Environmental Data

Third-party verification

In order to ensure the reliability of its environmental data reporting, in fiscal 2011 Casio began requesting third-party verification.
Casio relied on SGS Japan Co., Ltd., for the audit in fiscal 2016. The audit covered greenhouse gas emissions (Scope 1, 2 and Categories 1, 4 and 11 of Scope 3), water intake, waste and emissions of atmospheric pollutants.
Of the sites covered, on-site surveys were conducted at Hamura R&D Center of Casio Computer Co., Ltd., Yamagata Casio, and Casio Electronics Co., Ltd.

See the third-party verification statement (PDF / 116KB)

Environmental Performance

The deadlines for a number of numerical targets came up in fiscal 2016. Major disparities and overachievement were observed in several areas, showing that there is room for improvements in the methods that have been used to set targets. To set targets for fiscal 2017 and beyond, Casio is taking the time to perform detailed analyses to ensure that targets are appropriate. Meanwhile, Casio will keep the targets that had deadlines in fiscal 2016 the same for fiscal 2017.
The policy is for group companies and sites that achieved their targets for fiscal 2016 to maintain that performance, and for those that did not achieve their targets to keep working to do so.

CO_2 | Waste | Water resources | Paper

CO_2

Medium-and long-term greenhouse gas reductions

Casio has established “reducing the total volume of global greenhouse gas emissions from business activities by 30% compared to fiscal 2006 by fiscal 2021 and by 80% compared to fiscal 2006 by fiscal 2051” as the medium- and long-term targets for Scope 1 and 2 greenhouse gases. In the fiscal 2016 results, the reduction was 28.8% compared to the base year, showing steady progress at first glance.

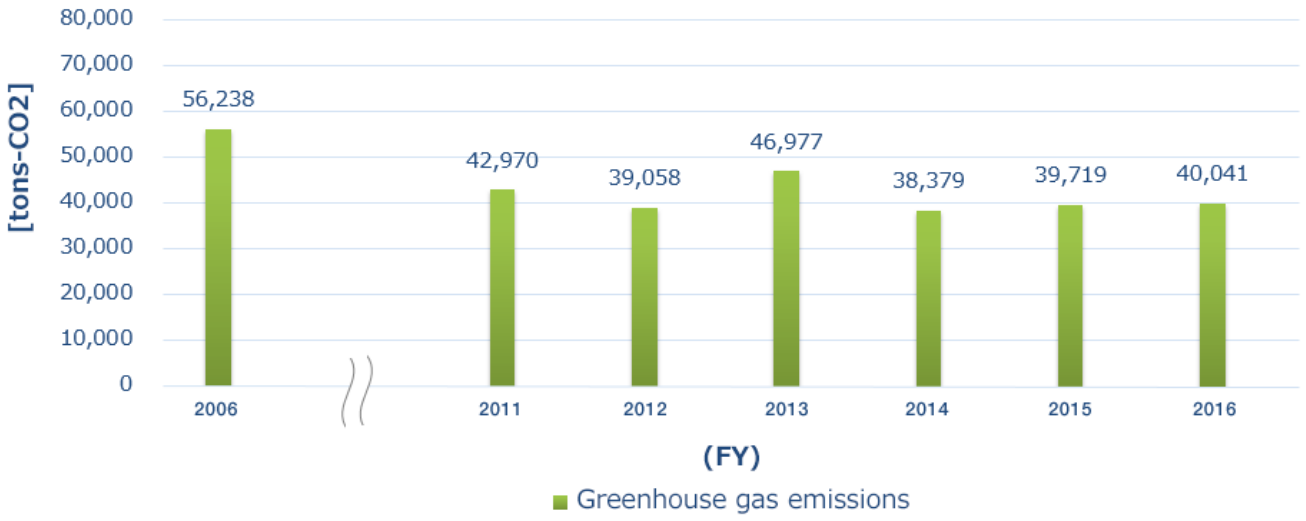
However, further verification of the trends in results thus far revealed that emissions from divested sites have not been adjusted to comply with the GHG Protocol since 2010.

Excluding the emissions from the device business in Japan which was transferred to another company in 2011, the total reduction over the five years from 2010 to 2015 by current businesses is only 2,929 tons, revealing that reductions have more or less stagnated.

The main reason for the stagnation in reductions is the 2011 flooding in Thailand, which required such measures as shifting production to other plants and setting up new plants through 2012. As a result, the efficiency of operations was impeded, for instance by changes in emissions of several thousand tons at a single site and other issues.

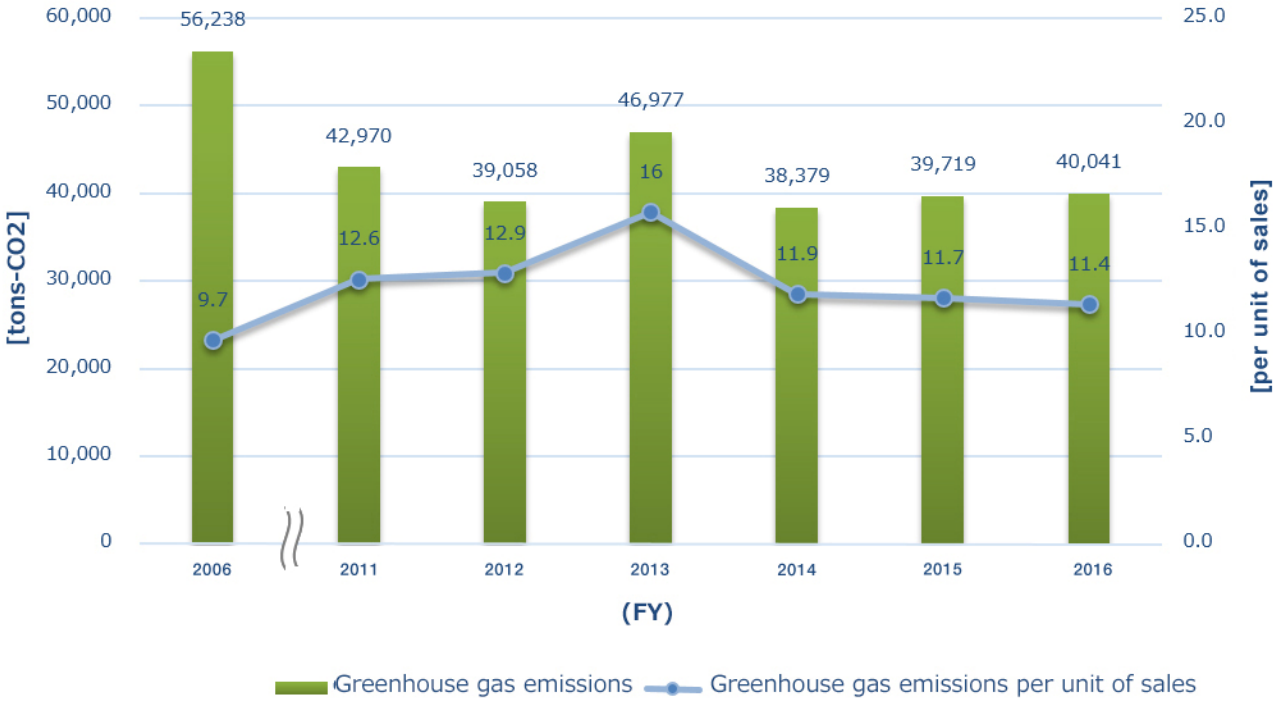
At present, Casio applies JEMA estimated values (estimates based on fiscal 2004 results) to the power conversion factor for overseas sites, but it is thought that circumstances have subsequently changed at individual sites. Casio has started to formulate concrete plans to achieve its medium- to long-term targets while considering revisions to methods of calculation in order to perform more reasonable emissions calculations amid expectations of increased production volume, going forward.

Greenhouse gas emissions



The base year (fiscal 2006) and subsequent results have been adjusted to a level that complies with the GHG Protocol.

Greenhouse gas emissions per unit of sales



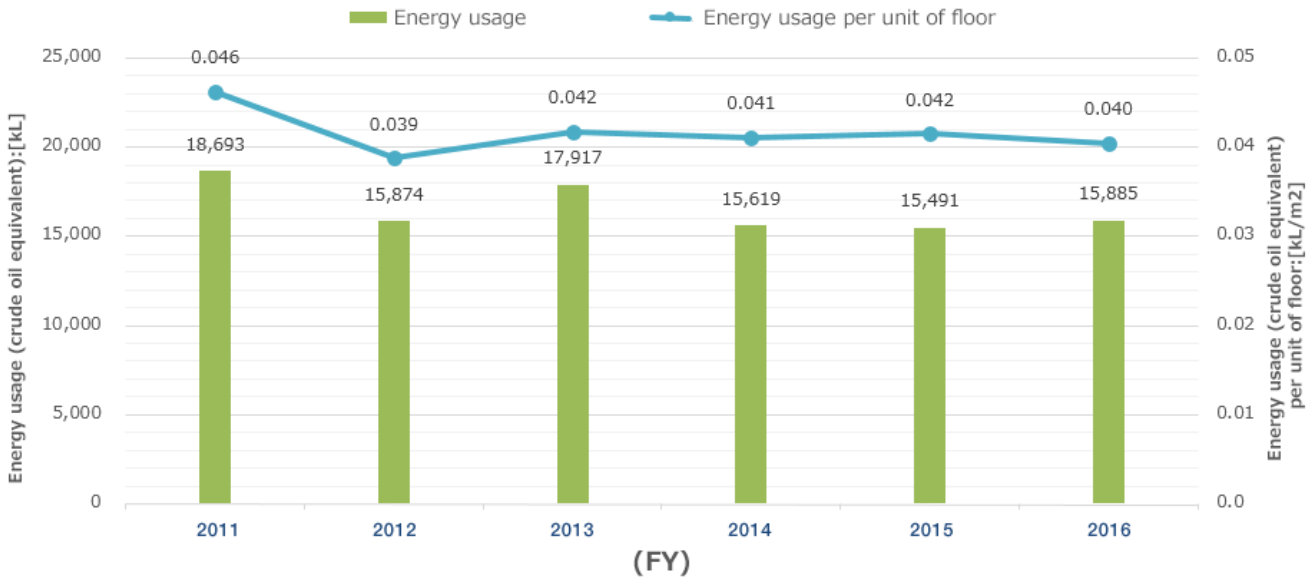
In recent years, CO2 emissions have trended upward, due in part to the operation of new production plants. However, consolidated sales have also expanded, and as a result emissions per unit of sales have decreased.

Energy Conservation

Casio revised its Environmental Action Plan in fiscal 2014 and established an energy conservation target that covers all of its sites. The goal is to reduce energy usage (crude oil equivalent kL) per unit of total floor space by 13% compared to fiscal 2011 by fiscal 2016. A further investigation of floor space during the recent evaluation of this target showed that revisions were required at several sites, and per unit of floor space data for past fiscal years has been revised.

In the results for fiscal 2016, the target achievement line stood at 0.0402 [kL/m2] compared with the target which had been set. Although the target was narrowly missed in fiscal 2016 (12.3% instead of 13%), compared with the previous fiscal year, energy usage per unit of floor space improved even though energy usage rose. This was due to measures including conversion of lighting fixtures from fluorescent lamps to LED. It is thought that if production volume rises even further in the future, this will offset the effect from conversion to high efficiency equipment. Nevertheless, Casio plans innovations in evaluation methods to continue making its reduction efforts clear.

Energy Conservation



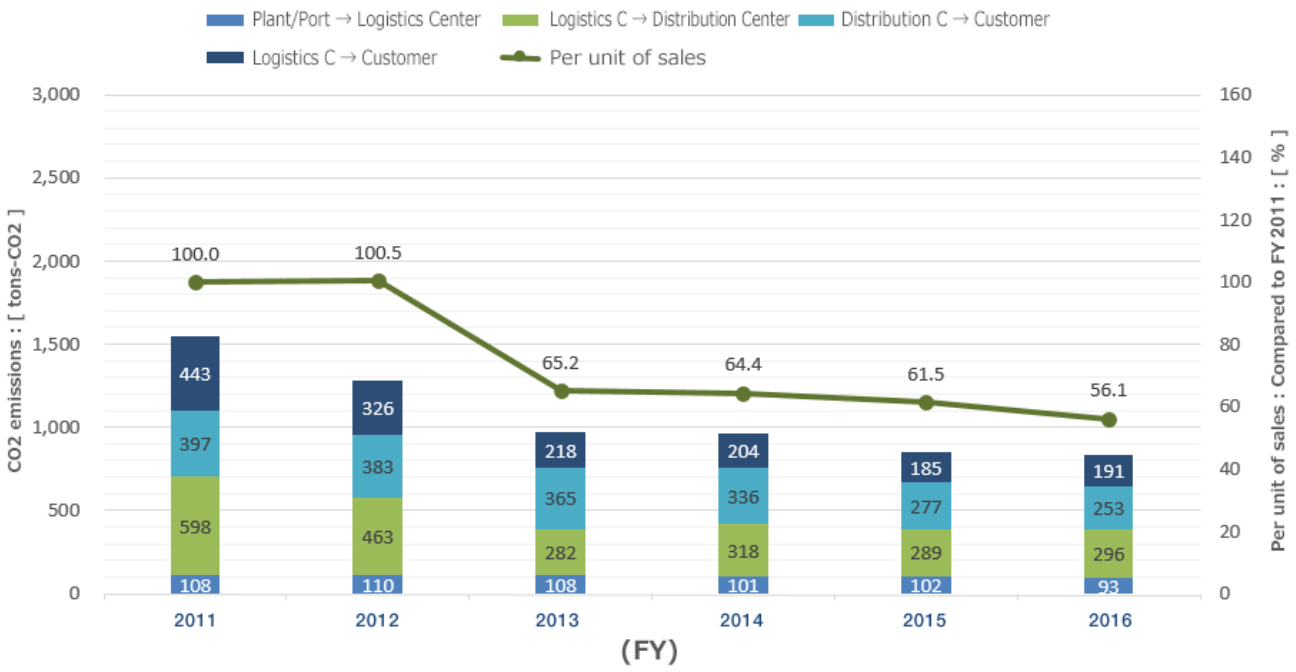
Due to errors in floor space, figures for energy usage per unit of floor space have been revised for past fiscal years.

Reducing CO2 Emissions in Logistics

The target for CO2 emissions from logistics activities in Japan is a 20% reduction per unit of domestic sales in fiscal 2016 compared to fiscal 2011. In fiscal 2016, the target year, emissions were 38.5% lower than in fiscal 2011, already achieving the target. Nevertheless, Casio will keep working to further reduce CO2 emissions. In August 2011, the logistics center was relocated from Suzuka City, Mie Prefecture to Toda City, Saitama Prefecture. In January 2012, the Eastern Distribution Center in Koto-ku, Tokyo was amalgamated with the logistics center. Through this staged effort, Casio reduced the number of consumer distribution centers in Japan from five to four. This transition not only shortened transportation distances, but also facilitated a modal shift from truck to rail, helping to further reduce CO2 emissions.

In fiscal 2013, Casio began an initiative to send products manufactured overseas directly to the Western Distribution Center in Osaka. This allows transport distances to be shortened significantly by cutting out transit through the Toda Logistics Center.

CO2 emissions and emissions per unit of sales for logistics in Japan



Waste

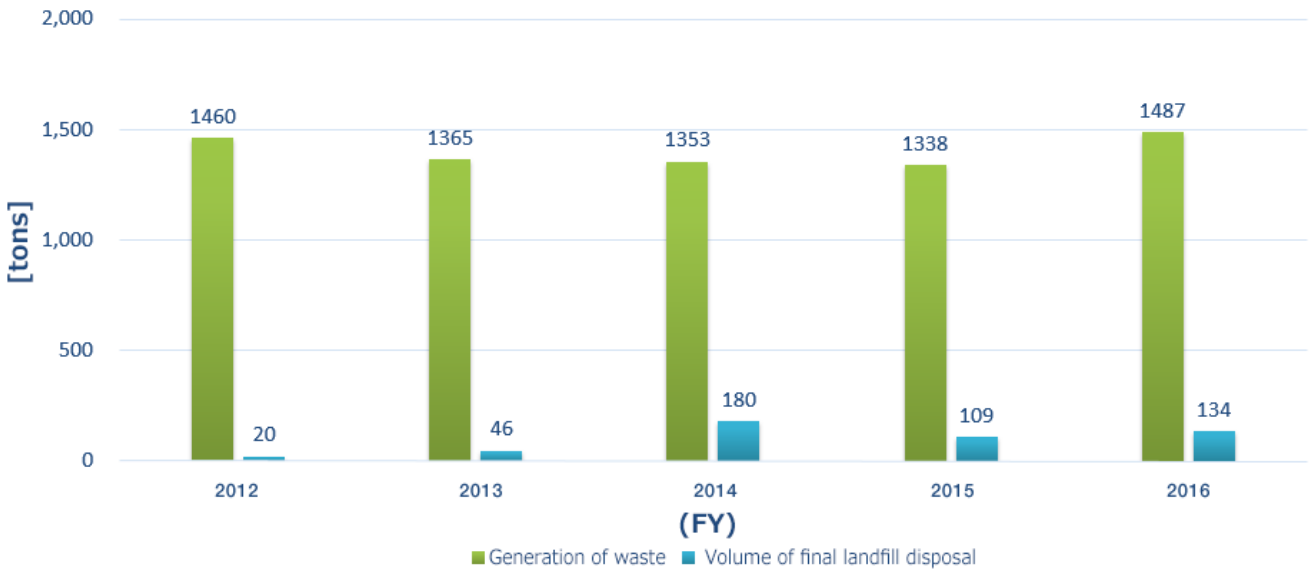
Reducing waste

Casio revised its Environmental Action Plan in fiscal 2014 and transitioned from per unit goals to absolute volume goals.

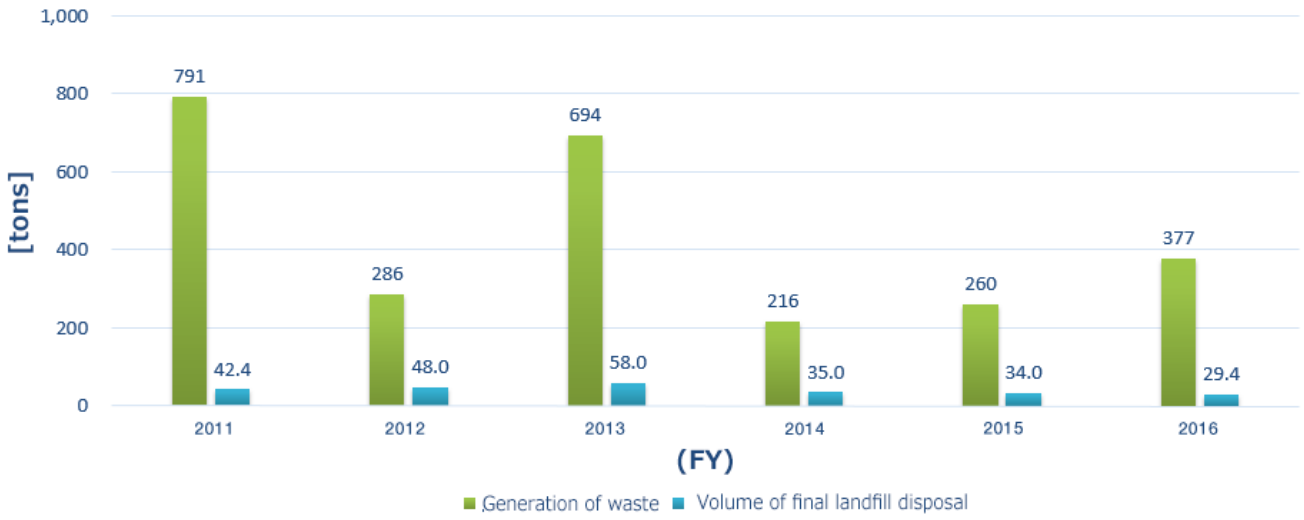
[All sites in Japan]
The target for waste from sites in Japan is a 4% reduction in fiscal 2016 compared to fiscal 2012. In fiscal 2016, the result of an approximate 2% increase compared to the base year was unsatisfactory. There was an 11% increase over the previous fiscal year, due to the impact of disposal of product and parts inventory at Yamagata Casio.

[Production sites outside Japan]
The target for waste from sites outside Japan is a 48% reduction in fiscal 2016 compared to fiscal 2011. In fiscal 2016, the target was achieved with a reduction of approximately 52% from the base year. Achievement outperformed the target significantly due to the closure of the Panyu Factory of Casio Computer (Hong Kong) in fiscal 2014.
Waste in fiscal 2016 increased by 45% over the previous fiscal year. However, this was due to an increase in waste at Casio Electronic Technology (Zhongshan) Co., Ltd.
Casio believes that group-wide measures to avoid an increase in waste are essential as it is forecast that waste will tend to rise with increases in production volume in the future.

Generation of waste and volume of final landfill disposal (all sites in Japan)



Generation of waste and volume of final landfill disposal (production sites outside Japan)



Water resources

Reducing input of water resources

Casio revised the parts of its Environmental Action Plan related to water resources in fiscal 2014 and transitioned from per unit goals to absolute volume goals.

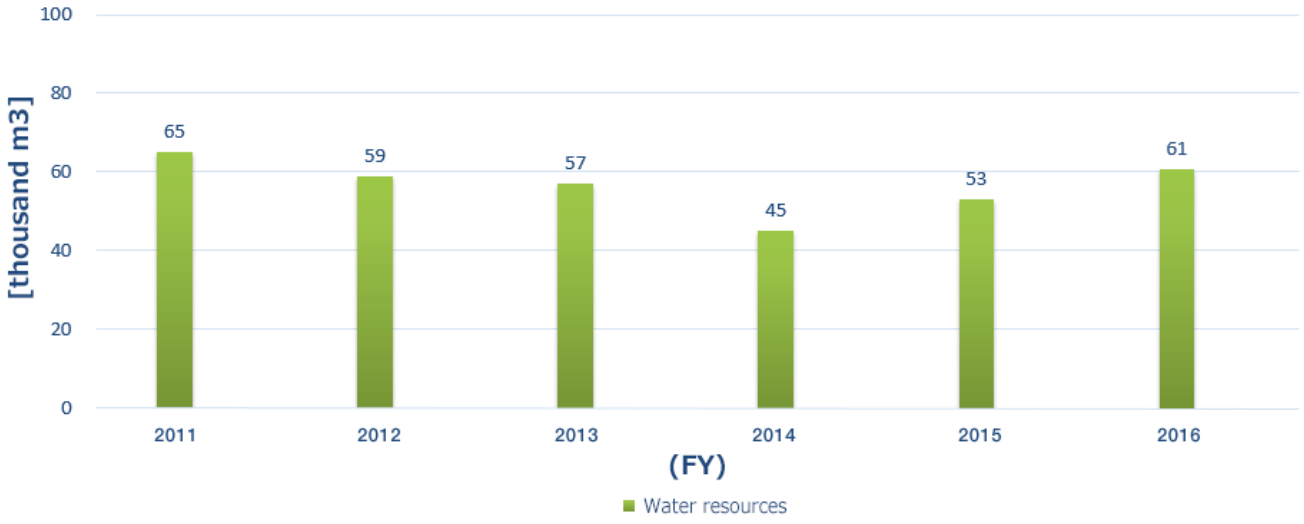
[Production sites in Japan]

Casio's goal is to reduce water usage at production sites in Japan by 5% in fiscal 2016 compared to fiscal 2011.

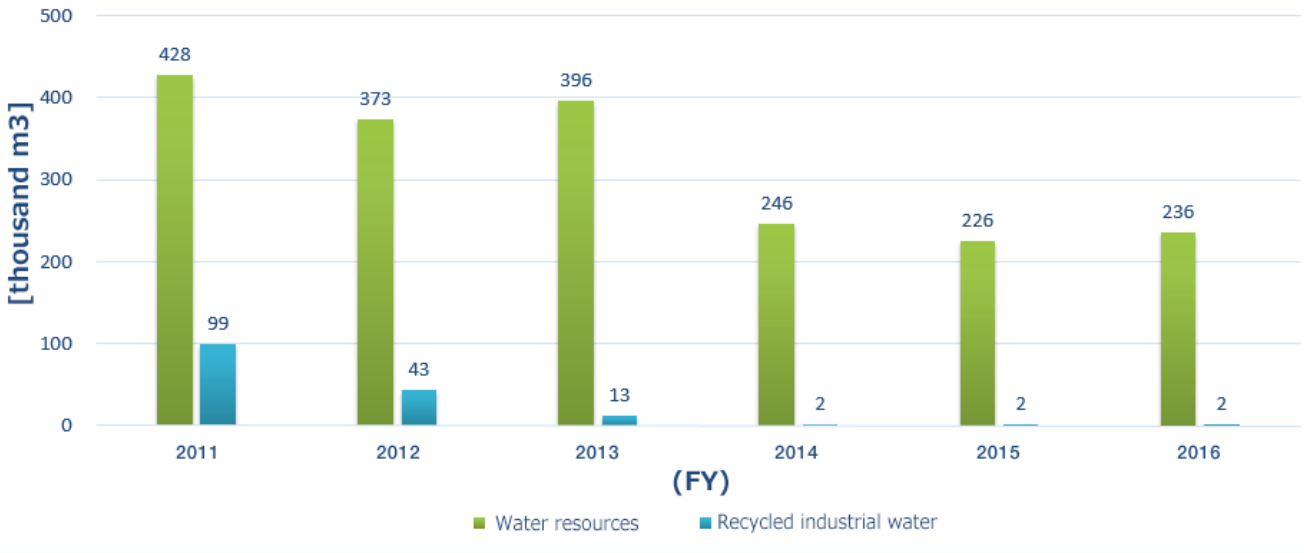
In fiscal 2016, although water usage increased by 15% over the previous fiscal year as the number of sites included in figures increased, the target for reduction from the base year was still achieved.

[Production sites outside Japan]
Casio's goal is to reduce water usage at production sites outside Japan by 5% in fiscal 2016 compared to fiscal 2011. In fiscal 2016, although water usage increased by 4% over the previous fiscal year due to the operation of new production sites, there was a significant reduction of approximately 45% from the base year, achieving the target, with a major effect from the closure of the Panyu Factory of Casio Computer (Hong Kong) in fiscal 2014.

Usage of water resources and recycled industrial water (production sites in Japan)



Usage of water resources and recycled industrial water (production sites outside Japan)

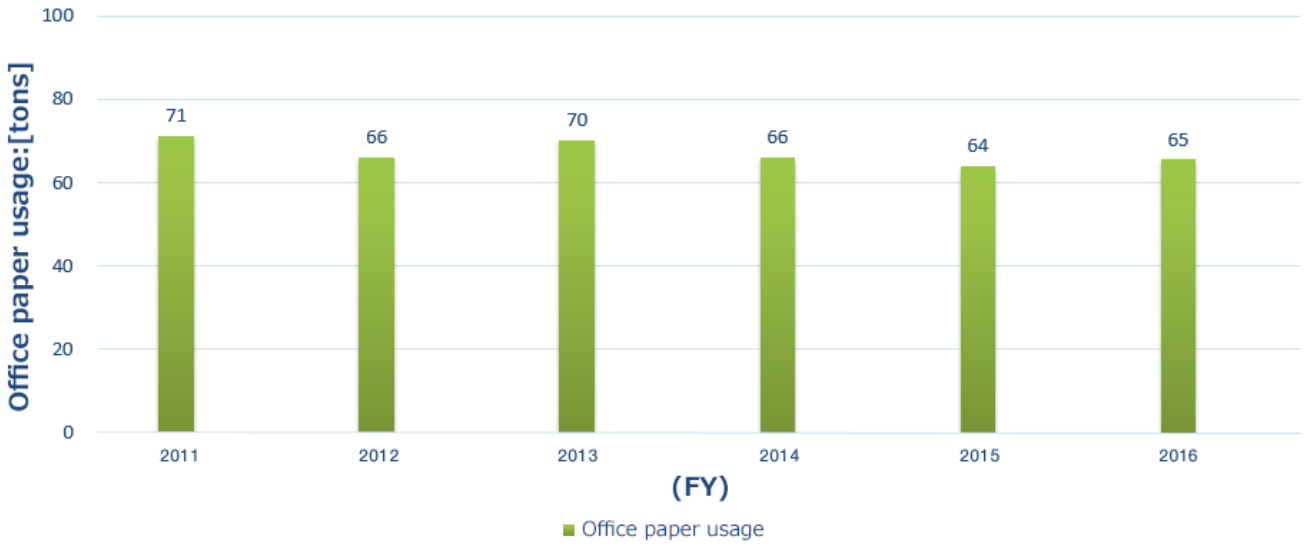


Paper resources

Reducing usage of paper resources

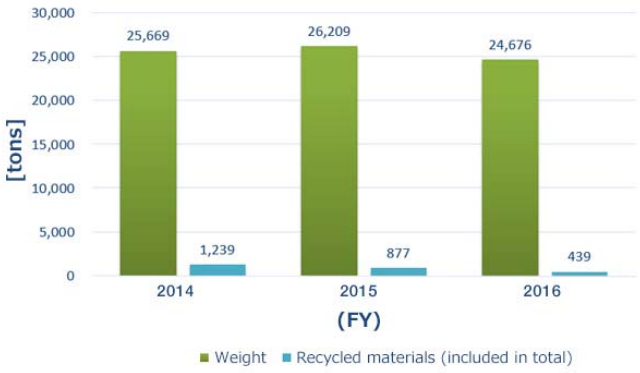
Casio revised the part of its Environmental Action Plan related to paper in fiscal 2014 and transitioned from per unit goals to total volume goals.
The goal is to reduce the volume of office paper used by 12% in fiscal 2016 compared to fiscal 2011.
In fiscal 2016, the volume of office paper used fell by approximately 8% from fiscal 2011, and the goal was not achieved, due in part to the increase from sites that were newly included in the scope of calculation for environmental data. Overall, a leveling-off trend is being seen at large-scale sites. Therefore, Casio plans to shift to qualitative initiatives such as expanding the use of certified paper as part of its measures to preserve biodiversity.

Office paper usage (all sites in Japan)



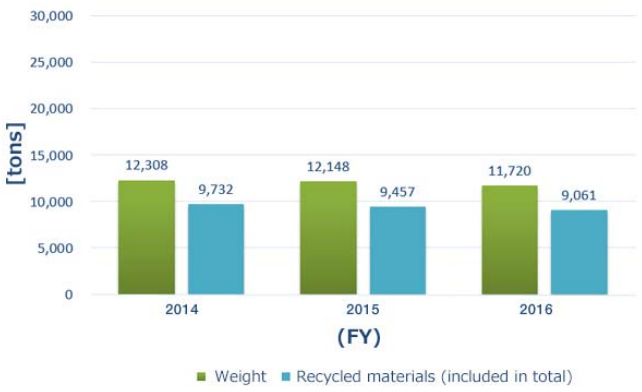
Usage of parts, materials, instruction manuals and packaging materials

Usage of parts and materials



Usage of instruction manuals

Usage of packaging materials



Scope of Data

For the calculation of environmental performance figures including material balances, data was gathered from the following 46 sites for the period of April 1 2015 to March 31, 2016 (fiscal 2016).
Numerical data on environmental performance for each site is listed separately.

Production sites in Japan (3 sites)	・ Yamagata Casio Co., Ltd. ・ Yamagata Casio Co., Ltd. (Yamanashi) ・ Casio Electronic Manufacturing Co., Ltd.
Office sites in Japan (18 sites)	・ Casio Computer Co., Ltd. (Headquarters) ・ Casio Computer Co., Ltd. (Hamura R&D Center) ・ Casio Computer Co., Ltd. (Hachioji R&D Center) ・ Casio Computer Co., Ltd. (7 sales sites) (Kudan, Osaka, Sendai, Saitama, Nagoya, Hiroshima, Fukuoka) ・ Casio Techno Co., Ltd. (Headquarters) ・ Casio Techno Co., Ltd. (Technical Center) ・ Casio Marketing Advance Co., Ltd. ・ Casio Business Service Co., Ltd. (Headquarters) ・ Casio Business Service Co., Ltd. (Kofu) ・ Casio Information Service Co., Ltd ・ CXD Next Co., Ltd. ・ Hatsudai Estate Building * Data for Casio Human Systems Co., Ltd., and Casio Communication Brains Co., Ltd. have been included in the data for the sites where they are located.
Production sites outside Japan (3 sites)	Asia (3 sites) ・ Casio (Thailand) Co., Ltd. ・ Casio Electronic Technology (Zhongshan) Co., Ltd. ・ Casio Timepiece (Dongguan) Co., Ltd.

Office sites outside Japan (22sites)	Asia (9 sites) ・ Casio Electronics (Shenzhen) Co., Ltd. ・ Casio Computer （Hong Kong） Ltd. ・ Casio (Guangzhou) Co., Ltd. ・ Casio India Co., Pvt. Ltd. ・ Casio (China) Co., Ltd. ・ Casio Taiwan Co., Ltd. ・ Casio Soft (Shanghai) Co., Ltd. ・ Casio Singapore Pte., Ltd. ・ Guangzhou Casio Techno Co., Ltd.
	Europe (8 sites) ・ Casio Europe GmbH ・ Casio Electronics Co., Ltd. ・ Casio France S.A. ・ Casio Espana S.L. ・ Casio Scandinavia AS ・ Casio Benelux B.V. ・ Casio Italia S.r.l. ・ Limited Liability Company Casio
	Middle East (1 site) ・ Casio Middle East FZE
	Americas (4 sites) ・ Casio America, Inc. ・ Casio Canada Ltd. ・ Casio Brasil Comercio De Produtos Eletronicos Ltda. ・ Casio Mexico Marketing, S. de R. L. de C.V.

Calculation Standards

1. Overall

(1) Items with no input, usage, handling or discharge performance have been left blank.

(2) Figures are rounded off to the second decimal point, in the specified units (figures shown as “0.0” are less than “0.05”).

(3) When total Casio Group values for VOC inputs/emissions and PRTR are 1 ton or more, data is shown separately for the individual site.

2. Inputs

(1) Energy input amount

All fossil fuels and power used in business activities are totaled for sites indicated in the Scope of Data.
Includes fuel usage by company vehicles, but does not include energy used for contracted logistics services, commuting, and business trips.
Crude oil equivalents are calculated based on Japan's Energy Conservation Act. Energy used at sites outside Japan is calculated on a crude oil equivalent by applying coefficients pursuant to Japan's Energy Conservation Act.

(2) Water resource input amount

Usage amounts of tap water and industrial water are combined.

(3) VOC input amount

For substances subject to follow-up surveys related to VOC emission controls by the four main electrical and electronics industry associations, those whose annual usage at each site exceeds 50 kg are included in the tabulations.

(4) Paper usage amount

Managed and tabulated based on the purchased amounts of paper used in printers, fax machines, and copy machines each year.
The weight of one sheet is determined for each paper size, and weights are calculated based on the amounts purchased.

(5) PRTR substance input amount

Calculated for chemical substances subject to Japan's PRTR Act whose annual amount handled per substance is 0.05 tons or more at each site.

3. Outputs

(1) CO2 emissions

The CO2 conversion factors for electricity used to calculate output amounts are as follows.
For emissions in Japan, Casio used the fiscal 2015 emission coefficient of 0.000554 (t-CO2/kWh), as announced by the Federation of Electric Power Companies to reflect an adjustment for depreciation credit.
For emissions in sites outside Japan, the “emissions factor adjusted for the CO2 emissions from CHP (combined heat and power) generated electricity” was used. It is taken from the latest year value (2003 estimate) in the Japan Electrical Manufacturers’ Association (JEMA) estimate survey (June 2006). Regarding CO2 equivalent for fuel, CO2 conversion coefficients were calculated using the emission coefficients and unit calorific values by fuel type based on Japan’s Global Warming Act, and then applied to different fuel types and totaled.

(2) Air pollutants

Calculated at sites that have smoke generating facilities based on the concentration measurements and gas emissions at each facility.
Yamagata Casio, Hamura R&D Center and Casio (Thailand) are included in tabulation of results.
Concentrations of dust emissions, NOx, and SOx, which must be managed by law, are measured at target sites, to confirm that they are below regulation levels.
The following substances are not used at any Casio site: dichloromethane, trichlorethylene, tetrachlorethylene, chloroform, vinyl chloride monomer, 1,3-butadiene, benzene, acrylonitrile, 1,2-dichloroethane, formaldehyde, trinickel disulfide, nickel nitrate, and acetaldehyde.

(3) Wastewater

Calculated from values at sites that measure wastewater amounts. Sites that do not measure wastewater amounts but can ascertain tap water use treat the amount of tap water used as their wastewater amount.
At sites with special facilities that fall under the Water Pollution Prevention Act and/or the Sewer Act, water quality surveys are conducted based on applicable laws, and confirmation is made that emissions are below regulatory limits. Since fiscal 2014, the applicable facilities have not been operating.
In the case of discharge into public sewer systems, BOD is left blank, but figures are shown if voluntary measurements are taken.

(4) PRTR

Release and transfer quantities are calculated for each chemical substance subject to Japan's PRTR Act whose annual usage is 0.05 tons or more.

(5) Waste

Waste is tabulated as the total amount of industrial waste generated when product is transferred from a Casio site to the processor, general waste derived from sites, and the quantity of valuables.
Because sales sites are small in size and mixed waste is handled by a contractor, it is difficult to get accurate figures for recycling quantities and landfill waste quantities. Thus, all waste from these sites is conservatively treated as landfill waste for calculation purposes.
Results for waste do not include Casio Timepiece (Dongguan).

(6) Base year figures

For the evaluation of greenhouse gases and energy conservation, emissions and usage of divested businesses are excluded from data in and after the base year in accordance with the GHG Protocol.