Environmentally Conscious Products

Products certified for environmental labels or those meeting the standards set by the Law on Promoting Green Purchasing are regarded as environmentally conscious products.

For details, please refer to: www.casio.co.jp/env/env_product.

Eco Mark-Certified Products

The Eco Mark label is an environmental label granted to products approved by the Eco Mark Office of the Japan Environment Association as useful for environmental conservation, including those with less environmental impacts.

Item \ FY	2001	2002	Total
Consumer product	49	51	100
System product	2	0	2
Total	51	51	102

Eco Mark

Product using solar battery modules named CASIO
Certification No.: 98026001

Solar-powered clock and watch named "Wave Ceptor"
Certification No.: 01071001

PC Green Label-Certified Products

The PC Green Label is an environmental label granted by the Japan Electronics and Information Technology Industries Association (JEITA). PCs meeting the environmental design standards of JEITA are certified for PC Green Labels. The standards cover environmentally conscious designs and manufacturing as well as the recovery, reuse and recycling of end-of-life products.

Item \ FY	2001	2002	Total
System product	1	2	3

PC Green Label

International ENERGY STAR Program-Certified Products

The INTERNATIONAL ENERGY STAR Program, implemented under mutual recognition between Japan and the United States, defines a set of energy conservation standards for OA equipment to promote the development and popularization of energy saving and efficient office machines. The INTERNATIONAL ENERGY STAR labels are mainly granted to products that meet the standards for power consumption in standby mode.

Item \ FY	2001	2002	Total
System product	8	7	15

International Energy Star Program Mark

Products Complying with the Law on Promoting Green Purchasing (Registered in the GPN Database)

We register our products that we think comply with the Law on Promoting Green Purchasing in the Green Purchasing Network's GPN Database.

Item \ FY	2001	2002	Total
Consumer product	7	5	12
System product	11	12	23
Total	18	17	35

GPN Database URL: http://eco.goo.ne.jp/gpn/index.html

TOPICS

Reducing the use of paper resources by manufacturing electronic dictionaries

Based on the annual sales of all Casio electronic dictionaries sold in fiscal 2002, we calculated the total weight of paper that would have been required to make paper dictionaries equivalent to the number of dictionaries included in the electronic ones in order to estimate the benefits obtained from computerization. (We assumed that one tree was required to produce 50 kg of paper.) According to the calculation results (obtained by dividing the total weight of 6,445 tons by 50 kg), we reduced the use of paper by an amount equivalent to saving about 130,000 trees.

Life Cycle Assessment (LCA) Results

Comparison of Watches through LCA

We compared and examined the differences in environmental impacts of watches by material (metal/plastic) used for major parts (case body, bezel, and watch strap), using the LCA method.

MTG-900DJ

GW-300J

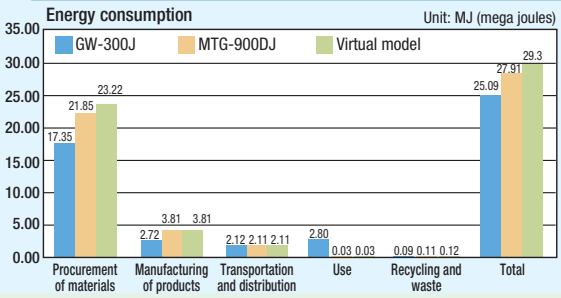
Conditions by model

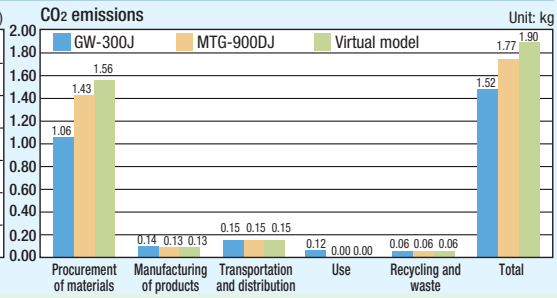
Model name \ Major component	Case body	Bezel	Watch strap
GW-300J	Plastic	Metal	Plastic
MTG-900DJ	Plastic	Metal	Metal
Virtual model	Metal	Metal	Metal

*Virtual model: watch made of 100% metal by assuming replacement of MTG-900DJ casing with metal

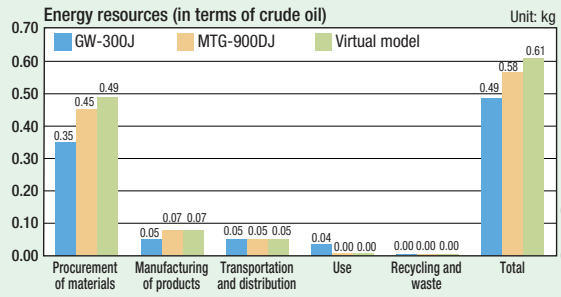
There are five targeted stages: procurement of materials, manufacturing of products, transportation and distribution, use, and recycling and disposal.

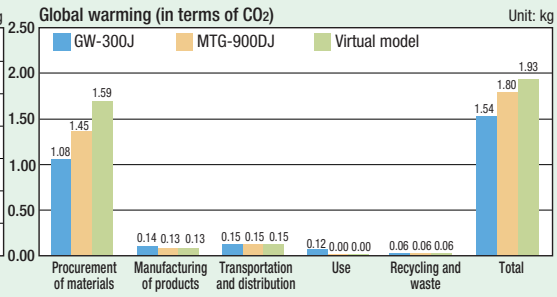
Inventory analysis (per watch)





Impact assessment (per watch)





Inventory analysis
Environmental impacts are quantified for each stage regarding inputs (energy, materials, parts, etc.) and outputs (CO_2, waste, etc.) and are listed in a table. Inventory analysis thus enables the quantification of input- and output-related environmental impacts.

Impact assessment
Based on the inventory analysis results, environmental impacts are assessed for each category item (energy resource (depletion of crude oil), global warming, acidification, etc.). Through such impact assessment, specific impacts caused on the global environment are identified.

Interrelationship between inventory analysis and impact assessment
Usually, inventory assessment is conducted based on inventory analysis results, but it is also possible to utilize the impact assessment results to plan measures for environmental impacts quantified in inventory analysis.

For example, in order to reduce the environmental impacts on global warming identified in terms of CO_2 in impact assessment, it would be effec-tive to reduce environmental impacts quantified as CO_2 emissions.

Conclusions

1. It was verified that plastic exteriors that are dominant among Casio watches and their cases are superior to all metal exteriors in terms of LCA.
2. Watches need to attract customers by their exterior design, in addition to their functions, and the composite design combining metal and plastics, which characterizes Casio watches, is effective in terms of LCA as well.

Measures to Promote Fuel Cells as a Next-Generation Clean Energy Source

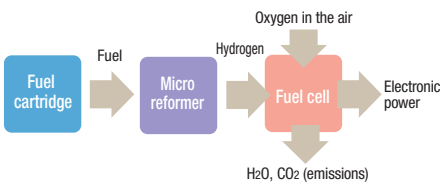
Casio has been developing fuel cells that are anticipated for next-generation clean energy.

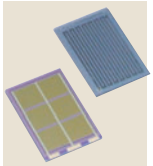
Fuel cells generate power through a reaction between the hydrogen contained in alcohol (such as methanol) and oxygen in the air. Fuel cells emit only a small amount of CO_2 and water while in use. The fuel cartridge is exchangeable and in the form of easily recyclable aluminum or PET bottle, achieving far less environmental impacts than ordinary cells. Also, fuel cells can be continuously used for about four times longer than usual lithium-ion batteries and weigh about half as much. They are thus very efficient cells usable for higher performance portable devices.

We developed a postage stamp-sized reformer to downsize a fuel cell with a reformer on it and improve its performance at the same time, by using our semiconductor processing technology. Although it was said that a fuel cell with a reformer on it achieved high performance but was too large to be mounted on a mobile device, but we succeeded in downsizing this type of fuel cell.

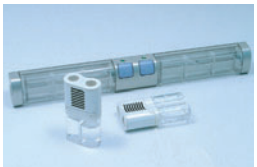
At present, research and development are being promoted for the practical use of fuel cells. We will make efforts to popularize fuel cells by achieving international compatibility and by establishing a social infrastructure for their recycling. We plan to utilize these cells for the development of environmentally-aware mobile devices for the protection of the global environment.

Mechanism of reforming type fuel cells system





Micro reformer



Anticipated products