

# Material Balance

Casio strives to accurately grasp the input and output that go with business activities in an effort to further improve its environmental conservation activities.

## Material Balance of the Casio Group

At Casio, the Electronic Component Division and the Electronics Equipment Division individually grasp their material and energy input, as well as the environmental impact that is discharged as the result, and uses the data to continue to improve their environmental conservation activities.

In recent years, CO<sub>2</sub> emissions of the Casio Group have been on a rising trend in step with its expanding business. Furthermore, water usage has also increased as the Electronic Component Division has grown in Japan. To offset the increased water use, Casio has endeavored to use recycled water.

As for wastes, Casio considers recycling to be an important task, and preferentially hires waste treatment companies that possess excellent recycling technology. In addition, Casio makes efforts to reduce chemical substances, including chemicals that are used for treatment in the electronic component processes. As these examples show, Casio takes various environmental measures in the course of its expansive business activities.

\* Please see the details of Casio's performance data on the following Website:

<http://www.casio.co.jp/env/activity/report.html>  
(in Japanese)

## Material Balance of the Electronic Component Division

In the Electronic Component Division, production has been growing rapidly since 1990, thanks to proliferation of such products as personal computers and cell phones. Accordingly, factory scales have expanded and facilities and equipment have been added. This has had an effect of boosting the total CO<sub>2</sub> emissions to 74,607 tons in fiscal 2004, a 3.7-fold increase from 20,144 tons in fiscal 1990.

In this division, heat sources for clean rooms and the equipment that detoxifies effluent operate around the clock at a steady pace regardless of changes in production volumes, and constitute a major factor of energy and water consumption. All sites are making ongoing efforts to reduce CO<sub>2</sub> emissions. One solution is to switch to a

fuel that releases less CO<sub>2</sub> (from Bunker A fuel oil to light oil).

As for waste disposal, there has been a large increase in the chemical solutions used. For this reason, all sites strive to recycle wastes by selecting waste treatment contractors that have the best treatment facilities so as to reduce the volume of landfill wastes. As the result of these efforts, five sites out of a total of six that are subject to monitoring achieved zero emissions (or landfill wastes representing 1% or less of the total wastes) by fiscal 2004. (These five sites are Kochi Casio Co., Ltd., Kofu Casio Co., Ltd. (head office and Ichinomiya branch), Casio Micronics Co., Ltd. (in Yamanashi), and Casio Computer Co., Ltd. (Hachioji Research and Development Center).) The remaining one site, where the landfill wastes represent 1.23% of total wastes, is expected to reach zero emission during fiscal 2005.

## Material Balance of the Electronics Equipment Division

In the Electronics Equipment Division, consumption of electricity decreased with the introduction of co-generation at Yamagata Casio Co., Ltd. in 2002. On the other hand, an increase in the use of fuels has become the major cause of a rise in CO<sub>2</sub> emissions. Total CO<sub>2</sub> emissions grew from 13,891 tons in fiscal 2003, to 17,417 tons in fiscal 2004, an annual increase of over 25%.

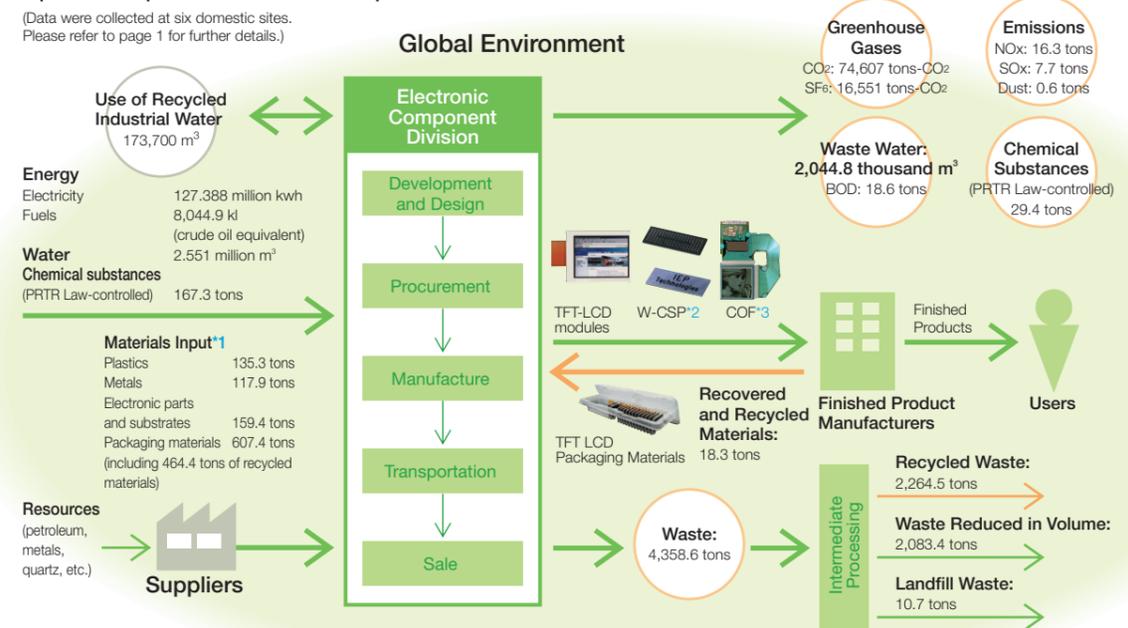
On the basis of the unit of production, CO<sub>2</sub> emissions grew over 32% between fiscal 2003 and fiscal 2004, from 0.153 (tons-CO<sub>2</sub>/¥1,000,000) to 0.202 (tons-CO<sub>2</sub>/¥1,000,000). Recognizing that the Kyoto Protocol mandates Japan to reduce its CO<sub>2</sub> emissions by six percent on an absolute basis, Casio will continue to pursue energy-saving measures.

As with the Electronic Component Division, the Electronics Equipment Division strives to recycle wastes by selecting waste treatment contractors that have the

best treatment facilities so as to reduce the volume of landfill wastes. As the result of these efforts, five sites out of a total of eight that are subject to domestic monitoring achieved zero emission by fiscal 2004. (These five sites are Yamagata Casio Co., Ltd., Casio Electronic Manufacturing Co., Ltd., Casio Computer Co., Ltd. (Head Office and the Hamura Research and Development Center) and Casio Hitachi Mobile Communications Co., Ltd.) The remaining three sites are pressing forward with continued improvements.

### Input and Output of the Electronic Component Division

(Data were collected at six domestic sites. Please refer to page 1 for further details.)



\*1 Material Input: Figures are for TFT LCD modules, W-CSP and COF.

\*2 W-CSP: An IC package whose entire packaging process is completed at the wafer level. It is characterized by the fact that the package is minimized to the exact size of a chip.

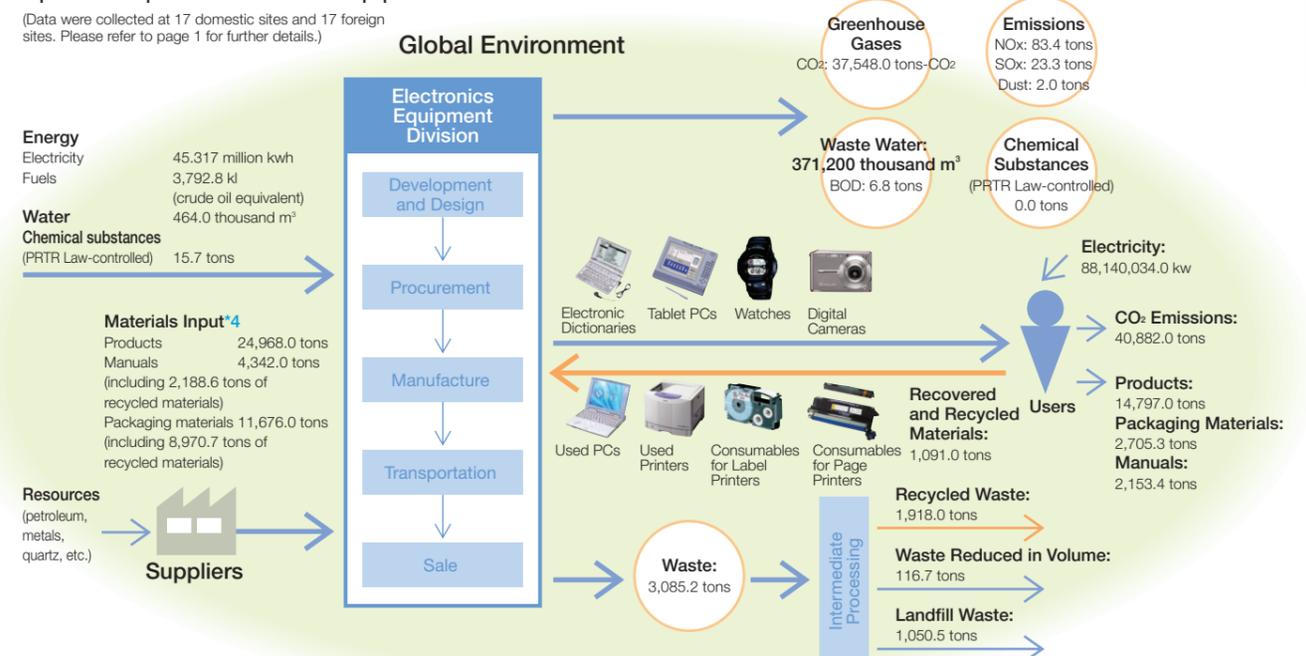
\*3 COF: An acronym for Chip on Film. A LSI chip is directly bonded to thin resin film. It enables packaging of LSI in limited space efficiently at high density.

**Apology and Correction:**

The Sustainability Report 2004 erroneously indicated that the Material Input contained "0.5 ton of packaging materials (including 0.3 ton of recycled materials)." This should have read "501.0 tons of packaging materials (including 384.1 tons of recycled materials)."

### Input and Output of the Electronics Equipment Division

(Data were collected at 17 domestic sites and 17 foreign sites. Please refer to page 1 for further details.)



\*4 Material Input: Figures were estimated, based on the representative models of individual products.

**Apology and Correction:**

The Sustainability Report 2004 erroneously indicated that the Material Input contained "12,154.5 tons of packaging materials (including 10,052.6 tons of recycled materials)." This should have read "11,654.0 tons of packaging materials (including 8,625.0 tons of recycled materials)."