
Scope3

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Building a low-carbon society is one of the medium- to long-term goals of the Casio Environmental Vision 2050 and the Casio Environmental Declaration 2020. This will require not only efforts from within the Casio Group, but also a commitment to reducing CO₂ emissions both upstream and downstream in the supply chain. For this reason, Casio has calculated emissions for each category in an effort to help everyone involved "visualize CO₂."

CO₂ emissions for the entire Casio Group supply chain in fiscal 2017 were 826,837 t-CO₂.

- Scope 1 direct emissions (e.g., fossil fuels, natural gas) were calculated at 5,076 t-CO₂.
- Scope 2 indirect emissions (e.g., electricity) were calculated at 31,606 t-CO₂.
- Scope 3 other emissions (e.g., use of sold products and end-of-life treatment of sold products, transportation and distribution, employee commuting, lease assets, and investments) were calculated for 11 of 15 categories (with four lowest-impact categories excluded). When CO₂ emissions were calculated pursuant to the GHG Protocol that serves as the international standard, emissions for fiscal 2017 stood at 790,155 t-CO₂, down 2.4% from the previous year.

As a result, Scope 3 accounted for more than 96% of entire supply chain emissions.

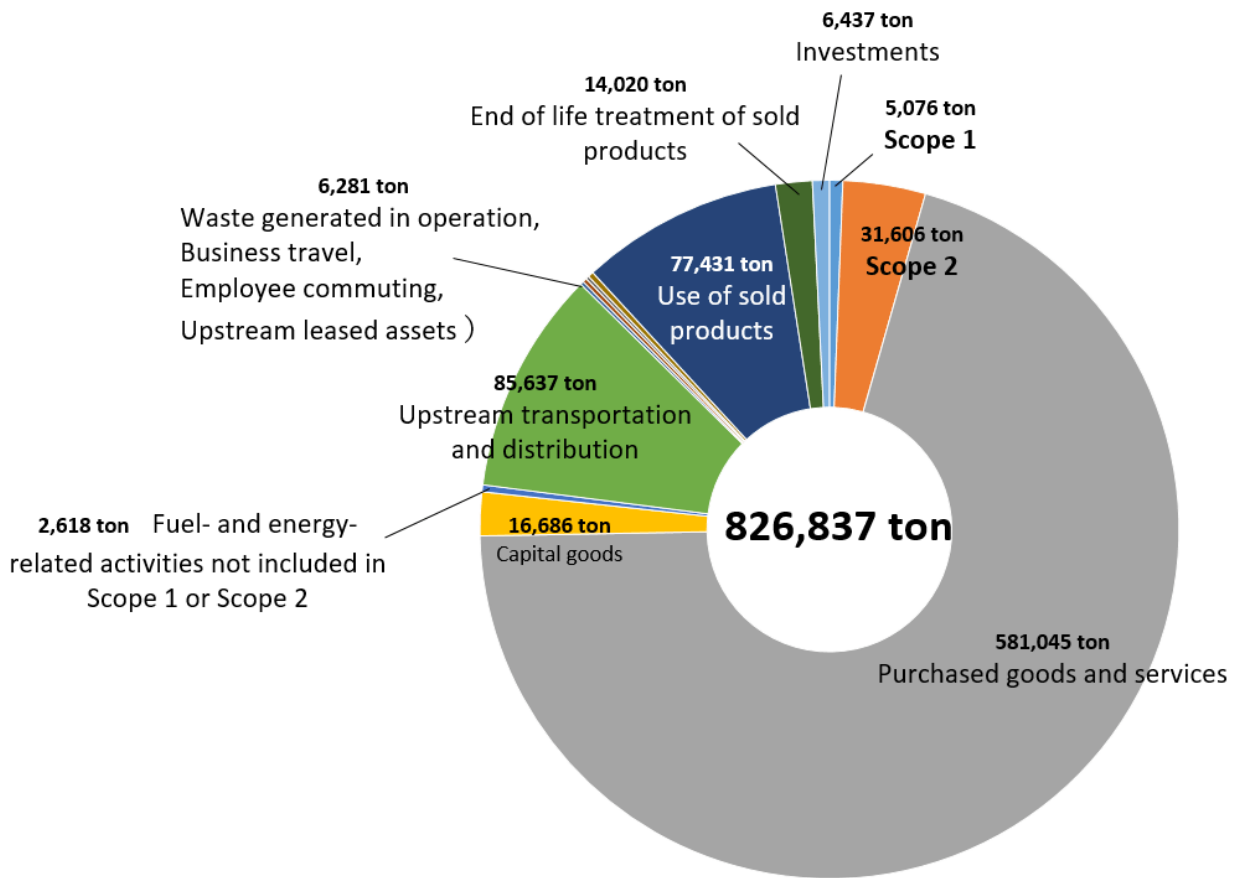
Within Scope 3, purchased goods and services accounted for the greatest share, about 70%.

In the future, the following issues will be addressed:

- Improve calculation accuracy in each category
- Propose and implement emission reduction measures for each category within Scope 3
- Develop measures for reducing emissions both upstream and downstream in the value chain

GHG Protocol: International standards for calculating and reporting greenhouse gas emissions

CO₂ emissions for the entire Casio Group supply chain



Efforts to Ascertain Scope 3

Category		CO ₂ emissions in fiscal 2016	
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Scope 1		5,076	0.61%
Scope 2		31,606	3.82%
Scope 3		790,155	95.57%
1	Purchased goods and services	581,045	70.27%
2	Capital goods	16,686	2.02%
3	Fuel- and energy-related activities not included in Scope 1 or Scope 2	2,618	0.32%
4	Upstream transportation and distribution	85,637	10.36%
5	Waste generated in operations	1,297	0.16%
6	Business travel	1,597	0.19%
7	Employee commuting	1,253	0.15%
8	Upstream leased assets	2,134	0.26%

9	Downstream transportation and distribution	-	-
10	Processing of sold products	-	-
11	Use of sold products	77,431	9.36%
12	End of life treatment of sold products	14,020	1.70%
13	Downstream leased assets	-	-
14	Franchises	-	-
15	Investments	6,437	0.78%
Total		826,837	100%

Category 4: The breakdown for transportation and shipping (upstream) is shown below. (Unit: t-CO₂)

Japan: Truck: 850, Railway: 49

Overseas: Railway : 1,143 Airplane: 67,544 Ship: 16,052

Scope 3 calculation methods

Category 1	Purchased goods and services	<p>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.</p> <p>Emission factor database for calculating organizational GHG emissions throughout the supply chain ver 2.4 issued by Japan's Ministry of Environment and CFP COMMUNICATION PROGRAM DB ver1.01.</p>
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Category 2	Capital goods	<p>Amount of activity: Amount of capital investment by all consolidated subsidiaries.</p> <p>Unit: Calculated by multiplying the emissions unit corresponding to the amount of capital investment. (Emissions unit DB ver2.0)</p> <p>Emission factor database for calculating organizational GHG emissions throughout the supply chain ver 2.4 issued by Japan's Ministry of Environment.</p>
Category 3	Fuel-and-energy-related activities (not included in Scope 1 or 2)	<p>Amount of activity: Amount of purchased electricity and fuels.</p> <p>Unit: Calculated by multiplying the emissions unit of each type and adding together the total. (CFP COMMUNICATION PROGRAM DB ver1.01)</p> <p>Emission factor database for calculating organizational GHG emissions throughout the supply chain ver 2.4 issued by Japan's Ministry of Environment and CFP COMMUNICATION PROGRAM DB ver1.01.</p>
Category 4	Upstream transportation and distribution	<p>Amount of activity: Amount of domestic and overseas shipment.</p> <p>Unit: Calculated by multiplying the weight and transportation distance by the emissions unit of each transportation type and adding together the total.</p> <p>(Trucks: Specific fuel consumption using the improved ton/kilo method. Trains, ships and airplanes: CO₂ emissions output level using the conventional ton/kilo method)</p>
Category 5	Waste generated in operations	<p>Amount of activity: Emissions of each type of waste.</p> <p>Unit: Calculated by multiplying the emissions unit of each type and adding together the total.</p> <p>Emission factor database for calculating organizational GHG emissions throughout the supply chain ver 2.4 issued by Japan's Ministry of Environment.</p>
Category 6	Business travel	<p>Amount of activity: Number of domestic and overseas employees.</p> <p>Unit: Emissions unit per employee.</p> <p>Emission factor database for calculating organizational GHG emissions throughout the supply chain ver 2.4 issued by Japan's Ministry of Environment.</p>

Category 7	Employee commuting	<p>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.</p> <p>Emission factor database for calculating organizational GHG emissions throughout the supply chain ver 2.4 issued by Japan's Ministry of Environment.</p>
Category 8	Upstream leased assets	<p>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.</p> <p>Emission factor database for calculating organizational GHG emissions throughout the supply chain ver 2.4 issued by Japan's Ministry of Environment.</p>
Category 9	Downstream transportation and distribution	<p>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.</p>
Category 10	Processing of sold products	<p>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.</p>
Category 11	Use of sold products	<p>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). 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.)</p> <p>Emission factor database for calculating organizational GHG emissions throughout the supply chain ver 2.4 issued by Japan's Ministry of Environment.</p>

Category 12	End of life treatment of sold products	<p>Amount of activity: Emissions from the product itself and container packaging materials.</p> <p>Unit: Calculated by multiplying the emissions unit of each type and adding together the total.(Emissions unit DB ver2.0)</p> <p>Emission factor database for calculating organizational GHG emissions throughout the supply chain ver 2.4 issued by Japan's Ministry of Environment.</p>
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	<p>Amount of activity: Emissions from equity method affiliates and companies which hold specific annual stocks and constructive stocks.</p> <p>Unit: Calculated by multiplying the emissions from investment destinations by the equity method ratio or the share holding ratio.</p>