing on crystalline solar cells. But in an effort to significantly broaden the potential of solar cells, Sharp has now pushed ahead to improve the performance of thin-film solar cells and expand their production. Compared to crystalline solar cells, thin-film solar cells use approximately one-hundredth the amount of silicon and require fewer steps in the production process. In addition, because production efficiency can be readily increased, mass production is expected to reduce the cost of power generation.

In October 2008, Sharp raised the production capacity for thin-film solar cells at its Katsuragi Plant (Katsuragi City, Nara Prefecture) from 15 MW/year to 160 MW/year, and in March 2010, began thin-film solar cell production of 160 MW/year as the first deployment of the solar cell plant at GREEN FRONT SAKAI (in Sakai City, Osaka Prefecture).

Crystalline solar cells feature high conversion efficiencies, and are ideal for residential applications where the available space for installation is limited. Thin-film solar cells suffer only a small amount of reduction in output in regions with high ambient temperatures, and so are ideal for large-scale power generation systems in warm-temperature climates.

Sharp is promoting the wider use of both crystalline and thin-film solar cells on a global basis to meet a wide range of needs based on their respective characteristics.

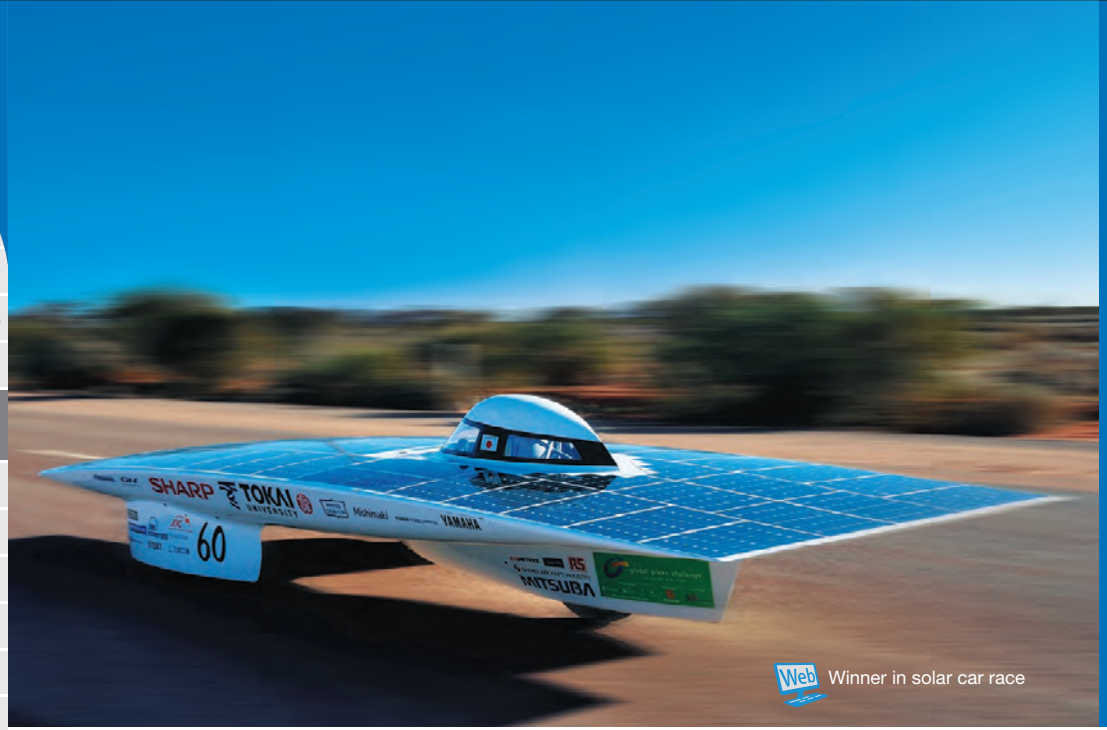
Aiming to Be a Total Solar Energy Solutions Company

Looking at medium- to long-term demand trends for photovoltaic power generation, solar energy is expected to continue to grow globally, based on world electric power demand forecasts (see graph above) from the European Renewable Energy Council (EREC). Forecasts indicate that photovoltaic power generation will account for as much as one fourth of total world electric power demand in 2040.

Demand in Europe, which has grown significantly in recent years, has hit a temporary plateau, reflecting the impact of the financial crisis, but in the medium term, it is predicted that this market will continue to expand as a result of large-scale power generation projects. In the United States, construction of a large number of large-scale power systems is being planned, such as the mega-solar energy projects proposed under the Green New Deal initiative.

Up to now, Sharp has been building solar cell plants in Japan, but to meet burgeoning demand in all areas of the globe, Sharp plans to develop such plants in local areas in the future, based on tie-ups with the local companies. Sharp will push "local production for local consumption" in which all links in the value chain—from procurement of materials to production and sales—will be completed within the consuming region.

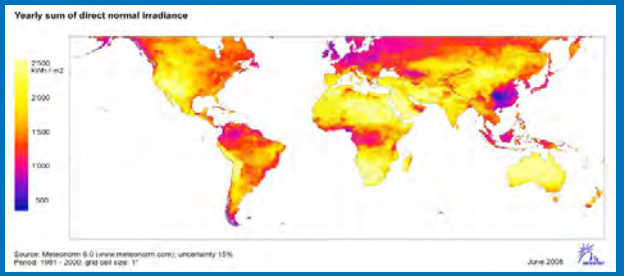
In addition, Sharp is aiming to be a total solutions company, handling all aspects of the value chain for solar power generation, from the materials for solar cells and production of cell modules, to system integration and even being an independent power producer.



Web Winner in solar car race

Global Solar Radiation

Source: METEONORM



▲ In the southern hemisphere and at lower latitudes where many newly emerging economies and developing countries are located, the amount of solar radiation reaching the earth is high. Introducing solar power generation in these regions would create tremendous amounts of renewable energy.

◀ The Tokai Challenger, a solar car equipped with Sharp compound solar cells (cell conversion efficiency 30%) driven by a team from Tokai University, won the Global Green Challenge, one of the world's largest solar car races. The team covered the approximately 3,000-kilometer course across the Australian continent at an average speed of over 100 km per hour for an impressive win! (October 2009)

Aiming to Reach Grid Parity

In R&D on solar cells spanning more than 50 years, Sharp has consistently taken up the challenge to lower costs. Specifically, Sharp has been conducting R&D to raise conversion efficiencies, create resource-saving designs that reduce the amount of silicon used, and develop highly efficient production technologies.

Based on these efforts, Sharp has so far more than doubled the conversion efficiency of crystalline solar cells, about halved the thickness of the silicon wafer, and lowered costs by 90% or more. In addition, Sharp has also been conducting R&D on thin-film solar cells.

However, the cost of electricity generated by photovoltaic installations today is still relatively high compared to other forms of power generation, and reaching "grid parity," the point at which the cost of photovoltaic electricity is equal to or cheaper than existing grid power, will be absolutely essential to bring about the widespread use of solar power.

As countries around the world are achieving remarkable economic progress, we will no longer be able to expand the consumption of limited fossil resources. Solar power, which makes electricity from the unlimited light of the sun, will play an extremely important role.

Sharp will be working in cooperation with local governments and businesses in many parts of the world to develop total solutions based on "local production for local consumption" involving the entire value chain of solar power generation. Through this effort, Sharp intends to reach grid parity and contribute to the achievement of a green society through the accelerated growth of solar power generation.

Challenging the "Triple 50" Looking Toward 2050

According to a forecast for global electricity demand (see previous page) by the European Renewable Energy Council (EREC), it is assumed that 9,113 TWh per year will be met by photovoltaic power generation, accounting for one-fourth of the total demand for electric power worldwide in the year 2040. To achieve this, 9 TW (terawatts) of solar cells will need to be installed on the planet, and for that, each year, new production lines with capacity equivalent to 109% of the previous year will have to be built in the future. These lines will have to run at full capacity for 30 years, and the solar cells produced will have to generate electricity for 30 years. Naturally, innovations in technology will be essential to achieve this.

Looking ahead to the year 2050, Sharp has set a goal called "Triple 50." This is a development goal to, first, increase cell conversion efficiency to 50%, next, extend the power generating life of solar cells to 50 years, and finally, lower the cost of solar modules to 50 yen per watt.

All of these goals are extremely ambitious, and to achieve them, even as progress is being made toward total solutions based on "local production for local consumption", including R&D on smart grids and home energy management systems, Sharp is pushing ahead with R&D by gathering knowledge and expertise from around the world.

Tetsuroh Muramatsu
Executive Officer
Group General Manager
Solar Systems
Development Group
Sharp Corporation

GREEN FRONT SAKAI Is Fully Operational!

One of the world's most environmentally advanced factories is now mass-producing energy-saving LCD panels and energy-creating solar cells. GREEN FRONT SAKAI is a culmination of Sharp's proprietary expertise and contributes to the creation of a new age of electronics while also manufacturing products in the most environmentally friendly way.

Portions indicated by dotted lines and rooftop solar cell panels are an artist's concept of the completed appearance. The area outside the GREEN FRONT SAKAI site differs from the area's actual appearance.

GREEN FRONT SAKAI

Making Energy-Saving and Energy-Creating Panels

Located in Sakai City, Osaka Prefecture, GREEN FRONT SAKAI is a cutting-edge plant that produces energy-saving LCD panels and energy-creating solar cells in one complex.

The LCD panel plant, which went onstream in October 2009, uses 10th-generation glass substrates, the world's largest*1, to produce energy-saving 40-inch and larger LCD panels employing Sharp's proprietary UV²A technology*2.

Operations began in March 2010 at the solar cell plant, where 1,000-by-1,400-mm glass substrates are used to produce thin-film solar cells that use just approximately one hundredth the amount of silicon used in crystalline solar cells.

*1 As of October 2009. *2 See page 38.

10th-generation glass substrate

Thin-film solar cell panel

Coproduction Means Environmentally Friendly, Efficient Operation

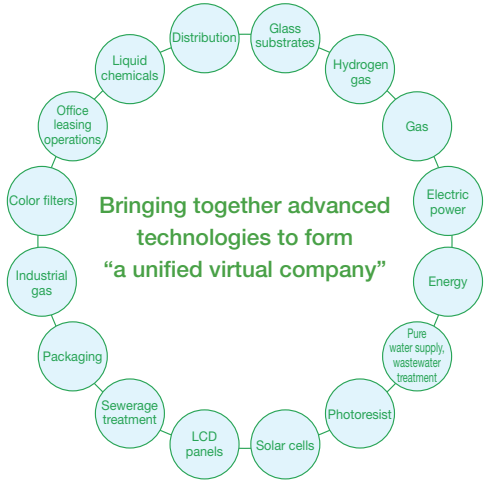
GREEN FRONT SAKAI brings together cutting-edge technology companies that function as one virtual company, with coproduction and coexistence the keywords towards achieving environmentally friendly, efficient operation.

An integrated energy management center makes energy sources visible (estimated usage volume, danger prediction, optimized operation, etc.) through the use of green IT, large-screen LCDs, and broadband connectivity. This makes it possible to reduce the energy and power usage of the entire factory complex.

An inter-building transport system running between the plants reduces lead-time. It also cuts CO_2 emissions during transportation and allows for ultra-efficient production.

Integrated energy management center

Inter-building transport system



One of the World's Most Environmentally Advanced Factories

Available space such as the roofs of buildings on the site grounds is being used to install a solar power generation system that will provide a portion of the power used by the factories.

Energy-efficient, long-lasting LED lighting fixtures are being installed throughout the site—the approximately 100,000 LED lighting fixtures will constitute one of the world's largest such installations. Some outdoor LED fixtures will have built-in solar cells.

Other environmentally friendly features include walkways paved with water-permeable bricks made from discarded LCD panel glass, and low-pollution electric vehicles used on the site.

LED lighting used throughout the site

Water-permeable bricks used for walkways

Coexistence with the Local Community

GREEN FRONT SAKAI strives to work in harmony with the surrounding communities.

Sakai has been selected as an environmental model city by the Japanese government. GREEN FRONT SAKAI is contributing to the city's efforts to become a low-carbon municipality under the "Cool City Sakai" initiative.

An advanced water treatment plant allows GREEN FRONT SAKAI to treat wastewater from the public sewer treatment system and use it to meet a portion of water requirements for production processes. Heat is also collected from treated wastewater for use in air conditioning systems.

Through the establishment of an ecology laboratory jointly with Osaka Prefecture University, technologies like solar power and LED lighting are used in plant cultivation and recycling of waste materials. And should a natural disaster occur, GREEN FRONT SAKAI will provide water and electricity to disaster evacuation parks located adjacent to the factory complex.

Eco-Friendly and Highly Efficient Operations Make for an Environmentally Advanced Manufacturing Complex

GREEN FRONT SAKAI brings together 19 companies including material producers and utilities providers, which work with Sharp's LCD panel and solar cell plants to create one virtual company that is environmentally friendly and highly efficient.

Efforts to become an environmentally advanced factory in cooperation with Sakai City in its "Cool City Sakai" initiative include joint R&D with nearby Osaka Prefecture University at its ecology laboratory at GREEN FRONT SAKAI and collaboration with the adjacent sewerage works to recycle wastewater.

Kohki Narita
General Manager
Energy Management Department
GREEN FRONT SAKAI Planning Center
Sharp Corporation

Working to Build a Green Society

GREEN FRONT SAKAI is also the hub of efforts to build a green society by implementing a series of eco-initiatives. New LCDs using energy-efficient panels, products incorporating solar cells, solar power generation businesses, the DC eco-friendly house running on direct current (DC) power, eco-offices combining environmental friendliness and productivity, and plant cultivation using trigeneration*—through such environmentally friendly plant operations and energy-creating and energy-saving technologies, Sharp is contributing to the creation of a green society.

* The use of electricity generated by solar cells, and CO_2 and heat from factories.

Eco-friendly offices

Sharp suggests ways to make offices both environmentally friendly and more productive through measures such as installing solar cells for power generation, installing energy-efficient LED lighting fixtures, introducing products with Plasmacluster Ion technology, and adopting highly efficient videoconferencing systems that use large-screen displays.

Simulated photo

Development of new LCDs

New innovations in LCDs make possible a variety of new applications, such as the use of LCD panels as signboards.

Solar power generation

Sharp will be increasingly active as an energy company that uses clean solar energy to generate electricity.

Sumitomo Corporation project in the Canary Islands, Spain

GREEN FRONT

Solar cells for automobiles

Electricity generated by solar cells mounted on the roof of a car can supplement the power requirements of the vehicle's operation.

Simulated photo

Products incorporating solar cells

Sharp is actively creating products that incorporate solar cells, to support a convenient lifestyle with minimal environmental impact.

DC eco-friendly houses

Sharp is creating electric appliances that run on DC power. They can use the DC current from the solar cells, without loss.

Simulated photo

Plant cultivation using technologies such as trigeneration

Sharp uses power from solar cells as well as CO_2 and heat from its factories to cultivate plants. In addition, technologies such as LED illumination and Plasmacluster Ion generators are creating new possibilities for agriculture.

Environmental Protection and Community Service in Indonesia

Consumer electronics manufacturing and sales company PT. Sharp Electronics Indonesia (SEID) and electronic components manufacturing company PT. Sharp Semiconductor Indonesia (SSI) make environmental protection a cornerstone of their management, and both companies carry out a wide range of environmental protection and community service activities.

Sharp in Indonesia

Sharp first established a production plant in Indonesia in 1970. In 1995, it established PT. Sharp Semiconductor Indonesia (SSI) for the manufacture of electronic components such as ICs and opto-devices, and in 2005 PT. Sharp Electronics Indonesia (SEID) for the manufacture and sale of TVs, refrigerators, and audio products. After over 40 years in business, Sharp has become a familiar corporate citizen of the country, well known by Indonesians as a popular brand name for TVs and home appliances such as refrigerators.

Environmental Protection Activities at Production Plants

The over 17,000 islands that make up Indonesia are home to a bounty of nature and a diversity of life forms. Today, however, the country is faced with pressing environmental problems like rain forest depletion and air and water pollution originating in urban areas.

Both companies make environmental protection a cornerstone of their management. SSI was certified for ISO 14001 in 2000 and SEID in 2006. Besides reducing the environmental footprint of their factories, the two companies are using their unique traits and strengths in a range of community environmental protection activities.

Through the Sharp Environment Idea Award, SEID encourages students in Indonesia to come up with innovative ideas for products and environmental measures

SEID and SSI's Community Environmental Protection Activities

SEID partners with NGO 89.2 FM Green Radio to plant trees in Gunung Gede Pangrango National Park

SEID is an official sponsor of Earth Hour 2010 in Indonesia, sponsored by the WWF (World Wide Fund for Nature)

SEID is promoting coral growth in the seas of Bali, Manado, and Pramuka Island

SSI led environmental education and cleanup activities at a local elementary school

SSI planted 1,000 mangrove trees along the beach at Pantai Samudra Baru, Karawang, West Java

SEID "Eco Greener" Campaign

"Eco Greener" is a slogan that SEID is using for environmental efforts in both its business activities and community service. The company is reducing the environmental impact of its offices and factory by using solar power, recycling paper, and gathering wastewater in a bio-treatment tank to use it for things like watering gardens. And through environment-related events, product exhibits, and social action programs around the country, SEID is working with NGOs, the mass media, and the general public to raise environmental awareness among the community.

Solar energy gathered in the daytime powers Sharp billboards like this in Jakarta and Bali at night

At the Eco-products International Fair 2010, the largest international environmental fair in Asia, SEID displayed Sharp solar cells and energy-efficient products

SSI Achieves Super Green Factory Status in Fiscal 2009

SSI is using Sharp's environmental management system to reduce the environmental impact of its factory and raise employee environmental awareness. Eco-efforts at the factory include using energy-efficient air conditioning, recycling water used for air conditioning, and adjusting delivery truck schedules to reduce CO_2 emissions. Employee awareness is raised through regular education activities and one-day and one-week environmental initiatives, as well as through volunteer environmental protection and cleanup activities in the local community. These efforts led to Super Green Factory* (SGF) status for SSI in fiscal 2009.

Reducing the factory's environmental impact by installing water recycling equipment on the cooling tower

Employee awareness is raised through a weekly "Environmental Day" and a semi-annual "Environmental Week"

* Based on Sharp's own certification system. See page 57.

Protecting the Environment, Helping Communities

Protecting the environment is crucial to business growth. SEID has pledged to do everything it can to reduce the environmental impact of its factory, while contributing to environmental protection and the betterment of society. The company's creative environmental and social contribution activities include teaming up with NGOs and other groups to protect rain forests and coral reefs, and sponsoring environmental idea contests for students.

To achieve its goal of becoming an eco-positive company and an integral member of society, SEID is putting all its energy into activities to protect the environment.

Standing, from left: Wahyu Murdowo, Administration Division; Satoru Hashimoto, Administration & Finance Director; Fumihiro Irie, President; Ryunosuke Kitagawa, Brand Strategy Group Director; Gina Handriany, Brand Strategy Group; Indra Pasosong, Administration Division
Front row, from left: Siti Nurmala, Administration Division; Cahyatih K, Administration Division; Novita Asri Ningtyas, Brand Strategy Group; Pandu Setio, Brand Strategy Group

Fostering Eco-Positive People

SSI, which started operations in 1996, has focused itself on environmental sustainability management for years, and this paid off with the company's recent achievement of Super Green Factory (SGF) status. Besides reducing environmental impact from its business activities, the company uses environmental and social contribution activities to raise environmental awareness among employees, their families, and local students and residents.

Besides stepping up its efforts to become an eco-positive company, SSI will strive to foster a society of "eco-positive people" in Indonesia.

Standing, from left: Dian Ambarwati, Administration Department; Akira Murakami, Administration Director; Yoshiharu Kuroda, President; Endah Karyani, Administration Department
Front row, from left: Fachruddin Rachman, Administration Department; Agus Saptana, Administration Department; Hendry Hariadi, Production Control Department; Tri Pambudi, Administration Department; Fry Harly, Administration Department

Multifaceted Approach to Biodiversity

Under the Sharp Group Policy on the Sustainable Support of Biodiversity, the Sharp Group carries out a multifaceted approach in which it protects biodiversity in business activities and social action programs at all worldwide bases.

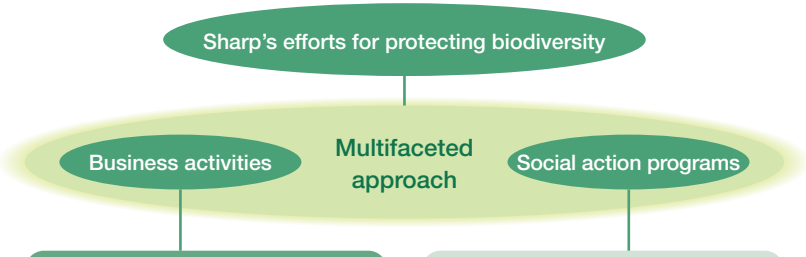
Contribute to Biodiversity Protection Through Business and Social Action Programs

Biodiversity refers to the existence of a variety of ecosystems, species, and genes. With the modern world's environmental pollution, more and more species are becoming extinct and ecosystems are in danger. Since companies both affect and benefit from biodiversity, it is crucial that they protect and make sustainable use of it in all of their business activities.

Based on the Sharp Group Policy on the Sustainable Support of Biodiversity, the company formulated detailed measures, the Sharp Biodiversity Initiative, in November 2009. The initiative's aim is to ensure the protection and sustainable use of the world's biodiversity through business activities and social action programs.

Sharp has detailed measures in each step of the value chain for ensuring that business activities exert minimal impact on biodiversity. And in social action programs, Sharp strives to continue carrying out activities that match the lifestyles and environment of each community and region.

In addition, Sharp has made biodiversity check lists and distributed these to bases around the world. The check lists explain the link between environmental measures and biodiversity as well as are used to regularly monitor the progress of environmental activities at each base. In the near future Sharp will quantitatively check progress at each base according to assessment standards so that the entire Sharp Group can better protect biodiversity.



Efforts throughout the value chain	
Procurement	Procure environmentally conscious parts and materials
Development	Develop environmentally conscious products and devices
Manufacturing	Reduce the amount of greenhouse gases and waste generated in factories
Sales	Reduce the amount of greenhouse gases and waste generated in offices
Logistics	Shift modes of transportation to reduce CO_2 emissions

See pages 29–79 for details.

Foster biodiversity-minded employees
(Sharp Green Club activities, etc.)

Plant trees and protect *satoyama* areas
(Sharp Forests, etc.)

Educate the general public
(Elementary school environmental education, outdoor environmental education classes)

See pages 105, 106, and 109 for details.

Biodiversity Protection a Simultaneous Worldwide Effort

In the past, environmental measures have first been introduced in Japan and then transplanted to overseas Sharp bases at a later date. But Sharp's new biodiversity initiative was launched simultaneously worldwide, with production bases in the UK and parts of Asia getting an enthusiastic early start. Sharp will continue these efforts on a worldwide scale, while incorporating the ideas of Sharp people in charge of activities in different countries.

Emi Miura
Junior Manager

Takahiro Ishida
Assistant Manager

Environmental Planning Department
Environmental Protection Group
Sharp Corporation

Web Sharp Group Policy on the Sustainable Support of Biodiversity

Objectives and Achievements in the Area of Management

To continue to be a company that has the trust of people and society, Sharp is establishing priority action themes in the area of management, the foundation of its business activities, and will be working for continuous improvement while verifying and assessing the results of these activities.

Overview of Efforts and Achievements in Fiscal 2009

In fiscal 2009, Sharp worked to accommodate an even greater number of demands from stakeholders, particularly shareholders and investors, to strengthen corporate governance and internal control. Accordingly, Sharp appointed an outside member to its Board of Directors and worked for the stable operation of the company's internal control system.

Sharp again revised the Sharp Group Charter of Corporate Behavior and the Sharp Code of Conduct, which serve as guidelines for taking action to promote Sharp's CSR. Regarding compliance, the very basis of CSR in advancing business activities, Sharp worked at the global level to build a framework and further measures for promoting compliance. It also worked continuously to be thoroughly compliant with antitrust laws.

Sharp also pushed forward with ongoing efforts to improve specific management-related areas, such as developing and expanding business continuity measures to cope with major earthquakes and outbreaks of new strains of influenza, ensuring information security, and protecting personal information and intellectual property rights.

Self Evaluation objectives ◎ : Results exceeded objectives ○ : Results nearly met △ : Certain results were accomplished

Important Themes		Actions in Fiscal 2009	Self Evaluation	Objectives for Fiscal 2010	See page(s)
Reinforce corporate governance	Objectives	(Corporate governance) Further improve transparency, objectivity, and soundness in management	○	• (Corporate governance) Further improve transparency, objectivity, and soundness in management • Clearer separation between functions to provide supervision and make important decisions from functions to execute business	18-19
	Achievements	• Appointed outside member to Board of Directors (June)			
Develop, maintain, operate, and assess internal control system	Objectives	Steady operation of internal control system	○	• Deepen, and continuously develop, put into practice, and re-evaluate internal control system • Continuously put into practice various policies related to internal control system • Implement evaluations of validity and effectiveness of internal control and develop internal control system in accordance with requirements for internal control report system under the Financial Instruments and Exchange Act	19 and website
	Achievements	• Revised Basic Policy for Internal Control in response to environmental changes inside and outside company (August) • Reviewed and continuously put into practice various policies related to internal control system • Submitted internal control reports to disclose information on status of development and operation of internal control system (June)			
Review systems for promoting CSR	Objectives	Revamp Sharp Group Charter of Corporate Behavior and Sharp Code of Conduct	○	• Ensure that content of revised Group Charter of Corporate Behavior and Code of Conduct is thoroughly conveyed to all directors, officers, and employees	20 and website
	Achievements	• Sharp Group Charter of Corporate Behavior and Sharp Code of Conduct revised again (April 2010)			
Strengthen business risk management	Objectives	Expand and improve BCM (business continuity management) system	○	• Ongoing improvement of BCM system • Review and develop BCP for domestic affiliated companies and others assuming occurrence of major earthquake and outbreak of new strain of influenza • Develop and improve BCP for major overseas production bases	21
	Achievements	• Reviewed and improved BCP (business continuity plan) for domestic production bases assuming occurrence of major earthquake • Developed BCP for domestic production bases assuming outbreak of new strain of influenza			
Practice compliance in business	Objectives	Ongoing improvement of compliance promotion system, policies, and measures	○	• Ongoing implementation of compliance promotion measures • Compliance training (job-level-specific training, e-learning, etc.) for all employees in Japan • Ongoing compliance training at all overseas bases • Ongoing internal audits and guidance on complying with antitrust laws • Create anti-bribery guidebook to preclude corrupt practices involving foreign public officials	24–26
	Achievements	• Implemented compliance training based on Sharp Group Compliance Guidebook and training on antitrust law through e-learning for all employees in Japan • Appointed legal affairs staff members in four overseas regions, and implemented development and training on compliance systems in all regions • Implemented internal audits and offered guidance on complying with antitrust laws to all business groups in Japan			
Strengthen measures for maintaining confidentiality and information security	Objectives	Expand and improve methods to promote information security at overseas bases	○	• Revamp content of self-checks for further strengthening confidentiality and information security, and implement them on a continuing basis in Japan and overseas	27
	Achievements	• Established autonomous information security management cycles at overseas bases			
Strengthen personal information protection system	Objectives	Ongoing implementation of policies to promote protection of personal information	○	• Ongoing implementation of policies to promote protection of personal information • Implement internal audits related to protecting personal information • Ongoing implementation of education and awareness policies related to protecting personal information for employees and others	28
	Achievements	• Implemented internal audits related to protecting personal information • Implemented education and awareness policies related to protecting personal information for employees and others			

Corporate Governance / Internal Control

As a company that has statutory auditors, Sharp is improving the quality of management while strengthening its Director/Corporate Auditor system, for example, introducing the executive officer system, appointing an outside director, and establishing the Internal Audit Division to monitor and hold management in check as an organization that works with the Board of Corporate Auditors. In addition, by continuously developing and maintaining the internal control system, Sharp is working to enhance this system to ensure the propriety of operational activities of the entire Sharp Group.

Objectives for Fiscal 2009	Achievements for Fiscal 2009	Objectives for Fiscal 2010
• (Corporate governance) Further improve transparency, objectivity, and soundness in management	• Appointed outside member to Board of Directors (June)	• (Corporate governance) Further improve transparency, objectivity, and soundness in management • Clearer separation between functions to provide supervision and make important decisions from functions to execute business
• Steady operation of internal control system	• Revised Basic Policy for Internal Control in response to environmental changes inside and outside company (August) • Reviewed and continuously put into practice various policies related to internal control system • Submitted internal control reports to disclose information on status of development and operation of internal control system (June)	• Deepen, and continuously develop, put into practice, and re-evaluate internal control system • Continuously put into practice various policies related to internal control system • Implement evaluations of validity and effectiveness of internal control and develop internal control system in accordance with requirements for internal control report system under the Financial Instruments and Exchange Act

Concept of Corporate Governance

Sharp is engaged in integrated production—from development to the manufacture and sale of products in a wide range of fields. Each of these areas is highly specialized, yet there is a close interrelation between them. Consequently, a management system is required in which directors who have a strong grasp of each area work closely with the R&D and manufacturing divisions in order to facilitate speedy decision-making and business execution. Under such a concept, Sharp, as a company with statutory auditors, is continuously improving the quality of its management while strengthening the Director/Corporate Auditor system.

Sharp is working to strengthen its system of corporate governance to satisfy the need for stronger decision-making and supervisory functions, as well as stronger business execution functions.

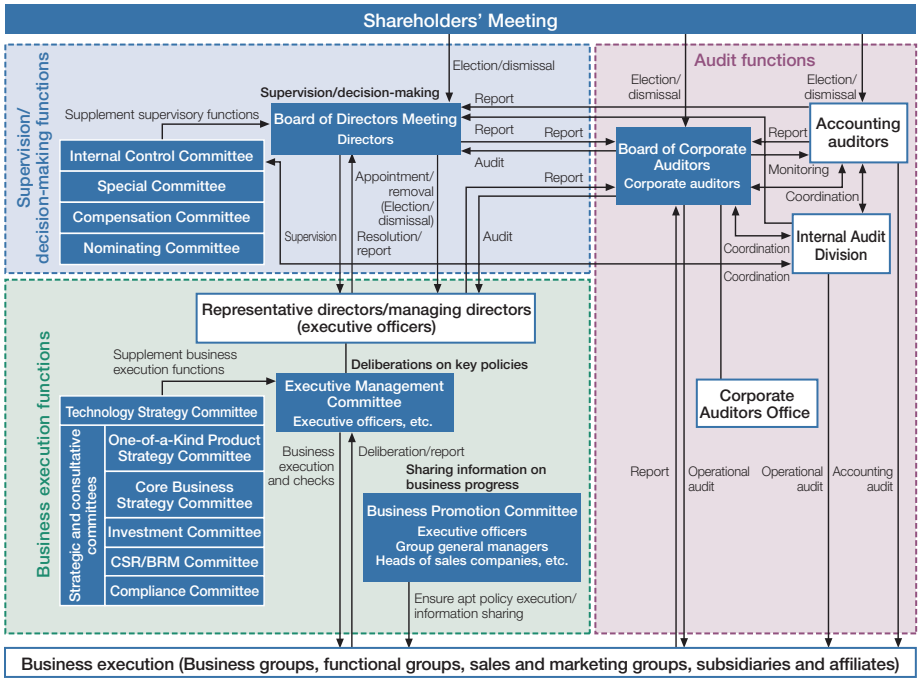
In June 2008, Sharp introduced the executive officer system to focus on both management decision-making and execution of business processes, as well as work toward effective and speedy corporate management. In addition, Sharp dissolved the Advisory Board established in 2006 to make the best use of opinions from knowledgeable outside experts in various fields aiming at a more transparent, objective, and sound management, and in its stead, appointed an outside member to the Board of Directors in June 2009.

To ensure the smooth functioning of the executive officer system, in April 2010, Sharp revamped its governance system to more clearly separate supervisory and important decision-making functions from business execution functions, thereby enabling more rapid management by emphasizing each respective role.

Sharp has also designated three of four current corporate auditors as outside auditors, and has strengthened their capability to monitor and hold management in check by establishing the Internal Audit Division as an organization that works with the Board of Corporate Auditors.

In the future, Sharp will further strengthen its Director/Auditor/Executive Officer system, while working to enhance and improve corporate governance.

Corporate Governance System



Status of Corporate Governance System

The Board of Directors Meetings of Sharp Corporation are held on a monthly basis to make decisions on matters stipulated by law and management-related matters of importance, and to supervise the state of business execution. To improve management agility and flexibility, and to clarify the responsibilities of the company management during each accounting period, the term of office for members of the Board of Directors is set at one year.

In addition to the Board of Directors, the company has the Executive Management Committee, where matters of importance related to corporate management and business operation are discussed and reported twice a month. This committee facilitates prompt executive decision-making. In addition, the Business Promotion Committee generally meets once a month to share information and thoroughly review corporate and management policies with managers in each business area.

The Board of Corporate Auditors formulates audit policies, listens to reports from accounting auditors, and receives reports on the execution of duties, in particular from the Board of Directors. Corporate auditors also exchange information and opinions on such matters as the progress of deliberations of important meetings, and auditing (on-site auditing) results, which increases the validity of audits.

Selection, Compensation, and Evaluation of Corporate Directors

Sharp has established an Internal Control Committee as well as a Special Committee, a Nominating Committee, and a Compensation Committee, which complement the supervisory functions of the Board of Directors. One purpose of establishing these committees has been to improve the fairness and transparency of the selection and compensation of corporate directors who have been entrusted by shareholders to manage the company.

The nomination of directors is carried out by the Nominating Committee. The outside director also participates in determining candidates for directors in the Nominating Committee. In addition, monthly compensation and bonuses for all directors are at the maximum limit of total compensation as set forth in a resolution adopted at a shareholders' meeting, and will be fairly determined by setting evaluation criteria such as financial results, level of contribution to the company, etc., in the Compensation Committee which includes the outside director.

Developing and Maintaining the Internal Control System

Based on Japan's Companies Act and the Financial Instruments and Exchange Act, Sharp is developing and maintaining its internal control system to ensure the properness of business of the entire Sharp Group.

In May 2006, the Board of Directors passed a resolution to adopt a basic policy related to the development and maintenance of systems necessary to ensure the properness of business (Basic Policy for Internal Control), as well as established the Internal Control Committee to serve as an advisory panel to complement the supervisory functions of the Board of Directors. The quarterly meeting of the Internal Control Committee discusses various policy measures related to the internal control system and affirms their operational status.

The Basic Policy for Internal Control is reviewed and revised in response to environmental changes inside and outside the company. In accordance with this basic policy, Sharp has been documenting the business processes of Sharp Corporation's business and functional groups, as well as its domestic and overseas subsidiaries, and has been conducting self-audits to assess whether they have been appropriately structured and implemented and whether internal control is functioning effectively.

In addition, the Internal Audit Division is auditing the organizational and operational status of these business processes and the company-wide control environment from an independent perspective.

Web Internal control system

Message from an Outside Director

The fundamental principle of corporate management is to maximize corporate value. This is a difficult thing to accomplish and brings numerous strategic options and challenges. Today management has become far more complex and sophisticated than in the past, involving manifold variables. Naturally, one important aspect is the executive capability needed to view each variable in light of the business environment and implement the best course of action. At the same time, an aspect that has become even more important is the management capability needed to carry out optimal overall management taking the balance of all of these variables.

The future of management will increasingly see the competitiveness of companies depend upon their ability to realize both partial enhancements in each business and overall optimization at the same time.

For Sharp, I believe a robust strategy for achieving this synchronization is to win the support and understanding of the broad range of stakeholders, and improve the image of the Sharp brand still further, while taking full measures to raise brand value. Enhancing the Sharp brand is the key to enabling "spiral-up" management, which will lead to greater corporate value in the medium to long term.

As an outside director, I hope I can make even a small contribution to helping Sharp achieve this kind of management.

Kunio Ito
Outside Director

Career Overview

April 1992	Professor, Faculty of Commerce and Management, Hitotsubashi University
August 2002	Dean, Graduate School of Commerce and Management, Hitotsubashi University
December 2004	Vice President and Executive Staff of Hitotsubashi University
December 2006	Professor, Graduate School of Commerce and Management, Hitotsubashi University (current position)
June 2009	Director, Sharp Corporation (current position)

System to Promote CSR / Risk Management

Sharp has set up internal systems to promote CSR including a CSR/BRM Committee. Additional efforts toward CSR include adopting the Sharp Group Charter of Corporate Behavior and the Sharp Code of Conduct, and participating in the United Nations Global Compact.
Sharp is also continuously improving business risk management to cope with events such as major disasters and outbreaks of new strains of influenza.

Objectives for Fiscal 2009	Achievements for Fiscal 2009	Objectives for Fiscal 2010
• Revamp Sharp Group Charter of Corporate Behavior and Sharp Code of Conduct	• Sharp Group Charter of Corporate Behavior and Sharp Code of Conduct revised again (April 2010)	• Ensure that content of revised Group Charter of Corporate Behavior and Code of Conduct is thoroughly conveyed to all directors, officers, and employees
• Expand and improve BCM (business continuity management) system	• Reviewed and improved BCP (business continuity plan) for domestic production bases assuming occurrence of major earthquake • Developed BCP for domestic production bases assuming outbreak of new strain of influenza	• Ongoing improvement of BCM system • Review and develop BCP for domestic affiliated companies and others assuming occurrence of major earthquake and outbreak of new strain of influenza • Develop and improve BCP for major overseas production bases

Structure to Promote CSR Policies and Activities

Sharp holds semi-annual meetings of the CSR/BRM* Committee to discuss and check policies, measures, and progress for the entire company. These meetings are attended by an Executive Vice President (Chief Officer, General Administration) and all group general managers of both the business groups and the functional groups. This committee serves to complement the business execution functions of Sharp.

In addition, Sharp has established the CSR Promotion Group for planning and promoting CSR policies and measures for the entire Sharp Group.

* BRM: Business risk management

Sharp Group Charter of Corporate Behavior and the Sharp Code of Conduct

To put into practice its Business Philosophy and Business Creed—the foundation of Sharp's CSR—and to fulfill its social responsibilities, Sharp has established the Sharp Group Charter of Corporate Behavior, the principles of corporate behavior of all Sharp Group companies; and the Sharp Code of Conduct, the standards of conduct for all directors and employees. These two documents apply to group companies around the world as the common standards of the Sharp Group.

In addition, the Charter of Corporate Behavior and Code of Conduct are regularly reviewed based on changes in the business environment, including changes in the nature of what society and stakeholders expect of companies, and revisions to existing laws and enactment of new ones. The latest revision of these documents took place in April 2010.

Web Sharp Group Charter of Corporate Behavior, Sharp Code of Conduct

United Nations Global Compact

Sharp became a participant in the United Nations Global Compact in June 2009. Since then, Sharp has set concrete targets for its efforts in support of the 10 principles of the Global Compact in the areas of human rights, labour, the environment, and anti-corruption, and is working to further promote these efforts throughout the Sharp Group.

THE GLOBAL COMPACT
WE SUPPORT

The Global Compact's 10 Principles	See page(s)
Human Rights Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights; and Principle 2: make sure that they are not complicit in human rights abuses.	4–81·91·92·96·101–103
Labour Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining; Principle 4: the elimination of all forms of forced and compulsory labour; Principle 5: the effective abolition of child labour; and Principle 6: the elimination of discrimination in respect of employment and occupation.	4·81·91·92·96–101
Environment Principle 7: Businesses should support a precautionary approach to environmental challenges; Principle 8: undertake initiatives to promote greater environmental responsibility; and Principle 9: encourage the development and diffusion of environmentally friendly technologies.	4·8–16·29–79
Anti-Corruption Principle10: Businesses should work against corruption in all its forms, including extortion and bribery.	4·17·25·26

Creating Integrated CSR and BRM Activities

Sharp believes BRM (business risk management) is indispensable in fulfilling corporate social responsibility because it controls and mitigates the risk of losses and compliance violations, while at the same time helping the company quickly adapt to changing business environments. That is why the company makes it a top priority to conduct integrated CSR and BRM activities.

The CSR/BRM Committee (see page 20) regularly reviews major risks and deliberates on company-wide measures for dealing with them. As well, Sharp's business groups and functional groups identify major risks pertinent to their business and mission, and plan and promote measures to either prevent them or minimize their impact.

Promoting BRM (Business Risk Management)

1) Rules of Business Risk Management

Sharp developed the Rules of Business Risk Management as a basic policy for the company-wide promotion of BRM, and controls business risks based on these rules.

In clarifying potential risks pertinent to Sharp's business activities, Sharp has identified more than 100 risk items that could have a major impact on management. Those items appear in the Rules of Business Risk Management as "specific risks."

To promote application of BRM, Sharp created a Specific Risk Control Manual that organizes in a systematic way methods for minimizing and appropriately dealing with each risk, as well as proactive education and training programs to prevent such risks from actually occurring.

In addition, Sharp established the Rules of Emergency Response, detailing responses if a potential risk does come to pass. Taking prompt action when an emergency situation occurs works to minimize loss and prevent the damage from spreading not only across the company, but also to society at large. These Rules also specify action items to be implemented to ensure prompt and appropriate information disclosure to the broader community, such as stakeholders.

Sharp periodically reviews and revises these Rules and the Manual to reflect changes in society, for example, adding new specific risks and measures to deal with them.

2) Management Methods for Important Risks

From among the specific risks, each business and functional group further selects those important risks which possess greater impact and higher probability of occurrence within their responsible area, and tackles them as priority management risks in each group's risk management activities.

Every six months, all groups formulate and push ahead with concrete measures intended to decrease the level of impact and the probability of occurrence of priority management risks. The results are then examined and validated.

Also, through reports on occurrences of internal risks at company-wide meetings, information on BRM efforts of each group is shared across the entire company and reflected in selecting subsequent priority management risks and developing countermeasures for them.

Sharp is using the PDCA management cycle to promote these efforts, and regards this approach as an on-going operational management system. Sharp is also aiming to further improve and enhance its policy measures to minimize and mitigate risks by firmly anchoring BRM throughout the company.

3) Improving and Expanding BCM and BCP Activities

Sharp considers BCM (business continuity management) to be a priority issue for management. This effort is intended to ensure the safety of employees and their families and expedite an early recovery of important business operations when a major disaster occurs. Sharp is also committed to continuously reviewing and improving BCP (business continuity plans) to cope with natural disasters, such as a large-scale earthquake.

In fiscal 2009, for all production sites in Japan, Sharp re-evaluated and reviewed BCPs assuming the occurrence of a large-scale earthquake and also worked to develop BCPs that assume an outbreak of a new strain of highly virulent influenza. In addition, Sharp set a goal to develop BCPs for the supply chain and conducted a survey of its primary business partners (suppliers) in Japan on the status of their BCP development.

In fiscal 2010, in Japan, Sharp will continue to review BCPs for production sites, and will review existing BCPs and develop new ones for affiliated companies. In addition, Sharp will work to develop and improve BCPs for key overseas bases.

TOPICS

Promoting Measures to Combat New Strains of Influenza

In April 2009, an outbreak occurred of a new strain of influenza—A(H1N1), the so-called "swine flu." Even though it was declared a "low virulence" virus, it nevertheless spread like wildfire around the world, and large numbers of people became infected.

Sharp, based on guidance from WHO (World Health Organization) and governments of the countries where Sharp bases are located, had formulated an Action Plan to Combat New Influenza Strains in anticipation of a potential outbreak of a new strain of avian influenza (H5N1), which was feared would become "highly virulent," and made preparations and introduced a variety of countermeasures in Japan and abroad. However, with the outbreak of this new "low virulence" influenza virus, it was thought that more flexibility was needed in implementing the action plan and various related measures. In addition to establishing scenarios that will implement different measures depending on the level of virulence of the virus, Sharp has now put in place measures to combat the spread of the flu, matched to the situation at each business location and base, such as stronger health and hygiene management, and reinforcing controls on physical access. In addition, for its own unique action plan, Sharp has installed Plasmacluster Ion generators, which use Sharp's proprietary Plasmacluster Ion technology for deactivating harmful airborne substances, at its business locations (approximately 10,000 units in Japan and overseas).

Based on such efforts, no outbreaks of this new strain of influenza have occurred among Sharp employees, and no incidents have occurred which might be feared to have a major impact on business.

Sharp will continue to work to maintain its system of countermeasures and improve preparedness to combat new strains of influenza to be able to rapidly respond to any resurgence of A(H1N1) influenza or to a possible outbreak of new highly virulent strains of influenza.

Case Study Japan

CSR Efforts in Sales and Marketing Areas in Japan

The Domestic Sales and Marketing Group, which is in charge of all sales and marketing activities in Japan, conducts business, with a focus on CSR, based on the basic principles of "customer first" and "compliance first."

To ensure that Sharp employees at sales and service bases all over Japan fulfill their social responsibility in local communities and to create bases even more firmly anchored in local communities, Sharp is working to strengthen its efforts to make contributions to local communities by further raising the level of awareness of CSR among all employees and through sales and service activities.

In addition, Sharp is working to deepen the understanding of its CSR efforts among its business partners, and to build partnerships to promote CSR activities together, through such efforts as providing assistance to dealers seeking certification as Dealer of Excellence in Promoting Energy-Efficient Products (see page 93 for more information).

Structuring a PDCA Cycle for CSR and Building an Organization to Promote It

The CSR Promotion Department, established within the Domestic Sales and Marketing Group, works on the planning and promotion of a broad range of policies and activities on a more pragmatic level, particularly in terms of compliance at sales and service sites. Looking to further boost CSR awareness and strengthen action programs put in place at sales and service bases, Sharp is working to build a PDCA management cycle ("plan, do, check, and act") for CSR by continuously providing training and education, supporting on-site problem solving activities, and monitoring the results.

Further Raising Awareness of CSR Among Sales and Service Employees

1. Holding Morning Meetings to Coordinate CSR Activities

At business locations shared by affiliated sales and service companies, morning meetings are held at the beginning of each week to exchange sales and service information and conduct joint planning and review of CSR efforts that each base is expected to implement as a member of the local community. The leaders of the morning meetings use CSR-related information provided by the Domestic Sales and Marketing Group to improve every employee's knowledge of and insight into CSR.

2. Introduction of an Online Self-Auditing System

Each quarter, sales and service managers assess how well they are complying with laws and in-house rules related to operational activities, as well as the status of management activities with respect to business risks. These results are analyzed quantitatively and qualitatively, and are reflected in new policies and mechanisms to mitigate risks and prevent crises.

3. Personal Environmental Challenge Declaration

All employees of sales and service departments create a personal environmental challenge declaration with reference to a program advocated by the Japanese Ministry of the Environment. In this way, each individual can become aware of his or her own contribution to building a sustainable society and can work to promote the widespread use of environmentally conscious products and participate in environmental social contribution activities.

4. Sales and Service Personnel Who Can Talk About the Environment in Their Own Words

Being involved in sales and marketing of environment-related products, including energy-creating solar cells, energy-saving LCD TVs, major home appliances, and LED lighting products, all domestic sales and marketing divisions are taking the initiative in acquiring Eco Test (Certification Test for Environmental Specialists) certification.

In addition, these divisions have implemented a program of e-learning for all sales and service employees with the goal of acquiring basic knowledge about the environment.

5. Promoting Community-Based Social Contribution Activities (See pages 105 and 106 for more information)

A major CSR activity undertaken by Sharp sales and service bases is to jointly plan and participate in social contribution activities with local communities. These constructive action programs are intended to anchor Sharp sales and service bases more firmly in the community. In fiscal 2009, to engage in pursuits that would be more welcomed by communities, Sharp worked to increase its participation in activities sponsored by local governments and others. Community-based social contribution activities were held approximately 700 times at sales bases throughout Japan, with a total of about 17,400 participants.

Sharp has also been holding environmental education classes for elementary school children around the country in cooperation with the Weathercaster Network (WCN), a nonprofit educational organization of weather forecasters in the Japanese media. Approximately 300 employees from Sharp sales and service bases nationwide serve as ECO Navigators (teachers).

Words from a Staff Member Who Acquired Eco Test Certification

Eriko Motomura
Construction Support Promotion Department
Sharp Amenity Systems Corporation

Recently, environmental issues are a hot topic in the news, and in studying for the certification, my sources of information were TV, which I watch every day, and newspapers. By paying close attention and keeping my eyes and ears open, I was able to get some valuable information. When I'm caught up in work, I tend to forget about the environment, but the green Eco Test certification badge, which I always have on me at the office, makes me aware that "We can start taking eco-friendly action anytime, anywhere."

"If I don't do it, who will?" I try to keep this idea in mind, and I bring my own water bottle, and use the back side of the paper, too.

Case Study Overseas

CSR Efforts at WSEC in China

In April 2008, WSEC* built a system for carrying out CSR activities by formulating a CSR policy containing rules for managing in seven areas. WSEC's CSR policy is based on the Sharp Group Charter of Corporate Behavior and the Sharp Code of Conduct. WSEC conducts CSR activities with a focus on the following four key areas.

1. Occupational Health and Safety

In 2009 WSEC began working towards certification for the OHSAS 18001 international occupational health and safety management standard. After efforts by employees to identify and remove the causes of risk through safety inspections, at the end of December 2009 the company was certified for this standard. WSEC will strive to boost its level of OHSAS management so as to further improve occupational health and safety.

2. Labor, Human Rights

WSEC honors basic human rights and respect for the individual, abides by Chinese labor laws, works to prevent forced labor and child labor, and implements overtime with the consent of employees. The company also strives to tap individual personality and motivation by holding annual employee training divided by management level and job description. And to ensure employees enjoy a pleasant living environment, in 2009 WSEC introduced dormitories with state-of-the-art equipment and amenities.

WSEC will continue to provide employees with a workplace that is pleasant, productive, and conducive to personal growth.

3. Compliance

WSEC strives to prevent illegal business practices such as unfair dealings, misappropriation of funds, and bribes by holding a range of training based on the Sharp Group Compliance Guidebook and Japan's Antimonopoly Act. It has also formulated in-house rules relating to matters such as the prevention and early detection of illegal acts. It also informs business partners, suppliers, and all company departments in writing that under no conditions must they accept monetary gifts, expensive gift items, or rebates.

4. Social Contribution Activities

For a number of years, the Sharp Charity Foundation has been used for social contribution activities that include granting scholarships to outstanding students with limited financial resources and conducting environmental education at elementary schools.

Employees also actively participate in these activities by picking up litter around the factories and in public parks, and donating a day of their salary to the charity or to victims of the Sichuan earthquake. WSEC will continue to contribute to local society in any way it can, in the process raising Sharp's image as a good corporate citizen in the community.

* Wuxi Sharp Electronic Components Co., Ltd., established in 1996 as a manufacturing and sales company for electronic components

Promoting CSR with the Cooperation of Related Divisions

Wan Min
Manager
CSR Promotion Room
WSEC

I have been in charge of promoting CSR activities at WSEC since April 2008. This work is meaningful and highly important. However, the scope of CSR is wide, and fulfilling CSR requires strong cooperation among each related division. In March 2010, I made a business trip to Sharp Corporation's CSR Promotion Group in Japan. There, I was able to gain a deeper understanding of Sharp's CSR policy and of the specific actions Sharp's bases in China must take. Through closer collaboration with Sharp Corporation, I will continue doing my part at WSEC to expand and improve our CSR efforts and raise our corporate image.

Compliance

In strengthening its global business expansion, Sharp has been developing and improving its compliance system for Sharp Corporation as well as affiliated companies in Japan and overseas subsidiaries, and has been working to foster awareness of compliance on a global basis and promote the spread of this awareness throughout the Sharp Group.

Objectives for Fiscal 2009	Achievements for Fiscal 2009	Objectives for Fiscal 2010
• Ongoing improvement of compliance promotion system, policies, and measures	• Implemented compliance training based on Sharp Group Compliance Guidebook and training on antitrust law through e-learning for all employees in Japan • Appointed legal affairs staff members in four overseas regions, and implemented development and training on compliance systems in all regions • Implemented internal audits and offered guidance on complying with antitrust laws to all business groups in Japan	• Ongoing implementation of compliance promotion measures • Compliance training (job-level-specific training, e-learning, etc.) for all employees in Japan • Ongoing compliance training at all overseas bases • Ongoing internal audits and guidance on complying with antitrust laws • Create anti-bribery guidebook to preclude corrupt practices involving foreign public officials
• Expand and improve methods to promote information security at overseas bases	• Established autonomous information security management cycles at overseas bases	• Revamp content of self-checks for further strengthening confidentiality and information security, and implement them on a continuing basis in Japan and overseas
• Ongoing implementation of policies to promote protection of personal information	• Implemented internal audits related to protecting personal information • Implemented education and awareness policies related to protecting personal information for employees and others	• Ongoing implementation of policies to promote protection of personal information • Implement internal audits related to protecting personal information • Ongoing implementation of education and awareness policies related to protecting personal information for employees and others

Basic Policy Regarding Compliance

Sharp defines compliance as “observing company regulations and social codes of conduct, including laws and corporate ethics,” and regards it as the foundation of fulfilling its CSR (corporate social responsibility). Accordingly, Sharp is pursuing on a global basis the ongoing development and strengthening of systems and policy measures to promote management practices where compliance is given first priority.

Strengthening the System to Promote Compliance

Sharp is continuously reviewing and strengthening its compliance promotion system to grow its business in an appropriate manner in accordance with the law and social norms.

In fiscal 2009, the Compliance Committee met every three months to plan compliance measures and to confirm the implementation of these measures for the entire Sharp Group from a global perspective.

While Sharp already had a legal affairs chief and staff members at each Sharp Corporation business group and affiliated company in Japan, in fiscal 2009, Sharp finished the process of appointing legal affairs staff members at the four overseas regions (US, Europe, China, Asia/Africa), as part of efforts to strengthen the compliance system internationally.

Raising Legal and Ethical Awareness to Ensure Compliance

To foster legal and ethical awareness and ensure compliance with the law and social norms, Sharp Corporation and affiliated companies hold educational programs in Japan relating to compliance, including job-level-specific training for directors, senior executives, managers, mid-career employees and new employees, training for employees transferred overseas, and specialized training in specific fields.

In fiscal 2009, Sharp worked to foster awareness of compliance on a global basis and ensure that this awareness permeates the entire Sharp Group, by providing compliance training based on the Sharp Group Compliance Guidebook to all employees in Japan, and gradually implementing training programs at all overseas bases. In addition, Sharp’s Legal Affairs Division at its Head Office worked to further strengthen compliance through ongoing internal audits of the status of compliance promotion, targeting all business groups and affiliated companies in Japan.

In fiscal 2010, Sharp plans to work on the ongoing implementation of compliance training for all employees in Japan (job-level-specific training, e-learning, etc.) and at all overseas bases.

Compliance with Antitrust Laws

Sharp has made antitrust laws a priority area and is working constantly to ensure compliance. In addition to providing training for all employees in Japan, revising relevant manuals, and establishing an "antitrust law hotline" as a dedicated contact point (established inside and outside the company) for reporting problems, in fiscal 2009, Sharp implemented an online education program (Japan), conducted training at all overseas bases, introduced a checklist of specific items to be followed to comply with antitrust laws in Japan (to prevent the formation of cartels) for its internal control self-check system, and Sharp's Legal Affairs Division at the Head Office also began internal audits of the actions of all Sharp Corporation business groups.

In fiscal 2010, Sharp plans to provide guidance and implement monitoring related to compliance with antitrust laws to affiliated companies in Japan, and develop and introduce the antitrust law checklist for the internal control self-check system to overseas bases.

Consultation Hotline for Compliance Issues

Sharp Corporation and its domestic affiliated companies have a hotline (contact points inside and outside the company) for reporting problems and providing counseling services related to compliance issues. The hotline is open to employees, temporary staff, and employees of business partners, in line with the spirit of Japan's Whistleblower Protection Act.

The Sharp Code of Conduct clearly stipulates that the privacy of individuals who report compliance violations or seek consultation will be strictly protected and that there will be no unfavorable treatment or penalties against those persons.

Preventing Corruption in All Forms and Dealing Properly with Donations

The Sharp Group Charter of Corporate Behavior and the Sharp Code of Conduct contain provisions that strictly prohibit any form of corrupt behavior such as bribery or extortion of money or gifts, and require that donations be handled in a proper manner.

In Japan, Sharp prevents illegal payoffs and improper expenditures through a system of compulsory reviews by the Monetary Contribution Examination Committee on CSR to assess the propriety of monetary disbursements such as donations and contributions made by Sharp Corporation and its affiliated companies.

In addition, in fiscal 2010, Sharp plans to prepare a guidebook aimed at preventing bribery of foreign public officials and will make every effort to publicize the contents on a global basis.

Preventing Insider Trading

Sharp has established regulations restricting insider trading, and has established controls on material facts ("insider tips") and instituted restrictions on the buying and selling of stocks and other securities. Sharp has also implemented in-house training related to insider trading such as an educational campaign targeting Sharp Group employees in Japan on the corporate intranet and other methods, with the aim of preventing insider trading by Sharp Group directors or employees.

In addition, given the importance of disclosure, when "material facts specified in the Financial Instruments and Exchange Act" and/or "important company information that should be disclosed in a timely manner as stipulated by securities exchanges" is generated, Sharp will do its utmost to disclose and publicize them promptly. Further, regarding interviews by outside media, Sharp will deal with them in a positive manner, while fully honoring the spirit of disclosure and remaining attentive so as not to violate insider-trading regulations.

In fiscal 2009, bearing in mind socioeconomic conditions in which problems with insider trading increased, Sharp tightened controls on material facts, as well as strengthened its efforts to the greatest extent possible to prevent insider trading, including instituting e-learning targeting all Sharp Group employees in Japan.

Close-Up

Putting Compliance Management into Practice on a Global Basis with the Goal of Becoming a Company Even More Trusted by Society

Sharp is working to strengthen its system, and expand and improve measures to put compliance management into practice on a global basis.

In 2009, to strengthen its system of compliance overseas, Sharp appointed those responsible for Sharp business in the four major regions around the world (US, Europe, China, Asia/Africa) as Compliance Officers (CO), and appointed a legal affairs staff member from Sharp's Legal Affairs Division at the Head Office to each region. To strengthen the compliance function in the region, each legal affairs staff member, as staff of each regional CO, works in cooperation with the legal affairs department of each base in the region, and also holds regular meetings with Sharp's Legal Affairs Division at the Head Office.

To expand and improve compliance measures, beginning in fiscal 2009, Sharp made necessary changes to the Sharp Group Compliance Guidebook (produced by Sharp Corporation in Japan) in accordance with the laws of each region and country and within a scope that does not violate the spirit of the guidebook, and began to make the contents of the guidebook known to executives and employees at each overseas base. Sharp is also gradually implementing training in antitrust laws at all overseas bases.

Sharp Corporation's Compliance Committee confirms the status of these efforts to promote compliance in all overseas regions, and works to ensure steady progress.

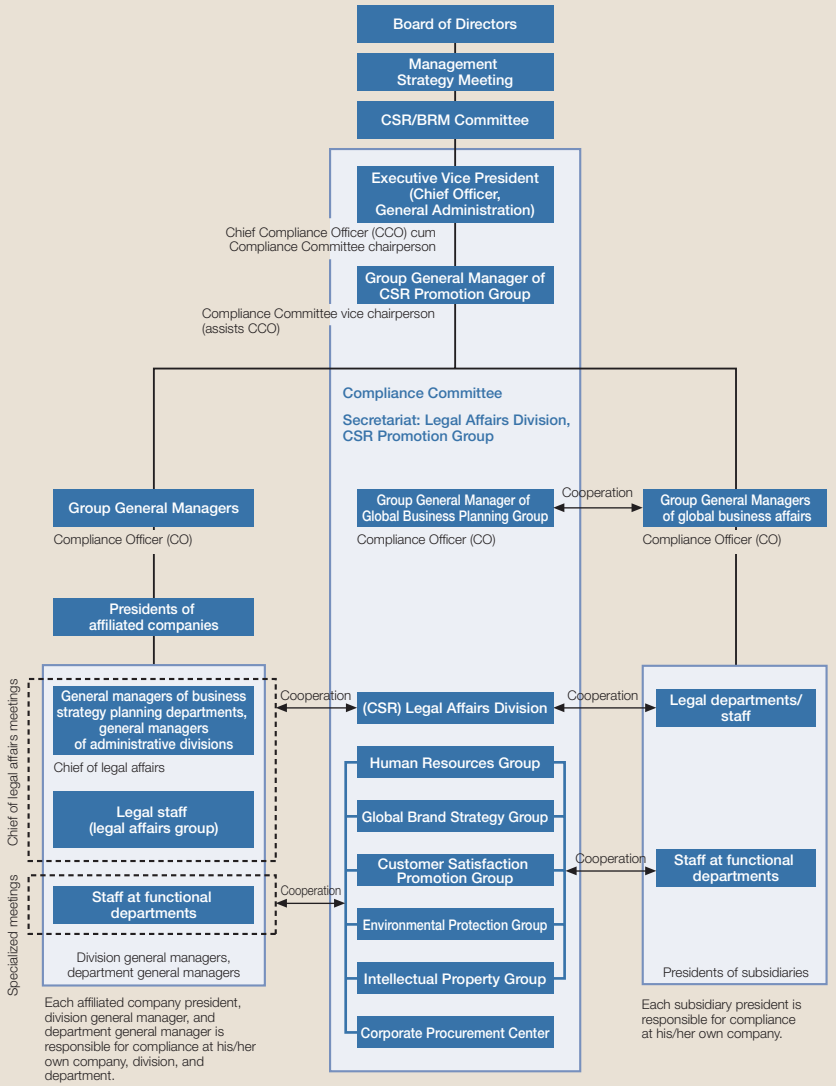
In fiscal 2010, Sharp will continue to disseminate the contents of the Compliance Guidebook and conduct training in antitrust laws at all overseas bases, and also plans to develop and introduce a checklist of specific items related to compliance with antitrust laws (anti-cartel formation) for its internal control self-check system.

Further, in conjunction with even wider business expansion globally, including the "local production for local consumption" strategy (implementing planning, development, procurement, manufacturing, sales, and service rooted in the local region), Sharp will further expand and improve its initiatives to comply with various laws and regulations so that its business activities are carried out appropriately, in line with regulations applicable globally or unique to specific regions.

In fiscal 2010, Sharp is also planning to produce guidebooks on preventing bribery of overseas public officials and ensuring compliance with antitrust laws in business tie-ups with other companies in the same industry. Sharp will take steps to make the content of these guidebooks as widely known as possible, and will also provide advice from the legal divisions on these issues.

In the future, as mentioned above, Sharp will continuously promote efforts to put compliance management into practice on a global basis.

Compliance System



Basic Policy on Information Security

Sharp Corporation has established a basic policy on information security as outlined below and is taking initiatives to ensure information security by promoting the safe and secure use of information under its control as well as its information systems.

1. Sharp will construct mechanisms to ensure that problems such as unauthorized disclosure ("leaks"), malicious alteration, or loss of information under its control does not occur, and will manage its information assets in accordance with the importance of the information. Specially, Sharp will exercise strict control over the personal information of customers and over important information disclosed by business partners and others.
2. In order for Sharp, together with its directors and employees, to ensure the security of information, Sharp will conduct education and training regarding information security for all directors and employees on a regular basis.
3. Sharp will comply with all laws and contractual obligations relating to information security.
4. Sharp will promote the construction of mechanisms to ensure the safe and proper use, and the continual management of information assets under its control. In addition, Sharp will aim to become a leading company in information security by reviewing these mechanisms on a regular basis and working constantly to improve them.

Strengthening Systems to Raise the Level of Information Security and Expanding Self-Checks and Evaluation

In line with the aforementioned Basic Policy on Information Security, Sharp has established in-house regulations and is carrying out various measures to protect the personal information of stakeholders, including customers, as well as trade secrets.

Sharp holds semi-annual meetings of the IT Infrastructure/Information Security Committee, which brings together IT/security managers from throughout the Sharp Group in Japan. This committee ensures the thoroughness of the Basic Policy on Information Security and checks the implementation status of various action plans. In addition, Sharp provides training through e-learning courses once a year for all Sharp Group employees in Japan.

Sharp has established Regional Information Security Committees in four regions around the world (North America, Europe, China, and Asia), and has initiated activities to further strengthen the system for promoting security and improving the level of security.

In fiscal 2005, Sharp Corporation introduced and has since been expanding a system for self-checks and evaluation in Japan and overseas to effectively implement security measures at each level of the organization and to improve the level of security throughout the entire Sharp Group.

In fiscal 2009, Sharp established a framework to enable implementation of autonomous information security management cycles in each region when carrying out self-checks.

In fiscal 2010, Sharp plans to review the self-check items and strengthen the measures for dealing with those items.

Protecting Personal Information

Sharp Corporation and its domestic affiliates have established a basic policy for protection of personal information, and are promoting measures related to the protection of personal information by constructing an in-house management system.

Specifically, each year, Sharp implements measures such as correcting problems uncovered during internal audits and conducting e-learning training for all employees. Sharp is also taking proactive steps to improve this system, and educate employees and make them aware of the importance of protecting personal information.

As a result of efforts to promote these measures, Sharp Corporation and the affiliated companies in Japan listed below have acquired Privacy Mark* certification.

As befits a company that has acquired certification, Sharp will constantly strive to improve and strengthen its system for protection of personal information in the future.

* A certification given to businesses that comply with the Japanese Industrial Standards (JIS) for personal information protection.

■ Privacy Mark Certification

Sharp Corporation
Sharp Document Systems Corporation
Sharp System Products Co., Ltd.
Sharp Finance Corporation
Sharp Engineering Corporation
Sharp Amenity Systems Corporation
Sharp Electronics Marketing Corporation

Sharp Corporation's Privacy Mark

■ E-Learning Screens

Intellectual Property Strategy

Sharp regards its strategy on intellectual property as one of its most important management measures, and is promoting it together with its business strategy and R&D strategy. Sharp is aggressively pursuing the acquisition of patents to ensure the superiority of its one-of-a-kind products and devices, thereby working to strengthen the foundation of its business.

Regarding patent acquisition, Sharp is clarifying the business areas that form the core of each of its businesses, and is staffing these core business fields with engineers well versed in patent-related matters. Sharp is thus able to file strategic patent applications tightly focused on the actual situation. In addition, Sharp is also acquiring useful patents invented in cooperation with other companies or derived from the activities of alliances, such as industry-university cooperation.

As of the end of March 2010, Sharp's patent holdings consisted of 17,501 Japanese patents and 22,568 foreign patents. Sharp is using this patent portfolio to strengthen its strategic businesses, and is aggressively analyzing the products of competitors with the aim of finding further applications. In addition, Sharp is filing applications and registering rights for designs and trademarks globally under its brand strategy.

Date	End of March 2008	End of March 2009	End of March 2010
Japanese patents	17,957	18,449	17,501
Foreign patents	22,649	22,052	22,568

Intellectual Property Management System

In developing a unified intellectual property strategy, Sharp's Intellectual Property Group based at the Head Office is responsible for overall strategic management, and is involved in a variety of activities related to intellectual property, working in mutual cooperation with patent-related departments located within the R&D groups and each production business group and base.

Protecting Intellectual Property

Sharp's business and R&D strategies are interlinked with its intellectual property assets, which are used to the fullest possible advantage. At the same time, Sharp is firmly committed to protecting its own intellectual property rights, while respecting the intellectual property rights of others. Even though Sharp regards discussion as the basis for resolving cases of infringement, it is the company's policy to seek judgment from a third party such as the courts when its intellectual property rights are not respected.

By strengthening in-house rules, Sharp is also working to bolster protection for trade secrets and to prevent unauthorized disclosure of production technologies and manufacturing know-how, particularly those that are unique or critically important to Sharp.

Further, counterfeit Sharp-brand products have had a growing impact in overseas markets in recent years, and Sharp is taking measures to counter these imitations through cooperation with industry groups and with regulatory authorities taking enforcement actions.

With regard to respect for the intellectual property rights of others, Sharp is responding by holding company-wide conferences for persons involved with patents and by training of engineers.

Incentives for Employee Inventions

To comply with the intent of Article 35 of Japan's Patent Law, Sharp Corporation consulted with employees before stipulating its in-house rules, called the "Regulations for Employee Inventions." The regulations include detailed standards on rewarding an employee who comes up with an invention during work for the company, when and after the employee reports the invention and hands over the rights to the invention to the company.

Sharp also reviewed and revised compensation systems in subsidiaries and affiliated companies in Japan according to the intent of the Patent Law, and has come up with programs that improve incentives for employees who devise inventions. Thus, Sharp has built and is promoting systems that compensate employees fairly and appropriately, depending on the contribution their invention makes to the company, as well as the contribution that each employee involved made to the invention.

Sharp and Samsung Reach Settlement in LCD Patent Infringement Disputes

On February 5, 2010, Sharp Corporation and Samsung Electronics Co. Ltd. signed a settlement agreement to end ongoing patent infringement disputes over LCD panels and modules.

Since 2007, each company had brought lawsuits against the other in the US, Japan, Korea, and Europe, alleging infringement of patents for LCD panels and modules. Based on this settlement, all lawsuits were promptly withdrawn, bringing an end to all patent infringement litigation between the two companies.

This settlement allows the two companies to mutually utilize the disputed patents relating to LCD panels and modules, owned worldwide by each company.

Aiming to Contribute to the Environment

In accordance with environmental conservation guidelines established in line with Sharp's Basic Environmental Philosophy, the Sharp Group Charter of Corporate Behavior, and the Sharp Code of Conduct, Sharp is pursuing environmental consciousness across all of its business activities.
In fiscal 2010, Sharp will be further strengthening its efforts to contribute to the environment based on its corporate vision of becoming an "Eco-Positive Company."

Basic Environmental Philosophy

Creating an Environmentally Conscious Company with Sincerity and Creativity

The Sharp Group Charter of Corporate Behavior

Contribution to Conservation of the Global Environment

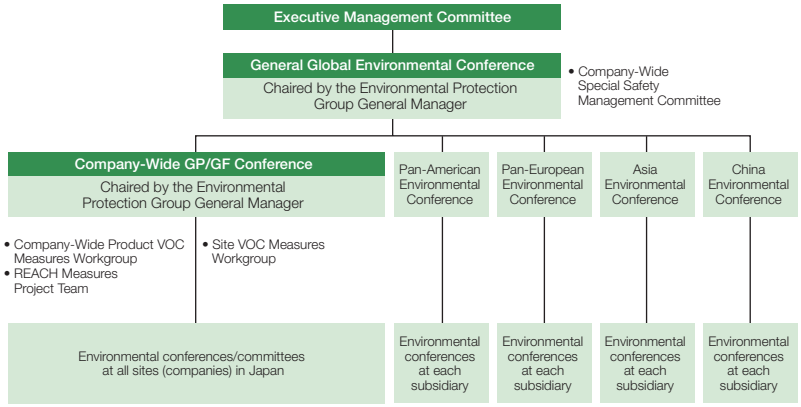
The Sharp Group will make efforts to further contribute to global environmental conservation by strengthening our development of proprietary technologies for protecting the global environment, and by carrying out business activities in an environmentally conscious manner.

The Sharp Code of Conduct

Contribution to Conservation of the Global Environment

1. To Conserve the Environment
2. To Develop Environmentally Conscious Products and Services, and Conduct Our Business Operations in an Environmentally Conscious Manner

Sharp Group's Environmental Sustainability Management



Web Sharp Group Charter of Corporate Behavior, Sharp Code of Conduct

Corporate Vision

Eco-Positive Company

Strengthening Environmental Sustainability Management to Achieve the Corporate Vision

Sharp set up the Environmental Protection Group to plan and promote overall company strategy for protecting the global environment. This Group forms the core of Sharp's system to promote environmental conservation, and facilitates the deployment of environmental sustainability management on a global basis.

Specifically, the General Manager of the Environmental Protection Group serves as the chair of the semiannual General Global Environmental Conference, where important matters such as environmental guidelines, strategies, and objectives are discussed and set for each division and for the Sharp Group as a whole. In addition, Sharp also hosts Company-Wide GP (Green Product) and GF (Green Factory) Conferences to discuss environmental measures concerning products and factories, as well as holding regional environmental conferences overseas to discuss environmental policies and measures for each region and each site. Sharp is also promoting various environmental measures across the entire company, while working in close cooperation with members of environmental departments at each site in Japan and overseas through various committees and project activities.

For fiscal 2010, with the aim of further strengthening environmental sustainability management to achieve its corporate vision of becoming an Eco-Positive Company, Sharp has established a series of "Eco-Positive Strategic Measures" as priority objectives under the group performance evaluation system, based on Sharp's original strategic management system (eS-SEM*). All divisions at Sharp Corporation are introducing these measures and taking proactive steps to achieve them. In the future, Sharp also plans to introduce these indicators at subsidiaries and affiliated companies in Japan and abroad, and with the objective of making its corporate vision a reality, develop initiatives for contributing to the environment by the entire Sharp Group.

* eS-SEM (e-Sharp Strategic Enterprise Management): Sharp's original strategic management system based on the balanced scorecard concept.

Environmental Objectives and Achievements

Sharp aims to achieve its corporate vision of becoming an Eco-Positive Company, and not only takes the environment into account in all its business activities, but also pursues what will create positive outcomes for the environment. All divisions set environment-related objectives, but this section reports on the objectives overseen by the Environmental Protection Group, which is responsible for company-wide environmental strategy, and on their results.

Fiscal 2009 Achievement Summary

Fiscal 2009 was the first year of Sharp's Eco-Positive environmental strategy, and in making the significant leap forward to the next stage, Sharp worked to achieve a number of challenging objectives. In addition to results rooted in the current Super Green Strategy, new accomplishments continue to emerge.

In particular, regarding goals for greenhouse gas emissions and waste discharges, Sharp took up the challenge to reduce emissions below the level achieved in fiscal 2007 at the 10 factories of Sharp Corporation that had achieved Super Green Factory status by fiscal 2007. As a result, greenhouse gas emissions were reduced by 22% and waste by 44% of the level of fiscal 2007

These accomplishments have affected the entire Sharp Group, and despite an increase in emissions resulting from the start of operations of the LCD plant at GREEN FRONT SAKAI (October 2009), the amount of greenhouse gas emissions for the Group as a whole was limited to a slight increase of 1% compared to the previous fiscal year, and waste, etc. discharges were reduced by 14% over the same period.

For a look at the main objectives and achievements, please refer to the table below and to the pages indicated on the right side of that table.

Self Evaluation ◎ : Achieved more than targeted ○ : Achieved as targeted △ : Achieved more than 80% of initial target × : Achieved less than 80% of initial target

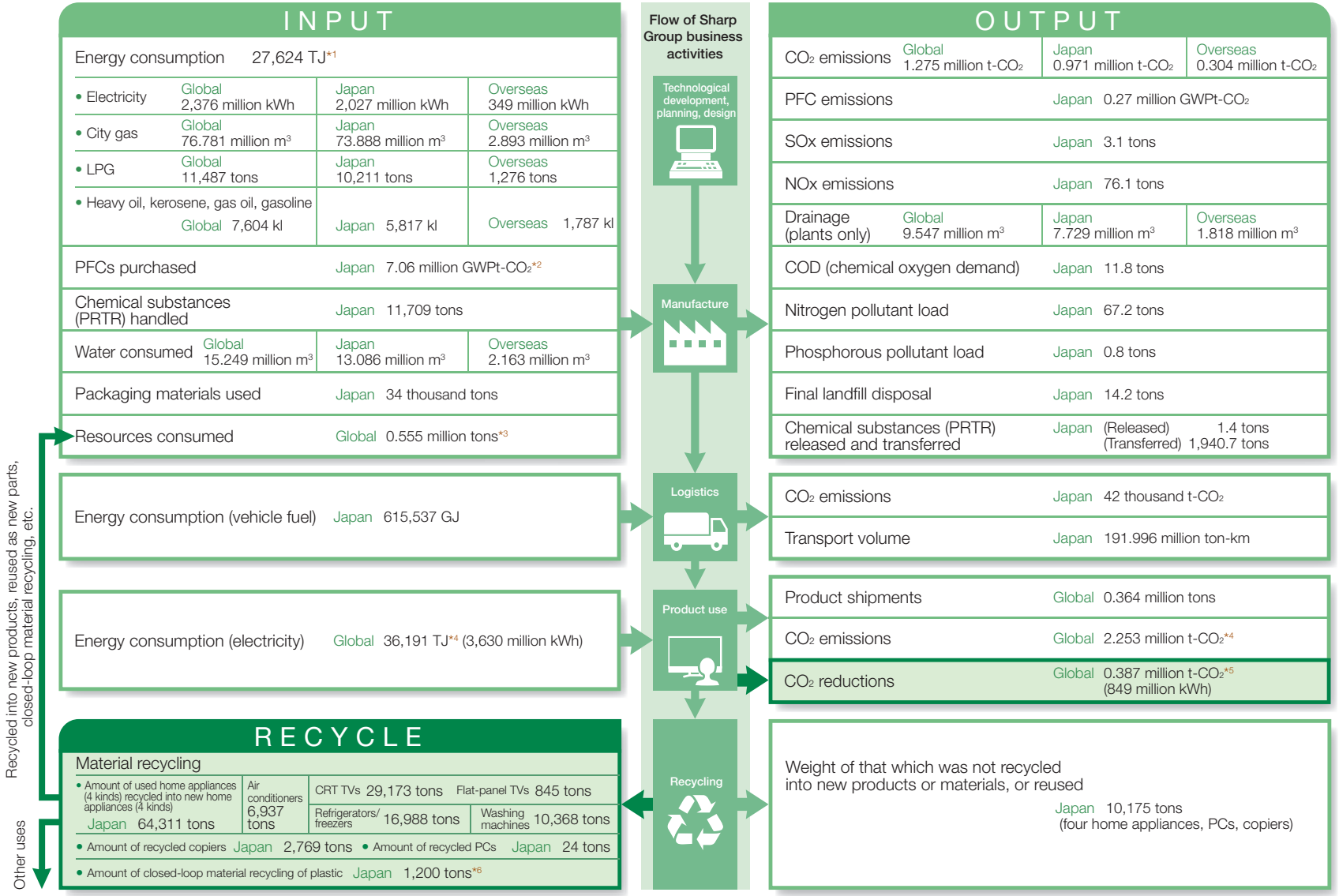
Stages	Themes	Major Objectives	Fiscal 2009 Objectives	Fiscal 2009 Achievements	Self Evaluation	Fiscal 2010 Objectives	Fiscal 2012 Objectives	See page(s)
Technologies	Develop 3R technologies	Expand closed-loop plastic material recycling	Use 1,200 tons of recycled plastic in new products	Used 1,200 tons	○	Use 1,300 tons	Use 1,500 tons	35
		Establish LCD TV recycling technology	Optimize LCD TV recycling line	Introduced recycling line for LCD TVs	○	–	–	51
		Develop LCD panel recycling technology	–	–	–	Develop recycling technology for the glass edge material discarded during the LCD panel production process	Develop waste LCD panel recycling technology	36
Products	Improve environmental performance of products and devices	Increase Super Green Products' share of net sales in Japan	60% or more	63%	◎	60% or more	60% or more	41・42
		Increase Green Seal Products' share of net sales	90% or more	87%	△	90% or more	90% or more	45 – 49
		Increase Super Green Devices' share of net sales	20% or more	24%	◎	20% or more	20% or more	44・45
		Increase Green Devices' share of net sales	85% or more	90%	◎	90% or more	95% or more	47
	Recycle used products	Enhance and improve recycling system	Increase efficiency of flat-panel TV recycling line	Reduced flat-panel TV recycling time to half	○	Increase recycling efficiency to process growing number of CRT TVs collected	Implement high-value-added recycling of LCD TV panel glass	51・52

Self Evaluation ◎ : Achieved more than targeted ○ : Achieved as targeted △ : Achieved more than 80% of initial target × : Achieved less than 80% of initial target

Stages	Themes	Major Objectives	Fiscal 2009 Objectives	Fiscal 2009 Achievements	Self Evaluation	Fiscal 2010 Objectives	Fiscal 2012 Objectives	See page(s)
Operations	Enhance and improve environmental management system	Build Integrated Management System (IMS)	5 overseas plants in total	5 overseas plants in total	○	–	–	54	56
		Restructure Sharp Environmental Management System (S-EMS)	–	–	–	Re-evaluate S-EMS and compile proposed revisions	Construct revised S-EMS	
		Restructure framework to promote environmental sustainability management system at offices in Japan	–	–	–	Set up supervisory sites in each region	Prepare for transition to management on an individual company basis (set up regional supervisory sites for each company)	
		Promote environmental e-learning	Hold step 1 (basic course) at offices in Japan and at plants and offices overseas	Held step 1 (basic course)	○	Hold step 2 (advanced course)	Hold step 3 (advanced course)	
	Improve environmental performance of plants and offices	Certify more plants as Green Factories (GF) and Super Green Factories (SGF)	10 Sharp Corporation plants: 2 plants equivalent to SGF II grade A or higher	10 plants equivalent to SGF II grade A or higher based on self evaluation	○	2 plants SGF II grade A or higher based on new evaluation criteria	All plants SGF II grade A or higher	57	60
			7 Japanese plants (subsidiaries/affiliates): introduce SGF II at 2 SGF, 3 SGF in total	Introduced SGF II at 2 SGF, 3 SGF in total	○	Implement SGF II at 3 SGF, 5 SGF in total	All plants SGF II grade B or higher	
			21 overseas plants (subsidiaries/affiliates): introduce SGF II at 9 SGF, 11 SGF in total	Introduced SGF II at 9 SGF, 11 SGF in total	○	Implement SGF II at 11 SGF, 16 SGF in total	All plants SGF II grade B or higher	
		Hold Eco Best Practice Forums	Hold forums in Europe, Americas, and China	Held forums in Europe, Americas, China, and Asia	◎	Hold forums at least once a year in all regions	Hold forums at least twice a year in all regions	58
		Certify more offices as Green Offices	Japan: Certify 43 out of the total 54 offices Overseas: Certify 4 (one each in Europe, Americas, China, and Asia) out of the total 20 offices	Japan: Certified all 54 offices Overseas: Certified 13 (3 Europe, 3 Americas, 1 China, and 6 Asia) out of the total 20 offices	◎	Strengthen certification criteria in Japan and overseas Japan: Ongoing certification of all 54 offices Overseas: Certify 8 (two each in Europe, Americas, China, and Asia)	Japan: Ongoing certification of all 54 offices Overseas: Certify all 20 offices	61	62
	Curb greenhouse gas emissions	Reduce CO_2 emissions	10 Sharp Corporation plants: Reduce to below fiscal 2007 levels	Reduced by 22% from fiscal 2007 levels	◎	Reduce to below fiscal 2007 levels (every fiscal year), reduce by 3% compared to BAU (every fiscal year)		63	66
		Reduce CO_2 emissions (per adjusted production unit)	10 Sharp Corporation plants: Reduce by 35% from fiscal 1990 levels	Reduced by 43% from fiscal 1990 levels	◎	Sharp Corporation plants: Reduce by 35% from fiscal 1990 levels	Reduce by 35% from fiscal 1990 levels (average for fiscal 2008 to 2012)	
		Reduce CO_2 emissions (per production unit)	Overseas plants (subsidiaries/affiliates): Reduce by 2% from previous fiscal year	Increased by 35% from previous fiscal year	×	Reduce by 2% from previous fiscal year (every fiscal year)		
	Reduce and recycle waste	Reduce amount of waste discharged	10 Sharp Corporation plants: Redue to below fiscal 2007 levels	Reduced by 44% from fiscal 2007 levels	◎	Reduce to below fiscal 2007 levels (every fiscal year), reduce by 6% compared to BAU (every fiscal year)		67	69
		Reduce amount of waste, etc. discharged (per production unit)	Overseas plants (subsidiaries/affiliates): Reduce by 2% from previous fiscal year	Increased by 19% from previous fiscal year	×	Reduce by 2% from previous fiscal year (every fiscal year)		
	Reduce risk from harmful chemicals	Reinforce management of chemical substances	Formulate new chemical management guidelines and ensure that they are firmly established at plants in Japan	Reviewed new chemical management guidelines (introduced concept of emission management index)	△	Formulate new chemical management guidelines (emission management index) and ensure that they are firmly established	Control emissions using new chemical management guidelines (emission management index)	71	72
	Reduce distribution-related CO_2 emissions	Reduce CO_2 emissions per shipping volume	Reduce by 1% from previous fiscal year by the Sharp Group in Japan	±0% from previous fiscal year	×	Between fiscal 2007 and fiscal 2010, reduce by average 1% each year against fiscal 2006	Reduce by 1% from previous fiscal year (every fiscal year)	73	74

Mass Balance

Sharp uses numerical values to accurately assess the relationship between its business activities and the environment, and uses them to promote environmental sustainability management. By making use of these current values at all stages of business activities to create proposals for policy measures and to analyze and evaluate the results, Sharp is aiming to effectively reduce the impact it has on the environment.



*1 TJ (terajoule) = 10^{12} Joules
*2 GWP (global warming potential) is a measure of how much a given amount of greenhouse gas will contribute to global warming, expressed relative to an equivalent mass of CO_2.
*3 Total weight of products in the 12 major categories sold in fiscal 2009 (estimate), plus waste, etc. discharged from production sites.
*4 Estimate of annual energy used and amount of CO_2 emitted by products in the 11 major categories sold in fiscal 2009. Calculation based on each product's annual energy consumption rate. The calculation method has been partially revised.
*5 Amount of electricity generated (kWh) annually by Sharp solar cells shipped in fiscal 2009, plus CO_2 emissions reduction (t-CO_2).
*6 For details, see page 35.

Environmental Accounting

Sharp introduced environmental accounting in fiscal 1999 to provide a quantitative assessment of the costs and benefits of its environmental conservation activities, and has applied the results to environmental sustainability management. Beginning in fiscal 2005, Sharp adopted a calculation format that follows the Environmental Accounting Guidelines published by the Japanese Ministry of the Environment.

Environmental Conservation Costs

Sharp's investment in plant and equipment at its existing production facilities have remained flat, while environmental conservation investment increased by 21% over the previous fiscal year, reflecting the start of operations of Sharp Display Products Corporation in October. Overall, environmental conservation investment totaled approximately 4.3 billion yen. Environmental conservation expenditures were approximately 24.5 billion yen, an increase of 21% compared to the previous fiscal year.

Economic Benefits

Actual benefit was approximately 6.4 billion yen, resulting from energy-saving effects and expanded recycling of used toner cartridges. Estimated benefit was approximately 128.2 billion yen, due to the installation of PFC*1 abatement systems at Sharp Display Products Corporation and growth in Sharp's solar power generation business expansion, which led to steady increases in the amount of electricity generated.

*1 A general term for perfluorocarbon gases, which are greenhouse gases.

Explanation of Terminology

Environmental Conservation Costs
Overhead costs, personnel expenses, and investment associated with environmental conservation activities, in addition to attendant depreciation.

Economic Benefits
Contributions to society and to the company, which result from environmental conservation activities, expressed in monetary units.

Actual benefit: Economic effects that can be assessed directly in monetary terms, such as cost savings from energy-saving efforts and use of recycled water, as well as profits from the sale of valuable resources.

Estimated benefit: Sharp Corporation uses the following terms to convert the economic effects of reduced greenhouse gas emissions and electricity savings from the use of solar power generation and energy-saving products into equivalent monetary amounts.
(1) Reduced greenhouse gas emissions converted into equivalent monetary amounts: 1,450 yen/t-CO_2.
(2) Electricity savings converted into equivalent monetary amounts: Unit cost of electricity: 21 yen/kWh.

Sites Covered

Sharp Corporation plants (Tochigi, Yao, Hiroshima, Nara, Katsuragi, Fukuyama, Mie, Tenri, Mihara, Kameyama and Toyama) and offices (Tanabe and the Head Office), Advanced Materials & Energy Engineering Laboratories (Kashiwa), Sharp Manufacturing Systems Corporation, Sharp Niigata Electronics Corporation, Sharp Yonago Corporation, Sharp Display Products Corporation, and Sharp Mie Corporation.

Period Covered

April 1, 2009 to March 31, 2010

Referenced Guidelines

Environmental Accounting Guidelines 2005 published by the Ministry of the Environment, Japan

Classification of Environmental Conservation Activities ( ): Category based on Environmental Accounting Guidelines, Ministry of the Environment		Description of Major Activities	Environmental Conservation Costs (Unit: ¥ million) Investment	Expenses	Economic Benefits (Unit: ¥ million) Actual Benefit	Estimated Benefit	Environmental Conservation Effects Tangible Effects		Estimated Benefit	See page(s)
Environmental Sustainability Management (management activities)		• Operation of environmental management system • Promote environmental sustainability management • Environmental education	59 (60)	1,641 (2,014)	–	–	Promote environmental sustainability management			55
							Number of employees with environmental education	Master	260	–
								Expert	1,007	–
								General	5,770	–
Planning and Design (R&D)		• R&D on solar power generation systems • Promote closed-loop recycling of plastic materials • R&D on basic environmental technologies • R&D on biopaint	709 (124)	4,722 (2,281)	–	123,846 (54,136)	Supply environmentally conscious products (Unit: ¥ million)			7 I 11 • 34 I 50
							Green Seal products' share of net sales		87%	–
							Super Green products' share of net sales		63%	–
							Total amount of electricity generated by solar power generation systems		2,755 GWh	57,855
							CO_2 emissions reduced by solar power generation systems		1.23 million t-CO_2	1,784
							Electric power saved from energy-saving products*2		2,976 GWh	62,496
							CO_2 emissions reduced by energy-saving products*2		1.18 million t-CO_2	1,711
Manufacturing	Reduce greenhouse gas emissions (global environmental conservation)	• Introduce PFC abatement systems • Install solar power generation systems • Introduce energy-saving equipment	2,800 (910)	2,481 (2,494)	2,049 (1,706)	4,305 (1,736)	Greenhouse gas emissions reduced by controlling electricity and fuel consumption (Unit: ¥ million)			57 I 72
							CO_2 emissions reduced		52 thousand t-CO_2	75
							PFC emissions reduced		2,917 million GWPt-CO_2*3	4,230
	Minimize and recycle waste (recycle resources)	• Reduce waste discharge and recycle waste into valuable resources • Recycle water	8 (15)	10,341 (7,725)	1,831 (2,139)	–	Waste recycled or sent for appropriate disposal			
							Waste recycled		156 thousand tons	–
							Recycled and reused water		16,436 km^3	–
	Prevent pollution (prevent pollution)	• Install scrubbers • Introduce exhaust gas treatment systems	697 (2,346)	5,144 (5,688)	–	–	Observe environmental laws and regulations Prevent air/water pollution and noise/vibration Promote risk management Chemical substances properly managed and their discharge reduced Reduce risk of soil contamination			
Recycling/ Logistics (upstream/ downstream)		• Promote collection, recycling, and proper disposal of used products	0 (91)	24 (21)	2,488 (1,615)	–	Collection, recycling, and proper disposal of used products			51 I 53 • 73 I 74
							Used PCs recycled		24 tons	–
							Used copiers recycled		2,769 tons	–
							Used home appliances (4 categories) recycled		64,311 tons	–
							Environmental burden during distribution reduced			
							Railway/ship cargo transport (container transport)		25,027 containers	–
							Number of low-pollution vehicles introduced		97.6%	–
Social Responsibility		• Expand social contribution activities	–	132 (53)	–	–	Environmental social contributions			104 I 109
							Number of employees who attended SGC activities		Total 30,345	–
							Number of schools where environmental education was provided		Total 600	–
Total			4,273 (3,546)	24,485 (20,276)	6,368 (5,460)	128,151 (55,872)				

Note: Figures in parentheses below entries represent actual values from the previous fiscal year.

*2 Previously quantified by calculating the differences in annual power consumption between models introduced in the previous year and models introduced in the current year. Beginning with fiscal 2009, will be quantified by calculating the amount that the energy-saving products of Sharp's Corporate Vision (page 7) contribute to reducing electricity consumption.

*3 GWP (global warming potential) is a measure of how much a given amount of greenhouse gas will contribute to global warming, expressed relative to an equivalent mass of CO_2.

Developing Unique Environmental Technologies

Sharp is working to develop unique environmental technologies to raise the environmental performance of its products and devices, and to lower the environmental impact of its production facilities.
Sharp is advancing research and development of people-friendly and environmentally friendly technologies covering four areas—energy saving and energy creation, effective use of resources, safety and peace of mind, and health and comfort.

Objectives for Fiscal 2009	Achievements for Fiscal 2009	Objectives for Fiscal 2010	Objectives for Fiscal 2012
• Expand closed-loop plastic material recycling • Use 1,200 tons of recycled plastic in new products	• Used 1,200 tons	• Use 1,300 tons	• Use 1,500 tons
• Establish LCD TV recycling technology • Optimize LCD TV recycling line	• Introduced recycling line for LCD TVs	–	–
–	–	• Develop LCD panel recycling technology • Develop recycling technology for the glass edge material discarded during the LCD panel production process	• Develop waste LCD panel recycling technology

R&D on Unique Environmental Technologies

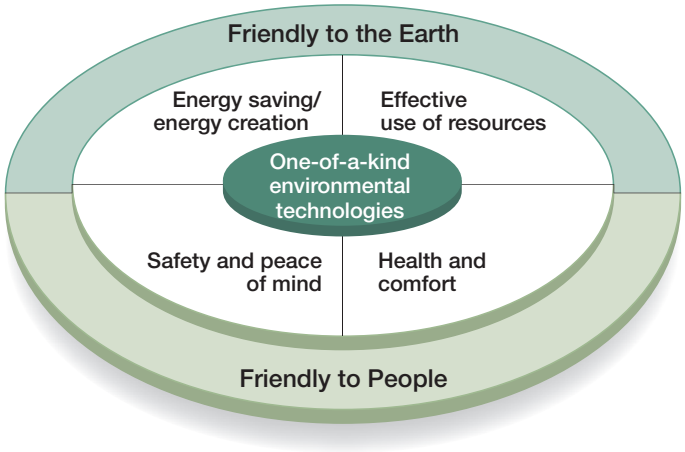
In fiscal 2009, the volume of plastic derived from closed-loop plastic material recycling technology that was recycled and reused in new products increased to 1,200 tons. This technology represents an example of a unique environmental technology that contributes to the effective use of resources. Sharp also worked to develop recycling technologies for LCD TVs and technologies for using biomass materials.

Sharp also developed and put into practical use UV²A technology, a photo-alignment technology for LCD panels that greatly reduces the power consumption of LCD TVs, as well as a unique air flow control technology based on applied fluid dynamics that increases the energy efficiency of air conditioners. Sharp also developed compound solar cells that achieve the world's highest conversion efficiency, and pursued new instances where the effectiveness of Plasmacluster Ions, Sharp's unique air purification technology, has been proven.

In addition, as initiatives looking to the future, Sharp began joint research with Osaka Prefecture University on plant cultivation and recovering resources from waste at GREEN FRONT SAKAI, Sharp's base in Sakai City, Osaka Prefecture, Japan.

Sharp will continue to develop unique environmental technologies in the future, and will work to improve the environmental performance of its products and devices, and strengthen the level of environmental friendliness at its production facilities.

■ One-of-a-Kind Technological Development Fields



Case Study 1

Developing and Using Closed-Loop Plastic Material Recycling Technology for Repeatedly Reusing Plastic

In fiscal 2001, Sharp and Kansai Recycling Systems Co., Ltd.*1 jointly developed and put into practical use closed-loop plastic material recycling technology that repeatedly recovers plastic from used consumer electronics and reuses it in parts of new consumer electronics for the Japanese market.

Sharp and Ube Industries, Ltd., a comprehensive chemical manufacturer in Japan, have since jointly developed and introduced new technologies such as high-purity PP separation and recovery technology*2 and plastic pigmentation technology*3, thereby increasing the volume of recyclable plastic and expanding the use of recycled plastic. As a result, the volume of plastic recycled and used in fiscal 2009 reached approximately 1,200 tons.

More than ever before, home appliances are being constructed from component parts made from plastics composed of two or more different polymer materials. These plastics add value to the product, but are difficult to recycle. Sharp has been working to develop technologies to enable the use of closed-loop plastic material recycling to recover these new plastics for re-use.

In addition, in January 2010, Sharp licensed a patent (No. 3731009) to Ube Industries, Ltd. This patent relates to a process for recycling plastics that Sharp invented in the course of technology development. Plastic recycling technology is now expected to spread to other industries as a result.

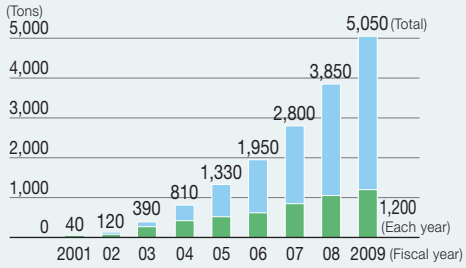
*1 A consumer electronics recycling company in Japan established with joint-investment from Sharp, Mitsubishi Materials Corporation, and five other companies.
*2 Sharp's original technology that separates and recovers high-purity PP (polypropylene) from recovered plastic composed of metal parts and different types of resin.
*3 Ube Industries' original pigment technology that makes it hard to see mixed foreign materials.

TOPICS

Volume of Plastic Recycled and Used Reaches a Total of 5,050 Tons

The total volume of plastic recycled by closed-loop material recycling since fiscal 2001 reached 5,050 tons in fiscal 2009, equivalent to a reduction of approximately 9,000 kiloliters of crude oil.

Use of Recycled Plastic



Sponsor: Research Association for Feedstock Recycling of Plastics, Japan

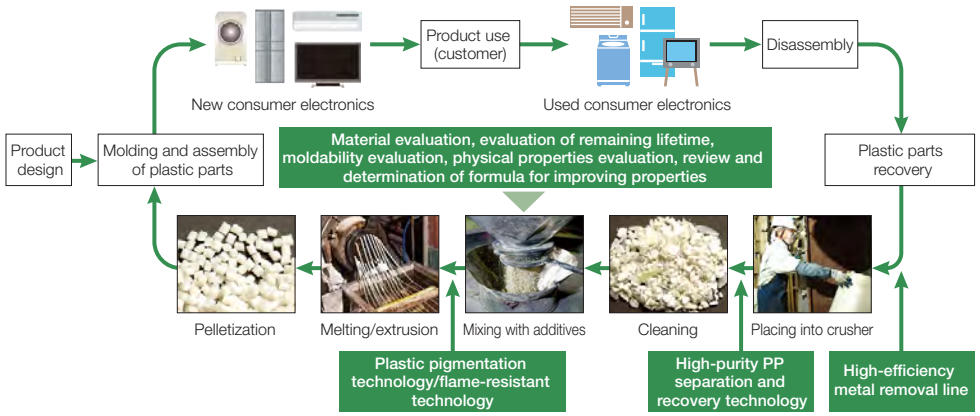
Technological Achievement Award

Presented in June 2010, this award recognized Sharp for developing highly original technologies and turning them into a profitable business.

Awards

Fiscal Year	Award Name and Sponsor
2004	Education, Culture, Sports, Science and Technology Minister's Prize; 13th Global Environment Awards Sponsor: Japan Industrial Journal
2005	15th Best Technology Award Sponsor: Japan Society of Polymer Processing
2008	Director-General's Prize, Industrial Science and Technology Policy and Environment Bureau, Ministry of Economy, Trade and Industry; 2008 Resource Recycling Technologies and Systems Commendation Sponsor: Clean Japan Center

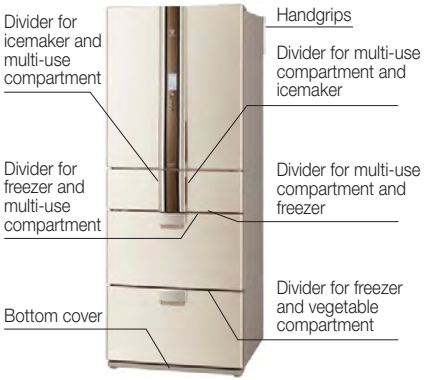
Closed-Loop Plastic Material Recycling Flow



Examples of Close-Loop Recycled Plastic Use

Fully automatic washing machine

Refrigerator/freezer



Case Study 2

Developing and Using Technology to Recycle LCD TVs

In fiscal 2006, Sharp developed and put into practical use a new material for the rear cabinets of AQUOS LCD TVs for the Japanese market. When these widely popular LCD TVs reach the end of their service life sometime in the future, these cabinets can be recycled through the closed-loop material recycling*1 process and the material re-used and recovered again and again. Since then, Sharp has continued to expand the number of AQUOS models*2 that use this material. At the same time, Sharp is continuing its R&D efforts to enable cabinets from flat-panel TVs that use conventional materials to be recycled using closed-loop material recycling technology.

In addition, Sharp has launched new initiatives to recover rare metals, particularly indium, from LCD panels, and recycle the glass that makes up LCD panel substrates.

As a leading manufacturer of LCD TVs, Sharp will continue the development and promote the practical use of recycling technologies in the future.

*1 See page 35.
*2 Fiscal 2009 models: LC-52AE6/46AE6, LC-60DS6/52DS6/46DS6/42DS6, LC-52DX2/46DX2, LC-60LX1/52LX1/46LX1/40LX1, LC-52SE1/46SE1/40SE1

Rear cabinet that can be recycled in the closed-loop material recycling process (LC-40LX1)

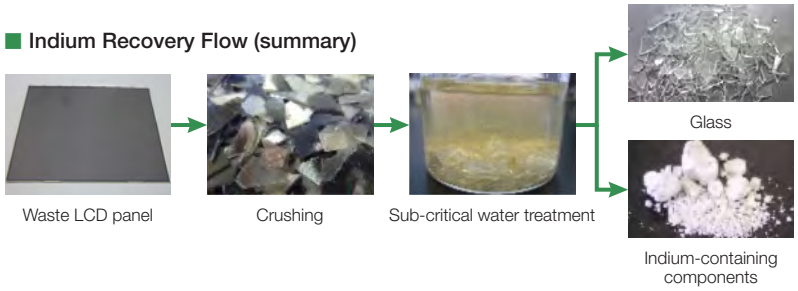
Developing Technology to Recover Indium from Waste LCD Panels

In fiscal 2009, Sharp, working in cooperation with Osaka Prefecture University, developed recycling technology for waste LCD panels that uses sub-critical water*3.

Taking advantage of sub-critical water's effectiveness at dissolving organic substances, this technology strips away the organic layer from the glass substrate of the LCD panel, and separates and recovers the indium, a rare metal, from the glass. Both the glass and the indium-containing components can be recovered efficiently. In fiscal 2010, Sharp will be working to further develop this technology and put it into practical use.

*3 Up to a temperature of 374°C and a pressure of 218 atmospheres, water is a liquid but has not entered the gaseous state. This temperature and pressure is called the critical point, and water in a temperature range slightly below the critical point is called sub-critical water.

■ Indium Recovery Flow (summary)

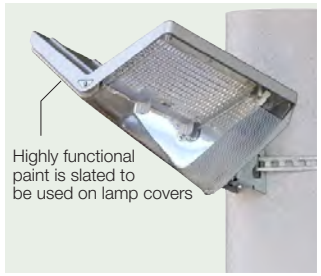


Developing Highly Functional Paint Using Waste Glass from LCD Panels

In fiscal 2009, Sharp developed a highly functional paint offering high strength, and excellent abrasion and corrosion resistance, that uses glass edge material*4 discarded during the LCD panel production process.

The glass used for LCD panels features outstanding physical properties such as high strength, low thermal expansion, and high heat resistance, but because its softening temperature is high, re-melting this glass for re-use as a new raw material is difficult using existing equipment. Accordingly, Sharp succeeded in developing a highly functional paint that takes advantage of the characteristics of LCD panel glass without melting the waste glass by finely crushing it and mixing the resulting powder with a pigment.

This paint can dramatically improve the long-term durability of products installed outdoors and exposed to sunlight, wind and rain, and sand and dust. Sharp is currently planning to use this paint on the exterior parts of security LED lights, and will promote its adoption for home appliances in the future. Sharp will also work to develop new applications, including opening up new market areas, such as architectural materials and highway fixtures and equipment.



Security LED light that will use the highly functional paint

*4 Glass edge material is generated when the large glass substrate sheets are cut down to screen size.

■ How Highly Functional Paint Is Made

Case Study 3

Developing and Using Technology for Utilizing Biomass Materials

Sharp is developing technology for using biomass materials in an effort to reduce the consumption of limited fossil resources.

In fiscal 2006, Sharp developed technology that blends starch-based bioplastic (PLA) and general plastic, such as polypropylene and polystyrene. And by increasing the durability of the blended bioplastic, it can withstand the closed-loop plastic material recycling* process. Since 2007, this plastic has been used for desktop mobile phone holders released in the Japanese market. Sharp has since improved some of the properties of this plastic, such as moldability and coloration, and is working to use it in more products.

Sharp and Kansai Paint Co., Ltd., a Japanese paint manufacturing and sales company, jointly developed a starch-based biopaint and began using it in 2006 on the stands of AQUOS LCD TVs for the Japanese market. Sharp will further improve the performance of the paint and increase its use in home appliances.

* See page 35.

Examples of Bioplastic Use

Desktop holder for “docomo STYLE series” SH-02B mobile phone (NTT DOCOMO, Inc.)

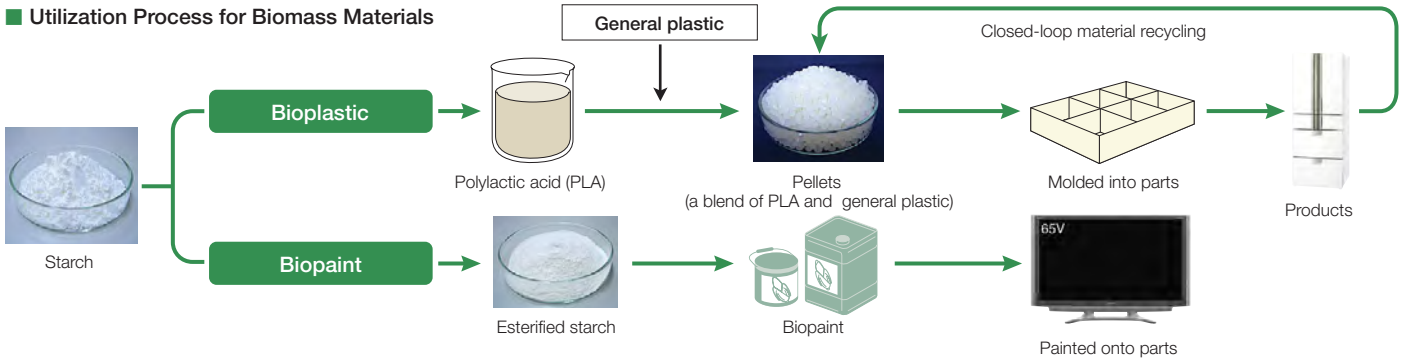
Desktop holder for SoftBank 941SH mobile phone (SoftBank Mobile Corp.)

Example of Biopaint Use

Awards

Year	Award Name and Sponsor
2007	Recognized for Excellence; 2nd Monodzukuri Nippon Grand Award Sponsors: Japanese Ministry of Economy, Trade and Industry and others
	Prize for Industrial Technology; 2007 JSCM Award Sponsor: Japan Society of Colour Material
2008	Environmental Technology Award; 40th JCIA Technology Awards Sponsor: Japan Chemical Industry Association

Utilization Process for Biomass Materials



Case Study 4

Developing and Using UV²A Photo-Alignment Technology for Greater Energy Efficiency in LCD TVs, a World First

In fiscal 2009, Sharp developed a photo-alignment*1 technology called UV²A*2 technology for LCD panels that can precisely control the alignment of liquid crystal molecules in a simple LCD panel structure. Sharp has fully incorporated this world-first*3 technology as a core technology for the production of a new type of LCD panel that will bring about a significant evolution in LCD TVs.

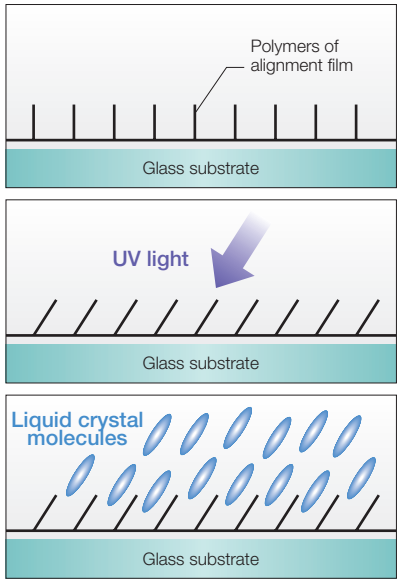
This photo-alignment technology uses a special material that responds to ultraviolet radiation for the alignment film in LCD panels. This technology controls the tilt angle of the liquid crystal molecules, which are only around two nanometers*4 in size, with an accuracy measured in picometers*5 in accordance with the direction of the radiation.

Previous technologies tilted the liquid crystal molecules to manipulate the light by forming structures called “protrusions” and “slits” in the individual cells where the liquid crystal material is confined to stably control the alignment (orientation) of the liquid crystal molecules. However, this architecture tends to scatter light passing through the cell from the backlight, causing light leakage, which is responsible for floating black levels and lower light transmissivity (aperture ratio). UV²A technology eliminates the minute gaps in the protrusion-slit architecture, providing a more than 20% higher aperture ratio compared to conventional panels while, at the same time, making it possible to display extremely deep blacks with a static contrast ratio of 5,000:1, a 60% improvement over conventional panels. The higher brightness also improves the ability to reproduce brilliant whites, as well as enabling more efficient use of light from the backlight, resulting in a significant reduction in the power consumed by the backlight.

Sharp has adopted UV²A technology for LED AQUOS*6 LCD TVs. In addition, it is the optimum technology to enhance the performance of high-definition 4Kx2K displays and 3D TVs, which are expected to become the next generation of TVs.

*1 A process that ensures a uniform alignment of the liquid crystal molecules in a certain direction.
*2 Abbreviation of Ultraviolet-induced Multi-domain Vertical Alignment.
*3 On a production volume basis using large glass substrates of at least 6th generation or later. Based on Sharp research.
*4 A nanometer is one billionth (10^{-9}) of a meter.
*5 A picometer is one trillionth (10^{-12}) of a meter.
*6 Used on models LC-60LX1/52LX1/46LX1/40LX1, LC-52SE1/46SE1/40SE1/32SC1.

Overview of Photo-Alignment Technology

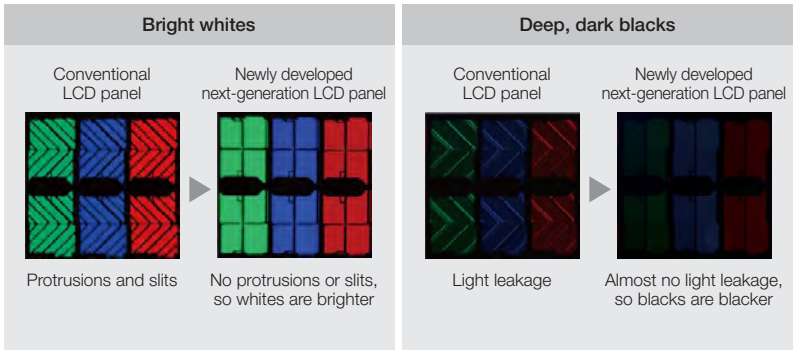


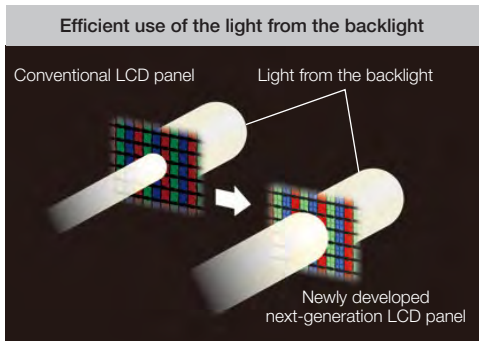
A special proprietary material developed by Sharp is coated onto the glass substrate as an alignment film.

When exposed to UV light, the polymers in the alignment film orient themselves in the direction of the radiation.

The liquid crystal molecules then align themselves in the direction of the polymers in the alignment film.

Overview of Next-Generation LCD Panel Using UV²A Technology





Case Study 5

Developing and Using Advanced Energy-Saving Technology to Provide High Performance and High Efficiency in Air Conditioners

Indoor Unit: Unique Airflow Control Technology Based on Applied Fluid Dynamics

Sharp has developed an airflow control technology based on fluid dynamics that efficiently makes the best use of air currents, and has adopted it for use in the indoor unit of split-system room air conditioners. This technology minimizes resistance to the flow of air, similar to the aerodynamic design of streamlined aircraft and high-speed trains, enabling highly efficient heating and cooling without using excessive amounts of energy.

1 Proprietary louver design **draws in air efficiently**

Air is drawn in efficiently through a wide intake louver, and is then gently blown out into the room from a long diffuser panel.

2 Long diffuser panel **tightly controls airflow**

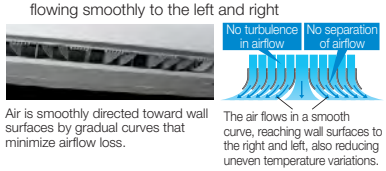
The way the diffuser panel opens changes depending on whether the unit is set for heating or for cooling, and tightly controls the flow so that the air does not blow directly on the body.

3 New Power Concentration Guide **constricts the airflow**

By constricting the airflow, the speed of the air is increased, enabling the air to be blown farther even with the same power.

Extending the airflow guide further boosts the constricting power.

4 Guide **directs air toward wall surfaces,** flowing smoothly to the left and right



Air is smoothly directed toward wall surfaces by gradual curves that minimize airflow loss.

The air flows in a smooth curve, reaching wall surfaces to the right and left, also reducing uneven temperature variations.

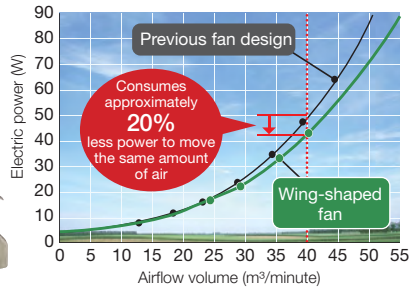
Awards

Year	Award Name and Sponsor
2008	Fluid Mechanics Technology Prize Sponsor: Japan Society of Fluid Mechanics
2009	Technology Award Sponsor: Japan Society of Refrigerating and Air Conditioning Engineers
	Contribution Award; Ichimura Industrial Award Sponsor: The New Technology Development Foundation

Outdoor Unit: Fan Blades Are Modeled on the Shape of Bird Wings to Minimize Air Flow Resistance

The fan blades in the outdoor unit feature an airfoil geometry modeled on the shape of bird wings, such as the albatross, which uses the full extension of its wings to glide efficiently on sea breezes, and the golden eagle, which can fly without stalling even in forests where the air is frequently very turbulent. This aerodynamic fan shape moves a higher volume of air for a given amount of power, reducing electricity consumption.

Power versus Airflow Volume



Case Study 6

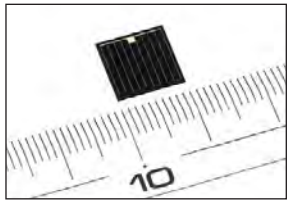
Sharp Triple-Junction Compound Solar Cell Achieves World's Highest Conversion Efficiency of 35.8%

Since 2000, Sharp has been advancing research and development on a triple-junction compound solar cell*1 that achieves high conversion efficiency by stacking three photo-absorption layers. In fiscal 2009, Sharp achieved the world's highest solar cell conversion efficiency*2 of 35.8%*3.

To boost the efficiency of triple-junction compound solar cells, it is important to improve the crystalline quality (the regularity of the atomic arrangement) in each photo-absorption layer (the top, middle, and bottom layer). It is also crucial that the solar cell be composed of materials that can maximize the effective use of solar energy.

Conventionally, Ge (germanium) is used as the bottom layer. However, in terms of performance, although Ge generates a large amount of current, the majority of the current is wasted, without being used effectively for electrical energy. The key to solving this problem was to form the bottom layer from InGaAs (indium gallium arsenide), though the process to make high-quality InGaAs with high crystalline quality was difficult.

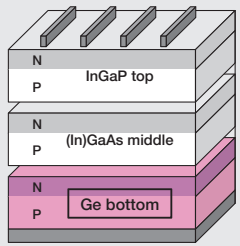
Sharp succeeded in forming an InGaAs layer with high crystalline quality by using its proprietary technology for forming layers. As a result, the amount of wasted current has been minimized, and the conversion efficiency has been successfully increased to 35.8%. Based on these results, Sharp will continue its efforts toward even greater improvements in solar cell conversion efficiency.



Triple-junction compound solar cell with the world's highest conversion efficiency of 35.8%

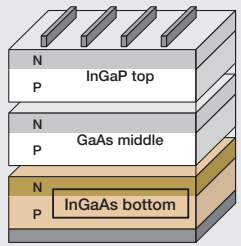
*1 Compound solar cells utilize photo-absorption layers made from compounds consisting of two or more elements such as indium and gallium. Due to their high conversion efficiency, compound solar cells are used mainly on space satellites.
*2 As of October 22, 2009, for non-concentrator solar cells at the research level (based on Sharp research).
*3 Conversion efficiency confirmed by the National Institute of Advanced Industrial Science and Technology (AIST; one of the organizations around the world that officially certifies energy conversion efficiency measurements in solar cells) in September 2009. (Cell surface: approx. 1 cm²)

Conventional cell structure



- InGaP: Indium Gallium Phosphide
- (In)GaAs: (Indium) Gallium Arsenide
- Ge: Germanium

New cell structure



- InGaP: Indium Gallium Phosphide
- GaAs: Gallium Arsenide
- InGaAs: Indium Gallium Arsenide

Case Study 7

Developing and Using Plasmacluster Ion Air-Purifying Technology

With the aim of creating healthy environments, Sharp developed Plasmacluster Ion technology in 2000. Since then, Sharp has proven the efficacy of Plasmacluster Ion technology, including its ability to decompose and remove airborne mold fungi and inhibit the action of airborne viruses*1, and has worked for its practical application.

A proprietary Sharp air purification method, this technology generates, via plasma discharge, positive and negative ions like those found in nature and releases them into the air. These Plasmacluster Ions inhibit the action of airborne viruses and decompose and remove airborne mold fungi.

Sharp has jointly proven with academic research organizations around the world that Plasmacluster technology is effective against 28 kinds of harmful substances, as of the end of fiscal 2009. Moreover, Sharp proved in fiscal 2009 that high-density Plasmacluster Ions (25,000 ions/cm³) are effective in preserving skin moisture and confirmed their skin beautifying effects in fiscal 2010. Sharp will continue its efforts to advance Plasmacluster technology and further prove its efficacy.

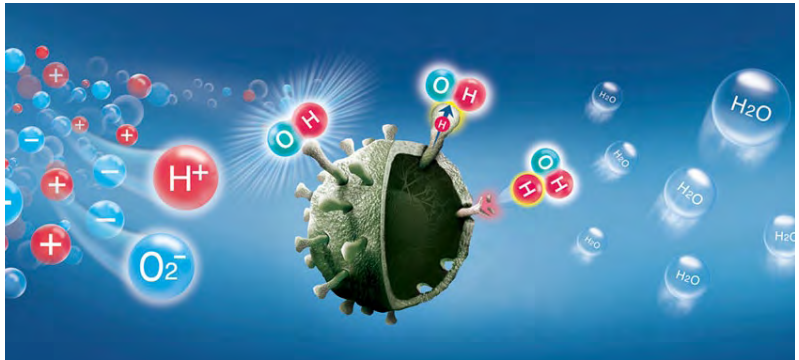
*1 Effect after 10 minutes based on tests carried out in a sealed container having a volume of 1 m³, and not the result of empirical tests in an actual habitable space.

Efficacy of Plasmacluster Ions Confirmed by Academic Research Organizations Around the World*2

Airborne viruses	Kitasato Research Center of Environmental Sciences, Japan	Airborne bacteria	Ishikawa Health Service Association, Japan
	Seoul University, Korea		Shanghai Municipal Center for Disease Control and Prevention, China
	Shanghai Municipal Center for Disease Control and Prevention, China		Kitasato Research Center of Environmental Sciences, Japan
	Kitasato Institute Medical Center Hospital, Japan		Kitasato Institute Medical Center Hospital, Japan
	Retroscreen Virology, Ltd., UK		Professor Gerhard Artmann, Aachen University of Applied Sciences, Germany
Adhering viruses	Retroscreen Virology, Ltd., UK		Dr. Melvin W. First, Professor Emeritus, Harvard School of Public Health, US
Airborne allergens	Graduate School of Advanced Sciences of Matter, Hiroshima University, Japan	Adhering bacteria	Kitasato Institute Medical Center Hospital, Japan
	Osaka City University Medical School's Department of Biochemistry & Molecular Pathology, Japan	Clinging odors	Japan Spinners Inspecting Foundation
Airborne mold fungi	Ishikawa Health Service Association, Japan	Adhering mold fungi	University of Lübeck, Germany
	Professor Gerhard Artmann, Aachen University of Applied Sciences, Germany		Japan Food Research Laboratories
		Skin moisture preservation	Soiken Inc., Japan

*2 Empirical data for Plasmacluster Ion generating devices manufactured between October 2000 and the end of March 2010. Omitted data includes the results of empirical tests on other harmful substances conducted at the same time by the same testing organization.

Plasmacluster Ions' Air Purification Mechanism (conceptual drawing)



1 Plasmacluster Ions are released into the air
Plasmacluster Ion generators electrically decompose water molecules in the air to generate positive and negative ions—the same kind found in nature. Those Plasmacluster Ions, surrounded by water molecules, are then released into the air.

2 Plasmacluster Ions decompose mold fungi and viruses
When Plasmacluster Ions come into contact with the surfaces of mold fungi and viruses, they turn into highly oxidizing hydroxide (OH) radicals that instantly remove hydrogen (H) from surface proteins, breaking them down.

3 Plasmacluster Ions return to the air as water
The OH radicals bond with hydrogen (H) to form water (H_2O), which returns to the air.

Safety Confirmed: Plasmacluster Ions Are the Same Type of Ions that Exist in Nature

1	**Identification of ion type**	Confirmed that Plasmacluster Ions are the same type of airborne ions that exist in nature.
2	**Elucidation of ion's working mechanism** (Dr. Gerhard Artmann, Aachen University of Applied Sciences, Germany)	Confirmed that Plasmacluster Ions react with proteins on the surface of airborne bacteria and viruses, and do not affect the internal cytoplasm.
3	**Confirmation of ion safety**	Highly reliable safety data acquired in testing facilities that follow GLP*3 (good laboratory practice).

Purpose	Test Name (abbreviation)	Ion Concentration Setting
Skin irritancy (normal-level)	Acute skin irritancy and corrosivity testing	Approx. 1 million ions/cm³
Eye irritancy (normal-level)	Acute eye irritancy and corrosivity testing	Approx. 13 million ions/cm³
Genotoxicity (normal-level)	Inhalation toxicity testing (assessment of genetic impact on lung tissue)	Approx. 7 million ions/cm³

Testing organization: Mitsubishi Chemical Medience Corporation

*3 GLP (good laboratory practice) is a set of standards for testing facilities, procedure manuals, etc. It is designed to ensure reliability in safety evaluation testing for chemical substances, etc.

Developing Products and Devices with High Environmental Performance

Along with having guidelines for environmentally conscious design, Sharp sets objectives for the development of environmentally conscious products and devices as well as assessment standards for certification as such. Every year, the company revises these guidelines and standards, thus constantly improving the environmental performance of its products and devices.

Objectives for Fiscal 2009	Achievements for Fiscal 2009	Objectives for Fiscal 2010	Objectives for Fiscal 2012
• Super Green Products account for 60% or more of net sales in Japan	• 63%	• 60% or more	• 60% or more
• Green Seal Products account for 90% or more of net sales	• 87%	• 90% or more	• 90% or more
• Super Green Devices account for 20% or more of net sales	• 24%	• 20% or more	• 20% or more
• Green Devices account for 85% or more of net sales	• 90%	• 90% or more	• 95% or more

Making All Products Green Products

Sharp calls its environmentally conscious products Green Products (GP). The GP Guidelines, which define development and design guidelines in line with seven concepts, have been in use at all product design departments in Japan and overseas since fiscal 1998.

In developing products, Sharp sets specific objectives according to the GP Standard Sheet, which is formulated based on the GP Guidelines; and in the trial manufacture and mass production stages, it determines how well the actual product has met these objectives, with those achieving the standards being named GP. All new products since fiscal 1998 have met the assessment criteria necessary to be designated as GP. Sharp will continue working to develop even more environmentally conscious products using GP Guidelines revised to reflect any new concepts that come into play.

Green Product Concepts (Fiscal 2010 Revision)

Energy Saving / Energy Creating	**Products with superb energy-saving / energy-creating performance** Improve the energy efficiency and reduce the energy consumption of products; other measures
Resource Conservation	**Products designed to conserve resources** Reduce the amount of materials used; design products that conserve resources during use; extend the life span of products; other measures
Recyclability	**Products designed for recycling** Design products that are easy to disassemble; use easy-to-recycle materials; other measures
Safe Use and Disposal	**Products that can be used and disposed of safely** Do not use substances that negatively affect people's health or the environment; other measures
Use of Green Materials and Devices	**Products that use green materials and devices** Use recycled materials / plant-based plastics; other measures
Environmental Consciousness Pertaining to Batteries, etc.	**Products that use batteries, manuals, and packaging with enhanced environmental consciousness** Reduce product packaging; design products that allow easy removal of batteries; other measures
Showing Eco Information of Products	**Products that show their environmental performance and information** Acquire environmental labels (eco labels); implement LCA; other measures

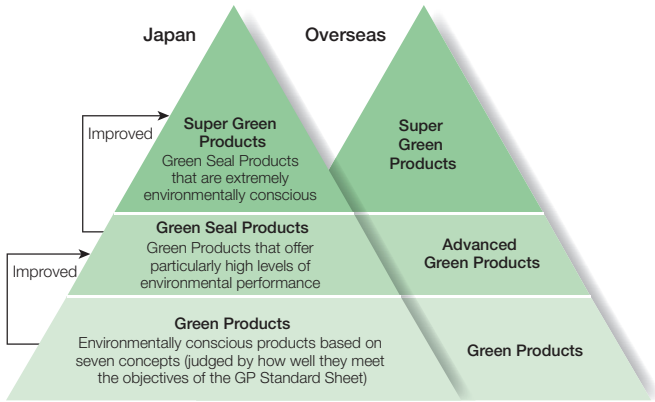
Developing Super Green Products on a Global Basis

Since fiscal 1998, Sharp has been certifying GPs for the Japanese market that offer a particularly high level of environmental performance as Green Seal Products (GS Products). In fiscal 2004, Sharp began creating criteria and certifying GS Products with the highest possible levels of environmental performance as Super Green Products (SGP).

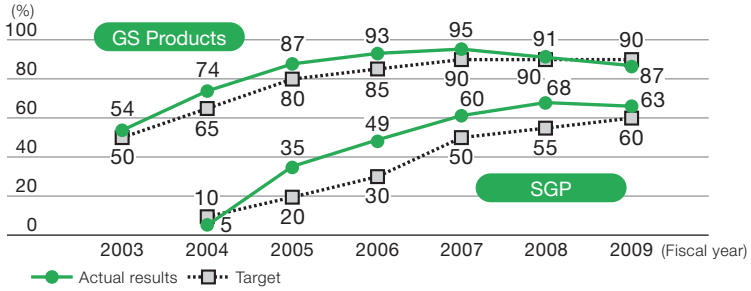
In fiscal 2009, Sharp surpassed its goal for SGP as a percentage of net sales but missed meeting its goal for GS Products by a small margin. Sharp will make further improvements to its environmental performance and will work to meet its goals.

Sharp began expanding SGP and Advanced Green Product (AGP) certification to products for overseas markets in fiscal 2009 and continues to develop such products. The certification criteria are set by region, taking into consideration the characteristics of each region, such as local consumer needs and local systems.

Sharp GP System



Ratio of SGP and GS Products to Net Sales in Japan



Assessment and Certification Standards for SGP and GS Products in Japan (Fiscal 2009)

	Environmental Performance Criteria				External Environmental Claim Standards
	Required items		Attainment levels for 73 evaluation items, including required items		
SGP (Japan)	Satisfies items (1) to (9) at the right	Global warming prevention (1) Consumes less power in operation or standby modes than previous models (2) Has over 100% achievement rate of the energy-saving standard	At least 90 points	Global warming prevention Has low power consumption, high energy efficiency, etc. Point allocation 20 points	Is significantly more environmentally conscious than the products of other companies
GS Products	Satisfies items (1) to (8) at the right	Efficient use of resources (3) Is easy to separate and disassemble, or is upgradeable	At least 70 points	Efficient use of resources Is designed for recyclability, resource saving, etc. Point allocation 20 points	Satisfies at least one of the following items: **Power consumption** • Is the industry-leading model in its product category **Standby power consumption** • Is the industry-leading model in its product category • Consumes 0.1W or less (for remote controlled products/products with timer function) • Consumes 1.0W or less (phones, faxes, PCs) **Energy creating** • Has industry-leading conversion efficiency **Resource savings during use (except electricity)** • Is the industry-leading model in its product category (saves water and detergent, etc.) **Compact/lightweight** • Is the industry-leading model in its product category • Is at least 30% lighter or more compact than previous models **Recycled materials** • Uses materials that were recycled using the closed-loop material recycling process **Green materials** • Uses no halogen-based flame retardants, uses polyvinyl chloride substitutes • Uses refrigerant with low global warming potential **Acquisition of Eco Mark** • Has acquired the Eco Mark, authorized by the Japan Environment Association **Original technology** • Is an environmentally conscious product that uses industry-first or original Sharp technology
		Substitution of toxic chemical substances (4) Meets the RoHS directive (5) Uses no substances prohibited under Sharp standards (6) Uses no Ni-Cd batteries		Substitution of toxic chemical substances Meets the RoHS directive, etc. Point allocation 35 points	
		Others (7) Uses less packaging material in total than previous models (8) Has undergone LCA (9) Has environmental label status		Others Has environmental label status, uses less packaging materials, etc. Point allocation 25 points	

Examples of Certification Standards for SGP and AGP Overseas (TVs; Fiscal 2009)

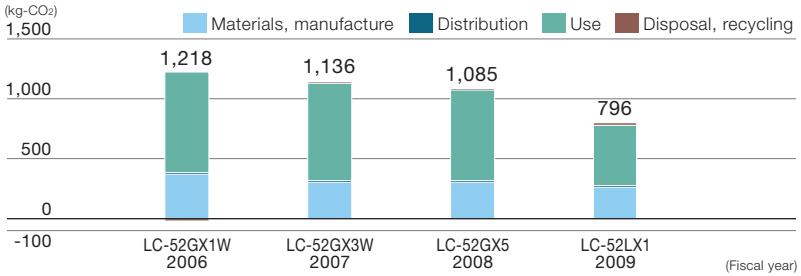
	Energy efficiency performance standard	Acquisition of environmental labels
SGP (overseas)	• Has overwhelmingly superior energy efficiency performance compared to products of other companies (Customer needs and various systems are taken into account in setting criteria for evaluation)	• Third-party environmental labeling is being acquired, or application has been made, or is expected to be made • For countries/regions that have a multi-level ranking system, even if there is no third-party environmental label certification system, be the best in the industry under the multi-level ranking system
AGP	• Has excellent energy efficiency performance (Customer needs and various systems are taken into account in setting criteria for evaluation)	

Identifying and Reducing Environmental Impacts Throughout the Life of Products

Sharp performs a life cycle assessment (LCA) on its products to identify their impact on the environment throughout their service life. Converting this impact into CO_2 emissions provides a quantitative measure that Sharp uses in its efforts to reduce environmental impacts by enabling it to focus on the areas where the impact is especially large.

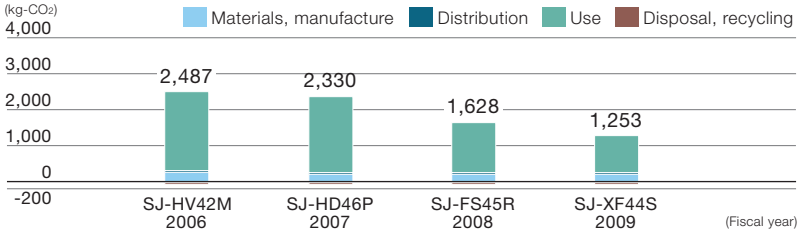
In the future, Sharp will continue to work to enable the creation of products with smaller environmental impacts.

LCA Data for LCD TVs*1

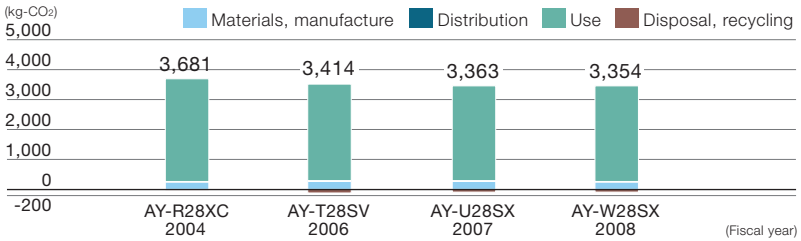


*1 CO_2 emissions during use is calculated from annual power consumption based on fiscal 2008 measurement methods under targets set for Top Runner criteria based on the Law Concerning the Rational Use of Energy (Energy Conservation Law).

LCA Data for Refrigerators



LCA Data for Air Conditioners*2



*2 In fiscal 2009, there was no new model with "2.8-kW cooling capacity dimension-free" that would have been the successor to the AY-W28SX. Year-by-year changes in LCA data are shown up to fiscal 2008.

Note: CO_2 emissions during use is calculated using a CO_2 emission coefficient of 0.373 kg-CO_2/kWh (after reflecting the Kyoto Mechanism credit; based on the emission coefficient for user-end electricity for fiscal 2008 published by the Federation of Electric Power Companies of Japan).

Reducing VOCs in Products

Sharp is working to make its products even more user friendly by reducing their VOC*3 emissions.

In fiscal 2009, Sharp conducted measurements of VOCs in 41 models of 17 products for the Japanese market, focusing on consumer electronics that see frequent use in living rooms, and on mobile products. Sharp also provided low-VOC product development training, targeting 31 engineers in various business groups.

Sharp plans to continuously push forward with developing low-VOC products, with the aim of providing products that are safer and that offer greater peace of mind.

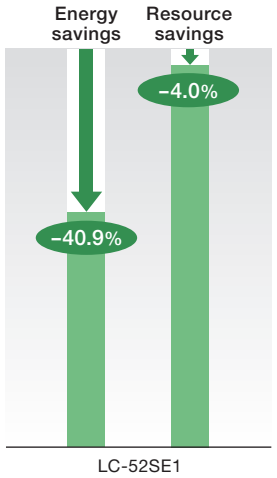
*3 VOC (volatile organic compounds) are assumed to be one of the causes of multiple chemical sensitivity and/or sick building syndrome.

Low-VOC product development training

Trial Introduction of Environmental Performance Evaluation Indicators

To inform consumers about the environmental performance of products in an easy-to-understand way and to serve as guidelines for the creation of environmentally conscious products within the company, Sharp has begun to introduce on a trial basis Environmental Performance Evaluation Indicators. These indicators will show the rate of improvement compared to the previous model for "saving energy" and "saving resources." In the future, Sharp will be looking at additional indicators that are more readily understood, and plans to expand the number of models for which these indicators are available.

Example of Environmental Performance Evaluation Indicators (LC-52SE1 AQUOS LCD TV)



LC-52SE1

Reduction from the previous model LC-52DS6

Energy Saving
Annual power consumption
reduced by 40.9%
225 kWh/year → 133 kWh/year
Annual CO_2 emissions also reduced
83.9 kg-CO_2 → 49.6 kg-CO_2

Resource Saving
Product weight
reduced by 4.0%
25.0 kg → 24.0 kg

Developing Green Devices and Super Green Devices

Sharp calls its environmentally conscious devices Green Devices (GD). To define guidelines for development and design based on seven concepts, Sharp established the GD Guidelines, which it began applying at all device design departments in fiscal 2004.

In developing devices, Sharp sets specific objectives according to the GD Standard Sheet, which is formulated based on the GD Guidelines; and in the trial manufacture and mass production stages, it determines how well the actual device has met these objectives, with those achieving the standards being named GD.

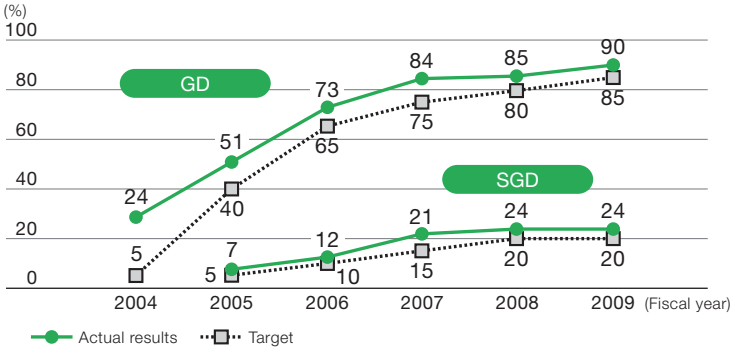
Sharp began certifying devices from among GD with the highest possible levels of environmental performance as Super Green Devices (SGD) from fiscal 2005.

In fiscal 2009, both GD and SGD exceeded their sales ratio targets. In the coming years, Sharp plans to raise these figures even higher.

Green Device Concepts

Energy Efficiency	**Devices with superior energy efficiency and that consume less energy** Reduce power consumption during operation and in standby mode; other measures
Resource Conservation	**Devices designed to conserve resources** Reduce device weight or volume; other measures
Recyclability	**Devices designed for recycling** Use standard plastic; design devices that are easy to disassemble; other measures
Safe Use and Disposal	**Devices that can be used and disposed of safely** Manage usage of chemical substances contained in parts and materials; other measures
Long Life	**Devices that make products last longer** Extend the life of the product with exchangeable parts and consumables (target: LCD devices); other measures
Packaging	**Devices that use packaging with enhanced environmental consciousness** Reduce packaging; other measures
Information Disclosure	**Devices that give environmental information** Provide information on chemical substances in devices; other measures

Ratio of SGD and GD to Net Sales



SGD and GD Certification Standards (Fiscal 2009)

	Environmental Performance Criteria			External Environmental Claim Standards
	Required items		Percentage of 34 evaluation items satisfied, including required items	
SGD	Satisfies items (1) to (13) at the right	(1) Uses no lead, cadmium, or dioctyl phthalate (DOP) in polyvinyl chloride coatings (2) Is below EU RoHS threshold levels for specific chemical substances (3) Complies with China RoHS (4) Uses no formaldehyde in parts that come in contact with the human body (5) Has been managed for chemical substances contained in parts and materials (6) Contains no substances prohibited under Sharp standards (7) Has had chemicals in products for export registered, and has been managed for chemical substances	More than 95%	Has environmental performance at the top of the industry
GD	Satisfies items (1) to (10) at the right	(8) Total heavy metal content in printing inks on packaging is less than 100 ppm (9) Certificate can be issued showing that no substances prohibited under Sharp standards are contained (10) Amount of Sharp-managed substances contained in device has been disclosed (11) Consumes less power in operation and standby modes than previous models (12) Uses no arsenic in the glass substrates of LCD panel (13) Has undergone LCA	More than 90%	–

Examples of Fiscal 2009 Certified SGP and SGD

SGP LED AQUOS LCD TV — Japan

LC-52SE1

■ No. 1 in Energy Efficiency*1

*1 LC-52SE1/46SE1/40SE1: As of January 28, 2010. Comparison based on annual power consumption. Measured with the AV switch position set to "Normal."

- Features high image quality and even higher energy efficiency by combining a next-generation LCD panel that uses newly developed UV²A technology with an LED backlight that offers precise, efficient control of light.
- Equipped with a Motion Sensor that senses a person's movement and automatically switches to power saving mode.
- Annual power consumption*2
  LC-52SE1: 151 kWh/year, LC-46SE1: 136 kWh/year, LC-40SE1: 118 kWh/year

■ Use of Green Materials

- Halogen-free cabinet, halogen-free power cord and internal wiring, circuit board with lead-free soldering, stand that uses resin blended with recycled material.

■ Design for Recycling

- Rear cabinet can be recycled in the closed-loop material recycling process.

*2 Calculated based on new revised standards issued in April 2010.

SGD Next-Generation LCD Module Incorporates Newly Developed LCD Panel and LED Backlight

■ Energy Efficient

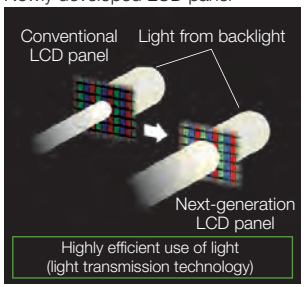
- LCD panel: Newly developed LCD panel employs UV²A*3, a world-first*4 photo-alignment technology that gives a higher aperture ratio for brighter images with less light.
- Backlight: The LED backlight offers precise, efficient control of light.
- The newly developed LCD panel and LED backlight combine to give outstanding energy efficiency.

■ High Contrast

- TV contrast*5 of 2,000,000:1.

*3 Ultraviolet-induced Multi-domain Vertical Alignment
*4 On a production volume basis using large glass substrates of at least 6th generation or later. Based on Sharp research.
*5 When viewed from directly in front of the screen. TV contrast is the maximum contrast level a TV set is capable of achieving (the ratio of maximum screen brightness for an all-white signal to the minimum screen brightness with an all-black signal; in this case, 2,000,000:1 with AV position set to "Dynamic").

Newly developed LCD panel



LED backlight

SGP Solar-Powered Mobile Phone — Japan

■ Energy Creating

- Features a solar panel made by Sharp. A 10-minute solar charge provides approximately one minute of talk time, or approximately two hours of standby time*6.

SOLAR PHONE SH002 for KDDI Corporation

■ Waterproof

- Waterproof (to standards equivalent to IPX5/IPX7)

*6 Typical value measured under artificial light under the following conditions: manufacturer's setting at time of purchase changed to Power Saving Mode ON; charged under direct daytime sunlight in clear weather; oriented perpendicular to the sun; good mobile reception (3 bars); when calling, solar charging initiated immediately after power runs out; and calling initiated immediately after turning unit ON.

■ Energy Creating

- Features a solar panel made by Sharp. A 10-minute solar charge provides approximately one minute of talk time, or approximately two hours of standby time*7.

SOLAR HYBRID SoftBank 936SH for SoftBank Mobile Corp.

■ Waterproof

- Waterproof (to standards equivalent to IPX5/IPX7)

*7 Typical value measured with the solar charge lamp illuminated GREEN under the following conditions: unit used in Japan; when calling, solar charging initiated immediately after power runs out; ambient temperature of 25°C; charged in direct daytime sunlight with the sun not obscured by clouds; charged with the solar panel oriented perpendicular to the sun (with the solar panel not in shadow); backlight brightness set to "2"; good mobile reception; and call initiated by dialing "117" (automated time announcement) immediately after turning unit ON.

■ Energy Creating

- Features a solar panel made by Sharp. A 10-minute solar charge provides approximately one minute of talk time, or approximately three hours of standby time*8.

docomo STYLE series SH-08A for NTT DOCOMO, Inc.

■ Waterproof

- Waterproof (to standards equivalent to IPX5/IPX7)

*8 Typical value measured with the solar charge lamp illuminated GREEN under the following conditions: unit used in Japan; when calling, solar charging initiated immediately after power runs out, with the surface of the solar panel adjusted perpendicular to the sun, with the solar panel not in shadow and free of any adhering dirt or stickers, outdoors (ambient temperature of 25°C) at 12 noon in clear weather (sun is not obscured by clouds); good mobile reception; and call initiated by dialing "117" (automated time announcement) immediately after turning unit ON.

Examples of Fiscal 2009 Certified SGP

SGP Plasmacluster Refrigerator — Japan

No. 1 in Energy Efficiency*1

*1 As of April 20, 2010. For CFC-free, home-use refrigerator/freezers in the Japanese market having a rated capacity of 501 liters or more.

- High-performance compressor features outstanding energy efficiency, enhanced by adoption of a wide linear inverter controller.
- High-performance vacuum insulation contributes to both saving energy and to reducing interior space requirements to provide greater capacity.
- Annual power consumption: 260 kWh/year

Use of Green Materials

- Uses recycled plastic made using closed-loop material recycling technology.
- Non-CFC refrigerant (R600a) has zero ozone depletion potential and approx. 1/400th the global warming potential of conventional CFC substitutes.

SJ-ZF52S

SGP Plasmacluster Air Conditioner — Japan

AY-Z50SX

No. 1 in Energy Efficiency*2

*2 As of March 1, 2010. For 5.0 kW-class home-use air conditioners (AY-Z50SX).

- Indoor unit uses a Tilt-Down/Tilt-Up Long Panel system and Wrap-Around Airflow, an airflow control technology based on applied fluid dynamics. By minimizing airflow resistance, this technology provides healthy heating and cooling while curbing excess energy use.
- Outdoor unit features a new bird-wing-shaped fan developed by applying the principles of biomimicry. This unique design enables efficient use of airflow and boosts efficiency during operation.
- Automatic filter cleaning function extends the benefits of high energy efficiency.
- Energy Miser function increases efficiency to save even more energy during operation.
- Seasonal power consumption: 1,670 kWh

First product to receive the fiscal 2009 Evidence-Based Relaxation & Comfort Recommendation Mark (one mark for "cooling" and a second mark for "heating")
Sponsor: Osaka Healthcare Service Industry Collaboration Platform (OHS: Open innovation of Healthcare Service)

SGP Plasmacluster Washing Machine — Japan

No. 1 in Water Saving*3

*3 For washer/dryers with a 10 kg capacity. Washing a 10 kg load uses 67 liters of water and requires approximately 35 minutes of time. As of February 2010.

- Newly developed Hot Steam technology showers laundry with a fine mist of steam that lifts dirt off of clothing to save water and shorten wash time.
- Shower Wash and Shower Rinse modes use the recirculating pump to efficiently sprinkle detergent and rinse water onto laundry.

Energy Efficient

- Power consumption: 2,050 Wh (wash and dry)

ES-V510

SGP LED Lamp — Japan

Long Life

- Design life of 40,000 hours*4, approximately 40 times longer than ordinary incandescent lamps. (25,000 hours*4 for intermediate base [E17] compact lamp models)

Energy Efficient

- Miniscule power consumption. Electricity costs*5 for models DL-L401N and DL-L401L (power consumption: 4.1 W) are approximately 28 yen per month (when used 10 hours per day × 30 days), and approximately 50 yen per month for models DL-L601N and DL-L601L (power consumption: 7.5 W).

Use of Green Materials

- Mercury-free

Adjustable Color and Brightness

- The DL-L60AV has an adjustable color function that enables users to change the color of light from the lamp ranging from warm white to daylight white using the remote control; brightness adjustments also possible.

*4 Design life is regarded as the time until total luminous flux declines to 70% of the initial level. However, product service life cannot be guaranteed.
*5 Calculated at the rate of 22 yen/kWh (tax included) as a measure of electricity charge.

DL-L60AV

平成21年度
省エネ大賞
(機器・システム部門)
省エネルギーセンター会長賞
DL-L60AV/DL-L60AN/DL-L40AN/
DL-L40AL/DL-L601N/DL-L601L/
DL-L401N/DL-L401L

Chairman's Prize, the Energy Conservation Center, Japan; Grand Prize for Excellence in Energy Efficiency and Conservation

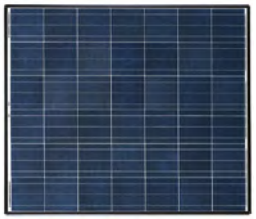
Plasmacluster Ion Technology
A proprietary Sharp air purification method, this technology generates—through plasma discharge—and releases into the air positive and negative ions like those found in nature. These ions inhibit the action of airborne viruses (effect after 10 minutes based on tests carried out in a sealed container having a volume of 1 m^3, and not the result of empirical tests in an actual habitable space) and break down and eliminate airborne mold.

Examples of Fiscal 2009 Certified SGP and SGD

SGP Polycrystalline Solar Module for Residential Applications — Japan

High-Efficiency Energy Creation

- Highly efficient energy creation using unlimited sunlight.
- Module conversion efficiency: 13.9%



ND-160AV

Higher Installed Capacity

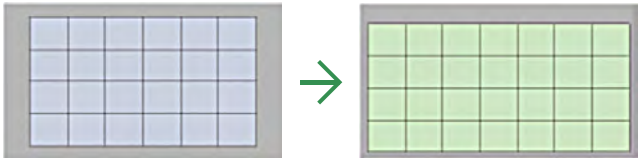
- Resistance to wind pressure of the solar modules and mounting systems (hardware to fix the modules to the roof) was improved. Now more modules can be installed in a given installation area on a roof than previously, enabling higher installed power generation capacity.

Example

ND-153AU
3.67 kW system
Number of installed modules: 24

ND-160AV
4.48 kW system
Number of installed modules: 28

Installed capacity 22.0% higher



Note: Actual installation area and the number of modules may vary depending on installation conditions and other factors.

SGP Digital B/W MFP — Japan

Energy Efficient

- Energy-saving design: Pre-heat and auto power shut-off modes

Use of Green Materials

- Complies with the EU RoHS directive
- PVC-free AC power cords

Space Saving

- Four functions (copy, print, fax, and scan) in one compact body
- Wingless design eliminates protruding paper output trays

MX-M310FP

ENERGY STAR

エコマーク認定番号
第09117017号

Eco Mark certification (Japan)

SGD 1/4-Type 5-Megapixel CMOS Camera Module with AF Function

Smallest Size and Thinnest Profile in the Industry*1

*1 As of November 10, 2009. For 1/4-type 5-megapixel CMOS camera modules with AF (auto-focus) function (based on Sharp research).

- Module volume: 0.36 ml; thickness: 5.0 mm.
- Features a 1/4-type 5-megapixel CMOS image sensor that uses 1.4 µm pixel cells, among the smallest in the industry.
- Designed to meet the need for high resolutions, high image quality, and high performance, as well as small size and thinner profiles, in cameras embedded in mobile phones.

RJ64SC100

SGD Surface-Mount*2 LED Device for Lighting

High Color Rendering

- High color rendering depicts illuminated objects with colors close to those perceived under natural light.
- Color rendering index (Ra)*3: 85

GM2BB50BM0C

*2 Suitable for planar lighting fixtures (such as ceiling lights to illuminate large spaces).
*3 A numerical value expressing the level of color distortion compared to a reference light source. The closer the value to 100, the lower the color distortion.

High Luminous Efficiency, at the Industry's Top Level*4

*4 As of December 18, 2009 (based on Sharp research). For LED devices for lighting in the 0.5 W input power class with color rendering index (Ra) of 85.

- Double molded package structure improves light extraction efficiency to deliver a luminous flux of 38 lumens.

TOPICS

Sharp Starts Mass Production of Blue LED Chips

Growth in demand for LED backlights for LCD TVs and LED lighting fixtures has led to a rapid increase in the demand for blue LED chips. Sharp started blue LED chip production at its Mihara Plant in Mihara City, Hiroshima Prefecture, Japan in January 2010. Sharp will start production at the Fukuyama Plant in Fukuyama City, Hiroshima Prefecture within 2010 as well. This will boost Sharp's production capacity of blue LED chips to approximately five billion units a year in fiscal 2011.

Examples of Fiscal 2009 Certified SGP and AGP

SGP LED AQUOS LCD TV — Australia

LC-52LE700X

No. 1 in Energy Efficiency*1

*1 Comparison based on values made public by companies under MEPS. As of January 2010.

- Achieved a 7-star rating, the industry's highest, under Australia's MEPS (Minimum Energy Performance Standards) program.
- Features high image quality and even higher energy efficiency by combining a next-generation LCD panel that uses newly developed UV²A technology for brighter images with less light, with an LED backlight that offers precise, efficient control of light.
- Annual power consumption: 363 kWh/year

SGP Digital B/W MFP — North America

MX-M260

Energy Efficient

- TEC value*2 of 1.71 kWh, a 41% reduction compared to the previous model (AR-M257).

Third-Party Environmental Certification

- ENERGY STAR®

*2 Typical amount of energy consumed in a hypothetical week measured as stipulated under the ENERGY STAR program. Value is for total electricity consumed during five days of use, cycling between full operation and Sleep mode or turned off, and two days in Sleep mode or turned off.

AGP Thin-Film Solar Module — Europe

NA-F128G5

High-Efficiency Energy Creation

- Highly efficient energy creation using unlimited sunlight.
- Module conversion efficiency 9.0%, an improvement of 5.9% over the previous model (NA-F121G5).
- Because thin-film silicon solar cells can be fabricated using low-temperature processes at less than 200°C and because there are fewer steps in the production process, they can be manufactured using less energy than conventional crystalline silicon solar cells.

TOPICS

Spreading the Use of Environmentally Conscious Products on a Global Scale

US

Sharp Electronics Corporation (SEC), Sharp's US sales subsidiary, has received an ENERGY STAR® Award for Excellence in Energy-Efficient Product Design 2010 sponsored by the US Environmental Protection Agency (EPA) and the Department of Energy (DOE). The ENERGY STAR Awards 2010 were given to companies and organizations out of the more than 17,000 that participate in the ENERGY STAR program*3.

The award presented to SEC recognized its key accomplishments, including its focus on promoting the widespread use of energy-efficient equipment by offering consumers ENERGY STAR-qualified products in nine categories and by introducing its line of LED backlight LCD TVs which feature significantly reduced power consumption. In addition, the award cited the involvement of SEC in taking a leadership role within the industry to develop efficiency metrics that are a key element of the ENERGY STAR program.

*3 An environmental labeling system to promote savings through the use of energy-efficient electrical appliances.

Plaque for the ENERGY STAR Award for Excellence 2010

Thailand

Four Sharp MFPs (MX-2600N, MX-3100N, AR-5516, and AR-5520) were certified for the Thai Green Label*4 by the Thai government. These models offer high environmental performance through such features as pre-heat and auto power shut-off modes.

*4 The Thai Green Label program is run by the Thailand Environment Institute (TEI) and the Thai Ministry of Industry and recognizes environmentally outstanding products and services. The program was launched by the Thailand Business Council for Sustainable Development (TBCSD) in 1994.

At the certification ceremony on October 8, 2009

SGP and AGP-Certified Models for Fiscal 2009

		Product	Model
SGP	Japan	LCD TV	LC-60LX1/52LX1/46LX1/40LX1 LC-52SE1/46SE1/40SE1 LC-52DX2/46DX2/40DX2 LC-60DS6/52DS6 LC-52AE6/46AE6/40AE6 LC-26DE7/20DE7, LC-20NE7
		Refrigerator	SJ-ZF52S, SJ-XF52S/XF47S/XF44S SJ-XW47S/XW44S
		Air conditioner	AY-Z63SX/Z50SX
		Washing machine	ES-V510, ES-TG830, ES-GE60K/GE55K
		Air purifier	KC-Y80/Y65/Y45
		Plasmacluster Ion generator	IG-B200/B100/B20, IG-BK100 IG-BC15/BA15
		Mobile phone	SH006, SH005, SH004, SH003, SH002, SHY01 SoftBank 943SH/942SH/941SH/940SH/ 832SHs/832SH/936SH/935SH/934SH/933SH DM005SH SH-06B/05B/03B/02B/01B/08A/06A/05A
		Facsimile	UX-D82CL/D82CW
		Electronic dictionary	PW-AC910/AC900
		LED lamp	DL-L60AV DL-L60AN/L60AL/L40AN/L40AL DL-L601N/L601L/L401N/L401L DL-L81AN/L81AL DL-J40AN/J40AL
		Digital MFP	MX-C381, MX-M310FP/M260FP
		LCD monitor (information display)	PN-E601/E521/E471
		Solar module	ND-160AV/160AVL/114CV/160AV1/160AL

		Product	Model
SGP	Europe	LCD TV	LC-46LE600E, 40LE600E/S, 32LE600E LC-52LE700E/S, 46LE700E/S, 40LE700E/S, 32LE700E/S, 46LU700E/S, 40LU700E/S, 32LU700E/S, 46LX700E, 40LX700E, 32LX700E
		Digital MFP	MX-M260
	North America	LCD TV	LC-52LE700UN/46LE700UN/ 40LE700UN/32LE700UN
		Digital MFP	MX-M260/M310
	Australia	LCD TV	LC-52LE700X/46LE700X
AGP	Europe	Digital MFP	MX-M283N/M363N/M453N/ M503N/M363U/M453U/M503U MX-M160D/M160DK/M200D/ M200DK, MX-M310
		Thin-film solar module	NA-F128G5
	North America	Digital MFP	MX-M283N/M363N/M453N/ M503N/M363U/M453U/M503U
	Australia	LCD TV	LC-46LB700X/40LB700X LC-40LE700X
	Taiwan	LCD TV	LC-52AE6T/46AE6T

Number of Environmental Label Products in Fiscal 2009

International ENERGY STAR® Program*1	LCD TVs	Blu-ray Disc recorders	Audio products	MFPs
	44	3	9	72
	Printers	LCD monitors (information displays)	Facsimiles	Air conditioners
	3	20	16	9

Eco Mark*2	MFPs	Calculators	Power conditioners for solar power generation systems
	20	4	8

PC Green Label*2	PCs
	8

EU Eco Label*3	LCD TVs
	20

Nordic Swan*4	MFPs	Printers
	19	2

Blue Angel*5	MFPs
	13

Hong Kong Energy-Saving Label	MFPs	Air conditioners
	5	8

Thai Green Label	MFPs	Air conditioners
	4	10

China Environmental Labeling	MFPs
	23

Taiwan Energy-Saving Label	Air conditioners
	4

Energy Conservation Certification*6	LCD TVs	Projectors	MFPs
	8	8	38
	LCD monitors (information displays)		Air conditioners
	4		14

Target countries: *1 Japan, United States, EU nations, etc. *2 Japan *3 EU nations *4 Norway, Denmark, Finland, Iceland, Sweden *5 Germany *6 China

Green Procurement

In 2000, Sharp established the Green Procurement Guidelines and began joint efforts with suppliers to ensure that parts and materials are environmentally conscious.

Beginning in 2003, Sharp investigated chemical substance content, as stipulated by the Japan Green Procurement Survey Standardization Initiative (JGPSSI)*1, and took measures toward eliminating RoHS*2-designated substances. Sharp was in complete compliance with the RoHS Directive for all products for the European market by the end of fiscal 2005. Since fiscal 2006, Sharp has conducted online surveys of Japanese and overseas suppliers, in line with the Green Procurement Guidelines and the Survey Manual for Chemical Substances in Parts and Materials.

In addition, Sharp constructed a system to meet the REACH*3 regulation registration criteria in fiscal 2008 and completed pre-registration*4 by the end of November 2008. In fiscal 2009, Sharp held meetings to explain its action plan to comply with the REACH regulation. These sessions were aimed at suppliers, particularly in Japan, but also in Europe, Asia and China, and were part of Sharp's efforts to pursue global investigation of Substances of Very High Concern (SVHCs), as well as to construct a system to manage notification obligations. Sharp plans to completely fulfill its notification obligations under the REACH regulation by June 1, 2011.

Meeting aimed at suppliers to explain Sharp's action plan to comply with the REACH regulation

*1 A council that aims to standardize research on chemical substances in parts and materials, comprising 2 organizations and 59 companies, mainly electronics manufacturers including Sharp Corporation.
*2 An EU directive on the "Restriction on the use of certain Hazardous Substances," RoHS restricts the use of lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyl (PBB), and polybrominated diphenyl ether (PBDE) in electrical and electronic equipment entering the EU market after July 1, 2006.
*3 REACH is a new regulation on the Registration, Evaluation, and Authorization of Chemicals produced in and imported into the EU.
*4 Pre-registration: A transition regulation for the application of REACH to existing chemical substances. Companies were given a grace period until official registration if they had pre-registered between June 1 and December 1, 2008.

Web Green Procurement Guidelines

Expanding the Recycling of Used Products

Sharp recycles products that have reached the end of their service life based on three policies: 1) improve the recycling rate and aim for zero landfill disposal, 2) improve the efficiency of the recycling system to reduce recycling costs, and 3) incorporate recycling technologies into the development and design of products.

Objectives for Fiscal 2009	Achievements for Fiscal 2009	Objectives for Fiscal 2010	Objectives for Fiscal 2012
• Enhance and improve recycling system • Increase efficiency of flat-panel TV recycling line	• Reduced flat-panel TV recycling time to half	• Increase recycling efficiency to process growing number of CRT TVs collected	• Implement high-value-added recycling of LCD TV panel glass

Recycling Four Kinds of Home Appliances in Japan (Air Conditioners, TVs, Refrigerators, and Washing Machines)

As a member of the B Group*1 for home appliance recycling, Sharp has constructed and is operating a highly efficient recycling system based on 18 recycling plants in Japan.

Since April 2009, Sharp is recycling flat-panel TVs (LCD and plasma) and laundry dryers that were additionally designated under the revised Law for Recycling of Specified Kinds of Home Appliances. Sharp began sharing the use of all designated take-back sites with the A Group*2 in October 2009.

In addition, the introduction of the Eco-Point system*3 in May 2009 led to a rapid increase in the number of CRT TVs collected to approximately 1.28 million units per year (up 105% over the previous year). The B Group as a whole responded swiftly, and these used TVs were properly recycled.

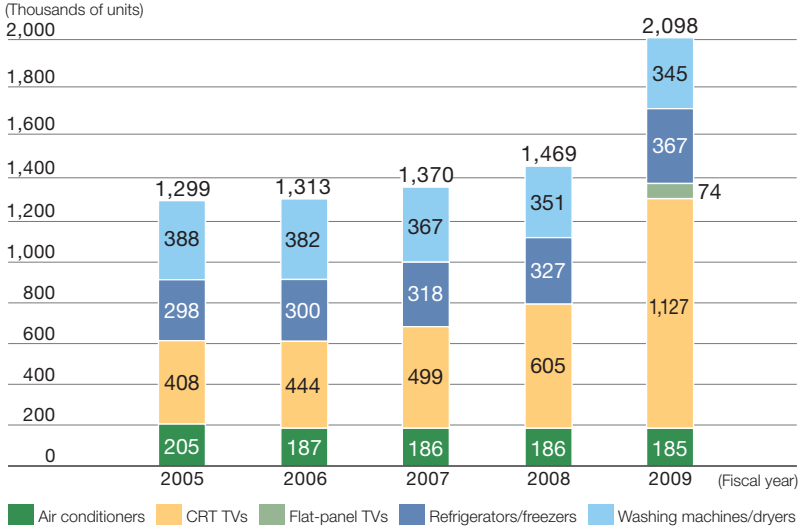
In fiscal 2009, Sharp recovered about 2.28 million units (up 53% over the previous fiscal year) and processed and recycled about 2.1 million units (up 43% over the previous fiscal year) of the four types of home appliances designated under the Law for Recycling of Specified Kinds of Home Appliances. The recycling rates exceeded the legal standard for all four kinds of appliances.

Building a Recycling Line for Flat-Panel TVs

Sharp and Kansai Recycling Systems Co, Ltd.*4 jointly built a recycling line exclusively for flat-panel TVs at Plant No. 2 of Kansai Recycling Systems, which began operations in April 2009. In preparation for the expected increase in the number of flat-panel TVs to be collected in the future, Sharp has worked to improve efficiency ever since operations began. The installation of a dedicated processing line for small-screen TVs and the introduction of labor-saving equipment in fiscal 2009 made it possible to slash the time required to dismantle a TV set nearly in half. Sharp will continue to study dismantling lines and strive to make further operational improvements.

*1 The B Group consists of Sharp Corporation, Sanyo Electric Co., Ltd., Sony Corporation, Hitachi Appliances, Inc., Fujitsu General Ltd., Mitsubishi Electric Corporation, and other companies.
*2 The A Group consists of Toshiba Corporation, Panasonic Corporation, and other companies.
*3 Designed to stimulate consumption and promote the use of environmentally friendly products, this program allows buyers of certain types of energy-efficient air conditioners, refrigerators, and TVs to earn "eco points" that can be exchanged at a later time for other goods.
*4 A consumer electronics recycling company in Japan established with investment from Sharp Corporation, Mitsubishi Materials Corporation, and five other companies (Sanyo Electric Co., Ltd., Sony Corporation, Hitachi Appliances, Inc., Fujitsu General Ltd., and Mitsubishi Electric Corporation).

Sharp Corporation's Processed and Recycled Units for the Four Home Appliances in Japan



Sharp Corporation's Processing and Recycling Status of the Four Home Appliances in Japan (Fiscal 2009)

	Unit	Air conditioners	CRT TVs	Flat-panel TVs	Refrigerators/ freezers	Washing machines/ dryers
Recycling rate	%	90	90	80	77	89
Legally required recycling rate	%	70	55	50	60	65
Units collected from designated collection sites	Thousand units	189	1,286	90	371	349
Processed and recycled units	Thousand units	185	1,127	74	367	345
Processed and recycled weight	Tons	7,655	32,106	1,048	21,992	11,648
Recycled weight	Tons	6,937	29,173	845	16,988	10,368

TOPICS

Handling the Rapid Increase in the Collection and Recycling of CRT TVs

Kansai Recycling Systems Co, Ltd. anticipates an increase in the number of CRT TVs taken back from consumers in conjunction with the end of terrestrial analog TV broadcasts in Japan scheduled for July 2011. A second plant went into operation in December 2006, exclusively to recycle TVs. This state-of-the art-plant features an integrated, start-to-finish recycling line—from disassembling the TV sets to refining glass cullet*1.

In fiscal 2009, as a result of the Eco-Point system which began in May, the number of CRT TVs collected increased rapidly, but Kansai Recycling Systems was able to handle this increase by significantly boosting processing efficiency by making improvements to the disassembly line, including developing and installing a fully automated system to remove the anti-implosion band*2 from CRTs, and installing conveyors to transport the recovered parts and materials.

In particular, up to now, the anti-implosion band was removed manually by pulling the metal band away from the CRT as part of the dismantling process. This involved a great deal of hand labor, but the introduction of this fully automated system both reduced the burden on workers and ensured their safety while at the same time dramatically improving efficiency.

Kansai Recycling Systems will strive to further boost efficiency and improve the work environment by developing new recycling technologies, and will work to contribute to the effective use of resources as well as promote deeper understanding of the recycling process by hosting tours of its facilities.

*1 Cullet is granulated glass from crushed CRTs. In the recycling process, contaminants are carefully removed from the glass to convert it into a nearly pure raw material suitable for use in a variety of applications.
*2 A metal band clamped around the CRT to prevent glass shards from scattering in the event an accidental implosion causes the picture tube to shatter.

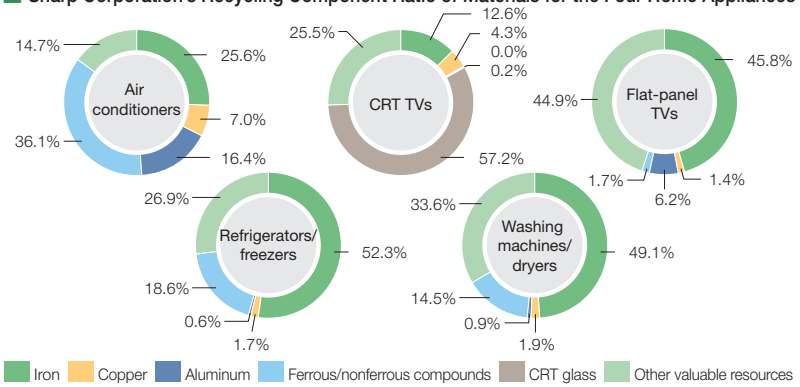
Fully Automated Anti-Implosion Band Removal System

A robot lifts the CRT from the conveyer, and moves it into position in the fully automatic anti-implosion band removal device. The removal device rotates the CRT while detaching the anti-implosion band.

Sharp Corporation's Total Weight of Parts or Materials That Can Be Transferred for a Fee or Free of Charge to Those Who Will Use Those Parts or Materials in New Products (Fiscal 2009)

Item	Unit	Air conditioners	CRT TVs	Flat-panel TVs	Refrigerators/ freezers	Washing machines/ dryers
Iron	Tons	1,779	3,677	387	8,882	5,092
Copper	Tons	489	1,268	12	281	194
Aluminum	Tons	1,141	8	52	97	96
Ferrous/nonferrous compounds	Tons	2,507	60	14	3,156	1,502
CRT glass	Tons	–	16,706	–	–	–
Other valuable resources (plastics, etc.)	Tons	1,019	7,452	379	4,569	3,482
Total tonnage	Tons	6,937	29,173	845	16,988	10,368

Sharp Corporation's Recycling Component Ratio of Materials for the Four Home Appliances



Sharp Corporation's Amount of Fluorocarbons Used as Refrigerants (Collected, Shipped, and Destroyed) (Fiscal 2009)

	Unit	Air conditioners	Refrigerators/ freezers
Refrigerant fluorocarbons collected	kg	116,090	40,363
Refrigerant fluorocarbons shipped to destruction contractors	kg	116,154	40,105
Refrigerant fluorocarbons destroyed	kg	115,565	40,099

Sharp Corporation's Amount of Fluorocarbons Included in Insulation (Collected, Shipped, and Destroyed) (Fiscal 2009)

	Unit	Air conditioners	Refrigerators/ freezers
Fluorocarbons contained in insulation material liquefied and collected	kg	–	60,769
Fluorocarbons contained in insulation material liquefied, collected, and shipped to destruction contractors	kg	–	60,117
Fluorocarbons contained in insulation material liquefied, collected, and destroyed	kg	–	57,854

• Differences in the totals shown for weights collected, shipped, and destroyed (by destruction contractors) reflect differences in reporting periods.

Continuing Design-for-Recycling Training

Since fiscal 2001, to promote easy-to-recycle product design, Sharp has been conducting design-for-recycling training with the cooperation of Kansai Recycling Systems Co., Ltd., mainly aimed at personnel responsible for product planning and design.

This training program combines actual hands-on experience in dismantling used consumer electronics and home appliances, with seminars and visits to a recycling line to observe dismantling operations, and aims to encourage participants to reflect their experience of design-related problems in their work to plan and design new products.

In fiscal 2009, this program was offered three times for a total of 45 participants. Sharp will offer this training program on an ongoing basis, and will work to ensure that the concept of design-for-recycling pervades the entire design process.

Hands-on training in dismantling used home appliances

Recycling TVs and Other Consumer Electronics in the United States

Sharp Electronics Corporation (SEC), Sharp's sales subsidiary in the US, established the Electronic Manufacturers Recycling Management Company, LLC (MRM) in cooperation with Panasonic Corporation of North America and Toshiba America Consumer Products, LLC in September 2007 for the recycling of audio-visual products, mainly TVs. The MRM recycling network expanded nationwide in November 2008, providing recycling opportunities at approximately 600 collection points. MRM holds special events and carries out voluntary activities to promote the recycling of used consumer electronics and complies fully with the laws and regulations of each state.

As a result of these efforts, the US Environmental Protection Agency (EPA) named MRM winner of its National TV Recycling Challenge*1 in October 2009.

*1 The National TV Recycling Challenge, issued in 2009, is part of the EPA's Plug-In To eCycling consumer electronics recycling program.

Plaque for the National TV Recycling Challenge award

Reusing and Recycling Copiers in Japan

Sharp is reusing and recycling copiers collected both through Sharp distribution channels and common industry channels. All of the approximately 34,000 used copiers collected (down 11% over the previous fiscal year) were dismantled and divided manually according to type of material, and recycled. Some of the parts and devices were reused.

Sharp also collected approximately 970,000 used toner cartridges (up 11% over the previous fiscal year) through its own collection channels and remanufactured them into approximately 430,000 toner cartridges (up 78% over the previous fiscal year; 12 varieties of cartridges), assuring customers the same quality as new toner cartridges. Sharp will continuously work to increase the number of kinds of toner cartridges it remanufactures as well as the amount recycled.

Recycling PCs in Japan

In compliance with the Japanese Law for Promotion of Effective Utilization of Resources, Sharp is recycling home- and business-use PCs.

For home-use PCs, the PC industry is working with Japan Post Service Co., Ltd. to collect used PCs at post offices nationwide as part of a common industry system for collection and recycling.

The PC3R Promotion Association has been assigned to efficiently collect and recycle business-use PCs within a common industry framework starting in February 2009.

In fiscal 2009, recovered and recycled PCs amounted to approximately 6,200 home- and business-use desktop and notebook PCs (up 9% over the previous fiscal year) and about 2,000 monitors (about the same as the previous fiscal year).

Amount of Sharp PCs Collected and Recycled in Japan (Fiscal 2009)

Product category	Business-use Home-use	Amount collected (kg)	Amount collected (units)	Amount treated for recycling (kg)	Actual amount reused (kg)	Recycling rate (%)*2	Legally required recycling rate (%)*3
Desktop PCs	Business-use	124	15	3,564	2,807	78.8	50.0
	Home-use	3,440	418				
	Total	3,564	433				
Notebook PCs	Business-use	835	284	16,978	11,748	69.2	20.0
	Home-use	16,143	5,489				
	Total	16,978	5,773				
CRT monitors	Business-use	244	20	4,786	3,261	68.1	55.0
	Home-use	4,542	372				
	Total	4,786	392				
LCD monitors	Business-use	907	213	6,782	5,684	83.8	55.0
	Home-use	5,875	1,379				
	Total	6,782	1,592				

*2 Ratio of the amount of recycled parts and materials to the amount of used products treated for recycling.
*3 Ratio of reusable resources targeted for achievement by the end of fiscal 2003 (in line with the Japanese Law for Promotion of Effective Utilization of Resources).

Collecting Portable Rechargeable Batteries in Japan

Sharp is a member of the Japan Portable Rechargeable Battery Recycling Center (JBRC) and takes part in the JBRC's system for the collection of used rechargeable batteries. In fiscal 2009, the JBRC collected approximately 1,355 tons of used batteries.

Promoting Environmental Sustainability Management

Sharp continuously strives to strengthen environmental sustainability management and raise employees' environmental awareness by building an Integrated Management System that unifies environmental and quality management systems based on its own strategic management system, and by implementing environmental education programs.

Objectives for Fiscal 2009	Achievements for Fiscal 2009	Objectives for Fiscal 2010	Objectives for Fiscal 2012
• Build Integrated Management System • 5 overseas plants in total	• 5 overseas plants in total	–	–
–	–	• Restructure S-EMS • Re-evaluate S-EMS and compile proposed revisions	• Construct revised S-EMS
–	–	• Restructure framework to promote environmental sustainability management system at offices in Japan • Set up supervisory sites in each region	• Prepare for transition to management on an individual company basis (set up regional supervisory sites for each company)
• Promote environmental e-learning (offices in Japan, plants and offices overseas) • Hold step 1 (basic course)	• Held step 1 (basic course)	• Hold step 2 (advanced course)	• Hold step 3 (advanced course)

Developing the Sharp Environmental Management System

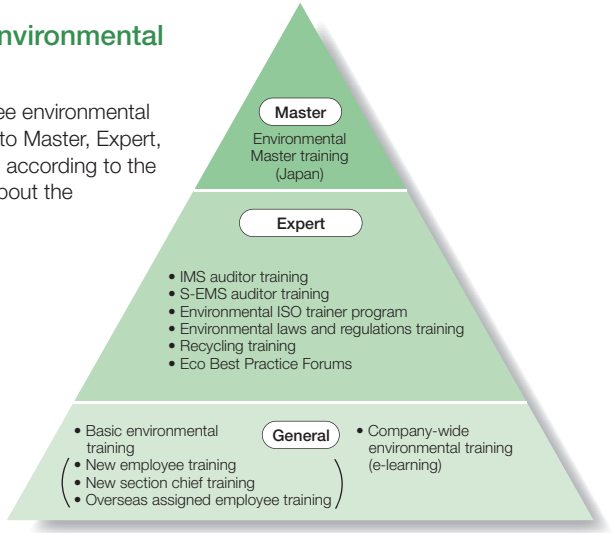
Sharp began working to obtain ISO 14001 certification in fiscal 1995. And since fiscal 2004, Sharp has put in place at all plants and offices in Japan and overseas a proprietary environmental management system (S-EMS: Sharp Environmental Management System) aimed at reinforcing environmental legal compliance and improving environmental activities. S-EMS is Sharp's original environmental management system based on ISO 14001 plus an additional 49 original criteria.

In fiscal 2006, based on Sharp's proprietary strategic management system (eS-SEM: e-Sharp Strategic Enterprise Management), Sharp merged the previously separate S-EMS and QMS (Quality Management System) into the Integrated Management System (IMS). Through total optimization, the IMS allows problem solving to become easier and management to become more efficient and precise. In fiscal 2009, two plants in China adopted the IMS.

Beginning in fiscal 2010, Sharp will reform the framework for promoting its system of environmental sustainability management at offices in Japan, and will further strengthen its environmental efforts by setting up new supervisory sites to manage offices in each region. In addition, Sharp will restructure S-EMS and enhance and expand environmental self-monitoring and internal audits.

Stepping Up Environmental Education

Sharp offers employee environmental education, divided into Master, Expert, and General courses according to the level of knowledge about the environment.



Environment-Related Accidents or Violations of Laws

There were no lawsuits against the Sharp Group, or fines levied against the Group related to the environment in fiscal 2009. There were also no serious environment-related accidents.

Examples of Environmental Education Courses

■ Master Course

The Master course is designed to foster the leaders needed for future environmental sustainability management.

Environmental Master training was held six times for a total of 260 people in fiscal 2009. The training included studying examples of efforts to improve energy efficiency, environmental safety consultation, and visits to recycling facilities. Sharp is working to expand the content studied in this training course across the entire company.

Environmental Master training

■ Expert Course

The Expert course provides training with the goal of understanding environmental laws and regulations, and of gaining specialized expertise related to various operational activities.

In fiscal 2009, Sharp conducted Internal Environmental Auditor training for 123 individuals. In addition, training on environmental laws and regulations were held at sales bases in Japan, the Kameyama Plant (Kameyama City, Mie Prefecture), and the Katsuragi Plant (Katsuragi City, Nara Prefecture) for a total of 227 participants.

Eco Best Practices Forums were also held 10 times overseas for persons in charge of promoting environmental efforts at production facilities.

Training on environmental laws and regulations

■ General Course

This course is intended to help employees master basic knowledge about the environment and improve environmental awareness.

The Domestic Sales and Marketing Group implemented environmental e-learning for all of the nearly 5,700 sales personnel in Japan, with the aim of bringing environmental knowledge to sales and marketing locations.

Environmental e-learning

Total of 5,671 Employees Pass the Eco Test

Beginning in fiscal 2007, Sharp approved the Eco Test (Certification Test for Environmental Specialists) sponsored by the Tokyo Chamber of Commerce and Industry, as a certification that qualifies an employee to receive an incentive payment under a program to promote independent skills development, and began encouraging employees to take the test. In particular, all domestic sales and marketing divisions, being involved in sales of environment-related products such as energy-creating solar cells and energy-saving LCD TVs, have been working on their own initiative to gain Eco Test certification with the goal of nurturing “sales and service personnel who can talk about the environment in their own words.” In addition, the stories of employees who have passed the Eco Test are posted on the Sharp website in the Environmental and Social Activities section with the aim of motivating more employees to take the test in the future.

In fiscal 2009, 2,783 employees acquired the certification, bringing the number of Sharp employees who have passed the test to a total of 5,671*1. This represents 18% of the 32,300 employees*2 of the Sharp Group in Japan, and 6% of the overall total of 95,245 persons*1 who have passed the certification test.

*1 As of March 31, 2010.
*2 As of April 1, 2010.

Holding Environmental Refresher Sessions

At the Mie Plant, Sharp has been holding regular environmental refresher sessions for employees. The aim is to improve employee knowledge and awareness of the environment by inviting speakers from corporations and government agencies to make presentations on their environmental initiatives. In fiscal 2009, three such refresher sessions were held, with 212 employees in attendance.

Environmental refresher session with an invited speaker from outside the company

ISO 14001-Certified Plants and Offices

Japan

Plants	Sharp Corporation	Tochigi Plant
		Yao Plant
		Hiroshima Plant
		Nara Plant
		Katsuragi Plant (including Toyama Plant)
		Fukuyama Plant
		Mie Plant
		Tenri Plant
		Mihara Plant
		Kameyama Plant
	Sharp Manufacturing Systems Corporation	
	Sharp Niigata Electronics Corporation	
	Sharp Yonago Corporation	
	Sharp Mie Corporation	
	Sharp Tokusen Industry Co.	
	Kantatsu Co., Ltd.	
	Sharp Takaya Electronic Industry Co., Ltd.	
Offices	Sharp Corporation	Head Office/Tanabe Building
		Makuhari Building (Tokyo Branch)
		Tokyo Ichigaya Building
	Sharp Electronics Marketing Corporation	
	Sharp System Products Co., Ltd.	
	Sharp-Engineering Corporation	
	Sharp Document Systems Corporation	
	Sharp Amenity Systems Corporation	
	Sharp Trading Corporation	
	Sharp Business Computer Software Inc.	
	One Stop Support Corporation	
	Sharp Office Rental Corporation	
	Sharp Electronics Sales Okinawa Corporation	
	Sharp Finance Corporation	
Recycling Plant	Kansai Recycling Systems Co., Ltd.	

North America

Plants	Sharp Manufacturing Company of America (SMCA)*1	US
	Sharp Electrónica Mexico S.A. de C.V. (SEMEX)	Mexico
Offices	Sharp Electronics Corporation (SEC)	US
	Sharp Laboratories of America, Inc. (SLA)	
	Sharp Electronics of Canada Ltd. (SECL)	Canada

*1 Manufacturing division of SEC

Europe

Plants	Sharp Manufacturing Company of U.K. (SUKM)*2	UK
	Sharp Electrónica España S.A. (SEES)	Spain
	Sharp Manufacturing France S.A. (SMF)	France
	Sharp Manufacturing Poland sp. z o.o. (SMPL)	Poland
Offices	Sharp Electronics (Europe) GmbH (SEEG)	Germany
	Sharp Electronics (U.K.) Ltd. (SUK)	UK
	Sharp Laboratories of Europe, Ltd. (SLE)	
	Sharp Electronics France S.A. (SEF)	France
	Sharp Electronics (Italia) S.p.A. (SEIS)	Italy
	Sharp Electronics (Schweiz) AG (SEZ)	Switzerland
	Sharp Electronics (Nordic) AB (SEN)	Sweden
	Sharp Electronics Benelux B.V. (SEB)	Netherlands

*2 Manufacturing division of SUK

Asia, Middle East, Oceania

Plants	Shanghai Sharp Electronics Co., Ltd. (SSEC)	China
	Sharp Office Equipments (Changshu) Co., Ltd. (SOCC)	
	Wuxi Sharp Electronic Components Co., Ltd. (WSEC)	
	Nanjing Sharp Electronics Co., Ltd. (NSEC)	
	Sharp Technical Components (Wuxi) Co., Ltd. (STW)	
	Sharp Appliances (Thailand) Ltd. (SATL)	Thailand
	Sharp Manufacturing (Thailand) Co., Ltd. (SMTL)	
	Sharp Manufacturing Corporation (M) Sdn. Bhd. (SMM)	Malaysia
	Sharp (Phils.) Corporation (SPC)	Philippines
	PT. Sharp Semiconductor Indonesia (SSI)	Indonesia
	PT. Sharp Electronics Indonesia (SEID)	
	Shanghai Sharp Mold and Manufacturing Systems Co., Ltd. (SSMC)	China
	Sharp India Ltd. (SIL)	India
	Sharp Korea Corporation (SKC)	Korea
	S&O Electronics (Malaysia) Sdn. Bhd. (SOEM)	Malaysia
Offices	Sharp Electronics (Shanghai) Co., Ltd. (SES)	China
	Sharp Electronics Sales (China) Co., Ltd. (SESC)	
	Sharp Electronic Components (Taiwan) Corporation (SECT)	Taiwan
	Sharp Electronics (Malaysia) Sdn. Bhd. (SEM)	Malaysia
	Sharp-Roxy Sales (Singapore) Pte., Ltd. (SRS)	Singapore
	Sharp Electronics (Singapore) Pte., Ltd. (SESL)	
	Sharp Software Development India Pvt. Ltd. (SSDI)	India
	Sharp Middle East Free Zone Establishment (SMEF)	UAE
	Sharp Corporation of Australia Pty. Ltd. (SCA)	Australia
	Sharp Corporation of New Zealand Ltd. (SCNZ)	New Zealand
	Sharp-Roxy Sales & Service Company (Malaysia) Sdn. Bhd. (SRSSC)	Malaysia
	Sharp-Roxy (Hong Kong) Ltd. (SRH)	Hong Kong (China)

Raising the Level of Environmental Performance in Factories

Sharp is working to raise the level of environment performance at all its factories to a level above Green Factory by putting into place a certification system that evaluates the environmental performance of its production facilities using its own criteria and standards. Sharp is also promoting efforts to raise all its plants to the level of Super Green Factory, which features an extremely high level of environmental performance.

Objectives for Fiscal 2009	Achievements for Fiscal 2009	Objectives for Fiscal 2010	Objectives for Fiscal 2012
• 10 Sharp Corporation plants • 2 plants equivalent to SGF II grade A or higher	• 10 plants equivalent to SGF II grade A or higher based on self evaluation	• 2 plants SGF II grade A or higher based on new evaluation criteria	• All plants SGF II grade A or higher
• 7 Japanese plants (subsidiaries/affiliates) • Introduce SGF II at 2 SGF • 3 SGF in total	• Introduced SGF II at 2 SGF • 3 SGF in total	• Implement SGF II at 3 SGF • 5 SGF in total	• All plants SGF II grade B or higher
• 21 overseas plants (subsidiaries/affiliates) • Introduce SGF II at 9 SGF • 11 SGF in total	• Introduced SGF II at 9 SGF • 11 SGF in total	• Implement SGF II at 11 SGF • 16 SGF in total	• All plants SGF II grade B or higher
• Hold Eco Best Practice Forums in Europe, Americas, and China	• Held forums in Europe, Americas, China, and Asia	• Hold forums at least once a year in all regions	• Hold forums at least twice a year in all regions

Making More Factories Super Green Factories

Sharp defines factories with a certain level of environmental consciousness as Green Factories (GF). The basic policies and operational know-how for achieving GF status have been formulated in line with 10 concepts in the GF Guidelines, which Sharp has been applying at all production bases in Japan since fiscal 1999 and overseas since fiscal 2001.

With construction of the Kameyama Plant, in fiscal 2003 Sharp established assessment criteria for Super Green Factories (SGF)—factories with exceptionally high levels of environmental performance—and launched efforts to award in-house certification. The Kameyama Plant was the first plant to achieve this certification. Sharp started GF certification in fiscal 2004 and overseas as well, and Sharp achieved its medium-term objective of having all Sharp plants in Japan and overseas certified for GF status and all 10 Sharp Corporation plants in Japan certified for SGF status by fiscal 2007.

For the assessment criteria, Sharp has established 21 environmental performance evaluation items covering five different areas to provide more detailed scoring in the assessment. A plant must score 70 or more points out of a possible 100 in the assessment process to earn GF certification, and score 90 or more points to achieve SGF certification.

In fiscal 2009, an additional one plant in Japan and two overseas were certified as SGF, making 24 of Sharp's 38 worldwide plants SGFs.

Green Factory Concepts

Greenhouse gases	Minimize emission of greenhouse gases
Energy	Minimize energy consumption
Waste	Minimize discharge of waste
Resources	Minimize resource consumption
Chemical substances	Minimize risk of environmental pollution and accidents caused by chemical substances
Atmosphere, water, soil	Minimize environmental burden on the atmosphere, water, and soil
Harmony with nature	Endeavor to preserve nature both on and off site
Harmony with the community	Encourage harmony with the local community
Environmental consciousness	Foster high environmental awareness among employees
Information disclosure	Disclose information on the environment

SGF II—An Initiative to Further Enhance the Environmental Performance of SGF

Beginning in fiscal 2008, Sharp launched SGF II, a new initiative for plants in Japan that have attained SGF certification. In addition to prior initiatives that focused on upgrading environmental equipment such as the introduction of high-efficiency equipment and abatement systems, SGF II incorporates the "soft" aspects in evaluation points, such as the know-how to maintain and manage this environmental equipment so that they operate at full performance. SGF II also focuses on reducing the absolute amount of greenhouse gases emitted and waste discharged.

In fiscal 2009, Sharp began expanding its SGF II efforts to plants outside of Japan that have been SGF certified, and looking ahead to fiscal 2012, will aim to achieve the goal of having all plants in Japan and overseas reach grade B or above under the SGF II system.

Case Study: Japan

Reducing the Environmental Impact of Production Equipment

Up to now, Sharp has been focusing on utility equipment* in pursuing reductions in environmental impacts at its production facilities in Japan. But Sharp's environmental management divisions, in cooperation with the production engineering divisions and the production divisions, have also been taking proactive steps to reduce the environmental impact of production equipment, which accounts for a large percentage of the impacts, without hurting product quality or productivity.
(For examples of these efforts, see pages 65, 66, 69, and 70.)

* Ancillary services and equipment such as power, air conditioning, etc.

Case Study: Overseas

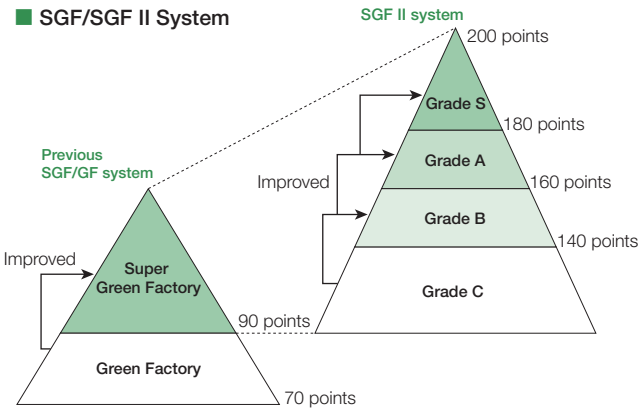
Raising Environmental Performance Levels Through Eco Best Practice Forums

As a way of improving the "soft" aspects prioritized under SGF II, Eco Best Practice Forums for mutual learning are being held at overseas production bases in all regions. Begun in fiscal 2009, these meetings generate new ideas and promote the sharing of valuable know-how, with the goal of raising the level of environmental performance at each plant. The forums are linked by videoconference to give participants from each plant opportunities to introduce their environmental protection efforts and discuss problems and solutions.

In fiscal 2009, Eco Best Practice Forums were held a total of 10 times in Europe, Asia, China, and the Americas. Sharp will continue to hold these forums to spread advanced eco efforts and ideas across the organization as it makes its plants even more environmentally sound.

Eco Best Practice Forum held in Asia

SGF/SGF II System



SGF II Quantified Environmental Performance Criteria and Assessment Weighting in Japan

Environmental performance criteria			Assessment weighting	Sub total	Total
Reductions in greenhouse gas emissions per production unit		• Reductions in PFC gases • Promotion of variable supply control systems • Recovery and recycling of waste heat • Introduction of high-efficiency equipment • Introduction of new energy sources • Implementation of managerial decision-making standards	25 points	100 points	200 points
Reductions in the release of chemical substances		• PRTR atmospheric emissions • PRTR water emissions • Sulfoxides produced by combustion • Elimination of all noxious odors	27 points		
Appropriate disposal of industrial waste		• Zero discharge to landfill • Confirmation of appropriate disposal • Recycling waste as valuable resources	18 points		
Reductions in the consumption of industrial water		• Use of rain and condensate water • Recovery of production rinse water	10 points		
Monitoring and safety		• Disaster and fire prevention measures for hazardous materials • Special safety measures • Adoption of central monitoring measures	20 points		
Reduction of environmental impacts and contribution to management	Greenhouse gas emissions reduction	• Rate of emissions reduction	40 points	100 points	
	Waste discharge reduction	• Rate of emissions reduction	30 points		
Safety measures	Environmental equipment	• Equipment replacement scheme • Maintenance management	10 points		
	Equipment other than environmental equipment	• Equipment replacement scheme • Maintenance management	10 points		
Information disclosure		• Assign points for each item disclosed	10 points		

SGF and GF Certified Plants

		Country	Fiscal 2003	Fiscal 2004	Fiscal 2005	Fiscal 2006	Fiscal 2007	Fiscal 2008	Fiscal 2009
Sharp Corporation	Tochigi Plant	Japan		GF	GF	GF	SGF	SGF II in place	Equivalent to SGF II grade A or higher (based on self evaluation)
	Yao Plant			GF	GF	SGF	SGF		
	Hiroshima Plant			GF	GF	SGF	SGF		
	Nara Plant			GF	GF	SGF	SGF		
	Katsuragi Plant			GF	GF	GF	SGF		
	Fukuyama Plant			GF	GF	GF	SGF		
	Mie Plant			SGF	SGF	SGF	SGF		
	Tenri Plant			GF	GF	GF	SGF		
	Mihara Plant			GF	GF	GF	SGF		
	Kameyama Plant		SGF	SGF	SGF	SGF	SGF		
Sharp Manufacturing Systems Corporation					GF	GF	GF	SGF	Introduce SGF II
Sharp Yonago Corporation						GF	GF	SGF	
Sharp Niigata Electronics Corporation						GF	GF	GF	GF
Sharp Mie Corporation					GF	GF	GF	GF	GF
Sharp Tokusen Industry Co.				GF	GF	GF	GF	GF	GF
Kantatsu Co., Ltd.						GF	GF	GF	SGF
Sharp Takaya Electronic Industry Co., Ltd.				GF	GF	GF	GF	GF	GF
SEMEX		Mexico			GF	GF	GF	SGF	Introduce SGF II
SUKM*1		UK			GF	GF	GF	SGF	
SEES		Spain				GF	GF	SGF	
SMF		France			SGF	SGF	SGF	SGF	
SOCC		China			GF	SGF	SGF	SGF	
NSEC					GF	GF	SGF	SGF	
SOEM		Malaysia				SGF	SGF	SGF	
SMM					GF	GF	GF	SGF	
SMTL		Thailand				GF	SGF	SGF	
SMCA*2		US					GF	GF	GF
SSEC		China			GF	GF	GF	GF	SGF
WSEC						GF	GF	GF	GF
STW							GF	GF	GF
SSMC						GF	GF	GF	GF
SKC		Korea				GF	GF	GF	GF
SATL		Thailand					GF	GF	GF
SPC		Philippines					GF	GF	GF
SSI		Indonesia					GF	GF	SGF
SEID							GF	GF	GF
SIL		India					GF	GF	GF
SMPL		Poland							GF

*1 Manufacturing division of SUK *2 Manufacturing division of SEC

SGF Certified Plants Worldwide

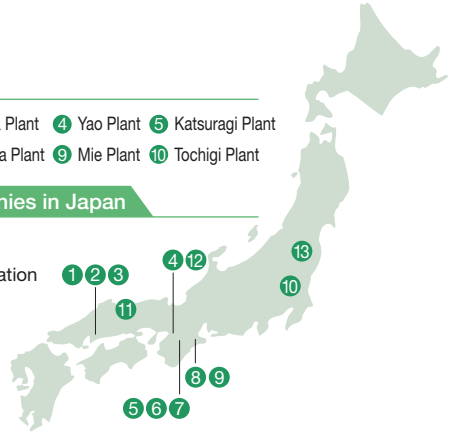
Sharp Corporation

1 Hiroshima Plant 2 Mihara Plant 3 Fukuyama Plant 4 Yao Plant 5 Katsuragi Plant
6 Nara Plant 7 Tenri Plant 8 Kameyama Plant 9 Mie Plant 10 Tochigi Plant

Subsidiaries and Affiliated Companies in Japan

11 Sharp Yonago Corporation
12 Sharp Manufacturing Systems Corporation
13 Kantatsu Co., Ltd.

SGF in Japan: 13



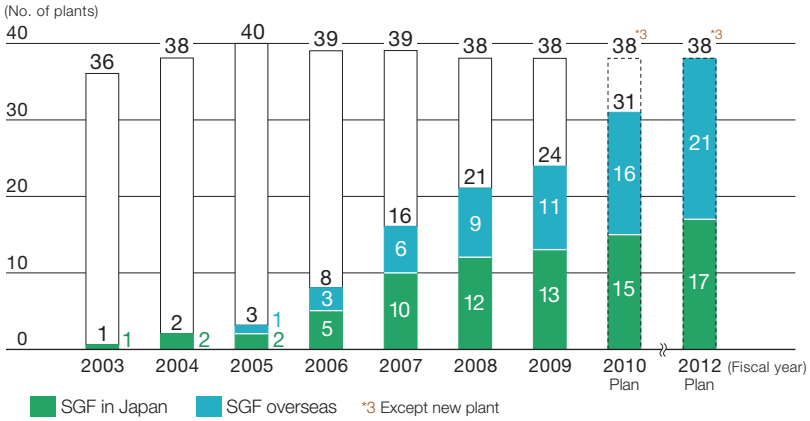
Subsidiaries and Affiliated Companies Overseas

1 SUKM (UK) 2 SMF (France) 3 SEES (Spain)
4 NSEC (China) 5 SOCC (China) 6 SSEC (China)
7 SMTL (Thailand) 8 SOEM (Malaysia) 9 SMM (Malaysia)
10 SSI (Indonesia) 11 SEMEX (Mexico)

SGF overseas: 11

Note: Underlined plants achieved SGF in fiscal 2009

Number of SGF Certified Plants



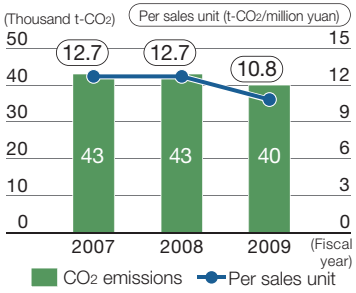
SSEC in China Achieves SGF Certification

Shanghai Sharp Electronics Co., Ltd. (SSEC)*1 in China acquired ISO 14001 certification in 1998, and has been working continuously to reduce its impact on the environment, including reducing CO_2 emissions by installing energy-efficient equipment, reducing waste by re-using packaging materials used to ship products, and properly managing chemical substances. In particular, this factory, which is located in Shanghai City where water is a serious problem, is concentrating on reducing the amount of the water it uses by introducing equipment to recycle water after inspections of the heat exchangers in air conditioners. In fiscal 2009, SSEC was able to reduce both CO_2 emissions and supplied water compared to the levels of the previous fiscal year. In addition, SSEC was able to hold down the amount of waste, etc. As a result of such activities, SSEC acquired SGF certification in fiscal 2009. It has also received high marks from the city of Shanghai, as shown in the table below.

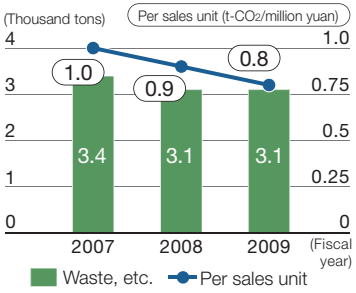
Fiscal Year	Accreditation
2005	Shanghai Exemplary Clean Manufacturer
2007	Green Company in the Pudong New Area, Shanghai
2008	Green Company in the Pudong New Area, Shanghai Shanghai Exemplary Clean Manufacturer
2009	Water-Saving Company of Shanghai Shanghai Exemplary Clean Manufacturer

*1 SSEC manufactures air conditioners, refrigerators, washing machines, and air purifiers.

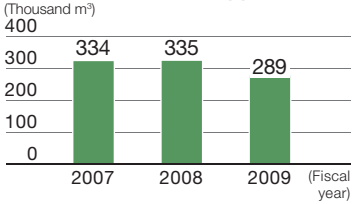
CO_2 Emissions



Amount of Waste, etc. Discharged



Amount of Water Supplied



Reported by
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Environment and Quality Management Division
SSEC

TOPICS

Kameyama Plant Makes "Best 100 New Energies" List

Sharp is putting energy-creation into practice at its Kameyama Plant, a Super Green Factory. Working with Cenergy Co., Sharp has installed a 5,210 kW solar power generation system on the roof and walls of the factory, and also set up a 200 kW floating solar power generation system on a nearby stormwater retention pond. These efforts were evaluated and chosen as one of the Best 100 New Energies*2 sponsored by the New Energy and Industrial Technology Development Organization (NEDO) and the Ministry of Economy, Trade and Industry in fiscal 2009.

*2 A program to select projects from around Japan that are outstanding in their use of new energies, and by widely disseminating information about them, promote the introduction of new and renewable energies nationwide.

5,210 kW solar power generation system installed on the roof and walls at the plant

Floating 200 kW solar power generation system set up in cooperation with Kameyama City on a stormwater retention pond that is adjacent to the factory. Proof-of-concept tests are underway.

Awards Received by the Kameyama Plant

Fiscal Year	Award Name and Sponsor
2004	Sustainable Management Pearl Award; 3rd Japan Sustainable Management Awards Sponsors: Japan Sustainable Management Awards Committee, Mie Prefecture
2005	Energy Conservation Encouragement Award; 4th Japan Cogeneration System Award Sponsor: Japan Cogeneration Center
2006	Economy, Trade and Industry Minister's Prize; 8th Japan Water Award Sponsor: Japan Water Award Committee
2007	Minister of the Environment Award; Fiscal 2007 Commendation for Outstanding Measures Against Global Warming Sponsor: Ministry of the Environment

Improving the Level of Environmental Performance of Offices

Sharp established the Green Office certification system as an initiative to increase the level of environmental performance at its offices.
This system builds on the know-how accumulated under the Green Factory certification system, which achieved demonstrable results in strengthening the environmental performance of production facilities. This system was introduced in Japan in fiscal 2007 and overseas in fiscal 2009.

Objectives for Fiscal 2009	Achievements for Fiscal 2009	Objectives for Fiscal 2010	Objectives for Fiscal 2012
• Certify more offices as Green Offices • Japan: 43 out of the total 54 offices • Overseas: 4 (one each in Europe, Americas, China, and Asia) out of the total 20 offices	• Japan: Certified all 54 offices • Overseas: Certified 13 (3 Europe, 3 Americas, 1 China, and 6 Asia) out of the total 20 offices	• Strengthen certification criteria in Japan and overseas • Japan: Ongoing certification of all 54 offices • Overseas: Certify 8 (two each in Europe, Americas, China, and Asia) out of the total 20 offices	• Japan: Ongoing certification of all 54 offices • Overseas: Certify all 20 offices

Expanding the Green Office Certification System in Japan

Sharp formulated its Green Office certification system to improve the environmental performance level of its offices and began applying it at the 54 offices of its main sales subsidiaries in Japan in fiscal 2007.

This certification system establishes evaluation criteria that add Sharp's own evaluation indicators to ISO 14001 and covers 27 items in eight fields. An office is recognized as a Green Office if it meets the performance-evaluation criteria of all eight fields at a specified level. Reducing environmental impacts generated by normal business activities, compliance with environmental laws and regulations, as well as contributing to the environment through sales of energy-efficient products or solar power systems, which is the primary business of a sales company, and involvement in community social action programs, are evaluated on a comprehensive basis.

In fiscal 2009, all 54 offices attained Green Office certification. Sharp plans to work to strengthen the certification standards in the future.

Expanding Green Offices Globally

In fiscal 2009, Sharp began to introduce the Green Office certification system overseas for the 20 offices of its main sales subsidiaries. Because the situation varies widely in countries and regions abroad, for example, environmental laws and regulations are different in each country and region, these offices were evaluated based on a combination of "common criteria," which all offices must address, and "optional criteria" that each individual office works to satisfy based on their own specific circumstances. An office is certified as a Green Office if it fulfills both common criteria and optional criteria to a certain level.

In fiscal 2009, a total of 13 offices* (in Europe, the Americas, China, and Asia) attained Green Office certification.

Sharp will work to improve the environmental performance of its offices around the world by working to ensure that outstanding examples of these efforts are propagated throughout its international operations.

Green Office Certification Standards (Japan, Fiscal 2009)

Field	Key Evaluation Indicators (number of items)
Adherence to environmental laws	Conditions of compliance as evaluated by audits, adherence to laws, other measures (3)
Reduction of environmental impact through work specific to each business division	Selling of environmentally conscious products, improvement of employee skills, other measures (2)
Prevention of global warming	Reduction of CO_2 emissions, other measures (4)
Waste management	Promotion of zero discharge to landfill, other measures (4)
Green purchasing, etc.	Promotion of green purchasing, other measures (4)
Environmental maintenance in the workplace	Operational management of facilities and equipment, other measures (4)
Implementation of environmental education	Achievement ratio of education programs, other measures (2)
Environmental social action programs	Implementation of community activities, other measures (4)

Green Office Certification Standards (Overseas, Fiscal 2009)

Field	Key Evaluation Indicators (number of items)
Expansion of sales of energy-saving and energy-creating products	Selling of environmentally conscious products, other measures (Common: 1; Optional: 2)
Reduction of environmental impacts from business activities	Reduction of electricity use, promotion of the 3Rs, other measures (Common: 8; Optional: 9)
Environmental governance	Formulation of environmental action plan, other measures (Common: 1; Optional: 3)
Adherence to environmental laws	Conditions of compliance as evaluated by audits, adherence to laws, other measures (Common: 3)
Environmental communication, etc.	Providing environmental education for employees, involvement in environmental community activities, other measures (Common: 3; Optional: 3)

* SUK (UK), SEIS (Italy), SEB (Netherlands), SEC (US), SMA (US), SECL (Canada), SES (China), SECT (Taiwan), SEM (Malaysia), SMEF (UAE), SESL (Singapore), SCA (Australia), SCNZ (New Zealand)

GREEN FRONT SAKAI Receives "Excellent Eco-Commuting Business Site" Certification

Four of Sharp's production sites and offices in Osaka Prefecture—GREEN FRONT SAKAI (including participating companies) (located in Sakai City), the Yao Plant (Yao City), and the Hirano and Kami Offices (both in Osaka City)—have received Excellent Eco-Commuting Business Site certification*1 from the Conference on Promotion of Public Transportation. With the aim of reducing CO_2 emissions and promoting the health of employees, these business sites were evaluated based on their success in encouraging commuting by public transportation.

エコ通勤優良事業所認証
京都議定書の目標達成に貢献しています

*1 This system certifies and accredits business sites that actively engage in voluntary efforts to promote eco-commuting. This program works to widely disseminate information about successes under this system to promote the widespread adoption of eco-commuting.

Makuhari Office Receives "Distinguished Organization of Merit in Promoting the Creation of a Sustainable Society"Award at Fourth National Convention for the Promotion of 3R Initiatives

The Sharp Makuhari Office (located in Chiba City, Chiba Prefecture) won a "Distinguished Organization of Merit in Promoting the Creation of a Sustainable Society—Minister's Award" as a company with outstanding 3R activities (Reduce, Reuse, and Recycle) at the fourth National Convention for the Promotion of 3R Initiatives*2 sponsored by the Ministry of the Environment and others. The Makuhari Office won the award based on its comprehensive activities to maximize recycling of waste paper, reducing the volume of organic waste by installing a kitchen food waste composter, and recycling industrial waste.

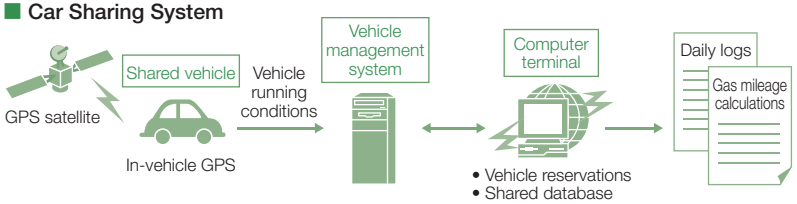
At the awards ceremony on October 16, 2009

*2 This event brings together businesses, administrative bodies, and ordinary citizens with the aim of promoting efforts to achieve the creation of a waste-free society and formulate plans for a sustainable recycling-oriented society by exchanging knowledge and experience and by providing an opportunity for each individual participant to re-examine their own lifestyle and deepen their understanding of the 3Rs.

Car Sharing at SEMC

In 2009, Sharp Electronics Marketing Corporation (SEMC), a sales subsidiary in Japan, introduced car sharing at three sites (Ichigaya and Ueno in Tokyo, Ebisu in Osaka). All shared vehicles are equipped with a GPS linked to a centralized management system that monitors vehicle running conditions and route information. The system enables eco driving by monitoring sudden start-ups and accelerations and by automatically calculating gas mileage, thus contributing to efficient use of travel time and increased environmental awareness.

Car Sharing System



SUK in the UK Achieves Green Office Certification

All staff members at Sharp Electronics (U.K.) Ltd. (SUK), Sharp's sales subsidiary in the UK, work together under the leadership of senior management to help protect the environment.

SUK carries out various measures to reduce its environmental impact, including the installation of energy-saving equipment and a motion-sensor lighting system, the use of recycled paper, and the installation of solar panels on SUK office roofs. In July 2009, SUK introduced a recycling scheme for discarded toner cartridges.

SUK is also keen to raise awareness about the importance of environmental protection and to encourage employees to proactively do their part to save the environment. Related activities include displaying educational, environment-related banners and posters throughout SUK offices and participating in a government-promoted bike commute program.

From November 23 to 27, 2009, SUK held a Green Week event where, with the help of external presenters, unique programs were implemented each day on four themes, one of which was global warming. For stakeholders, SUK introduces Sharp's environmental activities through sales promotion materials, its website, ads, and exhibitions, and works to expand sales of Sharp energy-saving products.

As a result of these efforts, SUK achieved Green Office certification in fiscal 2009. And, after rigorous assessment, Sharp subsidiaries in the UK, including SUK, were certified for the Carbon Trust Standard, proving that we have taken real action on climate change.

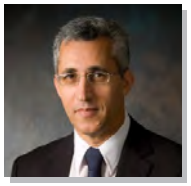
SUK will continue to make efforts to minimize the impact of its business activities on the environment by promoting best practices and encouraging its staff to get involved in protecting the environment.

Solar cells for installation on buildings and educational material on solar power displayed in the reception area

CARBON TRUST STANDARD
REDUCING CO2 YEAR ON YEAR

Carbon Trust Standard certified

Eye-catching environmental banners and posters



Reported by
Djelloul Kitter
Regulatory & Environment Division
SUK

Curbing Greenhouse Gas Emissions

Sharp is taking active measures to curb greenhouse gas emissions resulting from its business activities. Sharp is reducing CO_2 emissions through the introduction of cogeneration systems and energy-efficient equipment, the installation of solar power generation systems, and the meticulous implementation of energy-saving activities at plants and offices. At the same time, Sharp is also reducing emissions of greenhouse gases such as PFCs*1 by installing abatement systems and adopting replacement gases with lower global warming potential.

Objectives for Fiscal 2009	Achievements for Fiscal 2009	Objectives for Fiscal 2010	Objectives for Fiscal 2012
• CO_2 emissions for 10 Sharp Corporation plants • Reduce to below fiscal 2007 levels	• Reduced by 22% from fiscal 2007 levels	• Reduce to below fiscal 2007 levels • Reduce by 3% compared to BAU*2	• Every fiscal year: Reduce to below fiscal 2007 levels • Every fiscal year: Reduce by 3% compared to BAU*2
• CO_2 emissions per adjusted production unit*3 for 10 Sharp Corporation plants • Reduce by 35% from fiscal 1990 levels	• Reduced by 43% from fiscal 1990 levels	• CO_2 emissions per adjusted production unit for Sharp Corporation plants*4 • Reduce by 35% from fiscal 1990 levels	• Reduce by 35% from fiscal 1990 levels (average for fiscal 2008 to 2012)
• CO_2 emissions per production unit*5 for overseas plants (subsidiaries/affiliates) • Reduce by 2% from previous fiscal year	• Increased by 35% from previous fiscal year	• Reduce by 2% from previous fiscal year	• Every fiscal year: Reduce by 2% from previous fiscal year

*1 A general term for perfluorocarbon gases such as CF_4 (carbon tetrachloride) and C_2F_6 (carbon hexafluoride), and the like, which are greenhouse gases.
*2 Business As Usual: Amount of CO_2 estimated to be emitted assuming no CO_2 emissions reduction measures are implemented (estimated using weighted average of CO_2 emission units for each plant).
*3 Per adjusted production unit (t-CO_2/100 million yen) = CO_2 emissions (t-CO_2) ÷ {production output (100 million yen) ÷ Japanese corporate price index determined by the Bank of Japan}. Corporate price index: Until fiscal 2006, "Electrical machinery and equipment"; for fiscal 2007 and thereafter: weighted average of "Electrical machinery & equipment," "Information & communications equipment," and "Electronic components & devices."
*4 10 Sharp Corporation plants + GREEN FRONT SAKAI solar cell plant
*5 Per production unit (t-CO_2/100 million yen) = CO_2 emissions (t-CO_2) ÷ production output (100 million yen)

Sharp Group Activities to Control Greenhouse Gas Emissions

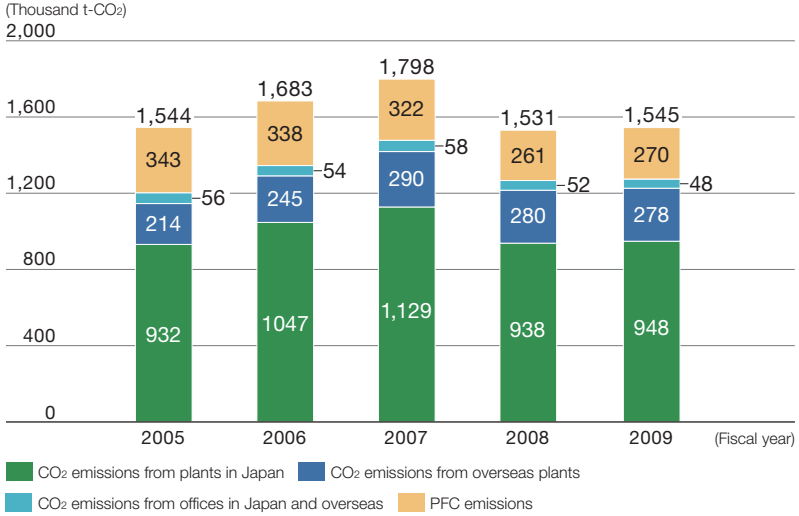
Even as production increased with the start of operations at Sharp Display Products Corporation, the Sharp Group was able to hold its greenhouse gas emissions in fiscal 2009 to an increase of 1% compared to the previous fiscal year thanks to a variety of measures (see graph at the right).

In addition, for fiscal 2010 and beyond, Sharp established a target to lower CO_2 emissions by 3% of baseline (BAU emissions) for the 10 factories of Sharp Corporation, based on a program to reduce CO_2 emissions, taking fiscal 2007 as the peak year for such emissions. By strengthening efforts and extending them even to production equipment as well as utility equipment, the 10 Sharp Corporation factories were able to reduce CO_2 emissions by 6% compared to the previous fiscal year, and by 22% compared to fiscal 2007 levels (see graph at top-left of the next page).

At the same time, initiatives launched at bases abroad were able to lower CO_2 emissions at overseas production facilities to levels slightly below last fiscal year's results. However, in the midst of a rapidly worsening business environment, CO_2 emissions per production unit increased by 35% compared to the previous fiscal year (see graph at middle-left of the next page).

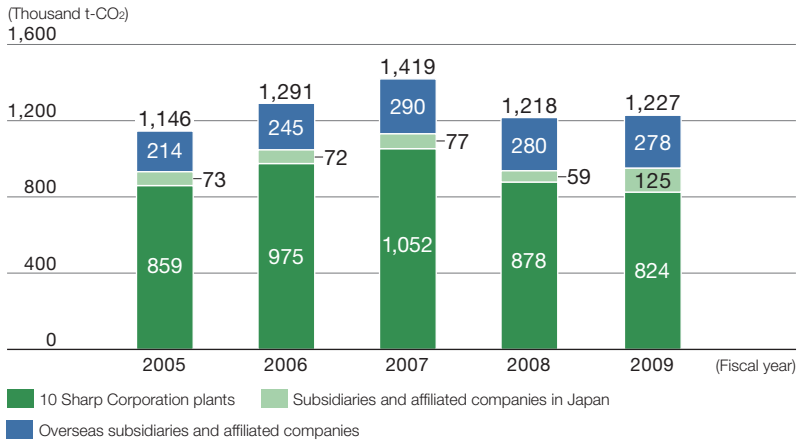
Although plans call for production to expand in fiscal 2010, Sharp will continue efforts to curb greenhouse gas emissions to the greatest extent possible. These efforts will be based on continuously promoting energy-saving measures and on installing and properly operating abatement systems on all PFC emission sources at newly expanded plants. In addition, at plants outside of Japan, Sharp plans to actively work on reducing CO_2 emissions.

Amount of Sharp Group's Greenhouse Gas Emissions

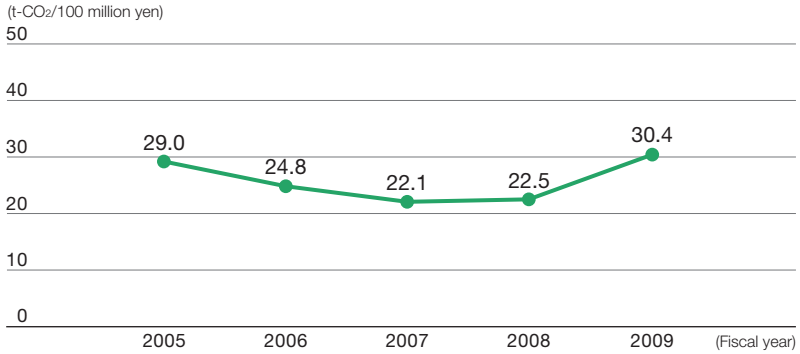


- In calculating PFC emissions, prior to fiscal 2005, values for global warming potential were taken from the IPCC's Second Assessment Report (SAR). For fiscal 2006 and later, the values used were taken from the IPCC's Third Assessment Report (TAR).
- Emissions from the Toyama Plant (Toyama City, Toyama Prefecture) were included beginning in fiscal 2006.
- Emissions from the Advanced Materials & Energy Engineering Laboratories (Kashiwa City, Chiba Prefecture) and Sharp Display Products Corporation were included beginning in fiscal 2009.
- Refer to page 79 for the CO_2 emission coefficients used.

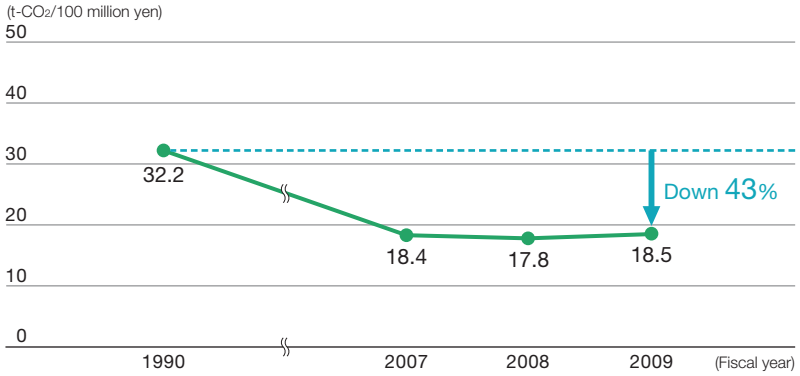
Amount of CO_2 Emissions for Sharp Group Plants



CO_2 Emissions per Production Unit for Overseas Plants



CO_2 Emissions per Adjusted Production Unit for Sharp Corporation Plants



• Per adjusted production unit (t-CO_2/100 million yen) = CO_2 emissions (t-CO_2) ÷ {production output (100 million yen) ÷ Japanese corporate price index determined by the Bank of Japan}. Corporate price index: Until fiscal 2006, "Electrical machinery and equipment"; for fiscal 2007 and thereafter: weighted average of "Electrical machinery & equipment," "Information & communications equipment," and "Electronic components & devices."

Promoting Private Power Generation

Sharp is working to provide a stable supply of electric power and reduce CO_2 emissions by generating its own electricity privately. Sharp has been installing cogeneration and fuel cell systems, as well as solar power generation systems.

Self-Generated Electricity* Output at Sharp Corporation Plants

Fiscal year	2006	2007	2008	2009
Self-generated electricity output (millions of kWh)	246	287	261	285

* Electricity generated by on-site cogeneration systems, solar power generation systems, and fuel cell systems.

Case Study 1 Saving Energy

Reducing the Environmental Impact of Production Processes

Reducing the Volume of Air Circulating in Cleanrooms

The Kameyama Plant (Kameyama City, Mie Prefecture) is working to save energy in the cleanrooms where the production processes for LCD panels take place.

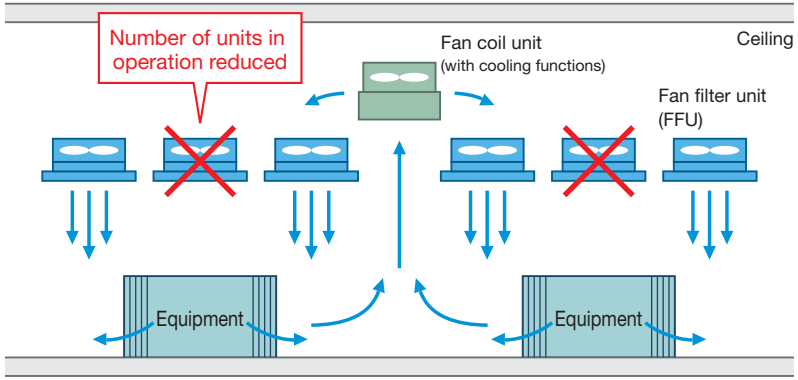
A large volume of air must be circulated in the cleanrooms to maintain the fabrication environment at a high level of cleanliness and at a constant temperature and humidity, and this requires large amounts of electric power for air conditioning. Implementing energy-saving measures has been challenging up to now because of the potential that altering the air conditioning design could have a significant effect on product quality. However, Sharp's production divisions, working together with the energy supply divisions, conducted research and did a number of analyses regarding the effects of cleanliness and temperature/humidity on product quality, and as a result, were able to both preserve the fabrication environment and save energy.

Specifically, the airflow from the fan filter units*1 (FFU) used in the temporary storage areas for products (buffers) and in the transport equipment areas (loaders) was reduced by 15%. In addition, the number of FFUs operating in the areas for the sputtering, dry etch, and CVD processes—carried out in the course of the TFT fabrication process—that have no direct impact on product quality, was reduced by 75%. The number of FFUs operating in the automated carrier trackway and guideway areas was also reduced by 27%, reflecting the fact that there was a large margin between the specs demanded for cleanliness and the actual values in those areas.

As a result, Sharp is able to reduce CO_2 emissions by approximately 4,700 t-CO_2 per year.

*1 Self-contained modules installed in the ceilings of rooms to provide a flow of microfiltered air to create a clean environment.

Sputtering, Dry Etch, and CVD Processes



The volume of air flowing around the equipment was adjusted to a level that would not hurt product quality, and the number of FFUs in operation was reduced by 75%.

Case Study 2 Saving Energy

Reducing the Environmental Impact of Production Processes

Reducing the Amount of Steam Used

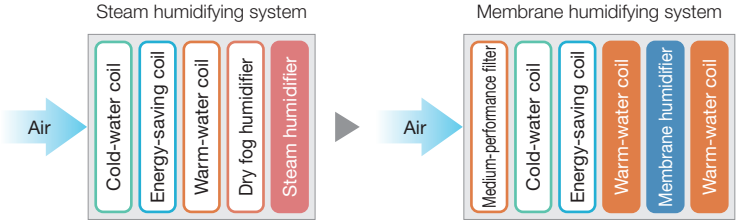
The Fukuyama Plant (Fukuyama City, Hiroshima Prefecture) is working to reduce the amount of steam used to add humidity in air conditioning and to heat purified water in cleanrooms.

Cleanrooms must be humidified to maintain a constant temperature and moisture level. The Fukuyama Plant had previously been using air conditioners that use steam to treat outside air*2 for this purpose, but since fiscal 2008, has been introducing membrane humidifying systems. In addition, the plant has been implementing a variety of measures to reduce the amount of steam used, such as utilizing waste energy collected from fabrication equipment to heat purified water and provide space heating instead of steam, as well as reducing heat losses in the steam distribution pipes that run between facilities.

As a result of these measures put into effect in fiscal 2009, the amount of utility gas (city gas) used to fuel steam boilers was reduced by approximately 320 km^{3}N, enabling CO_2 emissions to be reduced by approximately 730 t-CO_2.

*2 Equipment that adjusts the temperature and humidity of outside air to maintain the cleanrooms at a constant temperature and humidity.

Outside Air Conditioning Systems



The membrane humidifying system adds moisture to the air through water vapor evaporation by passing the air through a humidifying material impregnated with water.

Case Study 3 Saving Energy

Reducing the Environmental Impact of Production Processes

Pursuing Greater Energy Efficiency by Controlling the Temperature of Equipment

The Mie Plant (Taki Township, Mie Prefecture) has been holding CO_2 Reduction Meetings in a plant-wide effort to save energy in production processes, which account for a large percentage of the energy consumed. As part of this effort, the plant has been working to save energy used for the equipment that processes the glass substrates for LCD panels. To maintain product quality, the interior of the equipment is maintained at a high temperature of around 80°C. However, research and analysis on the effect that temperature has on product quality showed that the temperature could be lowered to approximately 60°C without hurting quality. As a result, electric power usage is reduced by approximately 10%, enabling CO_2 emissions to be reduced by approximately 70 t- CO_2 per year.

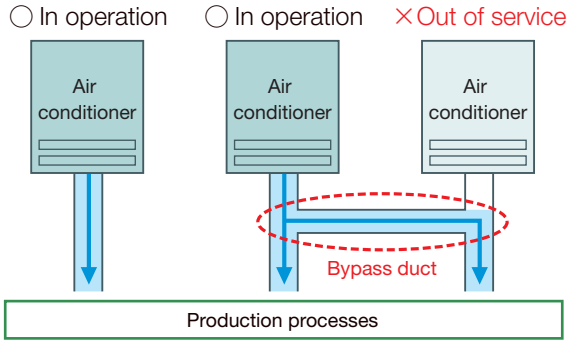
Case Study 4 Saving Energy
Reducing the Environmental Impact of Production Processes

Reducing the Number of Air Conditioning Units by Installing Bypass Ducts

The Nara Plant (Yamato-Koriyama City, Nara Prefecture) is working to save energy by re-engineering the configuration that air conditioning units operate in.

In the cleanrooms of Plant No. 6, three air conditioning units were used to maintain temperature and humidity. However, the plant reduced the amount of heat that needs to be removed from production equipment and adjusted the air exhaust from fabrication processes to cut the air conditioning load, enabling the way the air conditioning units operate to be re-configured. A bypass air supply duct was installed, connecting two of the air conditioning units, and allowing one of the air conditioning units to be taken out of service. This enables a reduction in CO_2 emissions of approximately 120 t-CO_2 per year.

■ **Bypass Ducts in Air Conditioning Units**



Case Study 5 Saving Energy

Replacing Mercury Vapor Lamps with LED Security Lights

The Yao Plant (Yao City, Osaka Prefecture) replaced twelve 400-watt mercury vapor lamps with 40-watt LED security lights. As a result, CO_2 emissions are reduced by approximately 6 t-CO_2 per year.

Case Study 6 Saving Energy
Reducing the Environmental Impact of Utility Equipment

Pursuing Energy Savings in Air Conditioning by Using Outside Cold Air

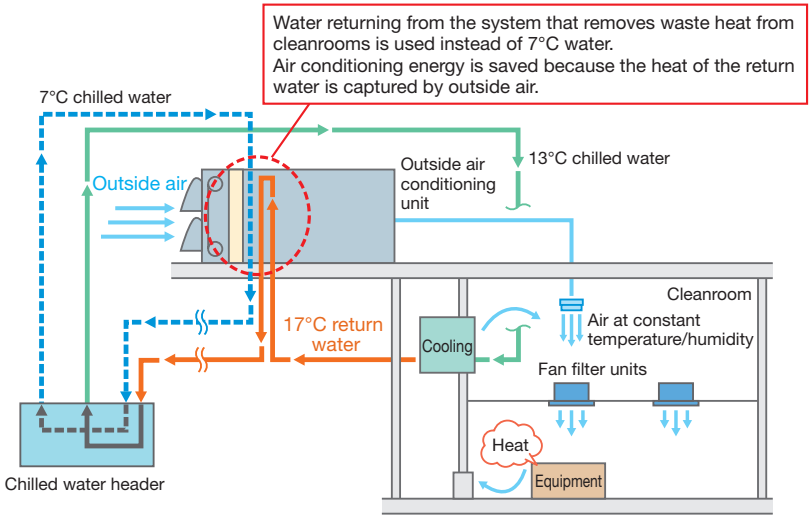
The Kameyama Plant is promoting energy savings for air conditioning by using outside cold air.

Outside air conditioning systems incorporate warm-water coils (34°C) for heating, and cold-water coils (7°C) for cooling and dehumidifying air that passes through the unit. During the winter, the cold-water coils are not used, but to prevent damage from freezing, cold water must be pumped through a freezing-prevention circuit. Previously, chilled water at a temperature of 7°C was used for this purpose, but the Kameyama Plant made a change in the circuit to use the return water (at 17°C) from the chilled water (13°C) supplied to the system used to remove heat from cleanrooms.

This not only made it possible to reduce the amount of 7°C water used, but also enabled the use of cold outside air to capture heat in the return water, thereby achieving energy savings in air conditioning. In addition, a mechanism was adopted that automatically adjusted the volume of water flowing in the freezing-prevention circuit according to the outside air temperature. This allowed heat to be captured from the 17°C return water not only in the winter, but also in the spring and autumn when the outside air temperature drops below 17°C, lengthening the time when outside air cooling can be used.

These efforts enable CO_2 emissions to be reduced by approximately 540 t-CO_2 per year.

■ **Mechanism for Using Outside Air for Cooling**



Minimizing and Recycling Waste

Sharp has been working to bring down its total amount of waste discharged and to recycle as much of its waste as possible.
In fiscal 2009, Sharp was able to dramatically reduce the level of waste, etc. discharged from the Sharp Group by strengthening measures to reduce waste, particularly spent developer solution.

Objectives for Fiscal 2009	Achievements for Fiscal 2009	Objectives for Fiscal 2010	Objectives for Fiscal 2012
• Amount of waste discharged*1 at 10 Sharp Corporation plants • Reduce to below fiscal 2007 levels	• Reduced by 44% from fiscal 2007 levels	• Reduce to below fiscal 2007 levels • Reduce by 6% compared to BAU*3	• Every fiscal year: Reduce to below fiscal 2007 levels • Every fiscal year: Reduce by 6% compared to BAU
• Amount of waste, etc. discharged per production unit*2 at overseas plants (subsidiaries/affiliates) • Reduce by 2% from previous fiscal year	• Increased by 19% from previous fiscal year	• Reduce by 2% from previous fiscal year	• Every fiscal year: Reduce by 2% from previous fiscal year

*1 Amount of waste discharged = Industrial waste discharged + general waste from business activities
*2 Amount of waste, etc. discharged = Waste discharged + valuable resources
*3 Business As Usual: Amount of waste estimated to be discharged assuming no waste reduction measures are implemented (estimated using weighted average of waste discharge units for each plant).

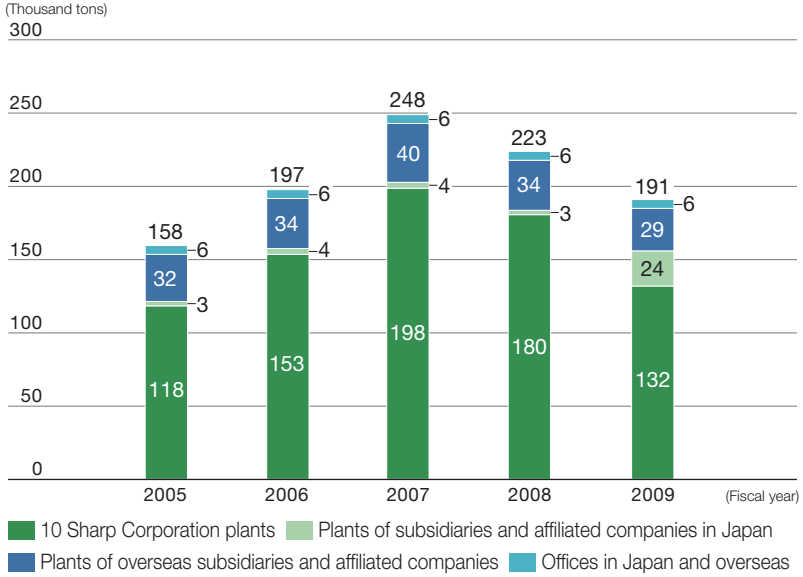
Reducing the Amount of Waste, etc. Discharged by the Sharp Group

In fiscal 2009, the Sharp Group in Japan and overseas discharged less waste, etc. (waste and valuable resources recovered from waste) than the previous fiscal year. Overall Sharp was able to achieve a 14% reduction in the total amount of waste, etc. discharged (see graph at right). Sharp Display Products Corporation, which began operations at GREEN FRONT SAKAI (Sakai City, Osaka Prefecture) in October 2009, was able to curb emissions of waste, etc. by constructing a new system to reclaim spent developer solution within the GREEN FRONT SAKAI complex.

The 10 Sharp Corporation plants achieved dramatic reductions in waste emissions by increasing the percentage of valuable resources recovered by 7.4 points compared to the previous fiscal year, and by reducing waste emissions by 33% compared to the previous fiscal year and by 44% compared to fiscal 2007 (see graph at top-left of the next page). This is the result of strengthening efforts to curb waste discharges under a plan to reduce waste emissions below fiscal 2007 levels. The Kameyama Plant (Kameyama City, Mie Prefecture) and the Mie Plant (Taki Township, Mie Prefecture), in particular, contributed greatly by reducing a significant amount of waste fluid. Beginning in fiscal 2010, Sharp has declared a goal of reducing waste by 6% of baseline (BAU emissions), and will work to further strengthen its efforts. In addition, fiscal 2009 was the ninth consecutive year for Sharp production plants in Japan, including those of subsidiaries and affiliated companies, to achieve zero discharge to landfill*4 (see graph at middle left of the next page).

Overseas plants were able to reduce total waste, etc., discharged by 15% over the previous fiscal year as a result of making efforts to achieve SGF status. However, the effects of a decline in production output led to an increase in waste, etc. discharged per production unit of 19% compared to the previous fiscal year (see graph at the bottom of the next page).

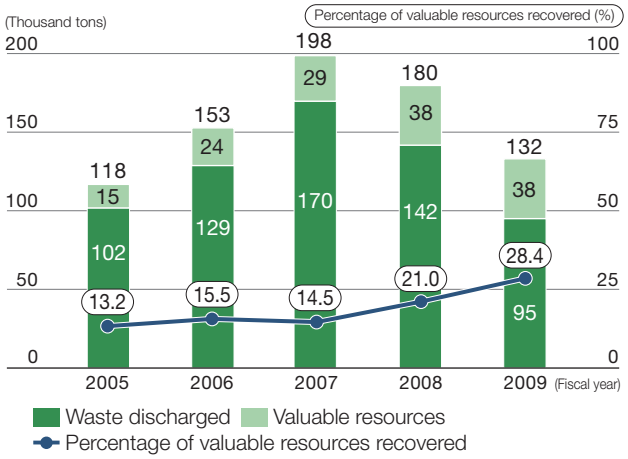
Amount of Waste, etc. (Including Valuable Resources) Discharged by the Sharp Group



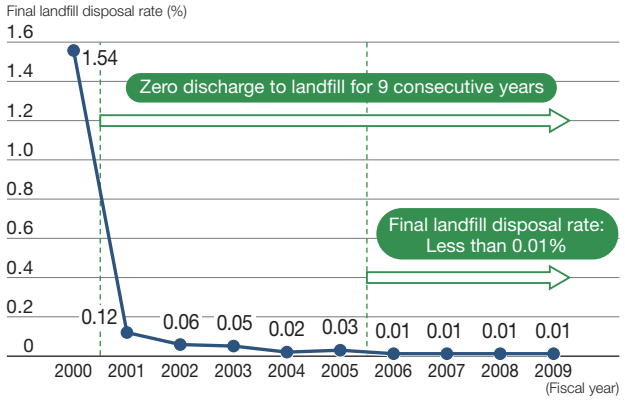
• Emissions from the Toyama Plant (Toyama City, Toyama Prefecture) were included beginning in fiscal 2006.
• Emissions from the Advanced Materials & Energy Engineering Laboratories (Kashiwa City, Chiba Prefecture) and Sharp Display Products Corporation were included beginning in fiscal 2009.

*4 Sharp defines "zero discharge to landfill" as a final landfill disposal rate of less than 0.5%.
Final landfill disposal rate (%) = Amount of landfill disposal / amount of waste, etc. discharged (amount of waste discharged + amount of valuable resources) x 100
In fiscal 2005, to make the definition of zero discharge to landfill more rigorous, Sharp replaced the value for the denominator of "total amount of waste generated" with "amount of waste, etc., discharged (amount of waste discharged + amount of valuable resources)", a smaller value.

Amount of Waste and Valuable Resources Discharged, and Percentage of Valuable Resources Recovered, at 10 Sharp Corporation Plants

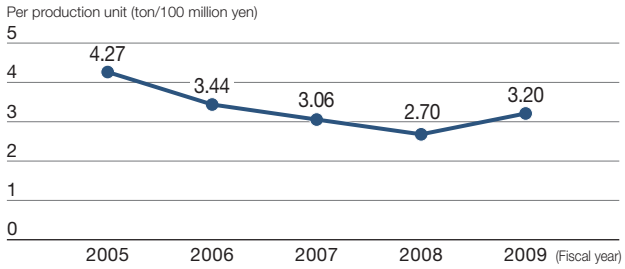


Final Landfill Disposal Rate of Waste from Plants in Japan



• Figures from fiscal 2004 include subsidiaries and affiliates.

Waste, etc. Discharged per Production Unit (Including Valuable Resources) at Overseas Plants



Amount of Waste by Category from Sharp Corporation Plants

(Unit: tons)

	Waste, etc.*1			Waste*2			Recycled into valuable resources		
	Fiscal 2007	Fiscal 2008	Fiscal 2009	Fiscal 2007	Fiscal 2008	Fiscal 2009	Fiscal 2007	Fiscal 2008	Fiscal 2009
Waste alkali	96,073	83,396	50,757	95,342	81,583	46,186	731	1,813	4,571
Waste oil	37,722	38,066	34,963	19,572	12,874	13,554	18,149	25,193	21,410
Sludge	22,041	18,509	11,695	21,771	18,382	11,592	270	127	103
Waste fluid (waste acid)	23,890	23,055	17,464	20,572	19,678	14,371	3,318	3,377	3,094
Waste paper	6,907	6,596	7,076	1,739	1,053	766	5,168	5,543	6,310
Waste glass	6,481	5,977	4,875	6,481	5,789	4,764	0	188	112
Scrap iron	531	409	442	117	14	32	414	395	410
Waste plastic	2,819	2,486	2,725	1,795	1,536	1,730	1,024	950	995
Others	2,027	1,825	2,241	1,820	1,590	1,651	207	235	590
Total	198,491	180,319	132,238	169,209	142,499	94,646	29,281	37,821	37,595

(Unit: tons)

	Recycled (not including valuable resources)			Intermediate treatment			Final landfill disposal		
	Fiscal 2007	Fiscal 2008	Fiscal 2009	Fiscal 2007	Fiscal 2008	Fiscal 2009	Fiscal 2007	Fiscal 2008	Fiscal 2009
Waste alkali	95,342	81,583	46,186	0	0	0	0	0	0
Waste oil	19,572	12,874	13,554	0	0	0	0	0	0
Sludge	21,759	18,374	11,580	11	7	12	1	0	0
Waste fluid (waste acid)	20,552	19,677	14,370	20	0	0	0	1	0
Waste paper	1,683	1,003	722	53	48	42	3	2	2
Waste glass	6,478	5,775	4,761	1	11	0	2	2	2
Scrap iron	117	14	30	0	0	2	0	0	0
Waste plastic	1,719	1,464	1,638	71	68	90	4	4	2
Others	1,799	1,589	1,652	21	0	0	0	1	0
Total	169,021	142,353	94,493	177	134	146	10	10	6

*1 Amount of waste, etc. discharged = Waste discharged + valuable resources
*2 Amount of waste discharged = Waste recycled + intermediately treated + amount of landfill disposal

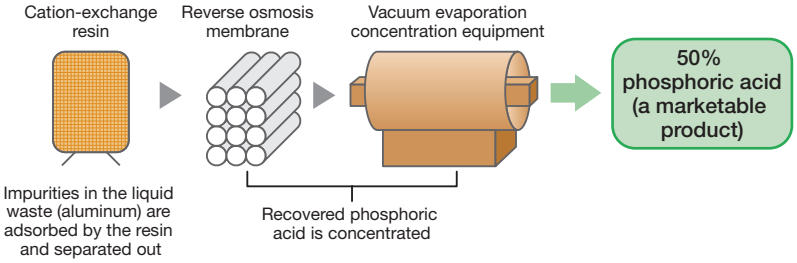
Case Study 1 Reducing Waste
Reducing the Environmental Impact of Production Processes

Recovering a Valuable Resource by Installing a Phosphoric Acid Recovery System

Sharp's Kameyama Plant (Kameyama City, Mie Prefecture) has installed a phosphoric acid recovery system that reclaims as a valuable resource the phosphoric acid contained in the liquid waste discharged as part of the LCD panel fabrication process.

In the past, the phosphoric acid was removed as an impurity and processed as industrial waste. Now, the collected phosphoric acid is re-processed by this system to a concentration of around 50%, enabling it to be sold as a valuable resource. In addition, this system enabled industrial waste to be reduced by approximately 35% compared to before its introduction.

Phosphoric Acid Recovery System



Case Study 2 Reducing Waste
Reducing the Environmental Impact of Production Processes

Reducing Concentrated Salts

The Mie Plant (Taki Township, Mie Prefecture) has been holding regular Waste Reduction Meetings to work on reducing waste for the entire plant. A part of these efforts is to work to reduce the amount of alkaline waste known as "concentrated salts" generated during treatment of wastewater from production processes.

The Mie Plant reclaims all wastewater from production processes. However, the wastewater contains chemical substances, and they are removed using chemical agents. Previously, in the removal process, the chemical substances reacted with the chemical agents, generating large amounts of concentrated salts. However, a review was conducted of the amount of chemical agents used, and as a result, the amount of concentrated salts generated was reduced by approximately 3% compared to the previous fiscal year.

Case Study 3 Reducing Waste

Reducing Waste by Reusing Wooden Pallets

The Tochigi Plant (Yaita City, Tochigi Prefecture) manufactures LCD TVs using LCD panels supplied from the Kameyama Plant (Kameyama City, Mie Prefecture). In the past, the wooden pallets used to ship the LCD panels were treated as waste and discarded.

In fiscal 2009, to reduce the amount of waste discharged, the Tochigi Plant began to return the wooden pallets used for 37-, 40-, 42- and 46-inch LCD panels to the Kameyama Plant for re-use, enabling waste to be reduced by approximately 100 tons per year.

Wooden pallets to be returned to the Kameyama Plant and re-used

Case Study 4 Reducing Waste

Recovering Valuable Resources from Discarded Electronic Components

In the past, the Yao Plant (Yao City, Osaka Prefecture) had been disposing of used parts such as printed circuit boards that contain a mixture of materials such as plastic and metals as waste. However, in fiscal 2009, the plant signed an agreement with a contractor who made these parts available for sale as a valuable resource, enabling a reduction in the amount of waste sent for disposal by approximately 3 tons per year.

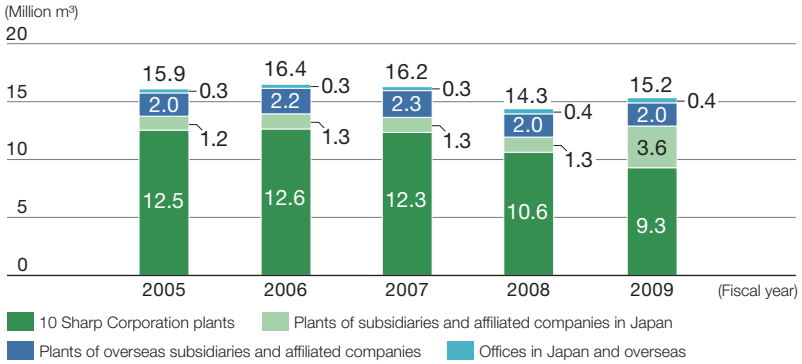
Effectively Using Water Resources

Sharp uses as little new water (water from the water supply system) as possible and recycles as much as it can in efforts to contribute to the preservation and effective use of this valuable resource.

Preserving and Effectively Using Water

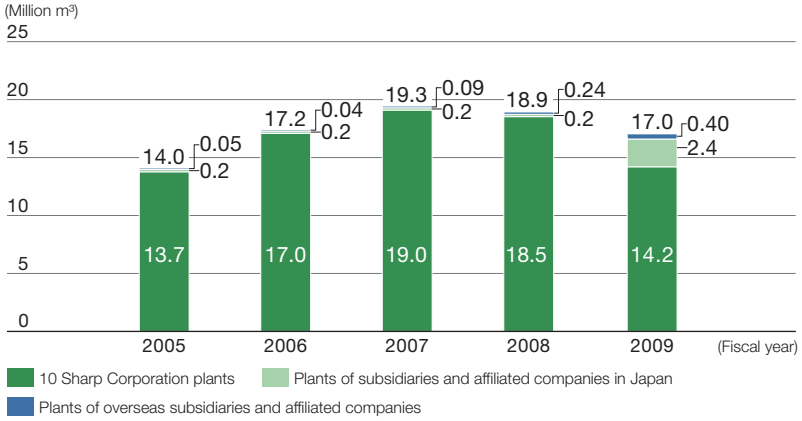
The amount of water used by the Sharp Group in fiscal 2009 increased by 6% over the previous fiscal year due to the startup of Sharp Display Products Corporation. However, the water used by all of Sharp Corporation's 10 plants was down 12% thanks to thorough recycling measures and a drop in production volume. Sharp will continue to preserve and use water effectively by using less new water and stepping up water recycling measures.

Amount of Water Used by the Sharp Group



- Emissions from the Toyama Plant (Toyama City, Toyama Prefecture) were included beginning in fiscal 2006.
- Emissions from the Advanced Materials & Energy Engineering Laboratories (Kashiwa City, Chiba Prefecture) and Sharp Display Products Corporation were included beginning in fiscal 2009.

Amount of Water Reused at Sharp Group Plants



Case Study 1 Reducing the Use of Purified Water

Reducing the Environmental Impact of Production Processes

Using Less Purified Water for Glass Substrate Processing Equipment

At Sharp's Mie Plant (Taki Township, Mie Prefecture), divisions in charge of environmental management and production technology matters are reducing the use of purified water in production processes.

During processing, enormous amounts of purified water are used to clean the LCD panel glass substrates. The volume of purified water required is determined by the need to ensure a constant supply to the processing equipment. However, the actual amount used at any given time fluctuates within a certain range. To eliminate waste and enable more efficient use of purified water, the Mie Plant worked to narrow the range of these fluctuations, which made it possible to reduce the overall volume of water used.

The glass substrates are washed with purified water in each processing stage. By reducing the washing time for each stage, the Mie Plant was able to reduce the time and water required per panel—without sacrificing the cleanliness of the panels.

Case Study 2 Reducing the Use of Purified Water

Reducing the Environmental Impact of Utility Equipment

Water-Saving Measures for Outside Air Conditioning Equipment

To ensure a uniform level of humidity for the air in the cleanrooms at the Mie Plant, a water membrane humidifying system was adopted for the outside air conditioning equipment. The plant had previously carried out regular dispersion of water to the humidifying membrane, but now has a device for regulating the amount dispersed. This has allowed it to reduce annual use of purified water by approximately 0.26 million tons.

Effectively Managing Chemicals Used in Factories

Sharp thoroughly controls chemical substances used at its plants and has established Special Safety Management Committees to meticulously manage safety according to the physical properties of hazardous materials and toxic chemicals.

Objectives for Fiscal 2009	Achievements for Fiscal 2009	Objectives for Fiscal 2010	Objectives for Fiscal 2012
• Reinforce management of chemical substances • Formulate new chemical management guidelines and ensure that they are firmly established at plants in Japan	• Reviewed new chemical management guidelines (introduced concept of emission management index)	• Formulate new chemical management guidelines (emission management index) and ensure that they are firmly established	• Control emissions using new chemical management guidelines (emission management index)

Effective Management of Chemical Substances

When introducing new chemical substances and handling equipment and when revamping existing handling equipment, Sharp conducts rigorous preliminary audits based on the process assessment system*1 to ensure safety, health, and lower environmental impact.

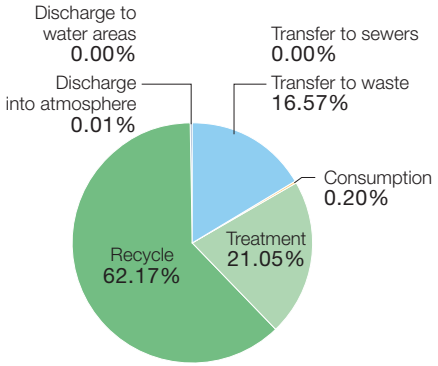
Sharp strives for effective management of chemical substances: employees handling these go through regular education and drills to prevent accidents, the Special Safety Management Committees oversee all control activities, and checks are carried out through an environmental safety audit system*2.

Of the chemical substances covered by the PRTR*3 Law, the number of chemicals handled in quantities greater than 500 kg in fiscal 2009 at each plant in Japan amounted to 14 substances or 11,709 tons (down 11% from the previous fiscal year). As well, because of efforts to control VOCs (volatile organic compounds) and the revision of the method for calculating emissions*4, the total amount discharged in Japan was approximately 1.4 tons, an 81% decrease from the previous year.

The chemical management guidelines Sharp had planned on formulating in fiscal 2009 will now include the concept of an emission management index, and the formulation and implementation of these guidelines in fiscal 2010 will mean reinforced management of chemical substances.

*1 A system for conducting preliminary safety assessments when introducing new chemical substances and handling equipment and when revamping existing handling equipment.
*2 A system for assessing the environmental, safety, and compliance activities of the division in charge of environmental management at factories.
*3 PRTR: Pollutant Release and Transfer Register. A system to collect and publicize data, such as the amount of harmful chemicals discharged and transferred.
*4 Based on guidelines published by four major electrical and electronic machinery associations in Japan, fluorine compounds in wastewater are not included in calculations of emissions into local bodies of water because they are water insoluble.

Destinations of PRTR-Listed Chemical Substances in Japan

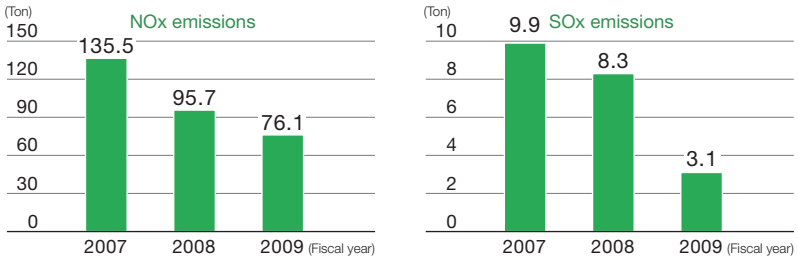


Fiscal 2009 PRTR Data (Japan)

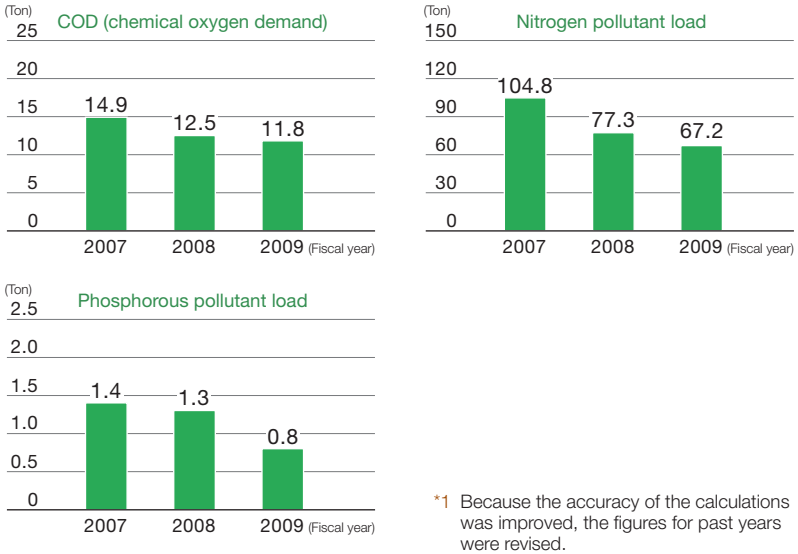
(Unit: kg)

Chemical	Amount handled	Amount discharged		Amount transferred		Amount consumed		Amount removed
		Into atmosphere	Into public water area	Into sewage	To off-site	Contained in products	Recycled	
2-Aminoethanol	10,532,256	703	44	0	1,057,798	0	7,274,285	2,199,426
Ethylene glycol	792	0	24	0	0	0	0	768
Xylene	1,295	35	0	0	518	0	0	742
Silver and its water-soluble compounds	20,187	0	0	0	0	19,212	975	0
N, N-dimethyl-formamide (DMF)	35,328	14	0	0	5,920	0	0	29,394
1, 3, 5-Trimethylbenzene	1,213	10	0	0	1,116	0	0	87
Lead and its compounds	4,000	0	0	0	231	3,760	9	0
Arsenic and its inorganic compounds	675	0	0	0	603	61	11	0
Pyrocatechol (also known as catechol)	4,226	0	0	0	4,226	0	0	0
Phenol	2,040	20	0	0	1,836	0	0	184
Hydrogen-fluoride and its water-soluble salts	1,096,439	535	0	0	862,223	0	0	233,641
Boron and its compounds	4,341	8	0	0	4,333	0	0	0
Polyoxyethylene alkyl ether	1,753	0	2	0	1,696	0	0	55
Molybdenum and its compounds	4,280	0	34	0	152	509	3,585	0
Total	11,708,825	1,325	104	0	1,940,652	23,542	7,278,865	2,464,297

Atmosphere Emissions in Japan



Pollutant Loads of Public Water Areas in Japan*1



*1 Because the accuracy of the calculations was improved, the figures for past years were revised.

Special Safety Management of Hazardous Materials and Toxic Chemicals

Special safety management is Sharp's program to safely manage the hazardous materials and toxic chemicals among the chemical substances used at its plants. Sharp strives for meticulous, wide-ranging management of these substances—from R&D to production lines.

Sharp has established Special Safety Management Committees at each plant in Japan made up of engineers in the production, technical, and environmental management divisions. The committees oversee the process assessment system, carry out education and emergency response training in preparation for the possibility of an accident, and conduct cross audits related to the way these substances are handled, all with the goal of continuously raising the level of safety.

Risk Communication and Information Disclosure

On the environmental and social activities section of the Sharp website and in site reports published by the plants, Sharp regularly discloses information on the environmental risk associated with business activities. Sharp also promotes communication between the company, its neighboring residents, and the local government through regular environmental festivals and meetings.

Soil and groundwater surveys conducted at all plants in Japan in 1998 identified chlorine solvent pollution at four plants (Nara, Yao, Tenri, and Katsuragi). With the exception of the Nara Plant (Yamato-Koriyama City, Nara Prefecture), all sites have reduced contamination levels below those of the environmental standard using pumping*2 and bioremediation*3. Sharp is continuing purification at the Nara Plant in order to reduce its contamination levels below those of the environmental standard, and regularly notifies government authorities and residents of the cleanup progress. In fiscal 2009, Sharp once again held meetings to notify the government and residents that the pollution has not spread to groundwater outside the plant and that steady progress is being made in cleanup measures.

At the Fukuyama Plant (Fukuyama City, Hiroshima Prefecture), Sharp, local residents, and the local municipal government each collect and analyze wastewater samples two times a year. The results are checked and compiled and then used as another way Sharp can communicate and foster good relations with all concerned parties.


Three-party wastewater sampling and analysis at the Fukuyama Plant

*2 Polluted groundwater is pumped up and purified in treatment facilities.
*3 Using microorganisms, hazardous substances are broken down and rendered harmless.

Appropriate Storage and Treatment of PCB Wastes in Japan

Sharp does not use PCBs (polychlorinated biphenyls), with the exception of a certain amount present in high-voltage transformers. Sharp also complies to the fullest extent with laws and regulations covering PCB wastes, their proper storage, and reporting requirements to the government. In addition, Sharp has achieved its target of completing registration with the Japan Environment Safety Corporation (JESCO) for treatment of its PCB wastes prior to the 2016 deadline set by law. Sharp will continue to treat PCB wastes according to schedules set by JESCO.

Status of Stored PCBs in Japan

High-voltage transformers (including those currently in use)	High-voltage capacitors	Capacitors recovered from discarded home appliances and fluorescent lamp ballasts
38 units	144 units	Approx. 12,500 units

As of March 31, 2010

Reducing Environmental Impacts in Distribution and Packaging

In cooperation with shipping contractors, Sharp is working to decrease environmental impacts in distribution, for example, by optimizing transport methods and load efficiency. In packaging, Sharp is also working to further reduce environmental impacts by reducing the use of packaging materials.

Objectives for Fiscal 2009	Achievements for Fiscal 2009	Objectives for Fiscal 2010	Objectives for Fiscal 2012
• CO_2 emissions per shipping volume*1 by Sharp Group in Japan • Reduce by 1% from previous fiscal year	• ±0% from previous fiscal year	• Between fiscal 2007 and fiscal 2010, reduce by average 1% each year against fiscal 2006	• Reduce by 1% from previous fiscal year (every fiscal year)

*1 CO_2 emissions per shipping volume (t-CO_2/thousand ton-km) = CO_2 emissions (t-CO_2) ÷ shipping volume (thousand ton-km). Starting in fiscal 2009, ton-kilometer (thousand ton-km) is used as the denominator since this gives a more accurate picture.

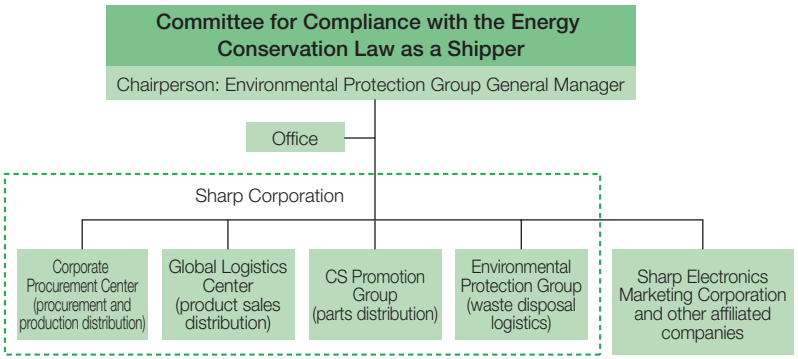
Promoting Measures to Reduce Environmental Impacts in Each Area of Distribution

Sharp established the Committee for Compliance with the Energy Conservation Law as a Shipper in fiscal 2006. This committee assesses the environmental impacts of distribution and logistics in the areas of product sales, procurement and production, waste disposal, and parts*2, and works to strengthen energy-saving measures in distribution across the Sharp Group. Sharp has declared an objective of achieving an average annual reduction in CO_2 emissions per shipping volume of 1% or greater, a legal mandate for specified shippers, for all members of the Sharp Group in Japan, and is promoting efforts to save energy, such as shifting to environmentally friendly modes of transport and improving transport and load efficiencies.

In fiscal 2009, Sharp Group CO_2 emissions from shipping activities in Japan were 42 thousand t-CO_2. This was up 11% from the previous fiscal year but still 15% lower than the base year of fiscal 2006. Emissions per shipping volume were 0.22 t-CO_2/thousand ton-km, about the same as the previous fiscal year and 8% lower than fiscal 2006.

*2 Distribution of parts used for after-sales service, such as repair and maintenance of products.

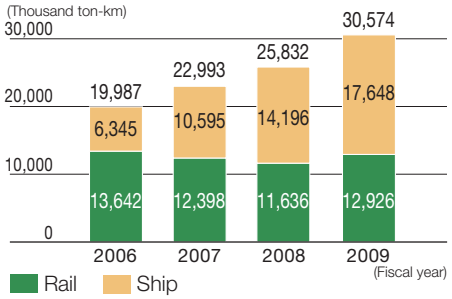
System to Promote Energy Savings in Distribution



Shifting to Environmentally Friendly Modes of Transport in Japan

In Japan, Sharp is shifting from conventional trucking to more environmentally friendly transportation modes, such as rail and ships. In fiscal 2009, Sharp significantly expanded shipping volume by ship, and was able to increase the use of rail and ship transport by 18% over the previous fiscal year. Sharp will continue expanding the shift in transport modes.

Transport Volume by Rail and Ship



Case Study: Environmentally Friendly Modes of Transport

Sharp Gets Eco-Rail Mark for Mobile Phone Shipment

After an evaluation by the Ministry of Land, Infrastructure and Transport and the Railway Freight Association, in fiscal 2008 Sharp acquired the Eco-Rail mark*3 for shipping approximately 63% of its mobile phones (in fiscal 2007) using rail for distances over 500 km. Sharp has been expanding on this: in fiscal 2008 this figure was 71.1% and in fiscal 2009 73.6%.

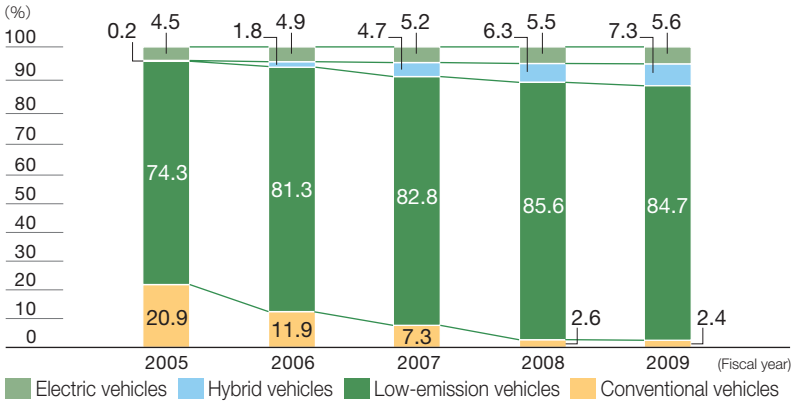
*3 A product brand can be Eco-Rail certified if the product travels at least 500 kilometers on land and 30% or more of the goods are carried on railways.

Sharp mobile phone packages carry the Eco-Rail mark (package on the left is for SoftBank Mobile Corp. and the package on the right is for NTT DOCOMO, Inc.)

Introducing Low-Pollution Vehicles

Sharp is switching to the use of low-pollution vehicles for the cars used by sales people and for the forklifts used in logistics activities. More and more low-emission, hybrid, and electric vehicles are being used as business vehicles and now all forklifts used are electric.

Percentage of Low-Pollution Vehicles Used as Business Vehicles in Japan



TOPICS

SEC's Eco-Transport Measures Honored for 4th Consecutive Year

In the US, Sharp Electronics Corporation (SEC), Sharp's sales subsidiary, strives for environmentally friendly transportation through participation in the SmartWay Transport Program*. The total weight of freight volume of products distributed by SEC that complies with the program has reached 99%. SEC has increased intermodal shipments since fiscal 2008 and this has helped to increase operational fuel efficiency. In addition, SEC installed a new software system that looks at the supply chain network to optimize distribution resource planning. SEC is also working with Climate TransAct, an EU-sponsored pilot program to reduce greenhouse gases in transportation.

At the fourth annual awards ceremony under this program sponsored by the US Environmental Protection Agency, SEC was honored with an excellence award for these efforts, the first shipper to win this award four years in a row.

* A joint effort by the US Environmental Protection Agency and industry to promote environmentally conscious shipping and distribution.

Case Study: Low-Pollution Vehicles

Hybrid Trucks

At the West Japan Logistics Center in Hiroshima, which mainly handles the distribution of mobile phones, Sharp delivery partner Tonami Transportation Co., Ltd. uses hybrid trucks (4-ton models) for deliveries in the region. These hybrids help reduce CO_2 emissions by approximately 10% compared to diesel trucks.

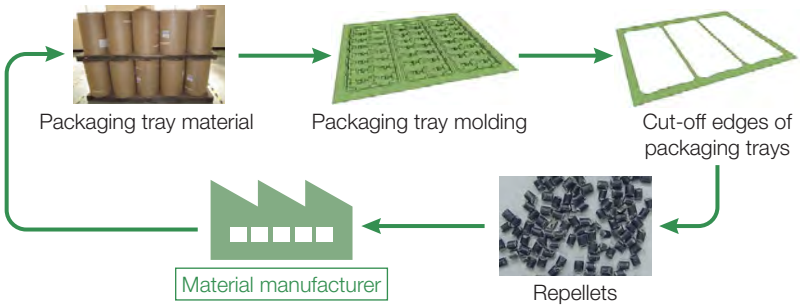
Hybrid truck used for local deliveries

Case Study: Reduction in Packaging

Recycling Plastic Packaging Trays

One of the ways Sharp saves resources is by recycling plastic packaging trays. The cut-off edges of molded plastic trays, which are used for packaging small- and medium-size LCD modules, are made into repellets (recycled resin) that are mixed in with the new raw material when making the trays again. About 15 to 20% of the raw material for the trays is recycled material, and in fiscal 2009 this totaled approximately 240 tons. This works out to about 10% of the plastic trays ordered.

Recycling of Plastic Packaging Trays



Promoting Environmental Communication

To provide environmental communication for its wide range of stakeholders, Sharp discloses environmental information through exhibitions and forums, and various media including newspaper ads and TV commercials, as well as Environmental and Social Reports and websites.

Disclosing Environmental Information Through the Environmental and Social Report, Website, and Site Reports

Every year, Sharp issues a report on its environmental and social activities, and discloses in plain language its policies, objectives, achievements, challenges, and future plans related to the environment and CSR. Sharp's website uses articles from the Environmental and Social Report, and also presents more specialized content with examples of specific activities and detailed data.

In addition, since fiscal 2004, a site report has been issued for each factory in Japan and overseas with the goal of securing greater trust in the community by aggressively disclosing environmental information. Copies of these reports are distributed to residents in the vicinity as well as to visitors to the facilities, and are also posted on Social and Environmental Activities web pages on the Sharp website.

The 2010 edition of the Environmental and Social Report will be produced in two forms—a detailed version for professionals and specialists (PDF), and a simplified version for the general public (printed hardcopy and PDF)—with the aim of meeting the widely varying needs of various stakeholders. In addition, the Sharp website has been redesigned to make the browsing experience smoother. Together, these improvements are intended to provide various stakeholders with easier access to information about Sharp's environmental and CSR efforts.

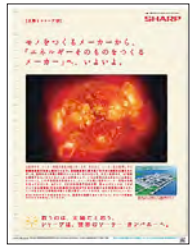
Sharp Environmental and Social Report 2009 (Japanese, English, and Chinese editions)
Winner of an award of merit in the 13th Green Reporting Awards

Website for Sharp's social and environmental activities:
http://sharp-world.com/corporate/eco/

Mie Plant Site Report
Winner of the Encouragement Prize in the 13th Environmental Communication Awards

Spreading Environmental Information Through Advertising and Commercials

To inform a wider audience of its environmental activities, Sharp creates TV and newspaper ads that introduce its solar energy initiatives as well as the environmental friendliness of its products, such as LED AQUOS LCD TVs, LED lighting, and air conditioners.



Newspaper ad

TOPICS

Environmental and Social Report, Site Report, and Newspaper Ads Receive Awards One after Another

The 2009 edition of Sharp's Environmental and Social Report won an award of merit in the 13th Green Reporting Awards sponsored by Toyo Keizai Inc. and the Green Reporting Forum. The Mie Plant's 2009 site report profiling the plant's environmental and social contribution activities won the Encouragement Prize in the 13th Environmental Communication Awards sponsored by the Ministry of the Environment and the Global Environmental Forum. The Mie Plant was also the winner of the Site Report Prize in the 12th Green Reporting Awards last year.

Since fiscal 2008, Sharp has been running a series of newspaper ads with the tag line "The Sun is the answer. Sharp: A world leading solar company." This Sun-and-Sharp series of ads has received high marks, as shown in the table below.

Awards Received by "The Sun and Sharp" Newspaper Ad

Fiscal 2008	Corporate Brand Award, 57th Nikkei Advertising Awards
	Grand prize in the media (newspaper) category, 38th Fujisankei Communications Group Advertising Awards
	Grand prize in the readers' choice category, 25th Yomiuri Advertising Awards
	Grand prize in *The Daily Yomiuri* Advertising Award, 25th Yomiuri Advertising Awards
Fiscal 2009	Prize in the advertiser planning category, 29th Newspaper Advertising Awards
	Grand prize in the media (newspaper) category, 39th Fujisankei Communications Group Advertising Awards
	Runner up in the advertiser participation category, 77th Mainichi Advertising Design Competition

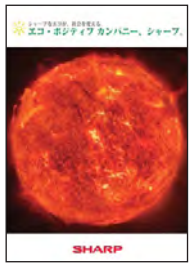
Participation in Worldwide Exhibitions

Sharp introduces its environmental activities to the public by taking part in trade fairs and exhibitions around the world. At Eco-Products 2009, one of Japan's largest environmental fairs, Sharp used the slogan "Sharp eco efforts will change the world. Sharp—an eco-positive company" to show how it is contributing to a green society. On display were solar power systems, and energy-efficient products like the LED AQUOS LCD TV, LED lighting, and home appliances. An exhibit of GREEN FRONT SAKAI showed collaboration with companies in other industries that is making this an environmentally state-of-the-art manufacturing complex.

At IFA 2009 in Germany, one of the world's largest consumer electronics fairs, Sharp's slogan was "Sharp—a green company" as it showed off environmentally friendly products including the LED AQUOS, LED lighting, solar panels, and combination solar-LED lighting units.

Sharp also took part in the Eco-products International Fair 2010 in Jakarta, Indonesia, the largest exhibition of its kind in Asia. Besides showing the latest environmentally friendly products, the Sharp booth had scale models of Solar House, Solar Town, and Solar Buildings representing Sharp's vision for the green society of the near future. The booth attracted large numbers of visitors including representatives from Indonesian government ministries.

Eco-Products 2009 (Tokyo, Japan)



Sharp's "eco-positive" pamphlet (Eco-Products 2009)

IFA 2009 (Berlin, Germany)

Eco-products International Fair 2010 (Jakarta, Indonesia)

Environmental Forums Around the World

To more widely disseminate information on its initiatives on behalf of the environment, Sharp has been holding environmental forums for government officials, journalists, and the general public. In fiscal 2009, Sharp held such forums a total of four times in Japan, China, and Indonesia.

Sharp has held a total of nine environmental forums in China since fiscal 2007, including two in fiscal 2009, in Shenyang and Hangzhou. At the Hangzhou forum, a total of 26 government officials and journalists gathered to hear Sharp presentations on the targets and actions that make up its Eco-Positive Company corporate vision and Eco-Positive Strategy. Hangzhou Deputy Mayor Zhang Jianting introduced his city's environmental policies and offered Sharp some advice. The forum was a valuable opportunity to strengthen ties with government officials and the media.


A scene from the 9th Environmental Forum in Hangzhou, China

Factory Tours and Community Exchanges

To enhance communication with its wide range of stakeholders, Sharp holds factory tours, exchange conferences, and other events in Japan and overseas.

Sharp Corporation holds public festivals at its factories, where employees host their families and local residents to help them learn about Sharp's environmental activities, interact with and know the environment better, and enjoy eco-related games and events. Participants have praised Sharp for such efforts to contribute to the community and get to know residents in a lively, amicable atmosphere.

At the Advanced Development and Planning Center (Tenri City, Nara Prefecture), local government officials are invited once a year to learn about Sharp's environmental activities and exchange ideas so that both sides can work together to make local society better.

In fiscal 2009, fruitful ideas were exchanged at a meeting between Sharp and Mie University in an effort to improve environmental reporting and the Mie Plant site report.


Environmental fun section of a family day at the Fukuyama Plant


Discussion session with members of Mie University

Boundary of Environmental Performance Data

Sharp Corporation and consolidated subsidiaries. Note that the category "plants" includes non-consolidated subsidiaries and affiliated companies.
Plants 40 plants/30 companies (18 plants/9 companies in Japan, 22 plants/21 companies overseas)
Offices 77 offices/30 companies (54 offices/8 companies in Japan, 23 offices/22 companies overseas)

As of March 31, 2010

Japan

Plants	Sharp Corporation	Tochigi Plant	
		Yao Plant	
		Hiroshima Plant	
		Nara Plant	
		Katsuragi Plant (including Toyama Plant performance)	
		Fukuyama Plant	
		Mie Plant	
		Tenri Plant (including Advanced Materials & Energy Engineering Laboratories performance)	
		Mihara Plant	
		Kameyama Plant	
	Consolidated subsidiaries	Sharp Manufacturing Systems Corporation	
		Sharp Niigata Electronics Corporation	
		Sharp Mie Corporation	
		Sharp Yonago Corporation	
		Sharp Display Products Corporation	
	Non-consolidated subsidiary	Sharp Tokusen Industry Co.	
	Affiliated companies	Kantatsu Co., Ltd.	
		Sharp Takaya Electronic Industry Co., Ltd.	
Offices	Sharp Corporation	Head Office/Tanabe Building	
		Makuhari Building (Tokyo Branch)	
		Tokyo Ichigaya Building	
	Consolidated subsidiaries	Sharp Electronics Marketing Corporation	
		Sharp System Products Co., Ltd.	
		Sharp-Engineering Corporation	
		Sharp Document Systems Corporation	
		Sharp Amenity Systems Corporation	
		Sharp Trading Corporation	
		Sharp Business Computer Software Inc.	

North America

Plants	Consolidated subsidiaries	Sharp Manufacturing Company of America (SMCA)*1	US
		Sharp Electrónica Mexico S.A. de C.V. (SEMEX)	Mexico
Offices	Consolidated subsidiaries	Sharp Electronics Corporation (SEC)	US
		Sharp Laboratories of America, Inc. (SLA)	
		Sharp Electronics of Canada Ltd. (SECL)	Canada

*1 Manufacturing division of SEC

Europe

Plants	Consolidated subsidiaries	Sharp Manufacturing Company of U.K. (SUKM)*2	UK
		Sharp Electrónica España S.A. (SEES)	Spain
		Sharp Manufacturing France S.A. (SMF)	France
		Sharp Manufacturing Poland sp. z o.o. (SMPL)	Poland
Offices	Consolidated subsidiaries	Sharp Electronics (Europe) GmbH (SEEG)	Germany
		Sharp Electronics (U.K.) Ltd. (SUK)	UK
		Sharp Laboratories of Europe, Ltd. (SLE)	
		Sharp Electronics France S.A. (SEF)	France
		Sharp Electronics (Italia) S.p.A. (SEIS)	Italy
		Sharp Electronics (Schweiz) AG (SEZ)	Switzerland
		Sharp Electronics (Nordic) AB (SEN)	Sweden
		Sharp Electronics Benelux B.V. (SEB)	Netherlands
		Sharp Electronics Russia LLC (SER)	Russia

*2 Manufacturing division of SUK

Asia, Middle East, Oceania

Plants	Consolidated subsidiaries	Shanghai Sharp Electronics Co., Ltd. (SSEC)	China
		Sharp Office Equipments (Changshu) Co., Ltd. (SOCC)	
		Wuxi Sharp Electronic Components Co., Ltd. (WSEC)	
		Nanjing Sharp Electronics Co., Ltd. (NSEC)	
		Sharp Technical Components (Wuxi) Co., Ltd. (STW)	
		Sharp Appliances (Thailand) Ltd. (SATL)	Thailand
		Sharp Manufacturing (Thailand) Co., Ltd. (SMTL)	
		Sharp Manufacturing Corporation (M) Sdn. Bhd. (SMM)	Malaysia
		Sharp (Phils.) Corporation (SPC)	Philippines
		PT. Sharp Semiconductor Indonesia (SSI)	Indonesia
		PT. Sharp Electronics Indonesia (SEID)	
	Non-consolidated subsidiaries	Shanghai Sharp Mold and Manufacturing Systems Co., Ltd. (SSMC)	China
		Sharp India Ltd. (SIL)	India
	Affiliated companies	Sharp Korea Corporation (SKC)	Korea
		S&O Electronics (Malaysia) Sdn. Bhd. (SOEM)	Malaysia
Offices	Consolidated subsidiaries	Sharp Electronics (Shanghai) Co., Ltd. (SES)	China
		Sharp Electronics Sales (China) Co., Ltd. (SESC)	
		Sharp Electronic Components (Taiwan) Corporation (SECT)	Taiwan
		Sharp Electronics (Malaysia) Sdn. Bhd. (SEM)	Malaysia
		Sharp-Roxy Sales (Singapore) Pte., Ltd. (SRS)	Singapore
		Sharp Electronics (Singapore) Pte., Ltd. (SESL)	
		Sharp Software Development India Pvt. Ltd. (SSDI)	India
		Sharp Middle East Free Zone Establishment (SMEF)	UAE
		Sharp Corporation of Australia Pty. Ltd. (SCA)	Australia
		Sharp Corporation of New Zealand Ltd. (SCNZ)	New Zealand

Calculation Standards for Environmental Performance Indices

[1] Period covered

April 1, 2009 to March 31, 2010

[2] Organizations covered

Sharp Corporation and consolidated subsidiaries. Note that the category “plants” includes non-consolidated subsidiaries and affiliated companies.

Plants: 40 plants/30 companies (18 plants/9 companies in Japan, 22 plants/21 companies overseas)

Offices: 77 offices/30 companies (54 offices/8 companies in Japan, 23 offices/22 companies overseas)

[3] Calculation method for environmental performance indices

Environmental Reporting Guidelines (2007 Version) published by the Japanese Ministry of the Environment were used as reference.

Environmental performance indices			Unit	Calculation method
INPUT	Manufacture	Energy consumption	TJ	Electricity purchased annually (kWh) x units of heat used*1 + Σ [Annual consumption of each fuel x heat value per unit *2] *1 Based on regulations of the Law Concerning the Rational Use of Energy (enforced April 1, 2006): • Daytime electricity 9.97 MJ/kWh • Nighttime electricity 9.28 MJ/kWh *2 Based on the heat value per unit per energy source used by the Agency for Natural Resources and Energy (February 2002): • City gas Japan: Figure individually confirmed for each gas provider: • Tokyo Gas/Osaka Gas: 45.0 GJ/km³ • Fukuyama Gas: 46.0 GJ/km³ • Toho Gas/Hiroshima Gas: 46.04655 GJ/km³ • Hokkaido Gas: 46.05 GJ/km³ Overseas: Highest figure from among those known in Japan: • 46.05 GJ/km³ • LPG: 50.8 GJ/t • Heavy oil: 39.1 GJ/kl • Kerosene: 36.7 GJ/kl • Gas oil: 37.7 GJ/kl • Gasoline: 34.6 GJ/kl • Steam: (SSEC) 2.817 GJ/t, (WSEC) 3.771 GJ/t, (NSEC) 3.782 GJ/t • Heating/cooling: Figure individually confirmed for each gas provider (currently, only the 0.799 GJ/GJ value for Makuhari is available)
		Electricity	Million kWh	Electricity purchased annually
		City gas	Million m³	City gas purchased annually
		LPG	Tons	LPG purchased annually
		Heavy oil, kerosene, gas oil, gasoline	kl	Fuel oil purchased annually
		PFCs purchased	Million GWP t-CO_2	PFCs purchased annually
		Chemical substances (PRTR) handled	Tons	Among the substances covered under the PRTR Law*3, the total amount of substances handled in quantities greater than 500 kg annually at each plant
		Water consumed	Million m³	Annual consumption of water supply, well water, and water for industrial use
		Packaging materials used	Thousand tons	Packaging materials consumed annually
		Resources consumed	Million tons	Total weight of products in the 12 major categories sold in fiscal 2009 (estimate), plus waste, etc. generated
	Logistics	Energy consumption	GJ	Revised ton-km system
	Product use	Energy consumption	TJ (million kWh)	Estimate of annual energy used by products in the 11 major categories sold in fiscal 2009. Calculation based on each product’s annual energy consumption rate (using a heat value per unit of 9.97 MJ/kWh).
	Recycling	Home appliances (four kinds)	Tons	Amount of used home appliances (four kinds) recycled into new home appliances
		Copiers		Amount of recycled copiers
		PCs		Amount of recycled PCs
		Amount of closed-loop material recycling of plastics		Amount of closed-loop material recycling of plastics

*3 Law Concerning Reporting, etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management

Environmental performance indices			Unit	Calculation method
OUTPUT	Manufacture	CO_2 emissions	Million t-CO_2	Σ [Electricity purchased annually x CO_2 emission coefficient + annual consumption of each fuel x CO_2 emission coefficient for each] CO_2 emission coefficient • Electricity Japan: Fiscal year 2004 / 2005 / 2006 / 2007 / 2008 / 2009; CO_2 emission coefficient (t-CO_2/MWh) 0.421 / 0.425 / 0.410 / 0.453 / 0.373*1 / 0.373*1 Overseas: Using the fiscal 2003 coefficient of each country from the Report on the CO_2 Emissions Intensity of the Power Sector of Various Countries that was compiled by the Japan Electrical Manufacturers' Association (June 2006) *1 Based on the values officially announced by the Federation of Electric Power Companies of Japan (after reflecting the Kyoto Mechanism credit) • City gas Japan: Calculated by multiplying the standard calorific value (GJ/km³) individually confirmed for each gas provider × carbon conversion factor (0.0136 t-C) × 44/12(t-CO_2/t-C) • Tokyo Gas/Osaka Gas: 2.244 t-CO_2/km³ • Fukuyama Gas: 2.294 t-CO_2/km³ • Toho Gas/Hiroshima Gas/Hokkaido Gas: 2.296 t-CO_2/km³ Overseas: Highest figure from among those known in Japan: • 2.296 t-CO_2/km³ Values taken from the guidelines for calculating, reporting, and announcing greenhouse gas emissions, Article 3 of the Act on Promotion of Global Warming Countermeasures published by the Ministry of the Environment, Japan: • LPG: 2.999 t-CO_2/t • Heavy oil: 2.710 t-CO_2/kl • Kerosene: 2.489 t-CO_2/kl • Gasoline: 2.322 t-CO_2/kl • Gas oil: 2.585 t-CO_2/kl • Steam: (SSEC) 0.166 t-CO_2/t, (WSEC) 0.158 t-CO_2/t, (NSEC) 0.159 t-CO_2/t • Heating/cooling: Figure individually confirmed for each gas provider (currently, only the 0.034 t-CO_2/GJ value for Makuhari is available)
		PFC emissions	Million GWP t-CO_2	Σ [Annual emissions of each PFC gas (t) x global warming potential of each PFC gas*2] *2 Based on the IPCC's Third Assessment Report: • Sulfur hexafluoride: 22,200 • The coefficient corresponding to segmentalized gas is used for HFC and PFC
		SOx emissions	Tons	(1) When a gaseous fuel is burnt: Handled as if there are no emissions because it is assumed that the fuel contains no sulfur. (2) When a liquid fuel is burnt: Amount of sulfur contained in fuel (kg/year)/32(kg-S) × (32+16×2) (kg-SO_2)/1,000
		NOx emissions	Tons	(1) When a gaseous fuel is burnt: Fuel consumption per year (Nm³/year) × dry base combustion gas (Nm³/Nm³) × concentration of released NOx (ppm) × 10^{-6}×(14+16×2) (kg-NO_2) / 22.4 (Nm³)/1,000 (2) When a liquid fuel is burnt: Fuel consumption per year (liters/year) × fuel specific gravity (kg/liter) × dry base combustion gas (Nm³/kg) × concentration of released NOx (ppm) × 10^{-6}×(14+16×2) (kg-NO_2) / 22.4 (Nm³)/1,000
		Drainage	Million m³	Annual drainage into public body of water and sewer system
		COD (chemical oxygen demand)	Tons	COD concentration (mg/l) x drainage into public body of water (m³) x 10^{-6}
		Nitrogen pollutant load	Tons	Nitrogen concentration (mg/l) x drainage into public body of water (m³) x 10^{-6}
		Phosphorus pollutant load	Tons	Phosphorus concentration (mg/l) x drainage into public body of water (m³) x 10^{-6}
		Final landfill disposal	Tons	Final landfill disposal of industrial waste + final landfill disposal of general waste discharged from business activities
		Chemical substances (PRTR) released and transferred	Tons	Among the substances covered under the PRTR Law, the amount of substances, which are handled in quantities greater than 500 kg annually at each plant, released and transferred
	Logistics	CO_2 emissions	Thousand t-CO_2	Revised ton-km system
		Transport volume	Million ton-km	Revised ton-km system
	Product use	Product shipments	Million tons	Total weight of products in the 11 major categories sold in fiscal 2009 (estimate)
		CO_2 emissions	Million t-CO_2	Estimate of annual energy used and amount of CO_2 emitted by products in the 11 major categories sold in fiscal 2009. Calculation based on each product's annual energy consumption rate. The calculation method has been partially revised.
		CO_2 reductions	Million t-CO_2	Amount of electricity generated annually by Sharp solar cells shipped in fiscal 2009, plus CO_2 emissions reduction
	Recycling	Weight of that which was not recycled into new products or materials, or reused	Tons	Weight of four kinds of home appliances, PCs, and copiers collected – Weight recycled into new products or materials, or reused

Objectives and Achievements in the Social Dimension of CSR

On the basis of the Sharp Group Charter of Corporate Behavior and the Sharp Code of Conduct, Sharp sets major social themes and targets for each type of stakeholder within the framework of CSR and promotes activities following those themes, to continue to be a company that has the trust of people and society.

Promoting CSR Efforts in the Social Dimension

To promote CSR efforts in the social dimension, Sharp develops important initiatives for its different types of stakeholders, sets fiscal-year goals, and implements a variety of measures.

The Sharp business philosophy states: “Our future prosperity is directly linked to the prosperity of our customers, dealers and shareholders …indeed the entire Sharp family.” Therefore, Sharp makes efforts to communicate with its various types of stakeholders and promotes CSR activities accordingly.

Sharp will work proactively to incorporate these CSR objectives and measures into operational processes by regularly assessing their progress and by utilizing a management system that enables the identification of emerging problems and the implementation of further improvements.

R-CATS* Small-Group Activities with a CSR Perspective

To offer products and services that deliver satisfaction and peace of mind to stakeholders, particularly customers, all Sharp employees belong to small groups called R-CATS*. These teams engage in group activities that take the viewpoint of stakeholders in confronting the challenges of improving the quality of their work and building new systems and methods to carry out job tasks.

Under these activities, all employees in Japan, as well as at all production bases overseas, take the perspective of CSR in working to solve problems and complete assigned tasks at their individual workplaces. Company-wide meetings are held twice a year where the highest achieving teams selected from Japan and abroad present the results of their activities with the aim of sharing examples of improvement with the entire company.

In fiscal 2009, approximately 37,000 employees from across the Sharp Group participated in R-CATS activities, and worked to solve problems and accomplish tasks from the perspective of CSR at their individual workplaces.

* R-CATS: Revolution-Creative Action Teams

Overall Results of CSR Efforts in Fiscal 2009

In fiscal 2009, Sharp was able to meet its objectives. These included gaining high ratings for after-sales service, deploying CSR Procurement Surveys on a global basis, working to achieve work-life balance, providing environmental education classes at elementary schools in Japan and overseas, and making efforts to protect biodiversity, particularly activities involving Sharp Forests.

The results of Sharp’s special efforts such as these can be seen in the Close-Up and Topics sections on pages categorized by type of stakeholder.

Pursuing customer satisfaction
(see page 83 “For Customers”)

Making efforts to acquire OHSAS 18001
(see page 96 “For Employees”)

Holding environmental education classes for elementary schools worldwide
(see page 104 “For Local Communities”)

Self Evaluation ◎: Results exceeded objectives ○: Results nearly met objectives △: Certain results were accomplished

Field (Stakeholders)	Important Themes		Actions for Fiscal 2009	Self Evaluation	Objectives for Fiscal 2010	See page(s)
For Customers	Secure quality and safety	Objectives	• Improve level of quality on a global basis	○	• Strengthen global quality assurance and customer service activities • Strengthen quality evaluation system overseas • Expand overseas call centers • Undertake technical education of engineers at overseas bases	83, 84 and website
		Achievements	• Constructed global market response information system that gathers and can consolidate domestic and overseas product quality and customer satisfaction information • Established technical safety standards for each overseas design base and developed risk management manual for emerging countries			
	Create products that are easier to use	Objectives	• Improve products by taking on customer's point of view	○	• The pursuit of usability • Establish analysis methods for usability and improve products by taking on customer's point of view • Sequentially develop VOC program overseas, following on from North America	85, 86
		Achievements	• Proactively developed Voice of the Customer (VOC) program overseas (North America), in addition to Japan, and implemented product improvement			
	Improve customer satisfaction	Objectives	• Further boost basic service and develop one-of-a-kind services	○	• Improve service quality • Proactively use customer feedback taken when making repair visits • Undertake customer satisfaction skill training • Improve service technical strength	87–89
		Achievements	• Improved customer convenience by making repair consultation call center toll-free in Japan • Implemented visiting repair service that allows customers to select time and date they want repairs to be made by expanding 365-days-a-year service and introducing service staff shift work system in Japan			
For Business Partners	Promote CSR across entire supply chain	Objectives	• Continue expanding implementation of supply chain CSR measures overseas	○	• Build system to conduct audits and do on-site verification of status of CSR measures at suppliers	90–93 and website
		Achievements	• Implemented CSR Procurement Survey for local suppliers serving Sharp production bases in North America, Europe, and Asia			
For Shareholders and Investors	Improve communication with shareholders and investors	Objectives	• Continue improving information disclosure and strengthen information transmission for shareholders and investors	○	• Improve information disclosure to shareholders and investors and respond to diversifying needs of investors	94, 95 and website
		Achievements	• Increased amount of information available on website • Held various kinds of IR meetings			
For Employees	Expand efforts related to human rights	Objectives	• Continue strengthening human rights education	○	• Continue strengthening human rights awareness activities • Undertake human rights training sessions at business sites and affiliates in Japan • Undertake human rights training sessions for management staff assigned overseas	96
		Achievements	• Undertook approximately 40 human rights training sessions at business sites and affiliates in Japan			
	Strengthen human resource development	Objectives	• Continue training to support development of global business	△	• Continue training to support development of global business • Nurture global management staff • Promote GATE/G-BANK training and SHINE program	97
		Achievements	• Approximately 60 employees received overseas assignment register training (GATE) • Approximately 140 employees received global personnel register training (G-BANK)			
	Development of company-wide diversity management (strategy for utilizing employee diversity)	Objectives	• Introduce and develop diversity program	○	• Establish diversity program • Expand work-life balance measures • Improve workplace for diversity inclusion	98–101
		Achievements	• Formulated and promoted specific objectives and measures to promote utilization of four demographic groups: female, non-Japanese, physically or mentally challenged, and elderly employees in Japan • Established work-life balance and diversity information site "Win-Win Network"			

Self Evaluation ◎: Results exceeded objectives ○: Results nearly met objectives △: Certain results were accomplished

Field (Stakeholders)	Important Themes		Actions for Fiscal 2009	Self Evaluation	Objectives for Fiscal 2010	See page(s)
For Employees	Promote occupational health and safety	Objectives	• Continue strengthening industrial accident risk reduction activities	○	• Continue strengthening activities to reduce and remove industrial accident risks • Implement risk assessment aimed at introducing occupational health and safety management system and measures to reduce and remove risks • Acquire OHSAS 18001 certification at 6 sites in Japan • Strengthen global health and safety efforts	102
		Achievements	• Conducted regular health and safety inspections at 11 major plants in Japan • Implemented risk assessment, training, and other measures aimed at introducing occupational health and safety management system • Acquired OHSAS 18001 certification at 2 sites in Japan and 2 bases overseas			
		Objectives	• Continue strengthening efforts to promote mental health care	○	• Strengthen measures for primary prevention of mental illnesses (illness prevention and health promotion) • Undertake mental health group work training • Improve knowledge of mental health-related issues by encouraging acquisition of third-party certification in mental health management	103
		Achievements	• Conducted survey into operational status of support system for employees taking or returning from medical leave due to mental health reasons, and ensured proper operation • Held Mental Health Promotion Meetings twice during the year, strengthening information sharing and coordination between representatives from each site			
		Objectives	• Continue strengthening measures against lifestyle diseases	○	• Continue strengthening measures against lifestyle diseases • Continue strengthening health exams for lifestyle diseases (periodic checkups) with follow-up observations • Stimulate health education activities • Stimulate regular exercise by holding company-wide sports events for all employees	103
		Achievements	• Health checkup participation rate was 99.99%. Proactively undertook specific health guidance (active support and motivational support), and ratio of follow-up observations was 99% • Promoted walking events such as company-wide team walking (approximately 15,200 participants for the year)			
For Local Communities	Expand and diversify social contribution activities	Objectives	Japan • Promote further Sharp Forest activities (10 locations) • Provide environmental education at 500 elementary schools, provide craftsmanship education at 100 elementary schools • Continue local social contribution activities at all Sharp sales and service bases • Encourage volunteering among employees, with a goal of having 30,000 employees volunteer	○	• Promote and expand Sharp Forest activities • Provide environmental education at 500 elementary schools, provide craftsmanship education at 100 elementary schools • Hold new educational programs that combine factory tours, visits to the Sharp Technology Hall, and environment/craftsmanship classes • Provide educational support for persons with disabilities (at special-needs schools) • Continue local social contribution activities at all Sharp sales and service bases • Encourage volunteering among employees, with a goal of having 30,000 employees volunteer	104 – 109 and website
		Achievements	• Held Sharp Forest activities 37 times with a total of about 1,500 employees participating • Provided environmental education for about 28,700 children at 500 elementary schools and craftsmanship education for about 3,800 children at 100 elementary schools • A total of about 17,400 employees participated in about 700 local social contribution activities at all Sharp sales and service bases • A total of about 30,000 employees participated in volunteer activities at all Sharp offices and bases			
		Objectives	Overseas • Expand activities centered on Sharp Charity Foundation in China • Expand environmental education in overseas regions		• Continue activities centered on Sharp Charity Foundation in China • Continue expanding environmental education in overseas regions	
		Achievements	• In China, provided scholarships (179 people at 11 universities), donated Sharp LCD TVs (38 units to 33 hospitals), carried out beautification campaigns in areas near Sharp bases, conducted tree-planting activities, built elementary schools and libraries, etc. • Conducted environmental education lessons at overseas locations, primarily in North America and China (for about 6,000 children at a total of 74 schools)			

Offering Products and Services That Deliver Peace of Mind and Satisfaction

Constantly thinking from the customer's point of view in order to develop and provide products and services that customers find useful is one of Sharp's fundamental values. Sharp is also applying customer feedback toward making better products that customers can rely on for years and striving to improve sales and after-sales service. Sharp seeks to satisfy customers so that they choose Sharp now, next time, and every time.

Objectives for Fiscal 2009	Achievements for Fiscal 2009	Objectives for Fiscal 2010

• Improve level of quality on a global basis	• Constructed global market response information system that gathers and can consolidate domestic and overseas product quality and customer satisfaction information
	• Established technical safety standards for each overseas design base and developed risk management manual for emerging countries
		• Strengthen global quality assurance and customer service activities
		  • Strengthen quality evaluation system overseas
		  • Expand overseas call centers
		  • Undertake technical education of engineers at overseas bases

• Improve products by taking on customer's point of view	• Proactively developed Voice of the Customer (VOC) program overseas (North America), in addition to Japan, and implemented product improvement	• The pursuit of usability
		  • Establish analysis methods for usability and improve products by taking on customer's point of view
		  • Sequentially develop VOC program overseas, following on from North America

• Further boost basic service and develop one-of-a-kind services	• Improved customer convenience by making repair consultation call center toll-free in Japan
	• Implemented visiting repair service that allows customers to select time and date they want repairs to be made by expanding 365-days-a-year service and introducing service staff shift work system in Japan
		• Improve service quality
		  • Proactively use customer feedback taken when making repair visits
		  • Undertake customer satisfaction skill training
		  • Improve service technical strength

Basic Stance and Vision on Quality and Customer Satisfaction (CS)

The Sharp Group meets customer needs and demands, and offers safety, quality, reliability, and better environmentally friendly products and services to gain customer trust and to improve customer satisfaction.

Quality Philosophy

To respond to society's needs and make products that satisfy our customers, we keep the slogan "Quality First" in mind at all times.

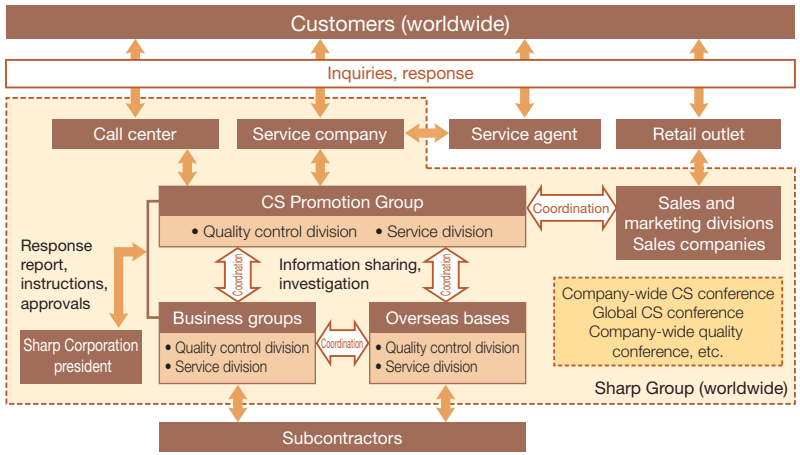
品質第一 私たちの心です ***Quality First in Heart and Mind***	Building a relationship of trust through quality and service so that customers choose Sharp now, next time, and every time.
Quality slogan	CS slogan

Quality and Customer Satisfaction Promotion System

Sharp undertakes all its business activities from product development through sales and service based on management from the customer's point of view and has established the CS Promotion Group as a company-wide promotion organization to further boost product quality and safety, and customer satisfaction.

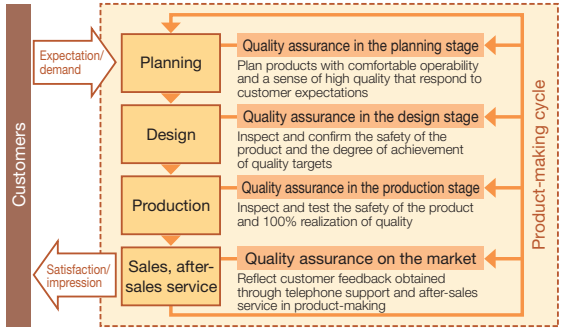
Sharp established a CS Promotion Center and a Quality Assurance Division that undertake product service and quality control in each business group, and the Sharp Group, including overseas bases and subcontractors, established a system that can provide safe, high-quality products and service. In fiscal 2009, Sharp constructed a global market response information system that gathers and can consolidate domestic and overseas quality and customer satisfaction information, and endeavors to further improve quality and customer satisfaction.

■ **Quality and CS System**



Quality Assurance System

Sharp specifies the quality levels it provides to customers, thus ensuring that all employees in product planning, design, production, sales, and after-sales service aim for the same targets in their ongoing pursuit of quality improvement. Sharp bases in Japan and abroad (business groups, manufacturing companies, etc.) have obtained the international ISO 9001 certification of quality management. They have also adopted the SHARP Corporation Standards—the Sharp Group's proprietary quality assurance standards—and conduct various quality assurance activities in each stage of the product-making process, from planning, design, and manufacture to testing/evaluation and marketing.



Web Quality assurance system

Sharp Voluntary Product Safety Action Policy

Since the Sharp Group acknowledges that ensuring product safety is one of the most important management issues and one of its corporate social responsibilities, for customer safety and peace of mind it promotes information disclosure and prioritizes efforts to ensure the safety of the products it manufactures and sells. To put this into practice, Sharp compiled a voluntary action plan on product safety and it strives to receive an even higher level of confidence from society.

Efforts to Ensure Product Safety

At Sharp, product safety is based on adherence to the safety standards, laws, and regulations of every country. In addition, Sharp has its own technical safety standards, which are applied to all products. Through these standards, Sharp aims to ensure complete safety even when rare and unexpected problems arise, especially concerning issues such as incombustible material usage and abnormal motion detection. To ensure an even higher level of safety, Sharp revises the standards whenever the need arises.

Also, Sharp is adjusting its system for ensuring product safety overseas so that unexpected product problems can be dealt with more swiftly and precisely. Along with responding in a timely manner to changes in the social situation and revisions to laws pertaining to product safety, Sharp will continue to increase its efforts at offering products that customers can use with peace of mind.

ISO 9001-Certified Sites

Certified business groups and subsidiaries in Japan	Location
Audio-Visual Systems Group	Yaita City, Tochigi Prefecture; Kameyama City, Mie Prefecture
Health and Environment Systems Group	Yao City, Osaka Prefecture
Communication Systems Group	Higashi-Hiroshima City, Hiroshima Prefecture
Personal Solutions Business Development Group	Yamato-Koriyama City, Nara Prefecture
Business Solutions Group	Yamato-Koriyama City, Nara Prefecture
Solar Systems Group	Katsuragi City, Nara Prefecture; Yao City, Osaka Prefecture
Electronic Components and Devices Group	Osaka City, Osaka Prefecture; Katsuragi City, Nara Prefecture; Tenri City, Nara Prefecture; Mihara City, Hiroshima Prefecture; Fukuyama City, Hiroshima Prefecture
Liquid Crystal Display Group	Kameyama City, Mie Prefecture; Taki Township, Mie Prefecture; Tenri City, Nara Prefecture; Yamato-Koriyama City, Nara Prefecture; Minato Ward, Tokyo
Sharp System Products Co., Ltd.	Chiba City, Chiba Prefecture; Shinjuku Ward, Tokyo; Osaka City, Osaka Prefecture
Sharp Manufacturing Systems Corporation	Yao City, Osaka Prefecture
Sharp Niigata Electronics Corporation	Niigata City, Niigata Prefecture
Sharp Business Computer Software Inc.	Sumida Ward, Tokyo; Osaka City, Osaka Prefecture
Sharp Yonago Corporation	Yonago City, Tottori Prefecture

Certified bases (companies) overseas	Country
Sharp Manufacturing Company of America (SMCA)	US
Sharp Electrónica Mexico S.A. de C.V. (SEMEX)	Mexico
Sharp Manufacturing Company of U.K. (SUKM)	UK
Sharp Manufacturing France S.A. (SMF)	France
Sharp Electrónica España S.A. (SEES)	Spain
Sharp Manufacturing Poland sp. z o.o. (SMPL)	Poland
Shanghai Sharp Electronics Co., Ltd. (SSEC)	China
Nanjing Sharp Electronics Co., Ltd. (NSEC)	China
Sharp Office Equipments (Changshu) Co,. Ltd. (SOCC)	China
Wuxi Sharp Electronic Components Co., Ltd. (WSEC)	China
Sharp Technical Components (Wuxi) Co., Ltd. (STW)	China
Sharp Manufacturing Corporation (M) Sdn. Bhd. (SMM)	Malaysia
Sharp Appliances (Thailand) Ltd. (SATL)	Thailand
Sharp Manufacturing (Thailand) Co., Ltd. (SMTL)	Thailand
Sharp (Phils.) Corporation (SPC)	Philippines
PT. Sharp Electronics Indonesia (SEID)	Indonesia
PT. Sharp Semiconductor Indonesia (SSI)	Indonesia

Applying Customer Feedback to the Making of Products

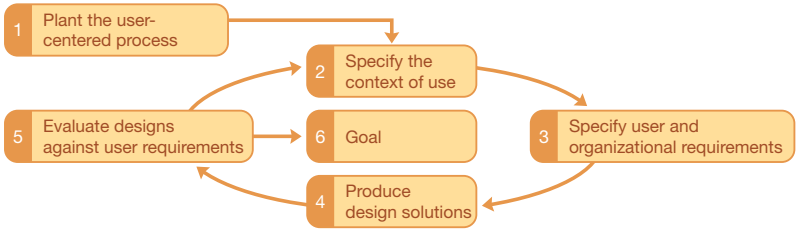
In order to deliver products that customers find easy to use, Sharp is implementing VOC (Voice of the Customer) activities so that customer evaluations and opinions are put to use when products are made.

As part of these activities, Sharp set up an intranet site, the Voice of the Customer Portal, where employees in charge of areas such as planning, development, and design can freely access anonymous customer feedback sent to Sharp's Customer Assistance Center.

In addition, Sharp investigates what problems customers actually face and what they actually want through a product development process based on the concept of user-centered design (UCD), as outlined in the international ISO 13407 standard. Sharp then incorporates its findings into the specifications and design of its products. In addition to the feedback gathered from the Customer Assistance Center, Sharp gathers and analyzes information about how customers interact with products through field research and surveys, and creates design proposals based on these results. Also, Sharp gains an understanding of customer needs and complaints that the customers themselves are not even aware of through interviews and product testing (usability tests), where customers actually operate products, and improves products based on these results.

Through activities such as these, Sharp is raising the appeal of its products.

Basic User-Centered Design Process



Usability Tests

A customer tries out a product

Developers observing the user during testing

Case Study

Understanding Various Customer Needs and Incorporating Them into Product Design

Sharp also promotes the manufacture of products that take into consideration universal design, so many more customers can comfortably use its products.

Sharp improves its products by considering how to make them "easy to see," "easy to understand," and "easy to operate" for all users, including the elderly and the physically or mentally challenged. Towards that end, Sharp conducts tests and field research in the upstream stages of product development to understand how customers use products. Sharp comes up with product improvement ideas by listening to feedback from customers as they actually use products in their homes and offices and by observing precisely how the products are being used.

In addition, the developers themselves evaluate the products by wearing tools (such as cataract goggles, weights, and gloves) that simulate the experience of the elderly, and increase their awareness of universal design by experiencing the loss of freedom anew.

As a result of these efforts, as of April 2010, 107 models of 19 products had been recognized as universal design home appliances by the Association for Electric Home Appliances in Japan.

Listening to User Opinions

Verifying operability for a user in a wheelchair

Experiencing Disabilities

Evaluation using tools that simulate the experience of being aged

Global VOC System Underway

At Sharp, the Voice of the Customer (VOC) program is being proactively expanded to use the raw information gathered from customers at call centers in Japan to create easy-to-use products and improve quality.

Global VOC System

Based on these efforts, a Global VOC System was built to be able to easily search the contents of inquiries from customers at the overseas call centers. Using this system, customer inquiries to the North American sales subsidiaries are gathered in Japan and merged with the Japanese customer inquiries and can be searched in Japanese and English.

The system will be globally expanded in the future to include call center information from Europe and China.

Case Study Product Improvements in Japan

AQUOS LCD TV (LC-LX1/DS Series)

■ Use of large buttons on the remote control

- Frequently used buttons are double in size compared to previous models
- Certified for Color Universal Design (CUD)* thanks to adopting an easily visible color combination for the color keys frequently used for functions in digital broadcasts

* A user-oriented design system developed in consideration of people with various types of color vision to allow information to be accurately conveyed to as many individuals as possible. The system was developed by the Color Universal Design Organization, a nonprofit entity in Japan.

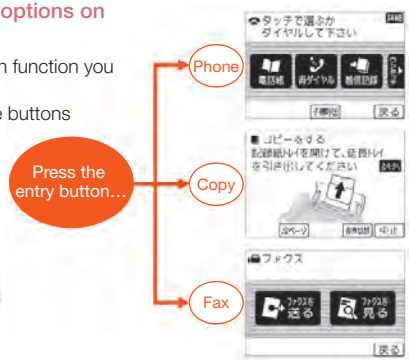
LC-60LX1

Digital Cordless Facsimile (UX-D82CL/CW)

■ Simple operation by choosing options on the touchscreen LCD

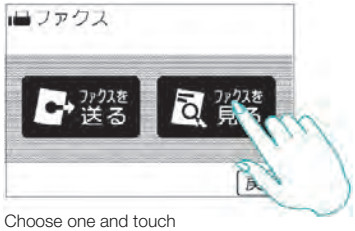
- Three “entry buttons” to choose which function you want to use first
- “Touch guide” where the LCD and the buttons guide you through the operations

UX-D82CL



Three “entry buttons” to choose which function you want to use

■ A simple screen to choose without hesitating



Choose one and touch

Set the original while looking at the screen

Case Study Product Improvements Overseas

AQUOS LCD TV (LC-LE810UN/820UN Series)

■ Use of a remote control with improved operability for peripheral devices (for North America)

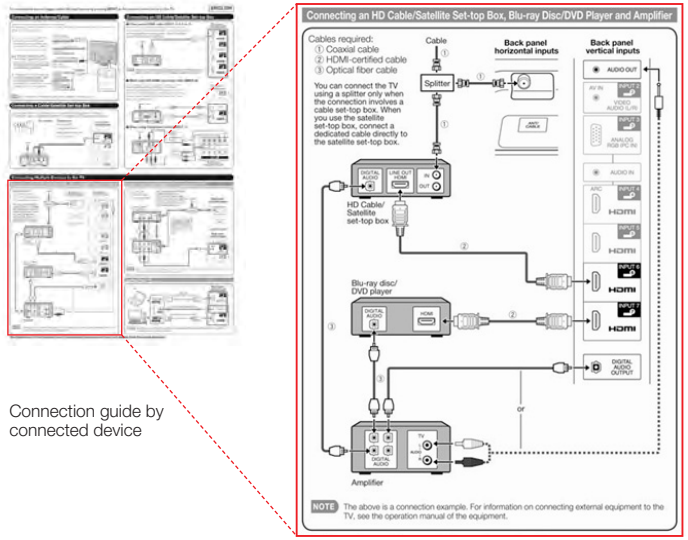
- Use of separate selection buttons for each target peripheral device to be operated
- Improved the remote control by using luminous buttons and by making the button for a selected peripheral device flash when the remote control is used

These luminous buttons blink

LC-60LE810UN

■ Inclusion of a connection guide (for North America)

- Improved the guide by explaining the connection method for each peripheral device and by using illustrations in the instructions to clarify how to connect the devices



Connection guide by connected device

Customer Service That Exceeds Expectations

From before a product is purchased until after the customer is finished using a product, Sharp's Customer Assistance Center in Japan always aims to meet or exceed customer expectations.

All Customer Assistance Center agents (operators) are periodically monitored by a response-quality manager. Based on those results, agents undergo training to improve their responsiveness in terms of providing assistance that matches the customer inquiry as well as their methods of speaking and listening. This enables the agents to maintain a high level of response skills while also boosting their awareness of customer satisfaction.

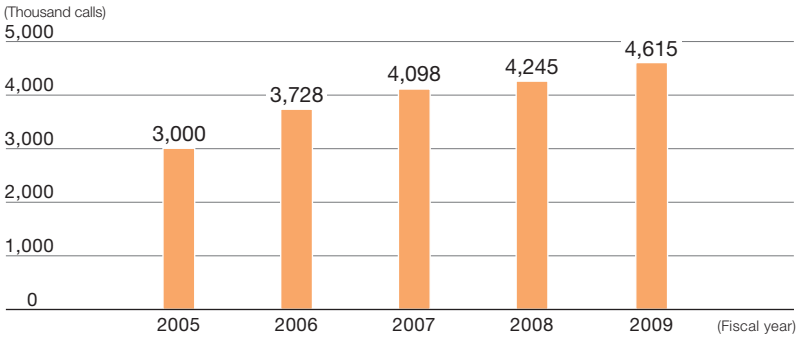
The number of consultations and inquiries has been increasing in conjunction with growth in Sharp's business. That is why in fiscal 2009, Sharp changed its repair consultation call center from a system where the customer must pay for part of the call to a toll-free system, further enhancing customer convenience.

In addition, Sharp offers new services to satisfy customers, such as Fault Diagnosis Navigation on the Sharp website, where customers themselves diagnose the symptoms of the problem and solve the problem by following the instructions on the screen, without calling the Customer Assistance Center.

Training to improve responsiveness

Fault Diagnosis Navigation page on the Sharp website

Number of Calls Received at the Customer Assistance Center (Japan)



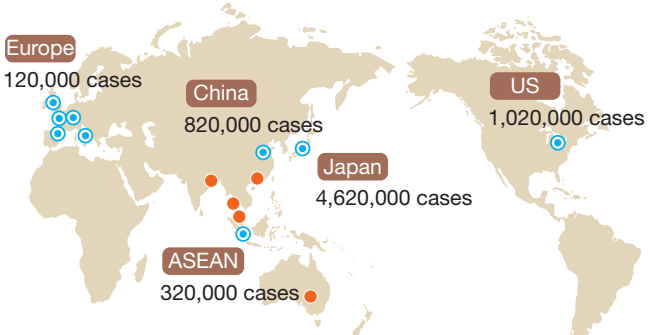
Global Customer Support System

Sharp has established call centers in Japan and at major overseas bases, and adequately responds to customer inquiries.

The large-scale call centers in and outside Japan assume the role of a control tower. For example, if a customer calls for repair service, the call center diagnoses whether the product is broken or not by asking questions, and contacts the service agent after confirming the symptoms of the problem and the cause. For cases such as this, Sharp has a system in place that connects its call centers and service agents via a network and allows the company to keep track of the progress from repair request to completion.

Additionally, small-scale call centers, in cooperation with Sharp sales and marketing divisions, work firmly rooted in their local communities and contribute to improved customer satisfaction and expanded sales.

Call Centers and Number of Customer Inquiries Handled

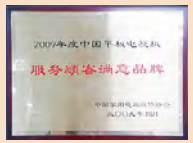


Large-scale call centers (support ranging from consultation on purchases to repairs)
Small-scale call centers (mainly repair inquiries)
Note: Number of cases in fiscal 2009

Sharp Flat-Screen TVs Rate High in Customer Satisfaction in China

In April 2009, the China National Household Electric Appliances Service Association announced the results of its survey on customer service satisfaction. Survey results named the Sharp AQUOS a Satisfactory Brand of Flat-Screen TV.

The survey, carried out in 14 major cities in seven regions, covered 15 brands of flat-screen TVs and other consumer electronics. Sharp Electronics Sales (China) Co., Ltd. (SESC) was given high marks for installation and repair visits.



Aiming to Remain No. 1 in After-Sales Service

In Japan, Sharp is advancing customer satisfaction innovation activities to give customers peace of mind by offering faster and more accurate after-sales service.

To provide quick service beyond what customers expect, in fiscal 2009 Sharp introduced 365-days-a-year service and a service staff shift work system in metropolitan areas in Japan, allowing customers to select the time and date they want the repairs to be made.

In addition, Sharp achieved reliable service where repairs were completed in one visit by precisely discovering the location of the fault in the product using the fault diagnosis tool.

Moreover, Sharp works to raise CS awareness among its employees by increasing the number of CS Meisters (masters), employees who have demonstrated outstanding customer response skills and extensive service knowledge and who can train other service employees to maximize their potential. Through these efforts, Sharp is raising employee response skills and giving peace of mind to customers receiving after-sales service.

TOPICS

No. 1 in After-Sales Service Ranking

Sharp obtained the number one position in four product categories—flat-screen TVs, Blu-ray/DVD/HDD recorders, air conditioners, and washing machine/dryers—in the *Nikkei Business* magazine's 2009 After-Sales Service Satisfaction Ranking survey in Japan.

Fiscal 2009 ranking	Fiscal 2008 ranking	Surveyed products
1	2	Flat-screen TV
1	3	BD/DVD/HDD recorder
1	5	Air conditioner
1	1	Washing machine/dryer

Sharp will continue various efforts to provide an even higher standard of service from the customer's point of view.

Words from a Service Employee (CS Meister)

Most people who I visit for repairs are customers who have a negative image of product failures.

For those customers to change their image to a positive one through our "impressive service" and make them want to buy a Sharp product again, we, CS Meisters, and all service employees continue to make diligent efforts to provide detailed service to meet each customer's needs.

Masao Takahashi
CS Meister
Junior Manager
Nishi Chiba Service Station
Sharp-Engineering Corporation

Educational Activities for the Safe Use of Products

Through its website and pamphlets, Sharp is enlightening customers on the safe use of its products.

Safety information on air conditioners was added to the website in fiscal 2009. Moreover, Sharp is undertaking other efforts, such as including a pamphlet on the safe use of microwave ovens with the user manual in the product package.

Disclosure of Information When Quality Problems Arise

In the event that a Sharp product is found to be responsible for injury to customers or for damage to property, Sharp will disclose relevant information immediately in newspapers and via its website, or through other methods. Sharp also has contact points to directly receive inquiries from customers and is striving to keep quality problems to an absolute minimum.

During fiscal 2009, Sharp notified customers as below, providing free-of-charge inspection, repair, and product recovery.

Based on the Sharp Voluntary Product Safety Action Policy, Sharp also releases on its website details of serious accidents involving products that are judged to be caused by a product or suspected to be caused by a product that were reported to the Consumer Affairs Agency and the Ministry of Economy, Trade and Industry in Japan.

Free-of-Charge Inspection and Repair

- Refrigerator/Freezer for Japan (January 2010)
  If anything became lodged between the refrigerator and its door, various problems would occur, making it difficult or even impossible to open or close the door. And forcibly opening or closing the door in such a situation raised the risk of the door becoming unhinged. Sharp advised customers on the safe use of its refrigerators and conducted free inspections and parts replacement.
- AV Center Computer Monitor and LCD IT TV for Japan (June 2009)
  A defective film condenser part in the power supply section raised the risk of smoke and strange odors being emitted from inside the monitor and TV. Sharp conducted free inspections and parts replacement.

Close-Up

Indonesia: Sharp Service Firmly Rooted in the Community

PT. Sharp Electronics Indonesia (SEID), Sharp's manufacturing and sales subsidiary, strives to serve its customers across the over 17,000 islands that make up Indonesia through locally rooted service aimed at providing people with products they can depend on.

Product repair is normally a cause of dissatisfaction among customers, but SEID believes that service calls are a great opportunity to interact directly with customers. SEID thus makes the most of this chance to determine customer wishes so that it can offer services that truly meet needs.

One of these efforts is the Platinum Service that SEID offers purchasers of AQUOS LCD TVs and Healsio superheated steam ovens to help them get the most satisfaction out of these products. This value-added service has proved extremely popular among users: SEID promises that it will replace for free a product that malfunctions within 30 days after purchase; and that a service technician will arrive within three hours of receiving a call from a customer and that SEID will lend the same product if repair is not completed during the service visit.

In September 2009, there were two large earthquakes, one in West Java (magnitude 7.6) and one in Sumatra (magnitude 7.9). To help victims, SEID ran a campaign in which it offered free repair and half-price parts replacement. Although the SEID branch in Padang was damaged in the September 30 Sumatra earthquake, it had set up temporary tent facilities a week later to resume helping customers. SEID carried out more than 500 repairs in a month and received many words and letters of thanks from customers.

SEID vows to step up efforts so that it can contribute to society by offering customers exactly the valued-added services they need.

SEID Efforts for Earthquake Victims

Notices of the campaign ran in newspapers and other media.

- September 2 earthquake in West Java
  From October 5, an 18-day servicing campaign was held (total of 125 repairs).
- September 30 earthquake in Sumatra
  From October 6, a one-month servicing campaign was held (total of 559 repairs).

Contributing to Earthquake Recovery Efforts

The SEID branch in Padang was damaged in the Sumatra earthquake


Customers bring their Sharp products for repair at the temporary tent service outlet

Ad informing customers of the servicing campaign

Repairing a TV at the temporary service outlet

Words from a Service Manager

Sharp has been in Indonesia for almost 40 years and has been able to take this long journey thanks to our dedicated customers.

Our service division is constantly in contact with customers. That is why we strive in a number of ways to offer service that meets the particular needs of the people here.

1) All service personnel are also sales people (handing out catalogs and presenting new products).
2) Call center staff inform customers of sales campaigns and events.
3) We call purchasers of AQUOS within one week to thank them.
4) We make a follow-up call to customers who have had product repairs.
5) We call customers six months after repair to make sure their products are working properly.

Last year there were two earthquakes in Indonesia large enough to merit a relief team from Japan. Because of the large-scale damage and large number of victims, we helped in relief efforts by donating money and daily supplies as well as offering free repair and half-price parts replacement for Sharp product owners. Many customers thanked us for this.

We will continue to step up efforts to be a locally rooted company that helps customers through the provision of valuable information and after-sales service that truly meets needs.

Katsumi Itoi
General Manager
SEID Service Division

Mutual Prosperity with Suppliers and Dealers

Sharp conducts its procurement activities on the basis of fair evaluation, ensuring that all companies are provided with equal opportunities. Sharp aims for mutual prosperity with business partners by building relationships of cooperation and trust through dialogue and communication that deepen mutual understanding. Sharp is also promoting CSR activities throughout the entire supply chain.

Objectives for Fiscal 2009	Achievements for Fiscal 2009	Objectives for Fiscal 2010
• Continue expanding implementation of supply chain CSR measures overseas	• Implemented CSR Procurement Survey for local suppliers serving Sharp production bases in North America, Europe, and Asia	• Build system to conduct audits and do on-site verification of status of CSR measures at suppliers

Determining Procurement Based on Providing Equal Opportunity and Fair Evaluation

Sharp has production activities around the world and it chooses who it will procure local parts, materials, and equipment from by providing all Japanese and overseas suppliers with an equal opportunity to do business with Sharp. This opportunity includes a fair evaluation of whether a supplier's procurement conditions meet Sharp's requirements for quality, standards, and performance.

Sharp has also formulated Basic Purchasing Principles that contribute to a prosperous coexistence with business partners. The Principles stipulate impartiality and fairness in all purchasing activities and the creation of a relationship of cooperation and trust with suppliers.

Basic Purchasing Principles

In procurement activities (including commissioning manufacture), Sharp will comply with all laws, regulations, and social standards, and enhance the mutual relationship with suppliers. Also, Sharp will practice the conservation of the environment and corporate social responsibility with suppliers' support.

Requests to Suppliers

1) Compliance with laws and social standards
2) Promotion of sound business operations
3) Consideration for the environment
4) Securing optimal quality and cost
5) Stable supply of parts and materials
6) Leading technology
7) No disclosing of confidential information

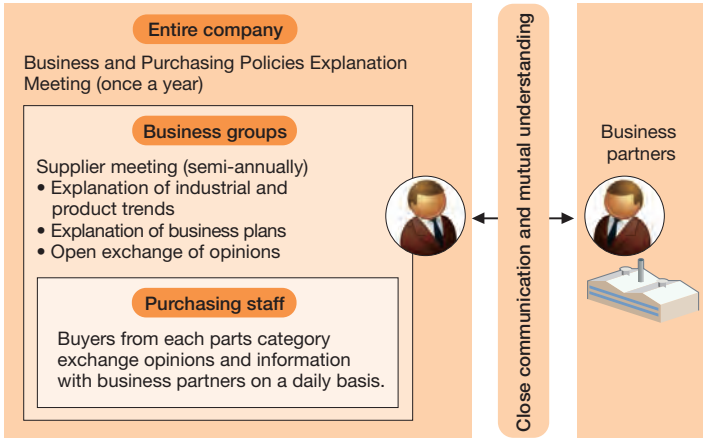
- Compliance with laws related to manufacture and distribution of material
- Compliance with laws related to labor
- Compliance with laws related to health and safety and arrangement of proper labor environment
- Prohibition of child and forced labor
- Prohibition of discrimination based on race and sex and respect for the dignity of each employee
- Compliance with environmental laws
- Prohibition of bribery and unfair act

Web Basic Purchasing Principles (full text)

Close Communication and Mutual Understanding

In fulfilling social responsibility through business activities in a wide range of areas such as product safety, minimizing environmental impact, human rights and labor, and health and safety, it is not enough that Sharp alone acts properly; the entire supply chain must do so as well.

To help its business partners gain an understanding of such concepts and to deepen the understanding between Sharp and its business partners, Sharp business groups and overseas production bases have been holding regular roundtables and meetings for their suppliers. In addition, buyers for various materials used by Sharp exchange ideas and information with sales representatives of suppliers on a daily basis.



Promoting CSR Measures Throughout the Supply Chain

To help its business partners (suppliers) gain an understanding of Sharp's CSR philosophy and promote concrete measures toward CSR among suppliers, Sharp created its own Sharp Supply-Chain CSR Deployment Guidebook and distributed it to major suppliers in Japan, and also made it available on the Sharp website in Japanese, English, and Chinese editions.

Through this initiative, Sharp is advancing CSR efforts throughout the entire supply chain by requesting that suppliers around the world step up their efforts in areas related to CSR.

This guidebook conforms to the Supply-Chain CSR Deployment Guidebook produced and distributed by the Japan Electronics and Information Technology Industries Association (JEITA). Suppliers around the world are making full use of its content to guide their own concrete efforts in the principal areas related to CSR that are covered by international standards.

Contents of the Sharp Supply-Chain CSR Deployment Guidebook

I. Human Rights and Labor
• Prohibit forced labor • Prohibit inhumane treatment and infringements of human rights • Prohibit child labor • Prohibit discrimination • Pay appropriate wages • Regulate working hours • Respect the right to freedom of association

II. Occupational Health and Safety
• Apply safety measures for equipment and instruments • Promote safe activities in the workplace • Promote hygiene in the workplace • Apply appropriate measures for occupational injuries and illnesses • Properly manage disasters and accidents • Be careful about physically demanding work • Promote safety and hygiene in all company facilities • Promote health maintenance programs for employees

III. Environment
• Establish and apply an environmental management system • Control hazardous chemicals in products • Control hazardous chemicals in manufacturing • Minimize environmental pollution (water, soil, air) • Obtain environmental permits • Promote resource and energy saving by reusing, reducing, and recycling (3R) • Promote greenhouse gas reduction • Promote waste reduction • Disclose environmental preservation activities

IV. Fair Trading
• Prohibit corruption and bribery • Prohibit abuse of a superior position • Prohibit the offering and receiving of inappropriate profit and advantage • Prohibit impediments to free competition • Provide accurate information on products and services • Respect intellectual property • Use appropriate export procedures • Disclose appropriate company information • Detect injustice promptly

V. Product Quality and Safety
• Establish and apply a quality management system
• Ensure product safety

VI. Information Security
• Secure computer networks against threats
• Prevent the leakage of personal information
• Prevent the leakage of customer and third-party confidential information

VII. Contribution to Society
• Contribute to society and community

Sharp Supply-Chain CSR Deployment Guidebook (Japanese, English, and Chinese editions)

Web Sharp Supply-Chain CSR Deployment Guidebook

CSR Procurement Survey Status

In fiscal 2007, Sharp began gradually introducing a CSR Procurement Survey using an online response system to enable suppliers to use the Internet to enter answers to self-checks based on the Sharp Supply-Chain CSR Deployment Guidebook.

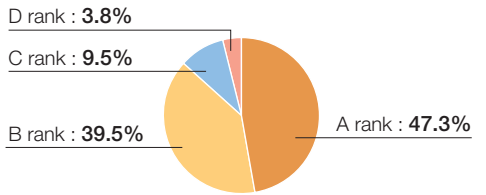
Based on the results of the self-check, Sharp requests that suppliers prepare and submit an improvement plan for any area that received a low score and where improvement is needed.

In fiscal 2009, Sharp extended these efforts by conducting a second survey of major suppliers in Japan, and also began surveys of local suppliers throughout the Asian region as well as Europe and North America. As a result, the introduction of the CSR Procurement Survey to major suppliers around the world was completed.

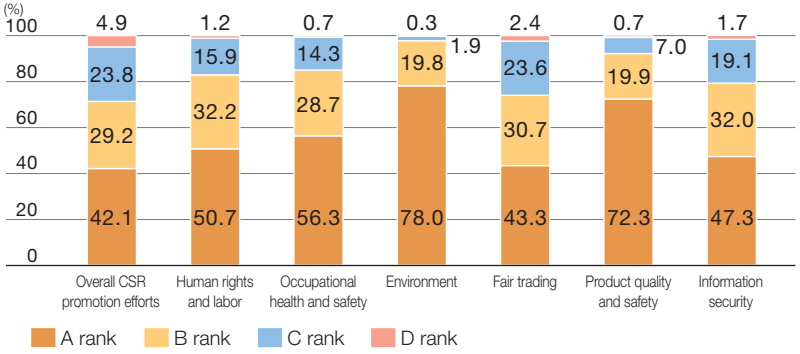
Sharp plans to continue conducting surveys once a year as a general rule. Sharp will also provide support for making needed improvements to low-scoring areas and items and will build and gradually implement a CSR audit framework for visiting the production sites of suppliers to verify their CSR efforts.

Status of Supplier Self-Evaluations in the CSR Procurement Survey*

Rankings by Overall Score



Evaluation Ranking by Area



* Status of suppliers serving Sharp production bases in Japan, China, and Malaysia that completed the CSR Procurement Survey in fiscal 2009.

Advancing Local Procurement

Sharp is also promoting local procurement in Japan and overseas in line with its "local production for local consumption" strategy under which the links in the value chain—from design to development, procurement, production, and sales/marketing—end within the region where products are purchased and used.

In Japan, Sharp has been involved in constructive information exchanges with technologically strong small- and medium-size suppliers, including holding business matchmaking events in areas where Sharp production sites are located. In addition, overseas, Sharp has set up international procurement offices in Malaysia, Hong Kong, Singapore, and South Korea, and is aggressively promoting procurement from local suppliers for production bases in each country.

By advancing local procurement efforts at production bases in countries around the world, Sharp is working to contribute even more to local communities where Sharp is expanding its business for the benefit of both Sharp and local suppliers.

Audits and Education to Ensure Full Compliance with the Subcontract Act

To comply with the Subcontract Act (Act Against Delay in Payment of Subcontract Proceeds, etc. to Subcontractors) in Japan, Sharp Corporation and its affiliated companies implement compliance checks and in-house education on an ongoing basis.

Regarding compliance checks, since fiscal 2002, Sharp's Corporate Procurement Center has conducted regular audits of all business groups in Japan once a year. In fiscal 2009, all business groups began self-audits, in which they check how well they are complying with the Subcontract Act. And to ensure thorough observance of the Subcontract Act across the entire Sharp Group, self-audits have begun at places other than the business groups, such as functional groups and affiliated companies.

In fiscal 2010, Sharp is planning to implement an intranet Subcontract Act training system for functional groups and affiliated companies, in an effort to raise awareness and improve knowledge among staff members.

Close-Up

Deploying Supply Chain CSR Measures on a Global Basis

With the globalization of its business activities, Sharp has been deploying CSR efforts around the world throughout the entire value chain—from design to development, procurement, production, sales/marketing, and service—and is working to implement global measures in cooperation with suppliers to support CSR efforts along the value chain to fulfill its corporate social responsibilities.

Since fiscal 2007, Sharp has been gradually implementing CSR Procurement Surveys for suppliers of production and procurement bases in Japan and China. In fiscal 2009, in addition to these partners, Sharp introduced the same survey to local suppliers for production and procurement bases in Europe, North America, and Asia. As a result, the deployment to all Sharp Group production and procurement bases around the world is complete.

At each overseas base, Sharp is conducting surveys and working to raise awareness and promote knowledge of CSR via harmonious communications with local business partners, including holding briefings for suppliers led primarily by local employees.

In the future, Sharp will work together with suppliers to continuously raise the level of its CSR efforts through regular surveys and visits to production sites to verify the status of CSR efforts, and will strive to contribute to the development of a sustainable society throughout the entire supply chain.

Production and Procurement Bases where CSR Procurement Surveys Were Introduced in Fiscal 2009

North America	1 SMCA (US)	2 SEMEX (Mexico)
Europe	3 SUKM (UK)	4 SMF (France)
	5 SEES (Spain)	6 SMPL (Poland)
Asia	7 SIL (India)	8 SATL (Thailand)
	9 SMTL (Thailand)	10 SEM (Malaysia)
	11 SOEM (Malaysia)	12 SMM (Malaysia)
	13 SEID (Indonesia)	14 SSI (Indonesia)
	15 SPC (Philippines)	16 SKC (Korea)
	17 SEM Korean Branch (Korea)	

Words from a Purchasing Staff Member at an Overseas Base

In Korea, CSR is actively carried out by business conglomerates and public corporations that value it as a way to continuously extend and manage customer satisfaction as well as to contribute to the local community. On the other hand, for the companies here that focus on profit without having any long-term vision, CSR activities are still in their infancy.

Promoting CSR with our vendors in Korea has given me a better understanding of what Sharp is ultimately pursuing. Among the various codes in Sharp's Code of Conduct, I am most impressed by the one that advises us to accept our competitors and not do anything to damage their business reputation.

I feel that CSR activities are important for raising Sharp's profile and for letting customers see Sharp as a socially responsible corporation. Internally, CSR activities will generate integration, teamwork, and respect for Sharp over the long run.

Se Sung Hun
Sharp Electronics (Malaysia) Sdn. Bhd. (SEM)
Korean Branch

Working Together with Dealers in Their Efforts for the Environment

Besides working with its suppliers, Sharp's CSR efforts include a range of joint efforts with retailers and dealers.

Sharp's sales companies in Japan have been working together with dealers in their efforts on behalf of the environment through routine sales activities, such as presenting ideas for in-store displays that help facilitate understanding of the benefits of energy-efficient products among consumers, and holding workshops on environmentally conscious products. As part of this effort, Sharp provides assistance to dealers to gain certification under a commendation system entitled Dealer of Excellence in Promoting Energy-Efficient Products, sponsored by the Energy Conservation Center, Japan.

In fiscal 2009, 98 of the dealers who worked with Sharp received Dealer of Excellence certification for the first time. Naruden Inc. of Wakayama Prefecture received the Economy, Trade and Industry Minister's Prize, and Life Page Fujiden of Yamaguchi Prefecture won the Environment Minister's Prize.

Related information Page 22: CSR Efforts in Sales and Marketing Areas in Japan

Words from the Winner of the Economy, Trade and Industry Minister's Prize (Naruden Inc.)

Hiroyuki Naruse
Store manager
Naruden Inc.

We are forever grateful. We offer our most sincere thanks to Sharp for introducing us to this competition.

Sharp's philosophy of spreading the use of energy-efficient products is in line with our own company creed. So, we thought if we were going to do this, then we should shoot for the top.

Thanks to Sharp's patient and caring guidance, we were able to make the list of finalists in our first year of this competition. We then continued to raise our employees' energy-saving awareness and the entire store worked together to come up with our own ways to promote energy savings. As a result, we made the list of finalists for the next two years, and this year received the Economy, Trade and Industry Minister's Prize.

Our customers were the ones most thrilled with this prize. I think this achievement is the result of the culmination of our many efforts. We have always conducted business with the aim of forming bonds with customers by providing them with the products and information they need based on our motto "A customer's smile is our greatest treasure." We don't just sell home appliances; we help solve energy problems by providing fully electric home systems and solar power systems. And we try to give back to the community by working with local governments to contribute to the nursing care and social welfare fields. I offer our deepest gratitude to our customers, who have given us their warm support and encouragement, to Sharp for its constant cooperation and backup, and to all of our other business partners without whom this award would not have been possible.

We want to continue providing the public with energy-efficient Sharp products.

Words from the Winner of the Environment Minister's Prize (Life Page Fujiden)

Toshiaki Fujiwara
Store owner
Life Page Fujiden

Everyone at our store—myself and all staff—consider it an honor to win this prize. I would also like to thank everyone that helped us in our achievement.

Winning this prize elicited a far greater response from customers than I expected. Many people congratulated us in writing or in person, and many ordered energy-efficient products and solar power systems. And local newspapers and other media came to do stories on us. I was also happy to receive congratulations from my family, colleagues, friends, and the members of the social and environmental NPO that I run.

This is the third time our store has vied for this prize. This time, we were praised for changing the way our employees think about saving energy. Our initiatives have included upgrading all in-store lighting to LED and raising awareness among the community at environmental events and at local school events through a theme song that we wrote ourselves. I also think we won this award for acting as energy-efficiency advisors who help customers achieve an eco-lifestyle by offering energy-efficient products to match each customer's level of environmental awareness. And of course we have Sharp and others in our industry to thank for their support over the past three years.

We are now looking to take our environmental efforts to the next level. We want to establish a local store focusing on solar power systems and Sharp's DC Eco-House*. We also want to work together with other companies like us to promote local electronics stores as the place to buy energy-efficient products. We will continue singing our energy-efficiency song for the sake of our children's future.

* The DC Eco-House is a next-generation house intended to improve energy efficiency and is centered on a home energy management system that makes advantageous use of information technology. Electricity generated by a solar power generation system is stored as direct current (DC) and supplied in the same form to DC-powered consumer electronics in the home.

Appropriate Return of Profits and Information Disclosure

One of the most important management principles for Sharp is to return a portion of profits to shareholders. Through general shareholders' meetings and IR (investor relations) activities that respond to the diversifying needs of investors, Sharp is promoting communication with shareholders and investors, and the valuable feedback of these stakeholders is applied toward management improvements.

Objectives for Fiscal 2009	Achievements for Fiscal 2009	Objectives for Fiscal 2010
• Continue improving information disclosure and strengthen information transmission for shareholders and investors	• Increased amount of information available on website • Held various kinds of IR meetings	• Improve information disclosure to shareholders and investors and respond to diversifying needs of investors

Basic Policies Concerning Profit Sharing

Sharp considers distributing profits to shareholders to be one of the most important management issues. While maintaining consistently stable dividend payouts, and while considering its consolidated business performance, financial situation, and future business development in a careful and comprehensive manner, Sharp implements a set of measures to return profits to its shareholders.

For fiscal 2009, Sharp distributed a year-end dividend of 10 yen per share, an increase of 3 yen compared to an interim dividend of 7 yen, due to improved business performance. The total annual dividend was 17 yen per share.

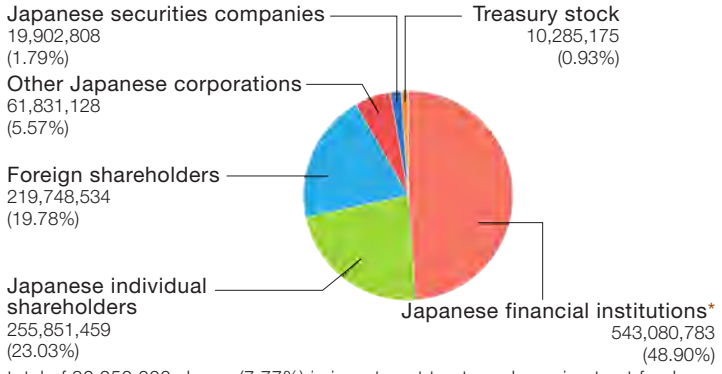
Sharp will use internal reserve funds for investment in future growth fields, the development of uniquely featured products and proprietary devices, overseas business development, and environmental protection.

Net Income per Share (Consolidated) and Cash Dividends per Share

Fiscal year	2005	2006	2007	2008	2009
Net income (yen)	80.85	93.25	93.17	▲114.33	4.00
Cash dividends (yen)	22	26	28	21	17

Share Distribution

(as of March 31, 2010)



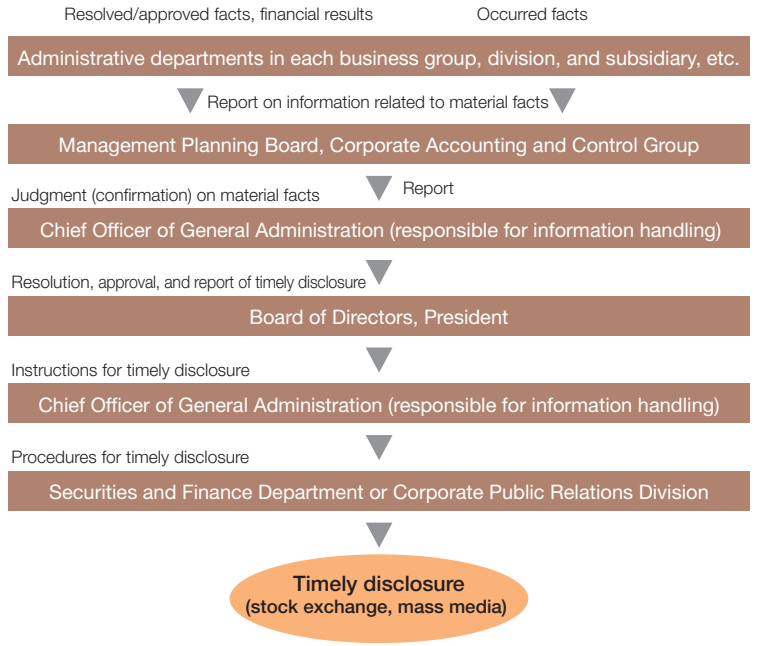
* A total of 86,250,000 shares (7.77%) in investment trusts and pension trust funds are included in shares held by Japanese financial institutions.

IR Disclosure Policy

Sharp discloses information to shareholders and investors in a fair and timely manner, in order to increase trust in its IR activities and to ensure a proper assessment of Sharp's corporate value in capital markets.

Sharp discloses information designated under the laws and regulations of Japan, and also actively discloses other information, such as business development, management policy, and strategy.

How Sharp Discloses Corporate Information in a Timely Manner



Web IR disclosure policy

Holding Open General Shareholders' Meetings

Sharp holds ordinary general shareholders' meetings earlier than most Japanese companies and sends out early notices of the meetings. It also strives to create an environment that enables shareholders to easily exercise their voting rights. Efforts include allowing shareholders to exercise voting rights by computers and mobile phones, participating in an electronic voting platform for institutional investors, and posting English notices about the meetings on its website. In addition, Sharp is working to further enhance information disclosure, such as by posting video of the shareholders' meeting on the website the day after the meeting for a certain period of time.

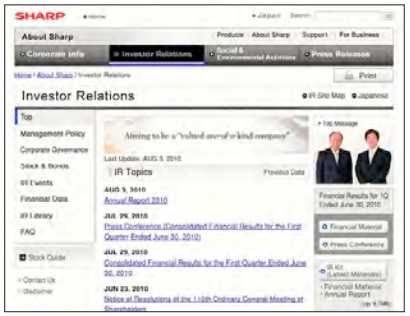
IR Activities Designed to Meet the Diversifying Needs of Investors

Sharp is striving to disclose a wide range of information in a timely and accurate manner while proactively engaging in communication with shareholders and investors through domestic and overseas IR activities. It also provides investors with easy-to-understand information on company performance, such as financial briefings and presentation materials.

Information on the IR website is constantly being updated and expanded, as Sharp strives to provide information needed by investors in a timely manner, including financial materials and reports given at briefings. There is also a site for individual investors, where they can easily access relevant information presented in an easy-to-understand format that employs layman's language, charts, graphs, and figures.

And to further promote understanding of its businesses and strategies among investors, Sharp does all it can to make its annual reports engaging and informative.

Sharp is continuing to go beyond its legal obligations to supply certain designated information by actively disclosing additional information about its businesses, as well as its management policies and strategies.



IR website

2009 Annual Report

Web Investor relations

Communication with Shareholders and Investors

Major activities in fiscal 2009 included holding individual interviews and meetings with institutional investors and analysts at the Osaka and Tokyo offices upon request, as well as hosting briefings on quarterly financial results and business strategies, and giving factory tours.

Sharp holds overseas meetings to retain existing shareholders and attract new shareholders, for example, visiting influential institutional investors in the US, Europe, and Asia.

In addition to enhancing the contents of the IR website, Sharp has improved the site's search capability and viewability.

Sharp also held explanation sessions for salespeople in charge of individual investors at securities companies and participated in securities company-sponsored conferences, where Sharp explained its business results and strategies and held question-and-answer sessions.

Through future IR activities, Sharp will continue to make sure a broad range of investors fully understand the condition of the company's business.

SRI (Socially Responsible Investment)*

As of September 2010, the following SRI ratings agencies had given Sharp a favorable CSR rating or included Sharp in their SRI indices.

- FTSE4Good Global Index (UK)
- FTSE KLD Global Climate 100 Index (US)
- Ethibel Sustainability Index (Belgium)
- Morningstar Socially Responsible Investment Index (Japan)
- oekom research AG (Germany), Corporate Responsibility Prime Status

* Investment in companies that fulfill not only their financial obligations but their environmental and social responsibilities as well.

Creating a Fair, Positive, and Progressive Workplace

Sharp stresses the importance of basic human rights and personal dignity, provides opportunities for growth to enthusiastic employees, fosters the diverse abilities of all employees, and promotes a workplace that utilizes employee diversity. It also has systems for helping employees maintain a healthy balance between their work and home lives, and it strives to create a workplace that offers employees mental and physical well-being.

Objectives for Fiscal 2009	Achievements for Fiscal 2009	Objectives for Fiscal 2010
• Continue strengthening human rights education	• Undertook approximately 40 human rights training sessions at business sites and affiliates in Japan	• Continue strengthening human rights awareness activities • Undertake human rights training sessions at business sites and affiliates in Japan • Undertake human rights training sessions for management staff assigned overseas
• Continue training to support development of global business	• Approximately 60 employees received overseas assignment register training (GATE) • Approximately 140 employees received global personnel register training (G-BANK)	• Continue training to support development of global business • Nurture global management staff • Promote GATE/G-BANK training and SHINE program
• Introduce and develop diversity program	• Formulated and promoted specific objectives and measures to promote utilization of four demographic groups: female, non-Japanese, physically or mentally challenged, and elderly employees in Japan • Established work-life balance and diversity information site “Win-Win Network”	• Establish diversity program • Expand work-life balance measures • Improve workplace for diversity inclusion
• Continue strengthening industrial accident risk reduction activities	• Conducted regular health and safety inspections at 11 major plants in Japan • Implemented risk assessment, training, and other measures aimed at introducing occupational health and safety management system • Acquired OHSAS 18001 certification at 2 sites in Japan and 2 bases overseas	• Continue strengthening activities to reduce and remove industrial accident risks • Implement risk assessment aimed at introducing occupational health and safety management system and measures to reduce and remove risks • Acquire OHSAS 18001 certification at 6 sites in Japan • Strengthen global health and safety efforts
• Continue strengthening efforts to promote mental health care	• Conducted survey into operational status of support system for employees taking or returning from medical leave due to mental health reasons, and ensured proper operation • Held Mental Health Promotion Meetings twice during the year, strengthening information sharing and coordination between representatives from each site	• Strengthen measures for primary prevention of mental illnesses (illness prevention and health promotion) • Undertake mental health group work training • Improve knowledge of mental health-related issues by encouraging acquisition of third-party certification in mental health management
• Continue strengthening measures against lifestyle diseases	• Health checkup participation rate was 99.99%. Proactively undertook specific health guidance (active support and motivational support), and ratio of follow-up observations was 99% • Promoted walking events such as company-wide team walking (approximately 15,200 participants for the year)	• Continue strengthening measures against lifestyle diseases • Continue strengthening health exams for lifestyle diseases (periodic checkups) with follow-up observations • Stimulate health education activities • Stimulate regular exercise by holding company-wide sports events for all employees

Respect for Basic Human Rights and Personal Dignity

The Sharp Code of Conduct, based on the Sharp Group Charter of Corporate Behavior, stipulates the guiding principles for all executives and employees regarding protecting basic human rights and personal dignity and prohibiting both child and forced labor.

Sharp works to ensure respect for human rights by annually conducting human rights training at each site in Japan (a total of approximately 40 sessions in fiscal 2009) and endeavors to prevent human rights violations overseas, based on local laws. Moreover, both domestically and internationally, Sharp aims to promote efforts in line with the human rights and labor standards stipulated in the United Nations Global Compact, in which Sharp participated in June 2009.

Good Labor-Management Relationship Through Dialogue

Sharp respects employees’ right to organize and right of collective bargaining based on the laws in each country and region, and works to strengthen trusting relationships with labor unions.

In Japan, Sharp has monthly meetings of labor-management heads: these include the Central Labor-Management Council, which involves top executives from both sides, and local labor-management meetings at each site, where opinions are exchanged on the business environment and labor-management issues.

In Europe, Sharp holds European Works Council meetings every year to review managerial issues from throughout Europe. With the enactment of the Employment Contract Law in 2008 in China, Sharp bases in that country hold employee representative assemblies where participants give opinions on proposals for their working conditions in a democratic manner before decisions are made.

Personnel, Education, and Training Systems That Value Employee Initiative and Diversity

To increase its global competitiveness, Sharp systematically promotes human resource development. In addition to holding seminars classified by function and job type to help employees deepen their knowledge and gain required expertise, Sharp has implemented a variety of personnel, education, and training systems designed to bring out the character, motivation, and creativity of each employee. Sharp's human resource development systems (introduced below) are based on respect for employee individuality and diversity.

Next-Generation Human Resource Development Systems

Leadership Program, Challenge Course

Sharp introduced the Sharp Leadership Program in Japan as an educational and promotion system targeting all employees, from younger employees in semi-managerial positions to those in supervisory positions, with the objective of systematically nurturing management personnel. In addition to education based on an MBA (Masters of Business Administration) curriculum, this program provides practical training that includes overseas assignments and participation in a key project. It is intended to nurture management skill and leadership that is in line with global standards.

The Challenge Course, for younger employees in semi-managerial positions, eliminates seniority-based factors and sets up a monthly compensation system based on performance. Along with an education support system, it is intended to enable early promotion of younger personnel.

Overseas Assignment Register Training and Global Personnel Register Training

In 2008, Sharp introduced and began promoting its overseas assignment register training (GATE) and its global personnel register training (G-BANK). Designed to help employees systematically acquire the knowledge and skills essential for working overseas, GATE targets employees newly tapped for overseas assignments. G-BANK targets young mid-career employees interested in working overseas or in working on overseas-related projects and was designed to help them acquire English skills and basic knowledge and to train future candidates for overseas assignments. In fiscal 2009, approximately 60 employees received GATE training, and approximately 140 employees received G-BANK training.

SHINE Program (for fostering young global employees)

The SHINE (Sharp International New Experience) Program in Japan is an in-service training system to foster the abilities of younger employees who will play a central role in the global business of the future and to nurture global personnel.

Under this program, Sharp sends highly motivated employees overseas for 18 months to two years to gain work experience at overseas bases and study foreign languages at local language schools. Since its introduction in 2004, Sharp has dispatched 50 trainees to 13 different countries through this program.

Master System

The Master System in Japan was designed to create and develop one-of-a-kind technical skills, pass down these skills to the younger generation, and foster master technicians. Through the scouting and nurturing of highly skilled persons, Sharp aims to maintain vitality within the company organization. The system covers seven types of skills.

Talent Development and Motivation-Boosting Programs

Open Recruitment System

Sharp implements the Open Recruitment System in Japan to solicit applicants from among all employees company-wide, inviting them to take newly available positions in critically important areas, such as expanding business in newly emerging economies, pioneering new business, as well as developing new technologies and products. In fiscal 2009, jobs were offered in approximately 70 projects, and about 150 employees were assigned a new position.

Personnel Declaration/Career Development System, Career Development Rotation

Sharp Corporation has a number of job rotation systems that promote individual skills and career development. Under Sharp's Personnel Declaration/Career Development System, once a year all employees in Japan document a career development plan and their job aptitude. Sharp then uses the information to develop skills and organize job rotations.

Sharp also implements a Career Development Rotation to give employees in Japan the opportunity to experience multiple types of jobs. The aim is to systematically foster "T-shaped"* personnel who balance a high degree of expertise and a wide intellectual horizon.

* Personnel who have acquired a wide range of knowledge and solid skills-based experience that serves as the foundation.

Education, Training, and Self-Development Support Systems

Seminars Classified by Function and Specialized Field

In Japan, Sharp widely conducts training programs aiming at the acquisition of the specialized knowledge and skills necessary in various job types, such as technology, planning, procurement, manufacturing, quality control, sales, service, accounting, and intellectual property.

Correspondence Course, Essential Course

To support self-development, correspondence education courses are offered for employees to acquire the knowledge, skill, and certification necessary in their jobs, including basic business knowledge, foreign languages, and specialized knowledge.

In the Essential Course, topical themes are set, and employees in Japan simultaneously receive lectures on the latest trends and theory by university professors and leading experts in those fields via a videoconference system.

Step-Up Campaign (Qualification Acquisition Encouragement Plan)

Supporting self-development for employees, Sharp introduced the Qualification Acquisition Encouragement Plan in September 2004 in Japan to reward employees who have acquired any of the specified six qualifications, such as public accountant certification. Adding to this, Sharp has been broadening the range of qualifications, from specialized fields such as technology and technical skills, to foreign languages and IT, which are directly connected to daily duties. Sharp now provides incentives in recognition of 200 qualifications. Approximately 5,500 qualified applicants received the respective incentives in fiscal 2009.

Commendation System

Sharp annually honors domestic and overseas employees and divisions/departments that have achieved outstanding performance. In fiscal 2009, approximately 110 awards were presented to about 1,400 employees.

Efforts Toward Diversity

Sharp believes in the importance of utilizing the diversity of its employees, in other words, "diversity management*," to quickly and flexibly respond to significant changes in the business environment. From this point of view, Sharp initiated the Corporate Affirmative Action for Women Strategy Program as the first step in diversity management in June 2005 in Japan .

In October 2004, the company established the Corporate Equal Partnership Project Team, which was responsible for planning and promoting the above program, and in March 2009, changed the name of the organization to the Diversity Development Team.

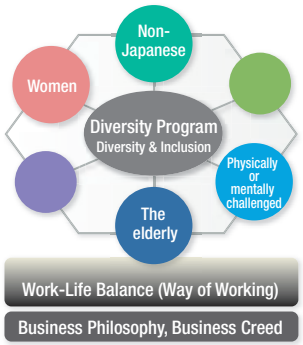
In addition to continuing to create an environment where women can excel, Sharp in Japan is promoting total diversity, including utilizing the skills and talents of non-Japanese employees in Japan, employing the physically or mentally challenged, and reemploying retirees who have reached mandatory retirement age.

The Diversity Promotion Committee is made up of managers responsible for promoting diversity and members representing various groups. The Committee holds regular meetings to confirm the implementation status of diversity promotion measures for each group, exchange views on policies, and share information on problems. The aim of the Committee is to foster mutual cooperation while promoting diversity in a consistent manner.

Sharp Corporation's concept of diversity is based on its business philosophy of "It is the intention of our corporation to grow hand-in-hand with our employees, encouraging and aiding them to reach their full potential and improve their standard of living". The company defines the concept behind its diversity efforts as fulfilling its one-of-a-kind business potential by making full use of the diversity of its employees. By encouraging each employee to respect and place value on the individuality of others, Sharp is aiming to foster new corporate value, develop unique one-of-a-kind products, provide one-of-a-kind services, and achieve higher levels of customer satisfaction.

Concepts Underlying the Diversity Program

① Consistently promote diversity.
② Based on their unique individual attributes, formulate and promote programs aimed at promoting the active participation of women, non-Japanese employees in Japan, the physically or mentally challenged, and the elderly.
③ As a foundation for promoting diversity, strive to ensure that systems supporting the balance between work and family are established and become widespread.
④ Work to build a corporate environment that accepts diversity.



* Diversity management (strategy for utilizing diverse employees) accepts the ideas and values of employees with diverse backgrounds (with regard to gender, age, or nationality) without being influenced by previous corporate or social standards. It is a strategy for promoting company growth and the personal satisfaction of employees by responding rapidly and flexibly to changes in the business environment. (Taken from the report by the Diversity Work Rule Study Group of the Japan Federation of Employers' Associations.)

Diversity Inclusion (Workplace Improvement for Equal Opportunity)

Sharp disseminates information about the effectiveness and importance of diversity as a business strategy, and is working to create a work environment that can accept diversity.

Case Studies

Win-Win Network

Sharp posts information on its intranet Win-Win Network that disseminates information on work-life balance and diversity, with the aim of creating a work environment where diverse employees can happily exercise their potential.

Sharp uses its Win-Win Network to post results of in-house attitude surveys and information for non-Japanese employees as well as to introduce a variety of role models for all employees.

Win-Win Network information site

Participation in WNF (Women's Networking Forum)

With the aim of becoming a corporation in which women can succeed, Sharp joined the Women's Networking Forum (60 corporations/organizations and 550 members), which was established in 2005 in Japan with the aim of increasing the motivation of women working at various corporations. Sharp currently participates in the forums held once a year in both Tokyo and Osaka as the organizing corporation.

In this way, Sharp is networking beyond the corporate framework and creating a work environment that can accept diversity.


Female employees participating in the forum plenary session

Establishing Diversity Programs

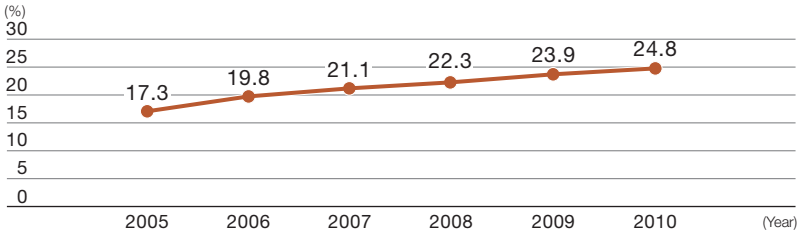
Promoting Activities of Female Employees (Corporate Affirmative Action for Women Strategy Program)

Sharp continues to promote the creation of an environment where female employees can excel, not as preferential treatment for women, but as a business strategy for maximizing the abilities of each female employee.

Corporate Affirmative Action for Women Strategy Program Targets

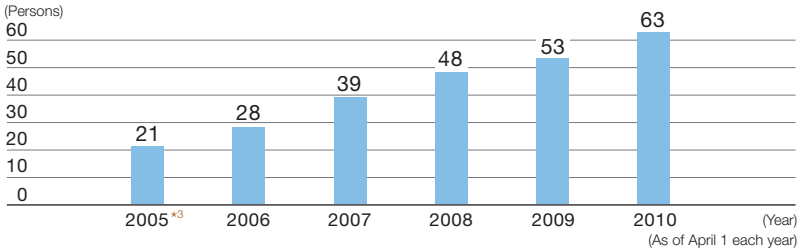
1) Female leader candidate development program: Expanding the number of female managers (at least 100 persons in fiscal 2012)
2) Development of female junior managers: Increase the ratio of junior managers to all female employees (30% in fiscal 2012)

Percentage of Female Junior Managers (Sub-Managerial Positions)*1



*1 Sharp Corporation in Japan only

Number of Female Managers*2

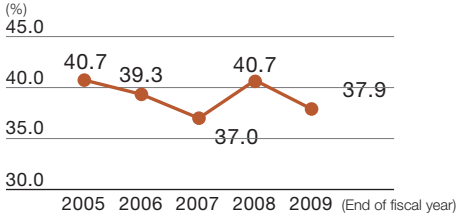


*2 Managers at Sharp Corporation in Japan, including personnel posted to domestic affiliates
*3 Corporate Affirmative Action for Women Strategy Program started in 2005

Employment of Non-Japanese

With the globalization of business, Sharp is working globally to secure human resources who match the needs of each overseas base and is developing a systematic training policy. In the future, Sharp plans to strategically nurture local human resources to play a central role in overseas markets.

Percentage of Overseas Sales Subsidiaries Headed by Local Employee



Sharp Corporation Personnel Composition

(As of end of fiscal 2009)

		Male	Female	Total (persons)
Directors, auditors		15	0	15
Employees	Managers	3,035	48	3,083
	Sub-managers	7,233	498	7,731
	General staff	9,957	1,560	11,517
	Subtotal	20,225	2,106	22,331
Total		20,240	2,106	22,346
Ratio (%)		90.6	9.4	100.0

Personnel by Gender at Major Overseas Subsidiaries

(As of end of fiscal 2009)

Base	Directors/managers		Non-supervisory employees (permanent employees)		Total	
	Male (%)	Female (%)	Male (%)	Female (%)	Male (%)	Female (%)
SEC (US) (Sales)	81.0	19.0	65.6	34.4	68.8	31.2
SMCA (US) (Manufacturing)	81.8	18.2	42.4	57.6	46.0	54.0
SEMEX (Mexico) (Manufacturing)	100.0	0.0	53.8	46.2	53.8	46.2
SEEG (Germany) (Sales)	90.4	9.6	61.1	38.9	66.6	33.4
SUK (UK) (Sales)	85.7	14.3	67.4	32.6	71.9	28.1
SUKM (UK) (Manufacturing)	95.5	4.5	66.5	33.5	68.1	31.9
SEES (Spain) (Manufacturing/sales)	96.8	3.2	54.0	46.0	57.0	43.0
SMPL (Poland) (Manufacturing)	90.0	10.0	29.8	70.2	31.0	69.0
SATL (Thailand) (Manufacturing)	83.0	17.0	25.8	74.2	28.0	72.0
SMM (Malaysia) (Manufacturing)	74.0	26.0	34.7	65.3	40.4	59.6
SEID (Indonesia) (Manufacturing/sales)	84.3	15.7	63.1	36.9	64.5	35.5
SESC (China) (Sales)	84.9	15.1	60.8	39.2	63.3	36.7
SOCC (China) (Manufacturing)	91.8	8.2	27.9	72.1	29.6	70.4
NSEC (China) (Manufacturing)	63.8	36.2	60.0	40.0	60.6	39.4
WSEC (China) (Manufacturing)	68.9	31.1	45.4	54.6	47.8	52.2

Promoting the Employment of the Physically or Mentally Challenged

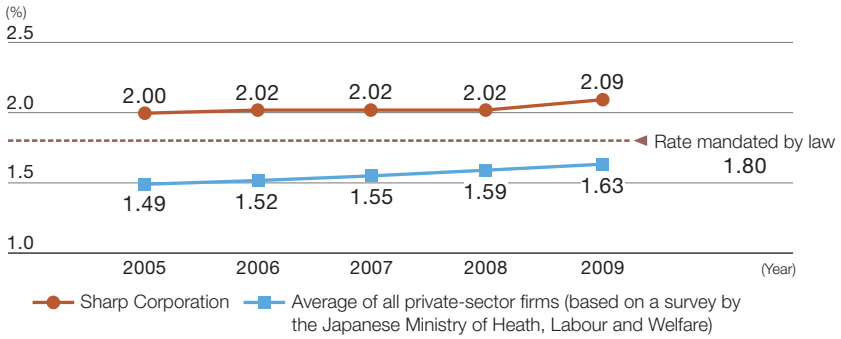
Sharp has been deeply concerned about social service and welfare since its establishment and has worked to promote the employment of the physically or mentally challenged. Each company within the Sharp Group makes efforts to proactively employ the physically or mentally challenged and create a better work environment for these employees.

The ratio of physically or mentally challenged employees at Sharp Corporation is 2.09%,* exceeding the rate mandated by law (1.80%) as stated in the Act for Employment Promotion etc. of Persons with Disabilities.

In April 2010, the Sharp Group received special approval to include affiliated companies when calculating the employment ratio for the entire Sharp Group in Japan. Sharp will make further efforts to increase the employment ratio in the future.

* As of June 2009; the results of Sharp Corporation (including Sharp Tokusen Industry Co., a special subsidiary)

Physically or Mentally Challenged Employment Rate in Japan



Reemployment of Seniors

In response to the fact that public pension is not paid until a retiree is 65 years of age in Japan, Sharp basically reemploys interested employees who have reached the mandatory retirement age of 60 (until they are eligible to start receiving a public pension). This is not in response to a legal request, but from the stance of the company to promote the utilization of senior employees that have a high work ethic and from the stance of the employee to give back to society their skill and knowledge accumulated over many years.

Case Study

Efforts of Sharp Tokusen Industry Co.

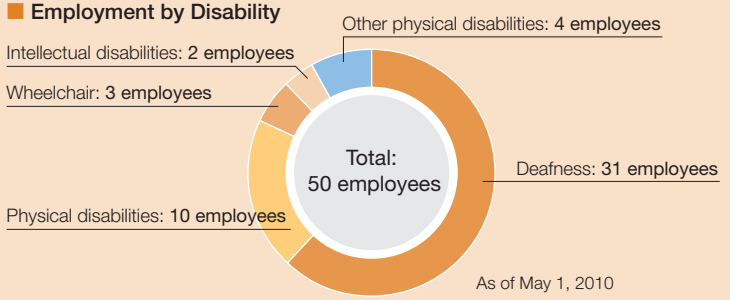
The precursors of Sharp Tokusen Industry Co., a special subsidiary, were the Hayakawa Branch Factory, a pressing factory for blinded WWII veterans, and later the Tokusen Metal Limited Partnership, which was founded in 1950—both established on the strong feelings of Sharp founder, Tokuji Hayakawa, who wanted to repay persons with disabilities for opening up his life path. In 1977, Sharp Tokusen Industry was the first company to be certified as a special subsidiary to employ the physically or mentally challenged in Japan. It changed and expanded its operations to fit the development of Sharp Corporation's electronics business, and operates utilizing cutting-edge equipment today.

Sharp Tokusen Industry's main business includes the processing and inspection of laser chips, the processing of refrigerator parts, the functional evaluation of mobile phones, LCD panel repairs, document printing, digitization, and translation.

For employees, having the company stand as a viable business is the greatest joy of all. Towards that end and to help fulfill its corporate social responsibilities, Sharp Tokusen Industry will continue to proactively expand employment and will further develop its areas of business.

The current office building and a scene from the floor

Employment by Disability



Related information Page 107: Social Welfare Activities in Japan

Close-Up

Promoting Efforts to Achieve a Work-Life Balance

In line with its promotion of diversity, Sharp supports its employees by creating a rewarding, safe, and healthy workplace. Sharp gives employees a choice of work styles—allowing them to select the style that best suits them at various stages in their lives—thereby helping them achieve a work-life balance that will enable them to lead rich lives both at work and at home.

Additionally, Sharp is systematically expanding various programs pertaining to childcare and nursing care, such as those for reducing working hours and for allowing family-care leave. To create a workplace that is conducive to utilizing such programs, Sharp is working to familiarize employees with the programs and to promote their use. Those efforts include posting comments on the Sharp intranet from employees who have achieved a work-life balance and actively encouraging fathers to take childcare leave.

These efforts have been highly appraised from outside the company, with Sharp receiving certification from the Japanese Ministry of Health, Labour and Welfare based on the Act on Advancement of Measures to Support Raising Next-Generation Children, as well as the 2009 Nikkei Child-Raising Support Award sponsored by Nikkei Inc.

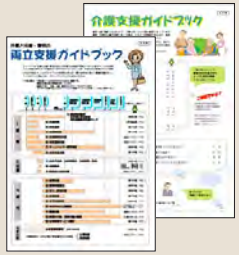
The next-generation certification mark (nicknamed Kurumin) shows that the company is certified by the Ministry of Health, Labour and Welfare.

Since April 2010, Sharp has been expanding and improving its nursing care system, strengthening the structure so that employees can continue working while providing nursing care and can work more flexibly when involved in care giving. Those efforts include extending the duration periods specified under Sharp's Nursing Care Leave and Reduced-Hours Employment for Nursing Care programs.

Publishing and Distributing Various Support Guidebooks

In Japan, Sharp has posted its Work-Life Balance Guidebook on the Sharp intranet, providing support for employees trying to balance work and childbearing/childcare. The guidebook includes information on various company programs, methods for applying for these programs, application procedures at government offices, and other tips useful to employees during pregnancy and while on leave.

In this age of low birth rates and an aging population, Sharp is also working to create a workplace where employees can continue to work while providing nursing care for family members. The Nursing Care Guidebook, which provides information on company nursing care programs, consultation contact points inside and outside the company, nursing care insurance, and other tips, was published in spring 2010 for the purpose of supporting employees who work while providing nursing care.



Work-Life Balance Guidebook and Nursing Care Guidebook

Work-Life Balance Support Programs (Main Programs and Participation at Sharp Corporation)

Program name	Description	Participation (Year and no. of persons) 2007	2008	2009
Childcare Leave ( ): Men	Allows a leave of any length until the last day of March following the child's first birthday or until the child is 18 months old. Childcare assistance grants: 1) The 10-day period beginning at the start of the childcare leave period is treated as a period with pay. 2) An allowance of 60,000 yen a month is provided during the leave period (excluding the 10-day period when salary is paid).	68 (1)	170 (78)	109 (54)
Reduced-Hours Employment During Childbearing/ Childcare	A system by which an employee can reduce work time for a maximum of three hours per day in units of 30 minutes during pregnancy. Also allows a female/male employee the same reduced-hours employment system until the last day of March after her/his child has reached the sixth year of elementary school. Eligible employees can take multipurpose leave (paid) on an hourly basis up to a total of five days per year.	70	80	72
Childcare Support Work Program	Allows flexible work schedules (work day start and end times) until the last day of March after the child has reached the sixth year of elementary school. Allows an employee to shorten working hours up to an average of three hours per day in one-hour units and/or take multipurpose leave (paid) (up to 32 times, five days per year), using either the morning hours or afternoon hours of core work time.	302	344	389
Nursing Care Leave	Allows an employee to take leave to care for a family member requiring nursing care for a total of two years (can be divided up).	9	11	11
Nursing Care Support Work Program	Allows flexible work schedules (work day start and end times) for nursing care for a six-month period per application (can be renewed if necessary). Employee can shorten working hours in one-hour units up to an average of three hours per day and/or take multipurpose leave (paid) (up to 32 times, five days per year), using either the morning hours or afternoon hours of core work time.	6	9	9

Other programs:

Guaranteed Reemployment after Childbearing/Childcare, Paternity Leave, Daycare Adaptation Leave, Reduced-Hours Employment for Nursing Care, Reduced Weekly Working Days for Nursing Care, Home Helper Expense Subsidies, Volunteer Leave, Multipurpose Leave, Leave of Absence/Increasing Half-Day Use of Annual Paid Holidays for Fertility Treatment, Fertility Treatment Financing System

Words from an Employee Who Took Childcare Leave

Being a double-income family, I wanted to experience infant parenting, which can only be experienced now, and have the opportunity to share the experience as a couple, so I took approximately two weeks of childcare leave.

Childcare was busier than I imagined and I had little time to relax, but I think being able to understand how hard it is was very beneficial for me and my family.

Moreover, I used the childcare support work program soon after my child was born and have been making efforts to balance work and childcare from day to day. As a result, I feel I have gained the understanding of those around me. My colleagues have even given me advice on childcare. I would like to continue using company programs in the future to balance both work and childcare.

Yukimi Kawaguchi
Assistant Manager
Development Department II
Advanced Technology Development Center
Audio-Visual Systems Development Group
Sharp Corporation

Basic Philosophy and Principles on Health and Safety

Sharp Corporation has established the Basic Philosophy and Principles on Health and Safety. Every year, the company draws up specific objectives and action plans, with the goal of totally eliminating industrial accidents.

Basic Philosophy

With the goal of creating a work environment where everyone at Sharp can work healthily and safely, Sharp places the utmost priority on health and safety and is working with sincerity and creativity to achieve the target of zero industrial accidents.

Health and Safety Principles

1. Zero industrial accidents.
2. Each individual promotes his or her own health and safety.
3. Observe the rules and coexist in harmony with local communities.

Aiming for a Secure, Safe, and Healthy Workplace

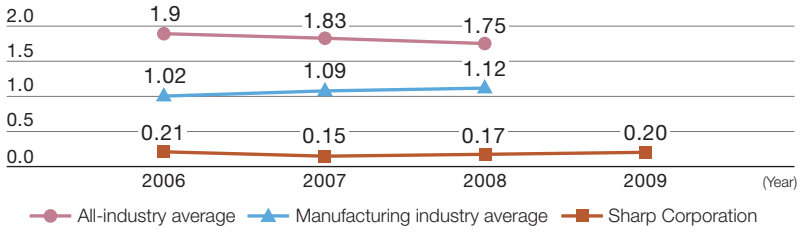
Every three months, Sharp Corporation holds Central Health and Safety Committee Meetings that bring the company and the labor union together to confirm the status of company-wide health and safety efforts and share valuable information. It has also organized a team consisting of Central Health and Safety Committee members to conduct health and safety inspections at each plant.

Moreover, a Health and Safety Committee consisting of labor and management representatives at each business location holds a monthly meeting to report and discuss health and safety activities and decide on improvement measures. Also, the Health and Safety Council at each business location holds meetings to further improve the health and safety of subcontractor employees permanently stationed within Sharp sites.

The result of these continuing measures is that Sharp's frequency rate*1 of lost-worktime industrial accidents in 2009 was 0.20. Sharp's frequency rate is consistently below the national average for the manufacturing industry.

*1 Indicator that represents the incidence of industrial accidents per million work hours (one day or more of suspended operations).

Sharp Corporation's Annual Industrial Accident Rates (Frequency Rate of Lost-Worktime Industrial Accidents)



Note: Averages for all industries and the manufacturing industry are based on a survey by the Japanese Ministry of Health, Labour and Welfare.

Promoting the Introduction of the Occupational Health and Safety Management System

Sharp is promoting the introduction of an occupational health and safety management system in an effort to further address the potential risk of accidents in the workplace and to promote proactive safety activities that prevent or reduce risks. Sharp aims to acquire OHSAS 18001*2 certification at all Sharp Corporation production sites.

Four sites have already acquired certification, and a further six sites are making efforts to acquire certification in fiscal 2010.

In fiscal 2009, Sharp created a structure for implementing risk assessments and internal auditor training, and prepared various documents, such as manuals. In fiscal 2010, Sharp will promote efforts to raise the level to the certification audit level, based on the efforts to date.

In addition, Sharp is also making efforts to acquire OHSAS 18001 or certification for occupational health and safety management system standards in each country*3 for its overseas manufacturing bases, and plans to globally strengthen its occupational health and safety management.

OHSAS 18001-Certified Sites & Overseas Bases (as of the end of March 2010)

	Sites & overseas bases		Date certification acquired
Japan	Mie Site	Plant No. 2	May 2004
		Plants No. 1 and 3	April 2009
	Kameyama Site		June 2007
	Mihara Site		January 2010
	Toyama Site		February 2010
Overseas	PT. Sharp Semiconductor Indonesia (Indonesia)		February 2009
	Sharp Manufacturing Poland sp. z o.o. (Poland)		September 2009
	Wuxi Sharp Electronic Components Co., Ltd. (China)		December 2009

*2 One of the occupational health and safety management system certification standards, and is the most widely and internationally used standard today.
*3 For example, Sharp Appliances (Thailand) Limited acquired TIS 18001 Thai occupational health and safety certification (August 2007)

Enhancing Mental Health Care and Expanding the Support System for Employees Taking or Returning from Medical Leave

In order to help employees prevent mental illnesses or deal with them at an early stage and to support employees on medical leave in making a smooth return to work, Sharp Corporation has an improved counseling system in which medical specialists or industrial counselors are stationed at main offices and plants. The company also conducts various training and educational activities.

Also, as part of periodic health checkups, Sharp Corporation carries out mental stress checkups on all employees by self-diagnosis (99.8% participation rate in fiscal 2009). For employees who are diagnosed with high stress levels, the company gives one-on-one counseling through company physicians or counselors.

In fiscal 2010, Sharp will promote efforts to (1) undertake mental health group work training, (2) improve knowledge of mental health-related issues by encouraging the acquisition of third-party certification in mental health management, and (3) foster the proactive use of internal and external counseling resources.

Promoting the Sharp "Get Healthy" Campaign

To prevent metabolic syndrome and other lifestyle diseases and thus improve employee health, Sharp is deploying a Get Healthy campaign at all business locations in Japan. This campaign distributes a record sheet that enables employees to keep track of their goals for exercise, diet, stopping smoking, losing weight, and other health aspects as a way of supporting employees in their own efforts to improve their lifestyle habits.

The company-wide team walking event, which is aimed at making employees accustomed to exercise, started in fiscal 2005 with over 3,000 employees participating, and it continues to grow with 15,000 employees participating in fiscal 2009. As a result, approximately 42% of employees diagnosed with metabolic syndrome who participated in this event were able to be excluded from that designation in health checkups in fiscal 2009.

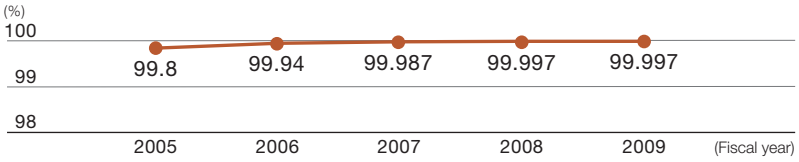
In addition, Sharp is providing support for smokers and is promoting quit-smoking campaigns. Efforts include collaborating with nurses and dental hygienists to educate smokers about the harmful effects of cigarettes through educational workshops and personal coaching, as well as encouraging employees to participate in events such as a "Quit Smoking Marathon" or "Mission Sparkling Clean Teeth."

Sharp will continue its proactive approach towards its employees on the theme of "The health investments that you, too, can do: diet, quit smoking, exercise, chew, and psychological care."

Specific Programs for Mental Health Care

- Providing job-level-specific training and other mental health awareness activities for all employees.
- Providing mental stress checkups simultaneously with regular physical checkups for all employees.
- Providing face-to-face counseling at main sites by company counselors or medical specialists.
- Giving advice by e-mail, phone, or in-person counseling through specialized outside organizations.
- Counseling for those employees who have experienced major changes in their environment, such as transfer, transfer not accompanied by family, and job promotion.
- A support system that provides ongoing communication with employees on medical leave from work.
- A support program to help employees who were on medical leave from work make a smooth return to work, in cooperation with an industrial physician, one's assigned department, and the General Affairs Department.
- Providing a trial period for employees who were on medical leave to support their return-to-work training.
- Holding regular meetings attended by the person in charge of mental health at every office and plant, and the company's healthcare staff.

■ Physical Checkup Participation Rates (in Japan)



Social Contribution Activities as a Corporate Citizen

Based on its business philosophy "to contribute to the culture, benefits and welfare of people throughout the world" and as a corporate citizen, Sharp addresses various social challenges with a global viewpoint and conducts community-based social contribution activities, aiming for a harmonious coexistence with society.
Sharp recognizes environment, education, and social welfare as priority fields, has created structures and systems for these activities, and voluntarily and continuously tackles these areas.

Objectives for Fiscal 2009	Achievements for Fiscal 2009	Objectives for Fiscal 2010
Japan: • Promote further Sharp Forest activities (10 locations) • Provide environmental education at 500 elementary schools, provide craftsmanship education at 100 elementary schools • Continue local social contribution activities at all Sharp sales and service bases • Encourage volunteering among employees, with a goal of having 30,000 employees volunteer	• Held Sharp Forest activities 37 times with a total of about 1,500 employees participating • Provided environmental education for about 28,700 children at 500 elementary schools and craftsmanship education for about 3,800 children at 100 elementary schools • A total of about 17,400 employees participated in about 700 local social contribution activities at all Sharp sales and service bases • A total of about 30,000 employees participated in volunteer activities at all Sharp offices and bases	• Promote and expand Sharp Forest activities • Provide environmental education at 500 elementary schools, provide craftsmanship education at 100 elementary schools • Hold new educational programs that combine factory tours, visits to the Sharp Technology Hall, and environment/craftsmanship classes • Provide educational support for persons with disabilities (at special-needs schools) • Continue local social contribution activities at all Sharp sales and service bases • Encourage volunteering among employees, with a goal of having 30,000 employees volunteer
Overseas: • Expand activities centered on Sharp Charity Foundation in China • Expand environmental education in overseas regions	• In China, provided scholarships (179 people at 11 universities), donated Sharp LCD TVs (38 units to 33 hospitals), carried out beautification campaigns in areas near Sharp bases, conducted tree-planting activities, built elementary schools and libraries, etc. • Conducted environmental education lessons at overseas locations, primarily in North America and China (for about 6,000 children at a total of 74 schools)	• Continue activities centered on Sharp Charity Foundation in China • Continue expanding environmental education in overseas regions

Fundamental View of Social Contribution Activities

Sharp promotes social contribution activities based on the business philosophy "to contribute to the culture, benefits and welfare of people throughout the world."

Sharp focuses on social challenges from a global viewpoint and uses its own resources to conduct community-based activities that contribute to society in Japan and in areas around the world.

Sharp recognizes education, environment, and social welfare as priority fields for these activities, has created structures and systems for these activities, and voluntarily and continuously tackles these areas. These activities will improve corporate value as well as help Sharp aim for a harmonious coexistence with society.

Three Important Fields of Social Contribution Activities

Structures and Systems for Promoting Social Contribution Activities

Sharp Corporation has a division specializing in the promotion of all domestic and overseas social contribution activities and is expanding measures and systems for these activities. For its environmental education lessons for elementary school children, Sharp continues to develop human resources, including training employees to serve as instructors in regions throughout Japan and registering those employees as in-house-qualified personnel.

Sharp jointly established the Sharp Green Club (SGC) with its labor union in Japan to provide employees with opportunities for contributing to communities through such volunteer activities as local cleanup campaigns and forest preservation activities. Sharp has also made it easier for its employees in Japan to participate in social contribution activities by introducing a volunteer leave system, where employees can take up to a one-year leave from work to engage in volunteer activities, and a multipurpose leave system, where employees can receive eight days of extra paid leave per year to engage in socially valuable activities.

SGC Community-Based Social Contribution Activities

Jointly established by Sharp and its labor union in Japan in June 2003, the Sharp Green Club (SGC) is a volunteer organization that aims to contribute to local communities and to increase employee awareness of volunteering through social contribution activities.
In fiscal 2009, a total of approximately 30,000 employees participated in various activities, such as local cleanup campaigns and creating Sharp Forests to preserve the woodlands and *satoyama* (areas between the foot of mountains and arable land) in areas near Sharp bases and sales offices around Japan.

These nature preservation and cleanup efforts have earned high praise. The Hachihon-matsu Yoshikawa Sharp Forest in Hiroshima Prefecture was given the Hiroshima Prefecture Afforestation Award by the Hiroshima Prefecture Afforestation Promotion Organization. The Mie site was honored for its Kushida River cleanup campaign by the Ministry of Land, Infrastructure and Transport Chubu Regional Bureau, and four Sharp Group companies in Hirano, Osaka were recognized by the Osaka City Director General Environment Bureau for their beautification campaigns.


Wakakusayama Green Campaign 2010


Kazutoshi Goto
SGC Chairman
(Executive Officer,
Group General Manager,
CSR Promotion Group;
Sharp Corporation)

Case Studies Environment

Sharp undertakes environmental conservation activities as a corporate citizen and contributes to the global environment through its business activities, as laid out in its vision of "Becoming an Eco-Positive Company." Sharp works closely with local communities, carrying out Sharp Green Club (SGC)-centered activities, such as cleanup campaigns and Sharp Forest work, at all production sites and sales and service bases in Japan. Cleanup campaigns and forest preservation work are also among the activities conducted at bases outside of Japan.

Environmental Conservation Activities in Japan

Sharp Forests

SGC is developing 11 Sharp Forests near its large-scale production sites and sales and service bases. The basic concept of the Sharp Forest initiative is to foster environmental awareness through tree-planting activities that give people a greater understanding of the bonds they have with forests and the creatures that inhabit them. In addition to planting trees, Sharp is also emphasizing activities to help take care of the trees that have already been planted.

The Sharp Forest initiative aims to increase employees' environmental awareness and contribute to the regeneration of forests and *satoyama* areas between the foot of mountains and arable land. As a new Sharp Forest activity, Sharp has begun conducting outdoor environmental education classes on the subject of biodiversity.

Related information Page 16: Multifaceted Approach to Biodiversity
Page 109: International Day for Biological Diversity activities

Web Sharp Forests

Cleanup Campaign Promotion

Sharp promotes cleanup campaigns in areas and communities near all Sharp offices around Japan. In fiscal 2009, a total of approximately 23,000 employees participated in 810 campaigns.

Related information Page 22: Further Raising Awareness of CSR Among Sales and Service Employees

Outdoor Environmental Education Classes at Sharp Forests

In August 2009, Sharp conducted outdoor environmental education classes at the Konoyama Sharp Forest in Osaka Prefecture directed at students who have taken elementary school environmental education classes (see page 106) to teach them forestry preservation and the importance of regenerating *satoyama* areas, which they cannot learn about at their desks.

Participation in Local Cleanup Schemes

Local sales and service bases are continuing participation in activities conducted by the local government with the aim of undertaking "activities that the community will appreciate even more." The Kitakyushu Building registered as a "City of Kitakyushu Road Supporter" in 2006 as a pioneer in this area. On the 25th of every month, the roads around the building are cleaned using cleaning equipment supplied by the city.

Overseas Environmental Conservation Activities

As a corporate citizen, Sharp is proactively undertaking environmental conservation activities, such as biodiversity protection, targeting various environmental social issues at local bases around the world.

Specifically, Sharp is conducting such activities as afforestation, silviculture, mangrove tree planting, coral reef regeneration, and cleanup campaigns.

Sharp aims to develop environmental awareness among its employees through these activities, while at the same time contributing to the global environment.

Sharp will continue developing community-based environmental conservation activities.

Mangrove Tree Planting in Indonesia

In January 2010, employees of manufacturing base P.T. Sharp Semiconductor Indonesia (SSI) and local residents participated in a tree-planting campaign at a beach in Karawang. Some 1,000 mangrove tree seedlings were planted.

Community Cleanup in Malaysia

In June 2009, manufacturing base S & O Electronics (Malaysia) Sdn. Bhd. (SOEM) conducted a community cleanup with local residents to pick up litter, clean out gutters, and plant seedlings.

Earth Day Tree Planting

In an Earth Day-related event in May 2009, sales base Sharp Electronics of Canada Ltd. (SECL) planted maples and other trees. The company plans to hold events celebrating Earth Day not only in areas around the company but in other areas as well.

Related information Page 109: International Day for Biological Diversity activities

Case Studies Education

Sharp is undertaking educational activities directed at children, on whose shoulders the future will rest, to increase their awareness of global environmental issues and their interest in science, and to get them thinking about future careers. In Japan, Sharp officially began providing environmental education at elementary schools from fiscal 2006 and craftsmanship education at elementary schools from fiscal 2009. Recognizing that environmental issues are global social issues, Sharp is also undertaking environmental education around the world, notably in the United States and China.

Educational Activities in Japan

Elementary School Environmental Education

Since October 2006, Sharp has conducted environmental education activities in collaboration with the Weathercaster Network (WCN) and with the cooperation of the Asaza Fund at a total of 500 elementary schools across the nation annually. The aim of the classes is to foster concern for the global environment in children, on whose shoulders the future will rest, by conveying to them current global environmental issues in easy-to-understand lessons, leading them to do environmentally conscious activities at home.

By January 2010, classroom presentations had been given in a total of approximately 1,500 schools, reaching 100,000 children. In fiscal 2009, classroom presentations had been given in a total of 500 schools to approximately 29,000 children. In addition, in April 2010, this activity was highly appraised and received the Minister's Award from the Ministry of Education, Culture, Sports, Science and Technology at the 19th Grand Prize for the Global Environment Award.*

The classes offer a choice of a total of four courses: two courses that combine global warming with recycling or new energy (solar power), as well as two courses that add ecosystem protection to the aforementioned courses. WCN representatives teach students about global warming, while Asaza Fund representatives teach about ecosystem protection, and Sharp presenters known as ECO Navigators teach about recycling and new energy. ECO Navigators are appointed from among Sharp personnel involved in sales and service activities at bases around the country, and receive special training to serve as instructors.

* Established in 1992, this award is one of the most respected and oldest environmental awards in Japan. (Organizers: Fujisankei Communications Group, Sponsors: Ministry of Economy, Trade and Industry; Ministry of the Environment; Ministry of Education, Culture, Sports, Science and Technology; and Ministry of Land, Infrastructure, Transport and Tourism)

Related information Page 16: Multifaceted Approach to Biodiversity
Page 22: Further Raising Awareness of CSR Among Sales and Service Employees

President Mikio Katayama and WCN Chairwoman Ryoko Fujimori (left) receive the Minister's Award from the Ministry of Education, Culture, Sports, Science and Technology; 19th Grand Prize for the Global Environment Award

Elementary School Craftsmanship Education

From fiscal 2009, craftsmanship education classes are being given at a total of 100 elementary schools around Japan annually. These classes aim at conveying to children in easy-to-understand language the fun and dreams of craftsmanship, and the importance of teamwork, an inquiring mind, and curiosity in craftsmanship, in the hope that the lessons will act as a catalyst to increase students' interest in science and get them thinking about future careers.

Sharp presenters known as Technology Navigators teach classes that convey the fun and ingenuity of craftsmanship through the evolution history of familiar electrical products, group work planning future products, and disassembling and reassembling the products. Technology Navigators are appointed from among Sharp engineers from various divisions, and receive special training to serve as instructors.

Elementary school class in craftsmanship education

Overseas Environmental Education

Environmental education directed at elementary school students in the United States and China began in fiscal 2008. In fiscal 2009, classroom presentations had been given at 74 schools, including Asia.

Environmental Education in China

In fiscal 2009, 36 environmental education classroom presentations had been given to approximately 2,400 elementary school children in China.

In China, representatives from all nine Sharp Chinese bases teach classes with content linked to national environmental policies, such as the reduction in the use of plastic shopping bags and energy saving, in cooperation with the China National Committee for the Wellbeing of the Youth, a state extra-governmental organization that promotes various activities with the goal of ensuring the sound upbringing of the next generation of children.

Elementary school class in China

Environment Education in North America

In fiscal 2009, 31 environmental education classroom presentations were given to approximately 3,100 elementary school children in North America.

When these activities began, presentations were given from two bases in New Jersey and California in the US, but from fiscal 2009 activities have expanded to eight North American bases, including Canada and Mexico.

Elementary school class in the US

Case Studies Social Welfare

Sharp is globally promoting various community-based activities, such as the employment of the physically or mentally challenged, job assistance for the physically or mentally challenged by offering sales opportunities to vocational training centers, environmental education classes for physically or mentally challenged children, and support through donations and charity.

Social Welfare Activities in Japan

Activities at a Special Subsidiary

Sharp Tokusen Industry Co. supports social participation by and employment opportunities for the physically or mentally challenged by changing and expanding its operations to fit the development of Sharp Corporation's electronics business and by providing work experience training.

Sharp Tokusen Industry's approach to expanding the employment of the physically or mentally challenged received recognition in October 2009 when the Osaka Prefectural Association of Employment Development gave the company an award for being a "company that contributed to the employment of persons with disabilities." A Sharp Tokusen Industry employee also received an award for long-time service.

Related information Page 100: Promoting the Employment of the Physically or Mentally Challenged

Award from the Osaka Prefectural Association of Employment Development

Work experience training

Providing Sales Opportunities for Vocational Training Center* Products

As a joint effort between labor and management, Sharp supports the social participation and independence of the physically or mentally challenged, and provides sales opportunities for handmade products from vocational training centers at its offices, working together with local governments and non-profit organizations. In fiscal 2009, sales began regularly at the Tanabe Head Office and the Yao Site, and there are plans to expand sales to other sites in the future.

Sales at the Yao Site

* A workplace for the physically or mentally challenged who have difficulty gaining immediate employment at corporations and businesses.

Environmental Education at Special-Needs Schools

After the National Association for the Deaf School Principals praised Sharp for its environmental education lessons at elementary schools, Sharp began an environmental education program at elementary special-needs schools for educating the deaf across Japan. The classes are conducted in sign language and utilize visual experiments, making them easy for deaf children to understand. Proper classes began from fiscal 2010.

Environmental education classes

Overseas Social Welfare Activities

As a corporate citizen, Sharp is proactively undertaking activities, targeting priority issues in social welfare even at local bases around the world.

Sharp is specifically focusing on undertaking donation and charity activities for facilities and schools for the physically or mentally challenged and the elderly.

These activities will lead to an improved social awarenes in Sharp employees, while at the same time contributing to local society.

Sharp will continue developing community-based social action programs.

Donating to a Facility for the Disabled in Thailand

In August 2009, sales base Sharp Thai Co., Ltd. (STCL) donated clothing and food and made monetary contributions collected from employees to a facility for visually impaired children.

Charity Activities in China

In June 2009, sales base Sharp Electronics Sales (China) Co., Ltd. (SESC) held a charity auction to gather money for building an elementary school. The money collected was donated to cover part of the construction costs.

Providing Health Support in Indonesia

In July 2009, manufacturing and sales base PT. Sharp Electronics Indonesia (SEID), in cooperation with a local health center, offered free medial check-ups to nearby residents. SEID also distributed booklets on health in an effort to raise awareness in the community.

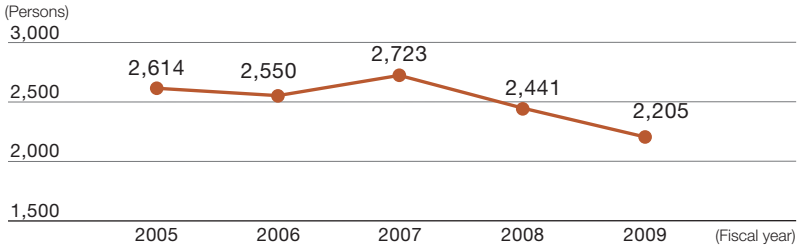
Case Studies Other Areas

Blood Donations

Every year, Sharp calls for blood donations at its sites in Japan so that: 1) employees can contribute to society, 2) Sharp can increase employees' awareness of voluntary activities, and 3) participants can be informed of blood test results to use for their own health control. In fiscal 2009, Sharp employees in Japan made more than 2,200 blood donations.

Sharp sales bases in Japan ask business partners to participate in giving blood. And blood drives are held actively at Sharp bases outside of Japan as well.

Blood Donations by Sharp Corporation Employees in Japan




Donating blood at the Amagasaki Building (Japan)


Donating blood in Thailand

Disaster Area Reconstruction Assistance

Sharp works in "harmony with the community" as stated in the Sharp Group Charter of Corporate Behavior and conducts social contribution activities as a "good corporate citizen." Based on this idea, when a large-scale disaster occurs, overseas or in Japan, Sharp takes into consideration the state of the local business activities in the country or area and provides assistance through monetary donations and relief supplies, working with local subsidiaries and related associations such as the Nippon Keidanren (Japan Business Federation), Kansai Economic Federation, and Japanese Red Cross Society.

Examples of Recent Support

(1) April 2010, Qinghai Earthquake, China:
· Donation approximately 14 million yen

(2) January 2010, Haiti Earthquake:
· Donation approximately 4 million yen

(3) September 2009, Sumatra Earthquake, Indonesia:
· Donation, relief package, etc. approximately 10 million yen

(4) August 2009, Typhoon Morakot, Taiwan:
· Donation approximately 3 million yen

TOPICS

Sharp Charity Foundation in China Actively Help Out the Community in Fiscal 2009

In June 2009, Sharp bases in China jointly donated money to the Shanghai Charity Foundation, a public fund, to carry out such social contribution activities as granting scholarships, planting trees, and donating Sharp products to public institutions.

The foundation donated 38 LCD TVs to 33 public hospitals around the country, including the Children's Hospital of Fudan University in Shanghai.

To address the needs of the community, Sharp bases in China will continue making such contributions.

At the monetary donation ceremony

Presenting a university student with a scholarship

Close-Up

Sharp Starts Worldwide Initiative for Supporting Biodiversity

May 22 is the United Nations International Day for Biological Diversity. In support of this day, Sharp carried out various activities around the world for the protection of biodiversity.

In Japan, the Sharp Green Club (SGC) led SGC Green Wave 2010, an event that took take place on May 22 in the 11 Sharp Forests located across the country between Hokkaido and Kyushu. Sharp employees planted trees—including special International Day for Biological Diversity commemorative trees—tended forests, hosted biodiversity lectures by local ecology specialists, and conducted wildlife surveys in line with the particular characteristics of each Sharp Forest. These activities were valuable opportunities for protecting biodiversity and increasing employee awareness.

Outside Japan, Sharp subsidiaries carried out a range of activities suited to each region, including planting trees, tending forests, protecting the habitat of wild birds, and holding awareness-raising programs.

Related information Page 16: Multifaceted Approach to Biodiversity Page 105: Environmental Conservation Activities in Japan, Overseas Environmental Conservation Activities

All together now—biodiversity activities in 27 countries and regions worldwide

Events held at the 11 Sharp Forests in Japan


Silvicultural activities
Sapporo Sharp Forest, Hokkaido


Tree planting
Yaita Sharp Forest, Tochigi


Forest workshop
Kameyama Eko Forest, Mie


Tree thinning
Taki Sharp Forest, Mie


Tree planting
Sharp Green Club Asuka Forest, Nara


Maintenance of bamboo grove near ancient burial mound
Tenri Kofun Sharp Forest, Nara


Biodiversity lecture
Konoyama Sharp Forest, Osaka


Tree planting
Kagawa Sharp Forest, Kagawa


Tree planting
Hiroshima Airport Side Sharp Forest, Hiroshima


Tree thinning
Ryuoh-zan Sharp Forest, Hiroshima


Silvicultural activities
Fukuoka Sharp Takasu Forest, Fukuoka


Tree planting
UK

Biodiversity lecture
US


Tree planting
France


Preserving national park grounds
China


Environmental class for children
Malaysia


Tree planting
Thailand


Tree planting
Philippines


Tree planting
Korea

Honors from Third Parties (Since Fiscal 2009)

Efforts

Year	Month	Award	Sponsor	Winner
2010	6	Technological Achievement Award	Research Association for Feedstock Recycling of Plastics (Japan)	Sharp Corporation
	4	IEEE Milestone (for the commercialization and industrialization of solar cells)	IEEE (US)	Sharp Corporation
		Award of Merit, 13th Green Reporting Awards	Toyo Keizai Inc. (Japan)	Sharp Corporation
		Minister's Award; Ministry of Education, Culture, Sports, Science and Technology; 19th Grand Prize for the Global Environment Award (for elementary school environmental education)	Fujisankei Communications Group (Japan)	Sharp Corporation, Weathercaster Network
	3	Excellent Eco-Commuting Business Site certification	Conference on Promotion of Public Transportation (Japan)	GREEN FRONT SAKAI; Yao, Hirano, and Kami Sites
		ENERGY STAR® Award for Excellence 2010	Environmental Protection Agency, Department of Energy (US)	Sharp Electronics Corporation (US)
		56th Okochi Memorial Technology Award (for the development and practical application of an LCD panel that uses high-performance crystalline silicon TFTs and integrates the peripheral circuits onto the panel itself)	Okochi Memorial Foundation (Japan)	Sharp Corporation, Semiconductor Energy Laboratory Co., Ltd.
		2009 Consumers' Choice Outstanding After-Sales Service Company, 4th National Electronics Products After-Sales Service Convention	China Electronic Chamber of Commerce	Sharp Electronics Sales (China) Co., Ltd.
		3rd place overall, CSR Company Ranking	Toyo Keizai Inc. (Japan)	Sharp Corporation
	2	Caring Company Logo 2009/2010 (for contributions to society and the environment)	Hong Kong Council of Social Service (China)	Sharp-Roxy (Hong Kong) Ltd. (China)
		Encouragement Prize, 13th Environmental Communication Awards	Ministry of the Environment, Global Environmental Forum (Japan)	Mie Site
	1	World's Top 500 Corporations – China Contribution Award	Southern Weekly (China)	Sharp Electronics Sales (China) Co., Ltd.
2009	12	2009 Outstanding CSR Award	First Financial Daily (China)	Sharp Electronics Sales (China) Co., Ltd.
		Excellent Company Award, 2009 Internet IR Best Company Awards	Daiwa Investor Relations Co., Ltd. (Japan)	Sharp Corporation
	11	Grand Prize, 2009 4th Nikkei Child-Raising Support Award	Nikkei Inc. (Japan)	Sharp Corporation
		Excellence Award, SmartWay Transport Program	Environmental Protection Agency (US)	Sharp Electronics Corporation (US)
	10	Grand Prize, 11th Green Purchasing Awards (for elementary school environmental education)	Green Purchasing Network (Japan)	Sharp Corporation, Weathercaster Network
		Outstanding Company Award (3rd place overall), 5th Quality Management Ranking Survey	Union of Japanese Scientists and Engineers	Sharp Corporation
		Distinguished Organization of Merit in Promoting the Creation of a Sustainable Society – Minister's Award	Ministry of the Environment (Japan)	Makuhari Site
		2009 China Best CSR Award	21st Century Business Herald (China)	Sharp Electronics Sales (China) Co., Ltd.
		Shanghai Exemplary Clean Manufacturer	Shanghai City (China)	Shanghai Sharp Electronics Co., Ltd. (China)
		Company That Contributed to the Employment of Persons with Disabilities	Osaka Prefectural Association of Employment Development (Japan)	Sharp Tokusen Industry Co.

Efforts

Year	Month	Award	Sponsor	Winner
2009	9	Silver Certificate, 1st GreenPlan Award	LeasePlan (Belgium)	Sharp Electronics Benelux B.V. Belgium Branch
		Wastewi$e Label (Class of Excellence), Hong Kong Awards for Environmental Excellence (for waste reduction)	Hong Kong Council of Social Service, Environmental Campaign Committee (China)	Sharp-Roxy (Hong Kong) Ltd. (China)
		Award for Relationship Between Employer & Employee About Right & Duty	Thai national government	Sharp Appliances (Thailand) Ltd.
		Environment Bureau Director General's Prize, Beautification Campaign Contributor Award	Osaka City Environment Bureau (Japan)	Sharp-Engineering Corporation, Sharp Document Systems Corporation, Sharp Tokusen Industry Co., One Stop Support Corporation
	8	No. 1 in four categories of the After-Sales Service Satisfaction Ranking (flat-screen TV, BD/DVD/HDD recorder, air conditioner, washing machine/dryer)	Nikkei BP Marketing, Inc. (Japan)	Sharp Corporation
	7	River cleanup commendation	Ministry of Land, Infrastructure and Transport Chubu Regional Bureau (Japan)	Sharp Green Club (Mie)
	6	Top brand for customer satisfaction (office equipment and TVs), 2009 survey on government organizations' satisfaction levels of electronics purchases and after-sales service	China National Household Electric Appliances Service Association	Sharp Electronics Sales (China) Co., Ltd.
		2009 Afforestation Award (for Sharp Forest tree-planting activities)	Hiroshima Prefecture Afforestation Promotion Organization (Japan)	Sharp Green Club (Fukuyama, Mihara, Hiroshima)
	5	Water-Saving Company of Shanghai	Shanghai City (China)	Shanghai Sharp Electronics Co., Ltd. (China)
	4	Satisfactory Brand of Flat-Screen TV, 2009 Survey on Customer Service Satisfaction	China National Household Electric Appliances Service Association	Sharp Electronics Sales (China) Co., Ltd.
		Site Report Prize, 12th Green Reporting Awards	Toyo Keizai Inc. (Japan)	Mie Site
		2009 Cherry Blossom Contributor Award (for Sharp Forest tree-planting activities)	Japan Cherry Blossom Association	Sharp Green Club (Fukuyama, Mihara, Hiroshima)

Products

Year	Month	Award	Sponsor	Winner
2010	2	Grand Prize (Nikkei Sangyo Shimbun Award), 2009 Nikkei Outstanding Products and Services Awards	Nikkei Inc. (Japan)	LED AQUOS LCD TV
	1	Chairman's Prize, the Energy Conservation Center, Japan; 2009 Grand Prize for Excellence in Energy Efficiency and Conservation (machinery and systems category)	Ministry of Economy, Trade and Industry (Japan)	9 LED lamp models (DL-L601N, etc.)
		Japan Brand Award, 52nd 10 Best New Products Awards	Nikkan Kogyo Shimbun, Ltd. (Japan)	UV²A LCD technology
2009	5	36th Technology Award	Japan Society of Refrigerating and Air Conditioning Engineers	Plasmacluster air conditioner with airflow control technology using tilt-down/tilt-up long diffuser panel
	4	Contribution Award, 41st Ichimura Industrial Award	The New Technology Development Foundation (Japan)	Practical application of new air conditioner airflow technology that controls excessive cooling and minimizes fatigue

Sharp's business activities comprise "Consumer/Information Products" that are actual consumer electronics and information products, and "Electronic Components" that provide the key components of electronic products. By undertaking the development of both key devices based on proprietary technologies and their application products, Sharp aims to inspire and impress customers by bringing forth never-before-seen, one-of-a-kind products and devices, and by pioneering new markets.

Corporate Profile

Name	Sharp Corporation	Operations*1	Manufacture and sales of audio-visual and communication equipment, health and environmental equipment, information equipment, LCDs, solar cells, and other electronic devices
Head Office	22-22, Nagaike-cho, Abeno-ku, Osaka, Japan		
Representatives	Katsuhiko Machida, Chairman Mikio Katayama, President	Capital Stock*1	204,675 million yen (rounded down to the nearest million)
		Number of Employees*1	Consolidated: 53,999 Entire Sharp Group: 61,734 (31,696 in Japan; 30,038 overseas)
Founded	September 15, 1912		

*1 As of March 31, 2010

Main Products

Audio-Visual and Communication Equipment

AQUOS Quattron 3D


Mobile phones

LCD TVs, color TVs, projectors, DVD recorders, Blu-ray Disc recorders, Blu-ray Disc players, mobile phones, PHS (personal handy-phone system) terminals, mobile communications handsets, personal computers, electronic dictionaries, calculators, facsimiles, telephones

LCDs


Four-primary-color*2 LCD panel using UV²A technology

Memory LCD

TFT LCD modules, duty LCD modules, System LCD modules

*2 The use of four primary colors is a concept designed for LCDs, and differs from the conventional three-primary-color concept of light and color.

Health and Environmental Equipment


Plasmacluster Ion generators


LED lamps

Refrigerators, superheated steam ovens, microwave ovens, air conditioners, washing machines, vacuum cleaners, air purifiers, dehumidifiers, humidifiers, electric heaters, small cooking appliances, Plasmacluster Ion generators, LED lights, solar-powered LED lights

Solar Cells


Residential solar power generation system (compatible with "Roofit" design)


Industrial-use thin-film solar module

Crystalline solar cells, thin-film solar cells

Information Equipment


LCD monitor (information display)


Digital full-color MFP

POS systems, handy data terminals, electronic cash registers, LCD color monitors, information displays, digital MFPs (multifunction printers), options and consumables, software, FA equipment, ultrasonic cleaners

Other Electronic Devices

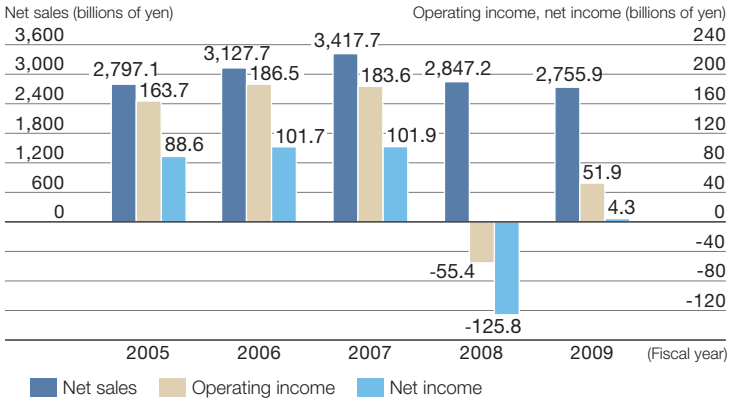

1/4-type 5-megapixel CMOS camera module


LED lighting device

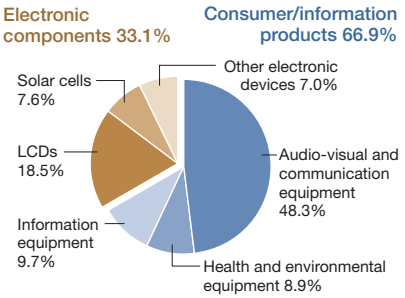
CCD/CMOS imagers, LSIs for LCDs, microcomputers, flash memories, analog ICs, components for satellite broadcasting, terrestrial digital broadcast tuners, RF modules, network components, laser diodes, LEDs, optical pickups, optical sensors, components for optical communications, regulators, switching power supplies

Web Corporate information

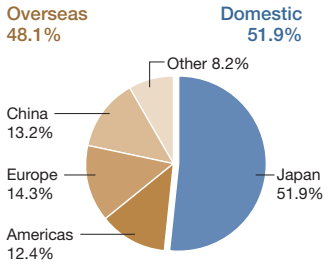
Net Sales, Operating Income, and Net Income (Consolidated)



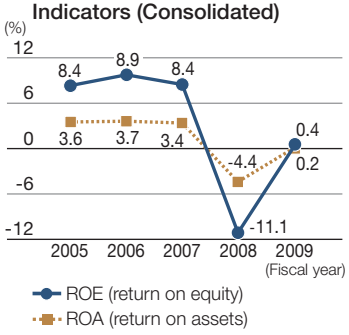
Fiscal 2009 Consolidated Net Sales by Product Group (Component Ratio)



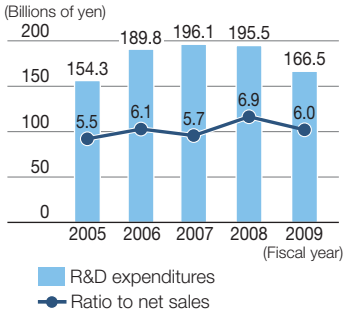
Fiscal 2009 Consolidated Net Sales by Region (Component Ratio)



Principal Financial Performance Indicators (Consolidated)



R&D Expenditures (Consolidated)

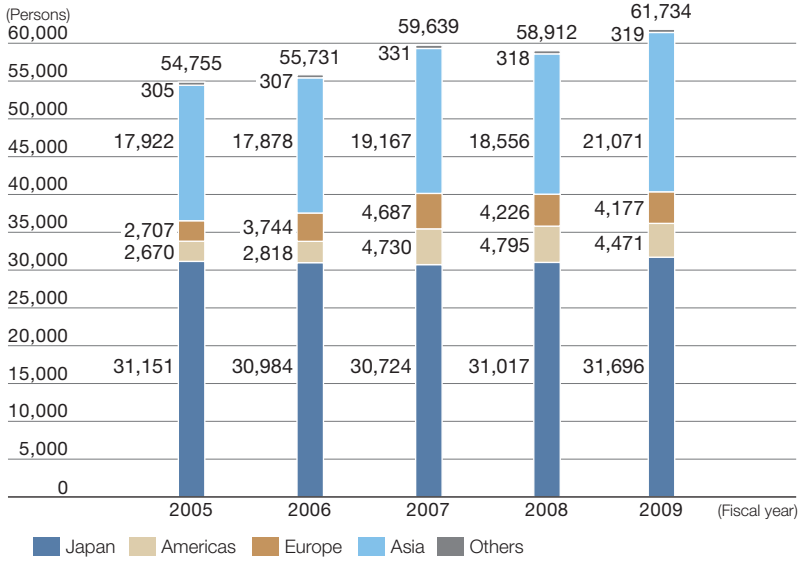


The Sharp Group at a Glance (as of March 31, 2010)

- **Consolidated subsidiaries: 57 (13 in Japan, 44 overseas)**
- **Overseas structure**

Sales subsidiaries	30 companies in 25 countries/regions
Manufacturing bases	23 companies in 14 countries/regions
R&D bases	4 companies in 3 countries/regions
R&D company and parts supplier	1 company in 1 country/region
Finance company	1 company in 1 country/region
Representative offices	2 offices in 1 country/region
Total	61 companies/offices in 26 countries/regions

Number of Sharp Group Employees



Note: Sharp Group comprises Sharp Corporation, its consolidated subsidiaries, affiliated companies accounted for by the equity method, and other affiliated companies. Figures as of the end of each fiscal year (March 31).

Web Corporate information
Investor relations

Independent Assurance Report

To the Board of Directors of Sharp Corporation

Purpose and Scope

We were engaged by Sharp Corporation (the "Company") to provide limited assurance on its 'Sharp Environmental and Social Report 2010' (the "Report") on its website for the fiscal year ended March 31, 2010. The purpose of our assurance engagement was to express our conclusion, based on our assurance procedures, on whether the environmental performance indicators, except product-related indicators, social performance indicators and environmental accounting indicators (the "Indicators") for the period from April 1, 2009 to March 31, 2010 included in the Report are prepared, in all material respects, in accordance with the Company's reporting criteria.

The content of the Report is the responsibility of the Company's management. Our responsibility is to carry out a limited assurance engagement and to express our conclusion based on the work performed.

Criteria

The Company applies its own reporting criteria as described in the Report. These are derived, among others, from the Sustainability Reporting Guidelines 2006 of the Global Reporting Initiative and Environmental Reporting Guidelines of Japan's Ministry of the Environment. We used these criteria to evaluate the Indicators.

Procedures Performed

We conducted our engagement in accordance with 'International Standard on Assurance Engagements (ISAE) 3000, Assurance Engagements other than Audits or Reviews of Historical Financial Information' issued by the International Auditing and Assurance Standards Board, and the 'Practical Guidelines of Sustainability Information Assurance' of the Japanese Association of Assurance Organizations for Sustainability Information ("J-SUS").

The limited assurance engagement on the Report consisted of making inquiries, primarily of persons responsible for the preparation of information presented in the Report, and applying analytical and other procedures. The level of assurance provided is thus not as high as that provided by a reasonable assurance engagement. Our assurance procedures included:

- Interviews with the Company's responsible personnel to obtain an understanding of its policy for the preparation of the Report.
- Reviews of the Company's reporting criteria.
- Obtaining an understanding of the systems used to generate, aggregate and report the Indicators, and of the internal controls at corporate and site level.
- Analytical reviews of the Indicators aggregated at corporate level.
- Examining, on a test basis, evidence supporting the generation, aggregation and reporting of the Indicators in conformity with the Company's reporting criteria, and also a recalculation of the Indicators.
- Visits to the Company's factories.
- Evaluating the overall statement in which the Indicators are expressed.

Conclusion

Based on the procedures performed, as described above, nothing has come to our attention that causes us to believe that the Indicators in the Report are not prepared, in all material respects, in accordance with the Company's reporting criteria as described in the Report.

We have no conflict of interest relationships with the Company that are specified in the Code of Ethics of J-SUS.

KPMG AZSA Sustainability Co., Ltd.

KPMG AZSA Sustainability Co., Ltd.
Osaka, Japan
September 15th, 2010

SHARP

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