

# Creating Super Green Products and Devices

Sharp establishes increasingly higher objectives as it revises its guidelines every year in making ever more strict assessment standards, all with the goal of continuously improving the environmental performance of products and devices. As a result, in fiscal 2006 Sharp achieved its goals to increase the percentage of net sales accounted for by Green Seal Products, Super Green Products, Green Devices, and Super Green Devices.

Objectives for Fiscal 2006	Achievements for Fiscal 2006	Objectives for Fiscal 2007	Objectives for Fiscal 2009
Green Seal Products account for 85% of net sales in Japan	<b>Approx. 93%</b>	90% or more	90% or more
Super Green Products account for 30% of net sales in Japan	<b>Approx. 49%</b>	50%	60%
Green Devices account for 65% of net sales	<b>Approx. 73%</b>	75%	85%
Super Green Devices account for 10% of net sales	<b>Approx. 12%</b>	15%	20%

Note: The sales ratios of Green Seal Products and Green Devices include both sales of Super Green Products and Super Green Devices.

## Make All Products Green Products

Sharp calls its environmentally conscious products Green Products. It formulated the Green Product Guidelines in fiscal 1998, which define development and design guidelines in line with seven concepts, including those of low power consumption and safety. The guidelines are used at all design and production sites in Japan and overseas.

The first step in developing Green Products is product planning and designing. Sharp sets specific objectives according to the Green Product Standard Sheet, which is designed to assess all aspects of environmental consciousness. Secondly, in the trial manufacture and mass production stages, Sharp determines how well the actual product has met its objectives.

In fiscal 2006, Green Products had to satisfy at least 90% or more of 44 assessment criteria, a goal that was met by all of Sharp's new products.

## Sharp Green Product concept

<b>Low energy consumption</b>	<b>Products that are energy-efficient and use little energy</b> Design products that consume less power both in running and standby mode, and air conditioners/heaters that give more efficient cooling and heating.
<b>Resource reduction</b>	<b>Products that use minimum resources</b> Make products that use less water and detergent, and reduce the amount of materials used in products and packaging.
<b>Safety</b>	<b>Products that are safe to use</b> Carry out tests on products for chemicals and work to abolish or reduce use of chemicals that have negative effects on people's health or the environment.
<b>Recycle</b>	<b>Recyclable products</b> Choose materials that can be easily recycled or reused in products, and label the type of material used.
<b>Use recycled materials</b>	<b>Products made from recycled materials</b> Use recycled plastic and reuse parts in making products.
<b>Long life usability</b>	<b>Products with a long life cycle</b> Design products that are upgradeable and easy to repair.
<b>Easy to disassemble</b>	<b>Products that are easy to disassemble</b> Design products so that they will be easy to take apart for recycling.

## Certification of Green Seal Products and Super Green Products in Japan

Since fiscal 1998, Sharp has been certifying products for Japan that offer a particularly high level of environmental performance as Green Seal Products. In fiscal 2004, it began certifying Green Seal Products with the highest possible levels of environmental performance as Super Green Products.

To receive Green Seal Product certification, a product must satisfy at least one item in the External Environmental Claim Standards and all four required items in the Environmental Performance Criteria, and must score

70 points or higher out of a total of 100 points in the Environmental Performance Criteria. To receive Super Green Product certification, products must score 90 points or higher in the Environmental Performance Criteria and they must acquire certification for Japanese environmental labels.

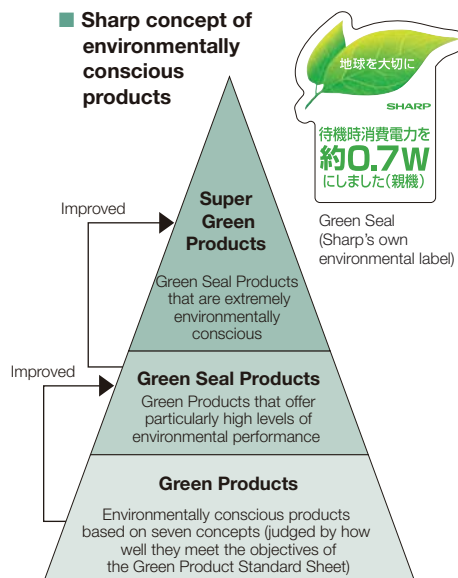
In fiscal 2006, Sharp surpassed its goals for both Green Seal Products and Super Green Products as a percentage of total sales. In the coming years, Sharp plans to raise these percentages even higher.

## Assessment and certification standards for Green Seal Products and Super Green Products in Japan (fiscal 2006)

Category	Green Seal Product	Super Green Product
I Level of environmental consciousness	<ul style="list-style-type: none"> <li>Satisfies at least one item of the External Environmental Claim Standards</li> </ul>	<ul style="list-style-type: none"> <li>Is significantly more environmentally conscious than the products of other companies</li> </ul>
II Environmental Performance Criteria (total score: 100)	<ul style="list-style-type: none"> <li>Satisfies four required items of the Environmental Performance Criteria</li> </ul>	<ul style="list-style-type: none"> <li>Satisfies four required items of the Environmental Performance Criteria</li> <li>Has environmental label status</li> </ul>
	<p><b>Prevents global warming</b> Low power consumption, high energy efficiency, etc. <b>20 points</b></p>	<p><b>Makes effective use of resources</b> Designed for recyclability, resource saving, etc. <b>20 points</b></p> <p><b>Uses substitutes for toxic chemicals</b> <b>35 points</b></p> <p><b>Other</b> Has environmental label status, uses minimum packaging materials, etc. <b>25 points</b></p>
	<b>At least 70 points</b>	<b>At least 90 points</b>

All conditions under sections I and II must be satisfied.

## Sharp concept of environmentally conscious products



## Four required items in the Environmental Performance Criteria in Japan (fiscal 2006)

Items	Detail
Energy saving	<ul style="list-style-type: none"> <li>Lower power consumption and standby power consumption than previous models</li> </ul>
3R	<ul style="list-style-type: none"> <li>Easy separation and disassembly, or is upgradeable</li> </ul>
Safety	<ul style="list-style-type: none"> <li>Meets the RoHS directive</li> <li>Uses no substances prohibited under Sharp standards</li> <li>Uses no Ni-Cd batteries</li> </ul>
Packaging	<ul style="list-style-type: none"> <li>Abolishes the use of polystyrene foam (for products weighing less than 10 kg)</li> <li>Increases the ratio of recycled materials, or uses less packaging material than previous models (for products weighing 10 kg or more)</li> </ul>

## Certification of Green Devices and Super Green Devices

Sharp calls its environmentally conscious devices Green Devices. To define guidelines for development and design based on seven concepts, such as low energy consumption and recyclability, Sharp established the Green Device Guidelines, which it began applying in fiscal 2004. In fiscal 2005, it began certifying Green Devices with the highest possible levels of environmental performance as Super Green Devices.

The development of Green Devices begins at the planning and designing stage, where every aspect of the product's environmental consciousness is discussed. Sharp then sets specific objectives based on the Green Device Standard Sheet. Finally, in the trial manufacture and mass production stages, Sharp determines how well the actual product has met its objectives.

Green Devices must satisfy at least 90% or more of all 20 assessment items (nine of which are compulsory) listed in the Environmental Performance Criteria. Super Green Devices must satisfy at least 95% or more of the 20 assessment items (10 of which are compulsory) listed in the Environmental Performance Criteria. They must also either be No. 1

in the industry or the first in the industry in at least one item of the External Environmental Claim Standards.

In fiscal 2006, both Green Devices and Super Green Devices exceeded their sales ratio targets. In the coming years, Sharp plans to raise these figures still higher.

### Green Device concept

<b>Energy saving</b>	Reduce total power consumption and reduce power consumed in standby mode compared to previous models
<b>Recyclability</b>	Use standard plastic or materials that are easy to separate and disassemble (target: LCD devices)
<b>Resource saving</b>	Reduce device weight or volume compared to previous models
<b>Green materials</b>	Control usage of chemical substances contained in parts and materials and use no substances prohibited under Sharp standards
<b>Long life</b>	Extend the life of the product with exchangeable parts and consumables (target: LCD devices)
<b>Packaging</b>	Reduce packaging materials
<b>Information disclosure</b>	Provide information on chemical substances in devices

### Green Seal Products External Environmental Claim Standards (fiscal 2006)

Items	Detail
Energy saving, energy creating	<p><u>Power consumption</u></p> <ul style="list-style-type: none"> <li>Industry-leading model of each product category</li> </ul> <p><u>Standby power consumption</u></p> <ul style="list-style-type: none"> <li>Industry-leading model of each product category</li> <li>0.1W or less (remote controlled products)</li> <li>1.0W or less (phones, faxes, PCs)</li> </ul> <p><u>Energy creating</u></p> <ul style="list-style-type: none"> <li>Industry-leading conversion efficiency</li> </ul>
3R	<p><u>Resource savings during use</u></p> <ul style="list-style-type: none"> <li>Industry-leading model of each product category (saving water and detergent, etc.)</li> </ul> <p><u>Compact/lightweight</u></p> <ul style="list-style-type: none"> <li>Industry-leading model of each product category</li> <li>Reduced by 30% or more compared to previous models</li> </ul> <p><u>Recycled materials</u></p> <ul style="list-style-type: none"> <li>Use of closed-loop recycled materials</li> </ul>
Safety	<p><u>Green materials</u></p> <ul style="list-style-type: none"> <li>Abolishing use of halogen-based flame retardants, substituting polyvinyl chloride</li> <li>Use of refrigerant with low global warming potential</li> </ul>
Eco Mark	<p><u>Acquired Eco Mark</u></p> <ul style="list-style-type: none"> <li>Acquired Eco Mark authorized by the Japan Environment Association</li> </ul>
Others	<p><u>Original technology</u></p> <ul style="list-style-type: none"> <li>Environmentally conscious products using industry-first or original Sharp technology</li> </ul>

## Development of Worldwide Comprehensive Product Environmental Evaluation System

In April 2006, Sharp began using the Comprehensive Product Environmental Evaluation System in all domestic product and device groups. This system combines Sharp's accumulated experience in developing and assessing environmentally conscious products and devices with its know-how of LCA (life cycle assessment). It enables Sharp to make the product development process more efficient, place design knowledge and development data under centralized management, and standardize the LCA method.

Sharp's product development processes are now carried out worldwide. The company began introducing the Comprehensive Product Environmental Evaluation System to its overseas development bases in March 2007. With the system's introduction, Sharp is able to consolidate the management of product environmental data to ensure that all bases comply with environmental regulations, and it can also facilitate the spread of environmentally conscious design. Sharp plans to have the system in operation at all overseas development bases within fiscal 2007.

## Green Procurement

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

In fiscal 2003, Sharp formulated the Survey Manual for Chemical Substances in Parts and Materials and investigated chemical substance content as stipulated by the Japan Green Procurement Survey Standardization Initiative (JGPSSI).<sup>1</sup> The company also took measures toward eliminating RoHS-designated<sup>2</sup> substances. It successfully eliminated them in all products for the European market by the end of 2005 and in all new products (except those for certain regions) by March 31, 2006.

In fiscal 2006, in line with the Green Procurement Guidelines and the Survey Manual for Chemical Substances in Parts and Materials, Sharp started an online survey for Japan. For overseas suppliers, Sharp has been giving meetings to explain guidelines and plans to have a similar system completed before the end of fiscal 2007.

<sup>1</sup> A council comprising 5 organizations and 86 companies, mainly electronics manufacturers including Sharp Corporation, which works to standardize research on chemical substances in parts and materials.

<sup>2</sup> RoHS: An EU directive on the "Restriction on the use of certain Hazardous Substances." RoHS prohibits 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.

### Information on website

<http://sharp-world.com/corporate/eco/report2007/>

- Green Products ● Green Devices
- LCA data for major products ● Green Procurement Guidelines