Environmental Data

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Greenhouse gas emissions(Scope1 and Scope2)

($t\text{-}CO_2$)

	FY2014	FY2015	FY2016	FY2017	FY2018
Scope1	6,043.2	5,729.3	5,483.1	5,619.2	5,670.1
Scope2	32,901.2	32,494.4	33,084.5	31,944.0	30,926.9
Total	38,944.3	38,223.7	38,567.6	37,563.2	36,597.0

(Breakdown by type of site)

	FY2014	FY2015	FY2016	FY2017	FY2018
Production sites in Japan	8,431.8	8,472.4	8,984.6	7,941.0	6,953.6
Office sites in Japan	10,150.5	9,613.6	8,854.6	8,951.1	9,108.9
Production sites outside Japan	14,220.3	14,031.7	14,461.8	14,199.9	14,178.3
Office sites outside Japan	6,141.6	6,106.0	6,266.7	6,471.2	6,356.3

Waste related data

Emissions of waste, etc. by type of site

(t)

	FY2014	FY2015	FY2016	FY2017	FY2018
Production sites in Japan	582.9	634.4	827.3	761.6	694.6
Office sites in Japan	769.9	703.6	661.1	725.5	718.0
Production sites outside Japan	320.6	411.6	689.1	1,456.9	2,599.6
Office sites outside Japan	700.2	924.7	657.6	626.8	640.5
Total	2,373.5	2,674.3	2,835.1	3,570.8	4,652.7

Disposal breakdown and recycling rate for generation of waste, etc.

(t)

		FY2014	FY2015	FY2016	FY2017	FY2018
Generation	Valuables	1,151.8	1,394.6	1,645.8	1,716.7	1,974.5
	Waste	1,221.7	1,279.7	1,189.3	1,854.1	2,678.2
Disposal	Recycled	1,897.0	2,146.1	2,146.9	2,686.6	4,090.6
	Landfill disposal	265.5	207.2	227.0	701.3	368.1
	Reduction	211.0	321.0	461.2	182.8	194.0
Recycling rate		88%	91%	90%	79%	92%

Recycling rate =Recycled waste/(Recycled waste+ Landfill disposal)

Water resources

(thousand m3)

	FY2014	FY2015	FY2016	FY2017	FY2018
Production sites in Japan	44.9	52.9	60.9	55.1	41.5
Office sites in Japan	168.6	85.9	79.7	81.5	76.7
Production sites outside Japan	377.7	381.5	394.8	369.7	371.1
Office sites outside Japan	17.4	17.2	17.2	17.7	16.7
Total	608.7	537.4	552.6	524.0	506.0

Usage of parts, materials, instruction manuals, packaging materials and recycle materials

(t)

		FY2014	FY2015	FY2016	FY2017	FY2018
Usage of parts and materials		25,669.0	26,209.0	24,676.0	13,985.0	11,508.1
	recycle materials	1,239.0	877.0	439.0	244.0	238.6
	recycle rate	4.8%	3.3%	1.8%	1.7%	2.1%
Usage of instruction manuals		3,235.0	3,790.0	3,683.0	3,122.0	3,059.0
	recycle materials	77.0	221.0	88.0	149.0	156.1
	recycle rate	2.4%	5.8%	2.4%	4.8%	5.1%
Usage of packaging materials		12,308.0	12,148.0	11,720.0	11,821.0	11,301.0
	recycle materials	9,732.0	9,457.0	9,061.0	9,173.0	8,864.0
	recycle rate	79.1%	77.8%	77.3%	77.6%	78.4%

Third-party verification

In order to ensure the reliability of its environmental data reporting, in fiscal 2011 Casio began requesting third-party verification.

Casio commissioned SGS Japan Co., Ltd. to conduct the audit in fiscal 2018. 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 Casio (Thailand) Co., Ltd., and the Casio Electronic Technology (Zhongshan) Co., Ltd.

Leased-office sites are not included in the scope of calculation because water usage and waste was difficult to ascertain.

See the third-party verification statement (PDF / 137KB)

Scope of Data

The scope of the environmental performance data for fiscal 2018 is shown below.
Period covered: April 1, 2017 – March 31, 2018
Sites covered: 73 Casio Group sites (covering 99.6% of employees)
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(44 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. (33 sales sites) (Kudan, Osaka, Sendai, Saitama, Nagoya, Hiroshima, Fukuoka and other sites) ・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(22 sites)	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.

   (2) Water resource input amount
   Usage amounts of tap water, industrial water and groundwater 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.

(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.
For sites that were included in the scope in and after the base year due to acquisition, etc., historical data on emissions and use is only added to historical data for fiscal years in and after the base year when it is available in accordance with the GHG Protocol, which is the international standard.

4. Scope 3 calculation methods

Category 1	Purchased goods and services	Amount of activity: Amount of purchased consumables, raw materials, and packaging materials, salaries of temporary staff, purchased tap water, industrial water, and advertising expenses. Unit: Calculated by multiplying each item by the emissions unit of the purchased amount and adding together the total. Emission factor database for calculating organizational GHG emissions throughout the supply chain version 2.5 issued by Japan's Ministry of Environment and CFP COMMUNICATION PROGRAM DB version 1.01.
Category 2	Capital goods	Amount of activity: Amount of capital investment by all consolidated subsidiaries. Unit: Calculated by multiplying the emissions unit corresponding to the amount of capital investment. Emission factor database for calculating organizational GHG emissions throughout the supply chain version 2.5 issued by Japan's Ministry of Environment.
Category 3	Fuel-and-energy-related activities (not included in Scope 1 or 2)	Amount of activity: Amount of purchased electricity and fuels. Unit: Calculated by multiplying the emissions unit of each type and adding together the total. Emission factor database for calculating organizational GHG emissions throughout the supply chain version 2.5 issued by Japan's Ministry of Environment and CFP COMMUNICATION PROGRAM DB version1.01.
Category 4	Upstream transportation and distribution	Amount of activity: Amount of domestic and overseas shipment. Unit: Calculated by multiplying the weight and transportation distance by the emissions unit of each transportation type and adding together the total. (Trucks: Specific fuel consumption using the improved ton/kilo method. Trains, ships and airplanes: CO2 emissions output level using the conventional ton/kilo method)
Category 5	Waste generated in operations	Amount of activity: Emissions of each type of waste. Unit: Calculated by multiplying the emissions unit of each type and adding together the total. Emission factor database for calculating organizational GHG emissions throughout the supply chain version 2.5 issued by Japan's Ministry of Environment.
Category 6	Business travel	Amount of activity: Number of domestic and overseas employees. Unit: Emissions unit per employee. Emission factor database for calculating organizational GHG emissions throughout the supply chain version 2.5 issued by Japan's Ministry of Environment.

Category 7	Employee commuting	Amount of activity: Transportation expenses paid to employees. Unit: Calculated by estimating the train/car ratio from employee commuting style, multiplied by the emissions unit of the amount of transportation expenses for each style and adding together the total. Emission factor database for calculating organizational GHG emissions throughout the supply chain version 2.5 issued by Japan's Ministry of Environment.
Category 8	Upstream leased assets	Amount of activity: Domestic G-SHOCK stores, sales area for digital paintings and other and number of business days. Unit: Calculated by determining the total sales area, and multiplying the emissions unit of the sales area. The number of business days is calculated on a pro-rate basis. Emission factor database for calculating organizational GHG emissions throughout the supply chain version 2.5 issued by Japan's Ministry of Environment.
Category 9	Downstream transportation and distribution	Transportation to retailers from the distribution hubs of regular sales companies is outside the scope of Casio's expense payment. Since this is difficult to ascertain and the CO2 emissions are deemed to be fairly small compared to Category 4 upstream transportation and distribution, it is not included in calculations.
Category 10	Processing of sold products	Although one of our group companies provides name printing and other services, emissions of CO2 and other substances from this business activity is included in Scopes 1 and 2.
Category 11	Use of sold products	Amount of activity: Number of products by category. Unit: Use of products is calculated by multiplying the emissions unit of each product for the supported period (five years; seven years for timepieces). Regarding the use period, relevant industrial standards are followed. In cases when such an industrial standard does not exist, Casio defines the use period. Regarding electricity, CO2 emissions were calculated by applying the GHG Protocol, which is the international standard. (Factors were used for Japan, Europe, Asia, the UK, and North America.) Regarding products that require battery replacement, CO2 emissions related to manufacture of the battery are also included in the calculation. (The purchased cost for the manufacturer of each battery is used in the calculation.) Emission factor database for calculating organizational GHG emissions throughout the supply chain version 2.5 issued by Japan's Ministry of Environment.

Category 12	End of life treatment of sold products	Amount of activity: Emissions from the product itself and container packaging materials. Unit: Calculated by multiplying the emissions unit of each type and adding together the total. Emission factor database for calculating organizational GHG emissions throughout the supply chain version 2.5 issued by Japan's Ministry of Environment.
Category 13	Downstream leased assets	Due to the disposal of relevant buildings, it is not subject to calculation from fiscal 2016.
Category 14	Franchises	The franchise formula is not used.
Category 15	Investments	Amount of activity: Emissions from equity method affiliates and companies which hold specific annual stocks and constructive stocks. Unit: Calculated by multiplying the emissions from investment destinations by the equity method ratio or the share holding ratio.