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 2017. 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 the Hachioji R&D Center of Casio Computer Co., Ltd., and the Kofu Office of Casio Business Service Co., Ltd.

The 21 leased-office sites in and outside Japan are not included in the scope of water intake calculation because water usage was difficult to ascertain.

See the third-party verification statement (PDF / 136KB)

Environmental Performance

In fiscal 2017, Casio Electronics (Shaoguan), a production site acquired from another company, began operations, causing a net increase of environmental impact for the Group as a whole. This ended up offsetting the reductions in CO_2 emissions achieved at other sites through efforts such as switching to LED lighting and upgrading to high efficiency air conditioners. On the other hand, Scope 1 and 2 emissions were down compared to the material balance in the previous year's report. This was because Casio reconsidered the method for calculating CO_2 emissions and uniformly applied the GHG Protocol's fiscal year- and country-specific emission factors for CO_2 emission calculations for electricity. In order to appropriately evaluate change over the years, the graph on the environmental data page shows recalculated figures for past years.

Waste increased substantially, above the net increase caused by Casio Electronics (Shaoguan). This was due in part to omissions in the reporting of valuables at Casio (Thailand) Co., Ltd. Casio (Thailand) experienced flooding in 2011 and thereafter moved its production site to a distant location with no risk of flooding. At that time, Casio's headquarters did not immediately discover the reporting omissions, which were caused by the destruction of work documents in the flood damage and by the transfer of personnel with the move to the new site. Accordingly, data was corrected retrospectively for waste, as well.

Since April 2016, Casio has been restructuring its environmental management implementation system, including integrating ISO 14001, and has strengthened its initiatives to improve environmental performance under a newly established basic policy. As part of that effort, it is reevaluating past performance, as necessary, and when errors or omissions are discovered, it will issue corrections at an appropriate time, such as when reports are published.

CO_2 | Waste | Water resources | Paper | Scope of data | Calculation standards

CO_2

Medium-and long-term greenhouse gas reductions

Casio has set the following medium-term target for Scope 1 and 2 emissions: “To reduce the total volume of global greenhouse gas emissions from business activities by 30% compared to fiscal 2006, by fiscal 2021.”

The target level was reached two times: in fiscal 2012 and fiscal 2014. However, with increases and decreases due to fluctuations in the amount of activity and the establishment of new production sites, there was a need to revise the target, including reduction measures.

At the same time, the Japanese government released new emissions reduction targets in fiscal 2017, accompanying the Paris Agreement coming into effect. In response, Casio changed its target year to fiscal 2031 and took the opportunity also to revise the method of calculation. Specifically, in the past it had adopted the average of the Federation of Electric Power Companies of Japan for sites in Japan and, in effect, a country-specific fixed coefficient for sites outside Japan. Now, considering changes in the circumstances of power generation, including with the spread of renewable energy, Casio has decided to uniformly apply the GHG Protocol’s fiscal year- and country-specific factors, and figures for past fiscal years have been recalculated.

Looking at the Group’s performance through fiscal 2017 based on the recalculated results, although there were unusual changes in the amount of activity due to the flooding in Thailand in fiscal 2012 and fiscal 2013, excluding that, emissions increased two years in a row in fiscal 2016 and fiscal 2017. This increase in emissions resulted from the start of operations at two new productions sites outside Japan one after the other—Casio Timepiece (Dongguan) in fiscal 2016 and Casio Electronics (Shaoguan) in fiscal 2017—which offset emissions reductions made by switching to energy-saving equipment at other sites.

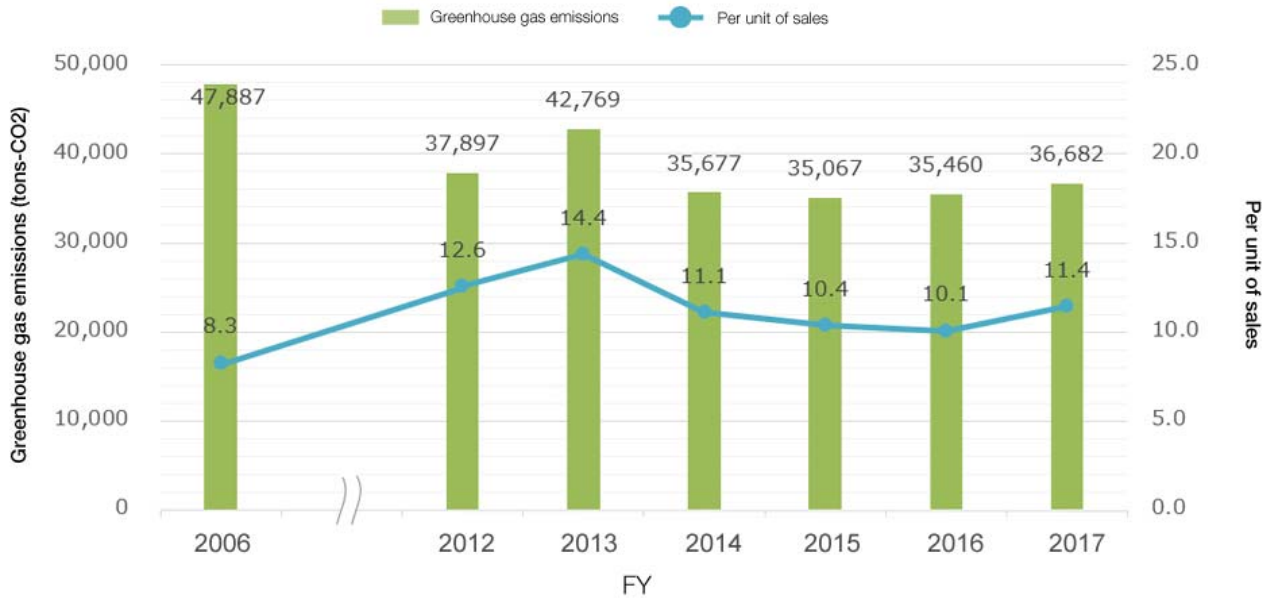
Going forward, Casio will carry out reduction measures aimed at achieving its target for 2030 while making appropriate investment decisions by scrutinizing cost effectiveness based on more objective analyses of reduction potential.

Casio also set new environmental action targets for fiscal 2018 and beyond, including the change of base year. Since Casio Electronics (Shaoguan), which began operations in fiscal 2017, is a production plant acquired from another company, in next fiscal year’s report Casio will adjust the base-year figures in accordance with the GHG Protocol, and add emission amounts for years after the base year but before the plant was acquired, based on Casio’s standards.

Greenhouse gas emissions

The CO_2 calculation method was revised, and emissions were recalculated back to the base year (2006).
Because of this, the relationship between the target value and the performance data for each year has changed slightly from the situation announced in the previous fiscal year's report.

Greenhouse gas emissions per unit of sales



Generally, there are expectations regarding CO_2 emissions per unit of sales as an indicator of CO_2 emissions efficiency associated with business activities. However, a feature of Casio's business is that its sales, which are the denominator in that equation, can fluctuate greatly depending on whether it has a hit product in the market. As a result, this measurement does not fit as a long-term assessment and so it is treated as reference data. In fiscal 2017, emissions per unit of sales worsened, as this was right after a new plant outside Japan commenced operations.

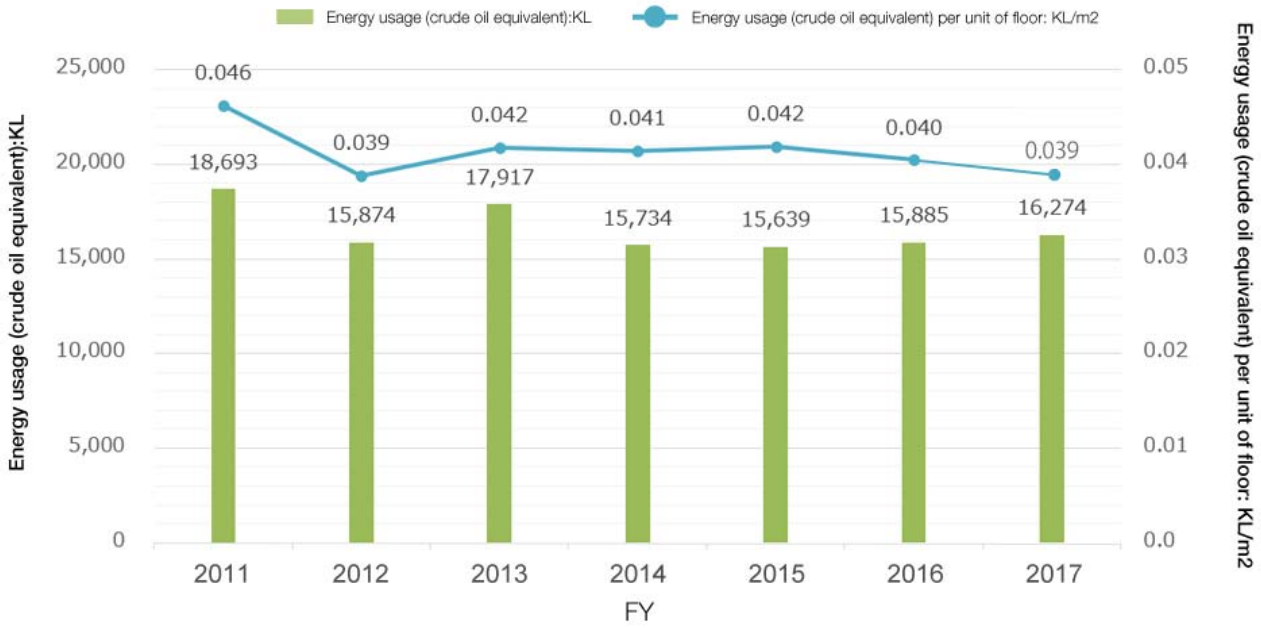
Energy Conservation

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 2017.

In fiscal 2017, it reached 0.0402 (kL/m2), which is the target achievement line and the level of fiscal 2012, when there was a temporary decline due to the Great East Japan Earthquake. So, even though energy consumption increased with the establishment of new sites, floor area increased even more, resulting in a decline in energy usage per unit of floor space.

When this target was established in fiscal 2014, it was set as a target management indicator, focusing on the fact that it is not easily influenced by fluctuations in sales performance, in contrast to energy usage per unit of sales, for which past targets had been established. However, due to the differences in the type of work conducted at production sites and offices, energy usage per unit of floor space differs greatly. Establishing a per-unit indicator for the total of all sites in this way makes it difficult to use as a target management indicator for each individual site. Accordingly, it was decided to remove this as a Group-wide target in fiscal 2018.

Energy Conservation

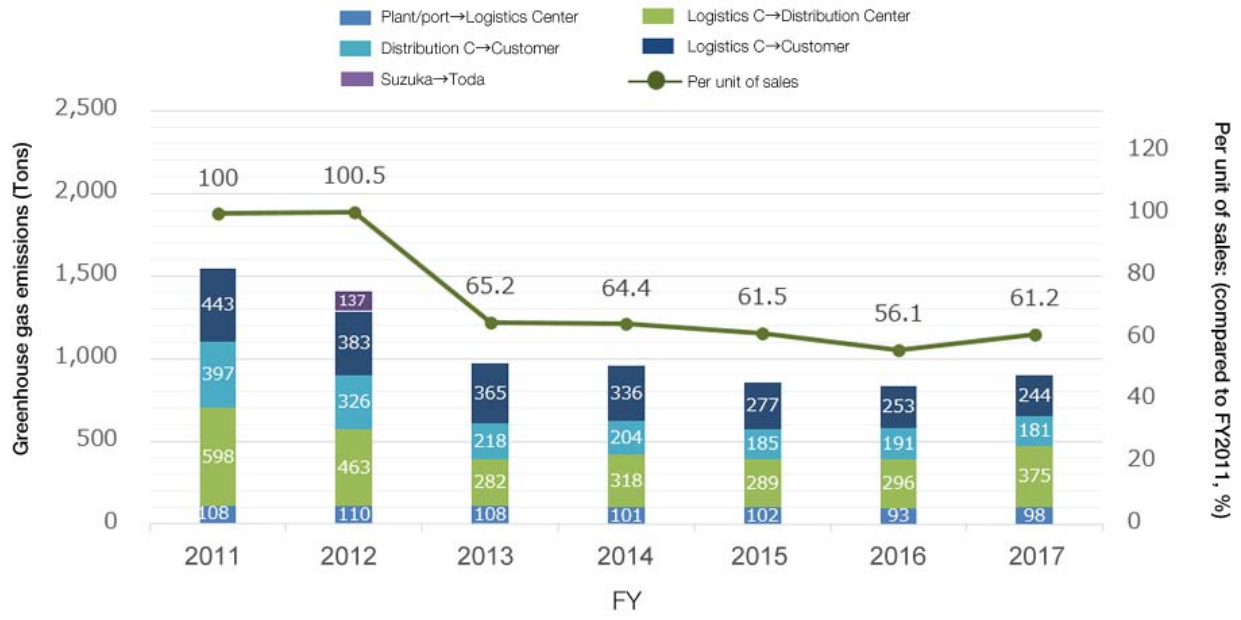


Reducing CO_2 Emissions in Logistics

The target for CO_2 emissions from logistics activities in Japan is a 20% reduction per unit of domestic sales in fiscal 2017 compared to fiscal 2011.

Emissions were about 39% lower, achieving the target. Going forward, Casio will keep working to further reduce CO_2 emissions.

CO_2 emissions and emissions per unit of sales for logistics in Japan



Waste

Reducing waste

Casio refers to the combined total of waste and valuables as “waste.” In fiscal 2014, Casio established absolute volume goals for this waste at sites in and outside Japan.

These goals are intended to reduce environmental impact by reducing the volume of waste generated. However, main sites that have continued to operate an environmental management system for many years have already minimized their environmental impact in terms of the volume of waste generated in usual business activities by a considerable level. Casio has therefore reached the situation where there are big fluctuations only in years with circumstances that differ from usual business activities. Looking ahead, Casio will aim to contribute to a recycling-oriented society through viewpoints and techniques that are more advanced than reducing the generation of waste.

[All sites in Japan]
The target for waste from sites in Japan (production sites plus offices) established in fiscal 2014 was a 4% reduction in fiscal 2017 compared to fiscal 2012. In fiscal 2017, the level of waste at Yamagata Casio returned to normal, the effect of having disposed of stocked products and other waste en masse the previous year. At Casio Electronics Manufacturing, on the other hand, disused articles were disposed as it wound down its business. Waste from all the target sites combined was therefore about the same amount as in fiscal 2016 and thus remained about 2% short of the target compared to the base year.

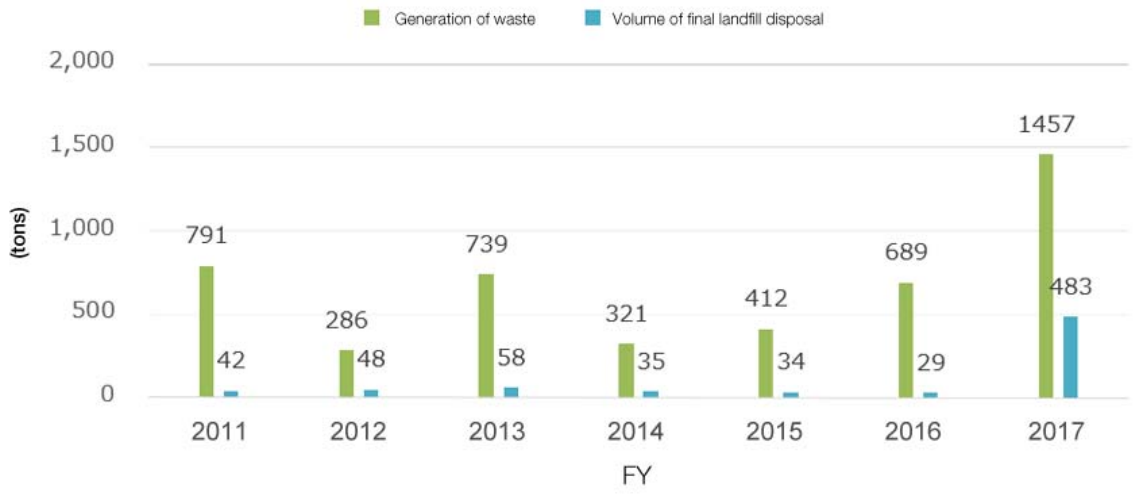
[Production sites outside Japan]
The target for waste from production sites outside Japan established in fiscal 2014 was a 48% reduction in fiscal 2017 compared to fiscal 2011. Very unfortunately, waste increased substantially in fiscal 2017 compared to the base year and compared to the previous year due to two reasons.

The first was a net increase in production due to the start of operations at Casio Electronics (Shaoguan), a new production site outside Japan, in fiscal 2017. Here, Casio anticipates that waste will gradually head toward minimization as the new site's organizational structure gets put into place.

The second cause was the discovery of omissions of valuables in reports from Casio (Thailand) over several years. Even though the valuables had been disposed of properly as such, they had been omitted from reports because a part of the work knowhow in the organization responsible for environmental performance reporting had been lost when personnel were transferred at the time the plant was moved to a remote location to avoid the risk of another flood following the flood damaged that occurred in 2011. Accordingly, change in the data on valuables over the years has been corrected for fiscal 2013 onward. Both of these causes are due to the fact that management system support does not always go as imagined at sites outside Japan. However, Casio plans to deal with this in the future through closer communication, including the creation of monthly reports.

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 water usage

Casio has set and managed absolute volume goals for water usage. Based on the characteristics of Casio's business, the majority of water usage in its business activities is used by employees, with water usage for production activities limited to such things as washing a few components.

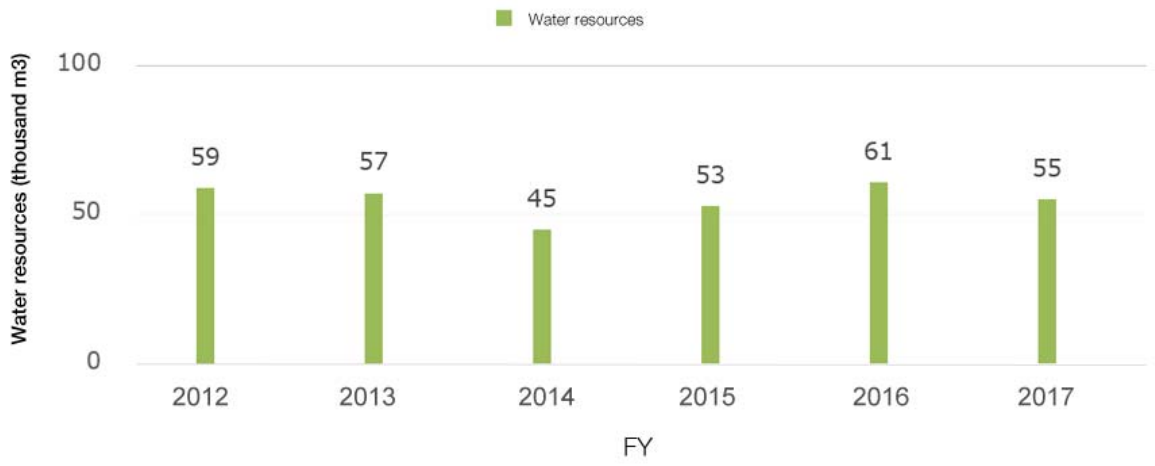
For this reason, minimization of water usage at the main sites that have continued to operate an environmental management system for many years has advanced to a certain level. Casio has therefore reached the situation where there are big fluctuations only in years with circumstances that differ from usual business activities, such as the discontinuation or new establishment of sites.

Based on this kind of business characteristic, Casio removed the perspective of water resources from its material issues. However, it will reanalyze the risk in the future and will aim to contribute to a recycling-oriented society through viewpoints and techniques that are more advanced than reducing water usage.

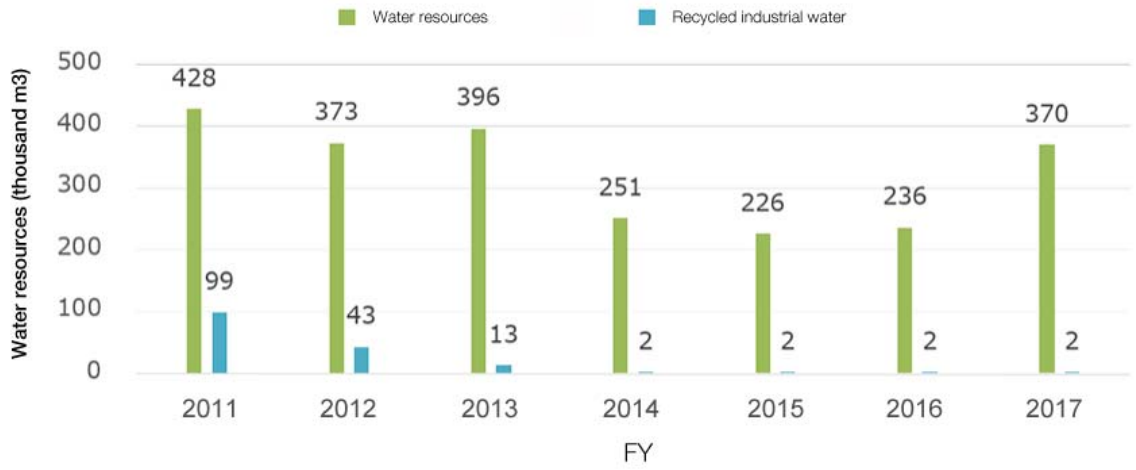
[Production sites in Japan]
The goal for production sites in Japan, established in fiscal 2014, was by a 5% reduction in water usage in fiscal 2017 compared to fiscal 2011. In fiscal 2017, water usage decreased compared to the previous year and the target line was achieved for the second year in a row for the reduction target against the base year.

[Production sites outside Japan]
The goal for production sites outside Japan, established in fiscal 2014, was by a 5% reduction in water usage in fiscal 2017 compared to fiscal 2011. In fiscal 2017, water usage increased by about 57% over the previous year with the addition of Casio Electronics (Shaoguan) as a new production site. However, at 407,000 m3, water usage came in below the target line, as it had the previous fiscal year. Since revising the target in 2013, a big reduction occurred with the closure of the Panyu Factory of Casio Computer (Hong Kong). And now the opening of Casio Electronics (Shaoguan) has brought water usage numerically back to the level of fiscal 2012.

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



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



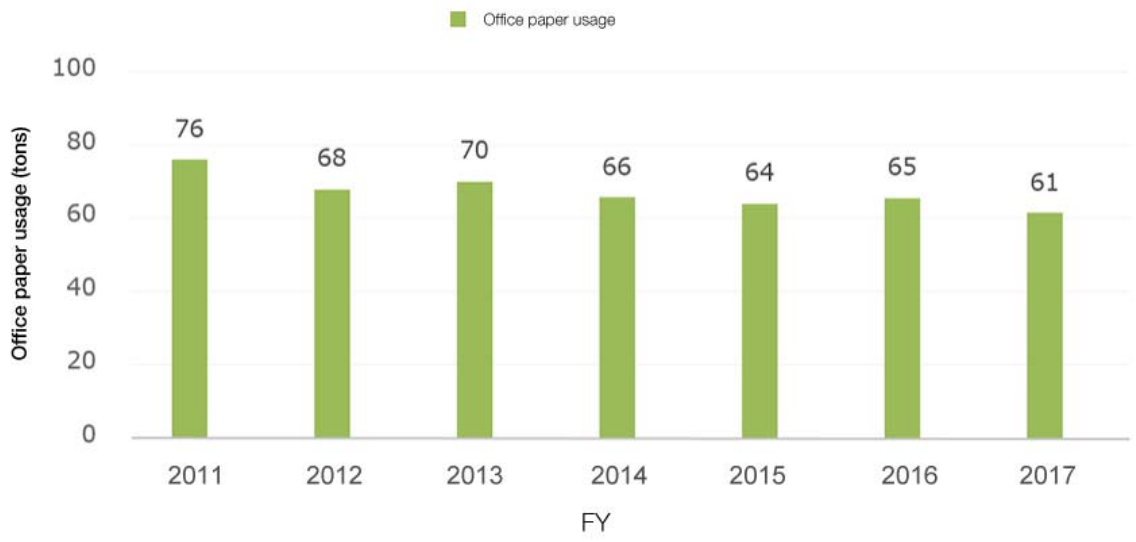
Paper resources

Reducing usage of paper resources

Casio manages paper with total volume goals.
The goal for sites in Japan, established in fiscal 2014, was to reduce the volume of office paper used by 12% in fiscal 2017 compared to fiscal 2011.
In fiscal 2017, the target line was achieved with a reduction of around 14% compared to fiscal 2011.

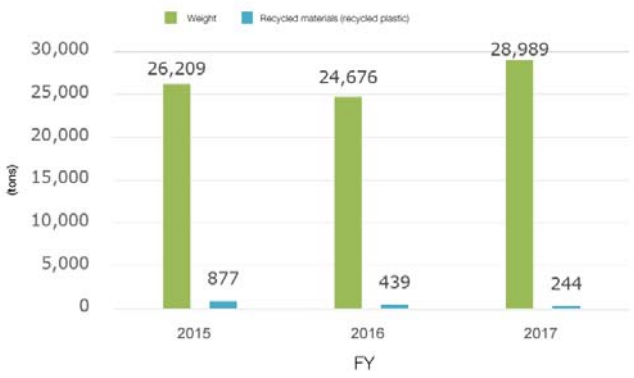
Therefore, Casio plans to shift to qualitative initiatives such as expanding the use of certified paper as part of its measures to preserve biodiversity.

Office paper usage (all sites in Japan)

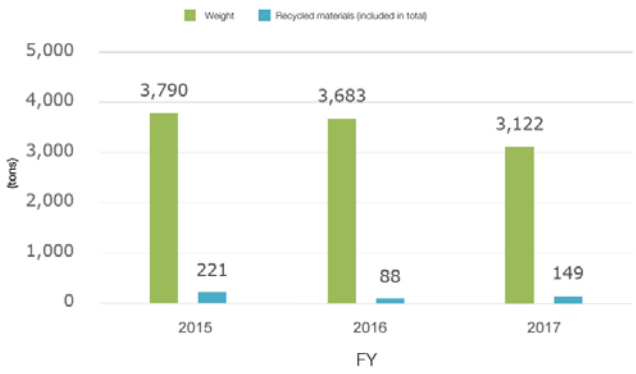


Usage of parts, materials, instruction manuals and packaging materials

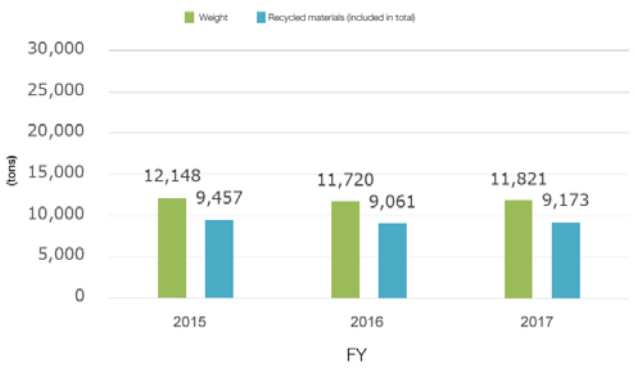
Usage of parts and materials



Usage of instruction manuals



Usage of packaging materials



Scope of Data

For the calculation of environm ental performance figures includ ing material balances, data was gathered from the following 48 sites（The coverage by employee number is 98.1%）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 （19 sites)	・ Casio Computer Co., Ltd. (Headquarters) ・ Casio Computer Co., Lt d. (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 ・ Repplex Inc. *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 (4 sites)	Asia (4 sites) ・ Casio (Thailand) Co., Ltd. ・ Casio Electronic Technology (Zhongshan) Co., Ltd. ・ Casio Timepiece (Dongguan) Co., Ltd. ・ Casio Electronics (Shaoguan) 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.

Office sites outside Japan (22sites)	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) CO_2 emissions
Used the fiscal year- and country-specific CO_2 emission factors for electricity listed in the GHG Protocol's calculation tool (GHG emissions from purchased electricity 4.8) to calculate CO_2 from electricity. The latest factors for a given country are temporarily used for fiscal years not listed in the calculation tool.
Regarding CO_2 equivalent for fuel, CO_2 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.

(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.