

Green Product Manufacturing

Environmentally Friendly Product Manufacturing

In order to promote eco-product manufacturing, Casio started conducting environmental product assessments in 1993. In 2001, it established the Green Product Development Guidelines* as a more clearly defined environmental standard, and it has prepared a Product Environmental Inspection Sheet based on these Guidelines. Using this sheet, Casio carries out product assessment and audits at each stage. Products that meet the criteria established in the Guidelines are approved and given certification numbers as Casio Green Products.

* Guidelines for developing products that are especially easy on the environment (Casio Green Products). The Guidelines establish the procedures for inspecting and evaluating eco-product manufacturing at all stages of new product development, from product planning to product design.

Casio Facts

First in the printer industry
Return Toner Cartridge with carbon offset



SPEEDIA N3600

Using part of proceeds from sales of the toner, Casio offsets an amount of CO₂ equivalent to the emissions produced by generating the electricity used for printing.

The carbon offsets are effected when Casio purchases certified emission reductions (CERs) under the greenhouse-gas reduction projects registered with the United Nations CDM Executive Board.

Structure of the Product Assessment

Product assessments are divided into two sets of criteria, environmental design and eco-product. The environmental design criteria are used to evaluate basic environmentally sensitive design issues such as design for ease of recycling. The eco-product criteria is used to evaluate advanced environmentally sensitive design such as energy saving and resource conservation in comparison with Casio's earlier products and those of other companies. Products that meet both sets of criteria are certified as Casio Green Products.

Product assessment procedure

Criteria and format

- Development Guidelines for Casio Green Products
- Product Environmental Inspection Manual
- Product Environmental Inspection Sheet

Internal Audit

- Design Planning Evaluation
- ↓
- Design Decision Evaluation
- ↓
- General Design Evaluation

Environment Center inspection and approval of certification

- Actual product inspection
The actual product is checked against the Inspection Sheet, and if the criteria are cleared, it proceeds to certification
- ↓
- Registration of product certification
Following authorization by the General Manager of the Environment Center, certification as a Green Product

Issue of a certification number

Green Product certification and announcement on the website

Product Assessment Process

The first assessment is conducted at the product planning stage, with the second at the design decision stage, and the third at the mass production decision stage, for a total of three product assessments. The Environment Center carries out an audit of the results of the assessments and certifies the product.

Examples of Casio Green Products

Handheld Terminal

The DT-X7 was developed based on universal design principles through a human-centered design process. Casio rigorously pursued usability while maintaining high performance. At the same time, the aim of development was green product design realizing energy savings and resource conservation. Ultimately Casio achieved a product design that prioritized human and environmental factors.



DT-830		DT-X7	Energy and resource saving
About 4 hours	Battery life	About 10 hours	25% size reduction
220.8 × 55 × 29.5mm	Size	166 × 52.5 × 30.5mm	
340g	Weight	145g	57% weight reduction

PROTREK timepieces

PROTREK is outdoor gear for sensing and measuring various aspects of the natural environment. In its development, Casio sought to achieve the utmost size and weight reductions, while giving the watch even greater functionality. Compared with the earlier PRW-1100 model, the PRW-1300 is about 13% lighter, with a body area downsized by about 40%.



PRW-1100		PRW-1300	Energy and resource saving
16.8mm	Thickness	11.5mm	32% thinner
52.2mm	Size	47.4mm	9% size reduction
78g	Weight	68g	13% weight reduction

>>> Ref. p20. Green Product Manufacturing

Green Marketing

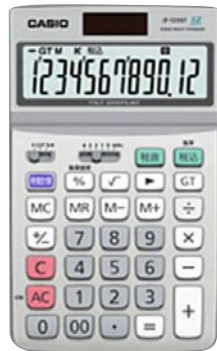
In addition to certifying Eco-Mark Products, Casio actively seeks to supply the market with products that conform to the criteria of Japan's Law on Promoting Green Purchasing.

As of March 2008, the company has expanded its range of conforming models to 23 calculators and eight printers.

Green purchasing is a process of giving careful consideration to the necessity of a purchase, while taking the environment into consideration, not only factors such as quality and cost. Purchasers prioritize companies which work to reduce environment impact and purchase products and services that make the smallest impact on the environment. Enacted in 2001, the Law on Promoting Green Purchasing makes green purchasing mandatory for agencies of the national government, and calls on businesses and the public to make similar efforts.

Casio carries out environmentally conscious design based on its Green Product Development Guidelines. It has consistently made significant contributions to reducing the environmental impact of products at all stages of their life cycle, from procurement, manufacturing and distribution, through use, recycling and disposal.

Casio is taking further steps in green marketing with a new "Three Point Check: Seller - OK!, Buyer - OK!, User - OK!"



JF-120GT

The specifications of calculators compliant with Casio's environmental standards

- Solar cells are the main power supply (50% or more of the power required)
- 40% or more recycled plastic by weight of plastic used
- Compliant with the European RoHS Directive
- A configuration that simplifies separate disposal of the battery
- Product packaging material that can be reused easily, with a structure that is simple to separate for disposal

Compliance Design

Casio's products are shipped around the world, and they must comply with the laws in the countries where they are exported. In recent years, environmental regulations in Japan and overseas have been tightened considerably, and although their purposes may be similar, laws with differing requirements are constantly being enacted in various countries.

In order to comply with the regulations enacted in each part of the world, Casio consistently obtains the latest information from the regions where it has a presence, using information exchanges with other companies in the industry, and specialist information agencies. By these means, Casio keeps a careful watch on the regulatory requirements that affect its products. The company analyzes complex legal instruments, including legislation under discussion, so that when regulations are announced, it is immediately ready to respond with specific policies for all Casio products.

At the same time, developing and designing products that comply with the regulations of each country involves a considerable burden in terms of the speed and cost of development. Casio makes a detailed examination of new and revised laws, including pending legislation, formulating the most rational responses which it then applies to its products. In addition, Casio incorporates the requirements of various regulations into its design standards wherever possible. For example, simply by meeting Casio's green procurement standards, products clear all worldwide restrictions on harmful constituent substances. By following its strict internal standards in this way, Casio is able to maintain compliance automatically.

From fiscal 2009, Casio is required to start complying with the EU REACH regulation and the EuP Directive. The specific requirements are still under discussion, but Casio will clearly identify the requirements for Casio products, and take the necessary steps to ensure compliance.

In order to ensure the safety and earn the trust of customers around the world, and to avoid inefficiencies both within and outside the company, Casio is responding promptly and appropriately to numerous environmental regulations to maintain its excellent compliance record.

>>> Ref. p21. Compliance Design

Green Procurement

Casio's green procurement standards are the basis for the compliance of Casio products with the environmental regulations of each country. In order to meet the restrictions on harmful substances and fulfill the information disclosure responsibilities in each region, Casio requires its suppliers of product parts and materials to restrict the inclusion of specified substances and to provide detailed information about their supplies.

As part of its green procurement initiative, Casio is introducing the GP-Web* system with the cooperation of its parts and materials suppliers.

This system enables the sharing of information and mitigates workload. In fiscal 2008, Casio began introducing the system in companies outside Japan, and 36 supplier companies in China have started using it. Looking to the future, Casio will introduce GP-Web more widely, taking into account the state of infrastructure at supplier companies.

*Green procurement survey web input system

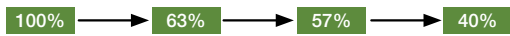
Product Packaging Material Initiatives

Up through fiscal 2008, Casio has been undertaking activities to reduce product packaging materials by 30% per unit of sales compared to fiscal 2001. The result for fiscal 2008 was 2.10 per unit of sales, which represented a 24.2% reduction.

Specific activities included two separate improvements in digital camera packaging during fiscal 2008. Ultimately, Casio reduced the volume of the box by 29.4% and the weight of the packaging by 28.8% in the second improvement, compared to the first improvement, contributing to reductions in the amount of packaging material used and in distribution costs. In addition, Casio is working to create universal design packaging for its electronic dictionaries.

>>>Ref. p22. Universal Design Evaluation Items for Electronic Dictionary Packaging

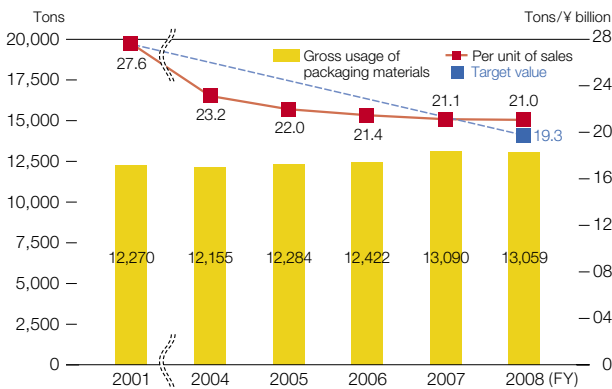
Changes in digital camera packaging



Reductions in box volume



Gross usage of packaging materials and usage per unit of sales

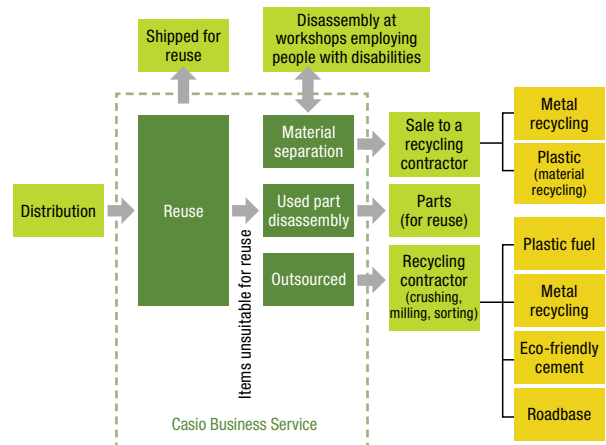


*The figures for gross usage of packaging materials are paper-based, cardboard, plastic materials and polystyrene foam.

Product Recycling Initiatives

Casio Business Service Co., Ltd., inspects the appearance and function of products returned from distribution, selecting items suitable for reuse. In the past, many of the products deemed unsuitable for reuse were disposed of. Now, they are disassembled and the parts and other valuable resources are reused or recycled. In this way, the 21.7% of waste sent to landfill in fiscal 2005 was reduced to 0.5% or less in fiscal 2008, thereby significantly reducing the impact on the environment.

Product recycling initiatives



We Dream of a Future of Recycling Rare Metals

Casio's products made with leading-edge technologies use rare metals that are gradually disappearing from the earth. A challenge for us in the future is recycling the rare metals from existing Casio products—what might be called a rich urban mine. We are determined to keep contributing to society and the global environment.

Casio Business Service Co., Ltd.

Reused Packaging for Digital Cameras

On February 1, 2008, Casio Techno Co., Ltd., started reusing packaging of repaired items.

Products for repair that are sent in with packaging materials provided by the customer sometimes experience problems that are likely caused by impact during transportation.

Furthermore, earlier shipping packaging was simple cardboard. It was generally large and could only be used a limited number of times.

So we wondered if it was possible to make a single packaging case that customers could use easily, that could be sent by mail, and that could be used in the three steps needed for repairs—sending the packaging materials, and getting and returning the item. It would have to be shockproof and be recyclable. So we made packaging materials of low expanded polypropylene, padded with a protective sheet of low resilience urethane.

This packaging material is being used for about 500 repairs a month, contributing to reduction of CO2 emissions through the reduction of packaging materials and a smaller box size.

The application for repairs can be made from our website, and items for repair can be taken to a post office or convenience store, which has resulted in better service.

We hope that in the future, more customers will use this service.

I'm personally very pleased to be able to make a contribution, however small, to protecting the natural environment.

>>> Web Repairs desk: www.e-casio.co.jp

Joji Oikawa
Casio Techno Co., Ltd.

