Panasonic Group Sustainability Data Book 2025
Standards for Calculating Main Environmental Performance Indicators

Reporting period

April 1, 2024 - March 31, 2025

Scope of this report

Product-related: All products developed in the reporting period.
Factory-related: Manufacturing sites in and outside Japan that have established Environmental Management Systems.
Some consolidated subsidiaries that joined the Group through acquisitions or other means may not be included.
Others: Scope according to individual initiatives.

Standards

Item	Indicator	Calculation method
Energy・CO_2	CO_2 emissions from the use of main products	CO2 emissions during use of products: Sum of (1) and (2) below (1) CO2 emissions from energy consumption during use of products sold by Panasonic Annual energy consumption*2 of main products*1 whose respective energy usage is high × Sales quantity × Product life*3 × CO2 emission factor (2) Leakage of refrigerant during use of products sold by Panasonic Refrigerant filling amounts of target products*4 × Annual leakage rate*5 × Sales quantity × Product life × Global warming potential *1 Lighting equipment and lamps, household air conditioners, commercial air conditioners, household refrigerators, washing and drying machines, ventilation fans, bathroom ventilation driers, electric water heaters, electric fans, A2W (heat pump type water heating systems), EcoCute, rice cookers, dishwasher and dryers, LCD TVs, OLED TVs, microwave ovens, heat exchanger units, blowers, mounting machines, showcases, hair dryers, IH cooking heaters, dehumidifiers, range hoods, vacuum cleaners, irons, electric thermal pots, projectors, digital signages, welding machines, welding robots, component insertion machines, screen printers, mobile computers, electric bidet toilet seats, freezing machines, commercial freezer and refrigerators, absorption freezing machines, pumps, telephones, air purifiers, fax machines, humidifiers, degital cameras, headphones, electrically-assisted bicycle, motors for air conditioning, motors for refrigerator, motors for FA application, etc. *2 Set based on the data of a representative model. For each product category, the model that was sold in the largest quantity in each region was selected as a representative model. *3 Period of use. The number of years during which spare parts for the product are available as defined by Panasonic. *4 Household air conditioners, A2W (heat pump type hot water heating systems), EcoCute, commercial air conditioners, dehumidifiers, bathroom ventilation driers, commercial freezers and refrigerators, showcases, etc. *5 Set based on the data of the Ministry of Economy, Trade and Industry.
	Amount of reduced CO2 emissions that contributes to society	Amount obtained by Life cycle emissions on the assumption that our group's products and services are not introduced minus Emissions after introduction: Sum of (1) through (4) below (1) Electrification - (Lifetime CO2 emissions throughout the life cycle from the use of one gasoline vehicle - Lifetime CO2 emissions throughout the life cycle from the use of one EV) × The number of EVs converted from the number of current year's products*1 - (Annual gas consumption of comparison target products (gas equipment) × CO_2 emission factor - Annual power consumption of current year's products*2 × CO_2 emission factor) × Product life × Replacement rate from the comparison target products (gas equipment) × Sales quantity (2) Replacement - (Annual power consumption of comparison target products*3, *4 - Annual power consumption of current year's products*3) × Product life × Sales quantity × CO2 emission factor (3) Solution: - Energy consumption reduced by solution services*5 per unit quantity × Sales quantity × CO2 emission factor (4) Others: - Sales capacity of current year's products*6 or products of other companies equipped with current year's products*6 × Lifetime power generation per unit capacity × CO2 emission factor *1: Automotive Battery *2: EcoCute, A2W (heat pump type water heating systems), etc. *3: Lighting equipment and lamps, household air conditioners, commercial air conditioners, washing and drying machines, ventilation fans, showcases, electric water heaters, electric fans, mounting machines, LCD TVs, OLED TVs, projectors, welding machines, screen printers, heat exchanger units, hair dryers, dehumidifiers, dishwasher and dryers, telephones, air purifiers, humidifiers, digital cameras, headphones, commercial freezers and refrigerators, motors for air conditioning, motors for refrigerator, etc. *4: Products with equivalent functionality *5: Store controllers, HEMS, BEMS, Distributed battery backup uinit for data centers, etc. *6: Photovoltaic solar panels/cells, Power conditioners, etc.
	Amount of renewable energy adopted at our sites	Total amount of used renewable energy that were generated at own sites, including photovoltaic, wind, and biomass power.
	CO_2 emissions in business activities	CO_2 emissions from the use of fuel + CO_2 emissions associated with purchased electricity and heat
	CO_2 emissions per basic unit in business activities (compared to FY2014)	CO2 emissions per basic unit in business activities (improvement rate of basic unit compared to FY2014) was calculated as follows: Basic unit improvement rate (%) for FY2024 = A2015 x A2016 x A2017 x A2018 x A2019x A2020x A2021x A2022x A2023x A2024 $An = \frac{\text{Panasonic group total CO2 emission in FYn / Panasonic group total sales volume in FYn}}{\text{Panasonic group total CO2 emission in FYn−1 / Panasonic group total sales volume in FYn−1}}$ n = 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
	Energy used in business activities	Total amount of energy used (including electricity, town gas, and LPG) in each factory. For the calorific value, the conversion factor specified in "the Order for Enforcement of the Act on the Rational Use, etc. of Energy (Japan)", is used globally. For town gas, however, the conversion factor published by the gas service provider is used. For electricity, the conversion factor of electric energy unit is used.
	Emissions of GHGs other than CO_2 in business activities	GHGs specified in the Fourth Assessment Report (2007) of the Intergovernmental Panel on Climate Change (IPCC) were calculated and converted into CO_2 emissions using the Global Warming Potentials stated in the Report.
	Scope 1 CO_2 emissions	CO_2 emissions from the use of fuel + Emissions of GHGs other than CO_2
	Scope 2 CO_2 emissions	CO_2 emissions associated with purchased electricity and heat

	Energy consumption in transportation	Applied the concept specified in the Energy Conservation Law Guidebook for Consigners edited by the Agency for Natural Resources and Energy, Japan. (Applicable scope: transportation in which the Panasonic Group owns cargo) Energy consumption in international logistics is tabulated by adopting the concept specified in the GHG Protocol.
	CO_2 emissions in logistics operations in Japan	Based on the energy consumption and other data calculated in the process specified above, the corresponding value was calculated in accordance with "the Guideline for Calculation of Greenhouse Gas Emissions (version 6.0) " published by the Japanese Ministry of the Environment.
Resources Recycling	Total resources used	Amount of resources directly used in production activities of a product. Total resources used is calculated in the following two methods: (1) Method of calculating by identifying the amount of purchased materials (including sub-materials). (2) Method of calculating by identifying the amount of: shipped products + sub-materials + waste*. *The figure used for the amount of waste is that published in the Sustainability Data Book 2024 as waste or valuable items.
	Usage of recycled resin	Mass weight of recycled materials used in recycled resin, excluding new resin and newly mixed additives or fillers.
	Recycled weight of four kinds of home appliances in Japan	Applies to the recycling defined in the Home Appliance Recycling Law in Japan, and refers to the weight of components and materials of separated products which can be used by oneself, or made into a state available for sale or free of charge.
	Amount of used products covered by the WEEE Directive collected in Europe	Weight of collected products per collection system x Panasonic's weight-based share of products put on the market within the applicable collection system.
	Amount of used electronic products collected in the USA	Amount of equipment collected in accordance with state laws and through voluntary measures.
	Amount of total wastes including revenue-generating waste from factories	Total amount of generated industrial and general waste and revenue-generating waste.
	Revenue-generating waste	Waste that can be sold to recycling or disposal companies for profit.
	Factory waste recycling rate	Amount of resources recycled / (Amount of resources recycled + Amount of final disposal).
Water	Amount of water withdrawal	Total water withdrawed (total amount of withdrawed municipal water, industrial water, river/lake water, and groundwater).
	Amount of water discharge	Total water discharged (total amount of discharged sewer systems and waterways).
	Amount of water consumption	Total water consumption = Total water withdrawal - Total water discharge
Chemical Substances	Substances requiring management	Based on the Chemical Substances Management Rank Guidelines (for factories). Including all the substances in the Japanese Law of the Pollutant Release and Transfer Registers (PRTR Law).
	Release of substances requiring management	Release amount includes emissions to air, public water areas, and soil.
	Transfer of substances requiring management	Transfer amount includes transfer as waste and discharge into the sewage system. Recycling that is free of charge or recycling where Panasonic pays a fee for treatment under the Waste Management Law is included in recycled amount. (Different from the transferred amount reported under the PRTR Law.)
	Substances subject to calculation of Human Environmental Impact from factories	Chemical substances specified in the Chemical Substances Management Rank Guidelines (for factories).
	Human Environmental Impact	Human Environmental Impact = Hazard factor* x (Amount of covered substances released + Amount of covered substances transferred) *Hazard factors: Given by Panasonic, after classification according to the impact on human health and the environment. Factors are set as A: 10,000, B: 1,000, C: 100, D: 10, and E:1, according to the hazardous level. - Emission amount of covered substances: Includes emissions to the atmosphere, public waters, and soil. - Transfer amount of covered substances: Includes transfer as waste and discharge to the sewage system (not including those recycled free of charge or charged under the Waste Management and Public Cleansing Law).
Compliance	Number of violations	Number of violations of laws and regulations caused by our factories and products