Sustainability Data Book 2024

Panasonic Group

Panasonic Group

Sustainability Data Book 2024

About the Sustainability Data Book 2024

We report on our sustainability activities through various media, primarily through our Sustainability Data Book and our website's Sustainability page. The Sustainability Data Book is an annual report on our sustainability policies, approach, and performance data. Please visit the Sustainability page on our website for specific examples of our initiatives and the latest news.

WEB **Sustainability Site:**
https://holdings.panasonic/global/corporate/sustainability.html
WEB **Integrated Report:**
https://holdings.panasonic/global/corporate/investors/library/annual-report.html

Scope of Reporting

Except when noted otherwise, results are calculated based on the following:

■ **Period:** Fiscal 2024 (April 1, 2023 to March 31, 2024)
■ **Organization:** Panasonic Group (Panasonic Holdings Corporation and its consolidated subsidiaries). Some consolidated subsidiaries that joined the Group through acquisitions or other means may not be included. In this data book, "the Company" means Panasonic Holdings Corporation, and "we", "Panasonic", and "the Group" mean the Panasonic Group mentioned above.
■ **Data:**

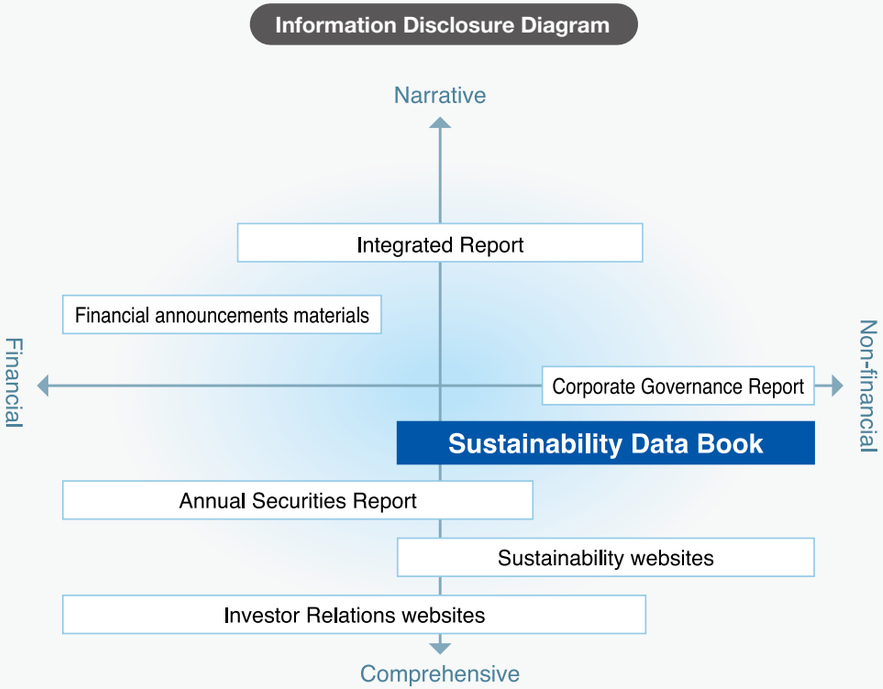
- Data concerning manufacturing sites cover all the manufacturing sites (totaling 222) that constitute the Panasonic Group's environmental management system
- Energy data and CO_2 emissions data from energy sources are added for non-manufacturing sites (75)
- Data for which the fiscal year and region are not expressly stated are global results for fiscal 2024

Assurances

Main data relating to the environment have been assured by LRQA Limited. For details on the indicators covered by the assurance, please refer to the Independent Assurance Statement on P157 Assured indicators are marked with ★.

Reference Guidelines

- Reporting requirements of the GRI Standards
- Japanese Ministry of the Environment, "Environmental Reporting Guidelines 2018"



Basics

Sustainability Data Book 2024

Sustainability Data Book 2024 Contents

Sustainability Data Book 2024

Corporate Profile

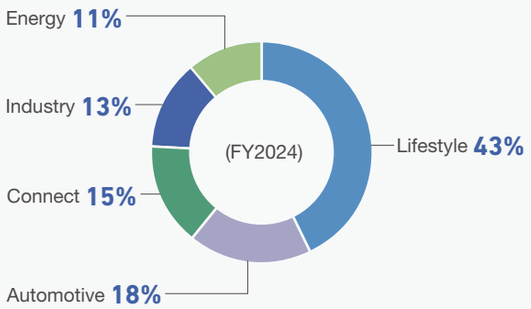
as of March 31, 2024

Company name:	Panasonic Holdings Corporation
Head office location:	1006 Oaza Kadoma, Kadoma City, Osaka 571-8501, Japan Tel: +81-6-6908-1121
Incorporated:	December 15, 1935
Founded:	March 7, 1918
Representative Director, President, Group CEO:	Yuki Kusumi
Common stock:	259.4 billion yen
Number of employees:	228,420 (consolidated)

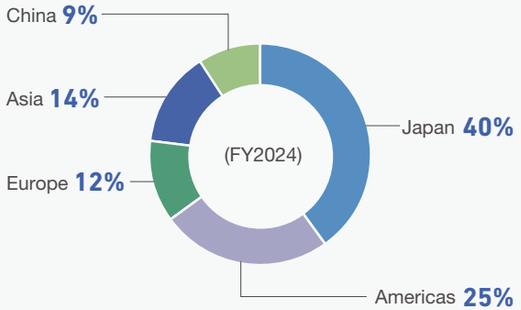
FY2024 Financial Results

Net sales:	8,496.4 billion yen
Operating profit:	361.0 billion yen
Profit before income taxes:	425.2 billion yen
Net profit attributable to Panasonic Holdings Corporation stockholders:	444.0 billion yen

Sales by Segment



Sales by Region



Main Products and Services

The Panasonic Group's major products and services, by segment, are as follows:

Lifestyle

Refrigerators, microwave ovens, rice cookers, washing machines, vacuum cleaners, personal-care products, air-conditioners for residential and commercial use, Air-to-Water (A2W) hot water heat pump system, ventilation, perflation and air-conditioning equipment, air purifiers, air purifier/sterilizers, freezing or refrigerating showcases, lighting fixtures, lamps, wiring devices, solar photovoltaic systems, fuel cells, compressors, bicycles, nursing care services

Automotive

Automotive-use infotainment systems, head-up displays, automotive speakers, automotive switches, advanced driver assistance systems (ADAS) and related devices, systems and devices for xEVs, Interior rearview mirrors

Connect

Aircraft in-flight entertainment systems and communications services, electronic components-mounting machines, welding equipment, projectors, professional AV systems, PCs and tablets, solutions for various industries, installation/operation/maintenance services, supply chain management software

Industry

EV relays, conductive polymer capacitors, film capacitors for xEVs, hybrid aluminum electrolytic capacitors, motors for automotive and HVAC, motors for industrial application (servomotors), programmable controllers (PLC), photoelectric sensors, laser markers, multilayer circuit board materials, semiconductor device materials, molding compounds

Energy

Cylindrical lithium-ion batteries for in-vehicle use, dry batteries, primary/secondary lithium batteries, nickel-metal hydride batteries, lithium-ion batteries, storage battery modules/systems

Other (businesses not included in reportable segments)

TVs, digital cameras, video equipment, audio equipment, telephones, intercoms, kitchen & bathroom fittings, interior products, exteriors

Sustainability Data Book 2024

Basic Approach to Sustainability

Panasonic Group's Sustainability Management

The Panasonic Group's mission is to achieve "an ideal society with affluence both in matter and mind." This is grounded in the dream of achieving prosperity both in matter and mind, which is the ideal state of society that our founder Konosuke Matsushita envisioned and pursued throughout his life. In 1932, the founder set forth a 250-year plan, consisting of ten successive phases of 25 years, to reach the ideal society he envisioned. Since then, we have been fulfilling this lofty mission by addressing various social issues through our business activities for the well-being of people all over the world.

However, today's society falls short of the ideal state of our founder's aspirations. Although people in developed nations now live a life full of material goods, many emerging issues are threatening social sustainability. These include environmental destruction and depletion of natural resources, problems that are rapidly worsening year by year, as well as population trends such as global-scale population growth and, at the same time, the aging populations with low birthrates in developed nations. These issues will only become more severe for the next generations.

We in the Panasonic Group will continue to squarely address these social issues, thus making meaningful contributions toward a sustainable society. Through these efforts, we are striving to enhance our corporate value, and eventually we will achieve our goal to realize "an ideal society with affluence both in matter and mind." This is how we at Panasonic promote sustainability management, by always putting into practice our Basic Business Philosophy.

Through our sustainability management process, we identify materialities, or important opportunities and risks, related to sustainability from the two perspectives of "financial impact on the Group" and "impact on society." The entire Panasonic Group focuses on contributing to society by addressing environmental issues such as global warming and resource depletion, as well as by improving all people's well-being through enhancing their lifelong health, safety, and comfort.

In the environmental area, we have been pursuing Groupwide efforts to maximize our contribution to reducing CO_2 emissions and to promote resources recycling under Panasonic GREEN IMPACT, our long-term environmental vision. Regarding the lifestyle solution area, we have demonstrated the Group's collective strength in our aim to become a "lifestyle solution provider" that offers optimal value to individual customers by leveraging the entire Group's diverse customer contacts and our cutting-edge digital and AI technologies.

The ideal society we envision cannot be achieved through our efforts alone. It can be achieved only through collaboration with our stakeholders, including customers, business partners, shareholders, employees, and communities. We believe this is the only way to achieve growth and development and enhance our corporate value in a sustainable way. As a public entity of society, the Panasonic Group will continue to help all of its stakeholders to "live their best," and we will walk alongside them toward the ideal society we pursue.

Yuki Kusumi
Group CEO

The Promotion of Sustainability Management

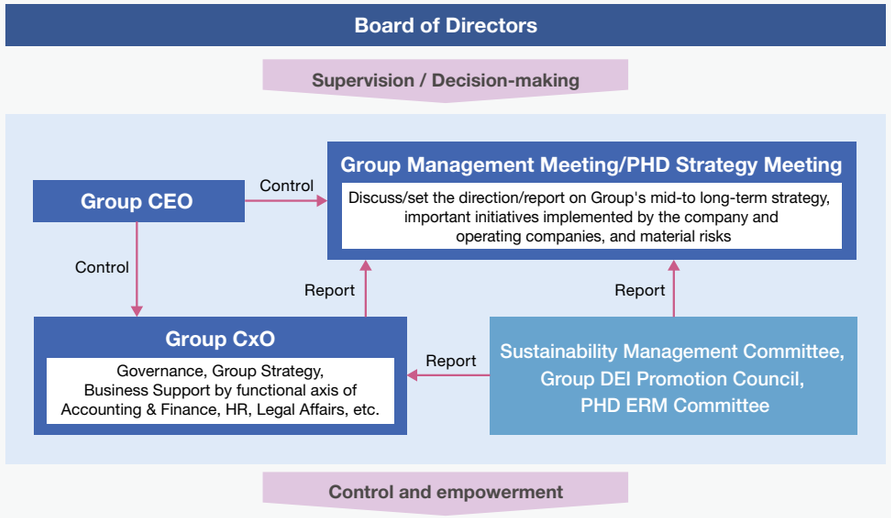
The Advancement of Sustainability Management

The Panasonic Group uses an Operating Company Structure (Holding Company Structure) to thoroughly implement autonomous responsible management and bolster the competitiveness of our business from a more medium- to long-term perspective. All our operating companies work to significantly enhance competitiveness through prompt decision-making in response to external changes and flexible system design depending on their business characteristics. The holding company monitors these efforts, using KPIs for competitiveness. We have also established various committees to provide dynamism in discussing and directing specific measures on important Group issues, while actively supporting efforts by operating companies to enhance their competitiveness and promoting growth strategies from a Groupwide perspective, improving the Group's overall corporate value.

Of these committees, the Sustainability Management Committee generally meets monthly to improve our sustainability management. It is chaired by the Group CEO and comprises Group company directors and executive officers appointed by the chair. Under the supervision of the Board of Directors, the Committee discusses and directs essential themes related to the Group's sustainability and shares such conclusions with the entire Group through the Group Management Committee and other vectors. It also reports and shares its conclusions with the Board of Directors as necessary, becoming part of Groupwide decision-making.

We also have specialized committees to address discrete themes, including the Group DEI Promotion Council and the PHD ERM Committee.

The Promotion Structure of Sustainability Management (As of Aug. 2024)



- Group Management Meeting: Chaired by Group CEO, consisting of about 20 Executive members including the presidents of operating companies, heads of each function (held monthly in principle)
- PHD Strategy Meeting: chaired by Group CEO, consisting of ca. 10 Executive members, including the head of functions such as HR, accounting, legal, and others (held twice a month in principle)
- PHD: Panasonic Holdings Corporation
- ERM: Enterprise Risk Management

Sustainability Data Book 2024

Materiality

Purpose of identifying materiality

We identify important opportunities and risks related to sustainability as materialities from the two perspectives of “financial effects on the Company” and “impact on society.” In response to these materialities, we aim to improve our sustainability management by creating new business opportunities and lowering risks.

Materialities will be reviewed as appropriate based on changes in the business environment and dialogues with stakeholders.

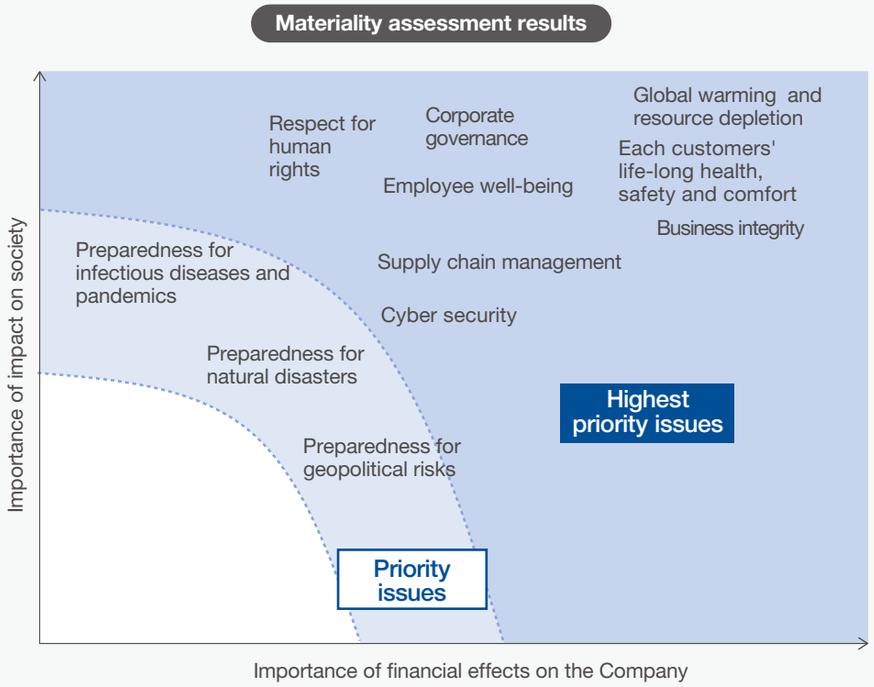
Process of identifying and positioning materiality

From a list of items that included demands from society and foreseeable future challenges, we selected issues that could represent opportunities and risks for the Group. Next, we assessed them from the two perspectives of the Group and its stakeholders, and 11 priority issues were extracted.

We confirmed the validity of these analysis processes and the priority issues we extracted through dialogue with external experts, and the 8 highest priority issues and 3 additional priority issues were identified after deliberation at the meetings of the Group’s Sustainability Management Committee, the Group Management Meeting, and with the Board of Directors of the Company.

Of the materialities we have identified, global warming and resource depletion correspond to the Group’s common strategy of helping the environment, while the lifelong health, safety, and comfort of every customer represent our lifestyle efforts. We aim to generate sustainable value by maximizing new business opportunities in these two areas. Meanwhile, other materialities help us build and strengthen our management foundation for sustainable value creation while reducing various risks.

The following pages summarize the key points and indicators/targets related to our efforts for these materialities.



Note: Some of the materiality items are similar to the names of “Group Major Risks / PHD Major Strategic Risks” determined by risk management activities; however, due to different objectives and identification processes, their corresponding initiatives are partly different. For more details, see “Risk Management” chapter (page 138).

Sustainability Data Book 2024

Sustainability Data Book 2024

Examples of initiatives to address materiality

● Increase positive impact ● Mitigate negative impact

		Materiality	Main initiatives	Indicators	Targets	Reporting on related items
Highest priority issues	Group common strategy	Global warming and resource depletion	Panasonic GREEN IMPACT ● Expansion of automotive batteries for EVs, Air to Water heat pump (hot-water and heating system with heat pump), and hydrogen fuel cells ● Environmental energy technology innovation (water electrolysis, perovskite solar cells, DERMS) ● Reduction of in-house CO_2 emissions (expansion of zero-CO_2 factories , expansion of energy-saving equipment) ● Expansion of circular economy businesses and products	CO_2 reduction impact	300 million tons (by 2050)	Sustainability Data Book 2024 • Environment P9 Sustainability site • Environment
				CO_2 emissions from all factories	Net zero (by 2030)	
				Waste recycling rate	99% or more	
		Each customers' life-long health, safety and comfort	● As a "lifestyle solutions provider" that delivers value tailored to each customer, we combine our diverse customer touchpoints with digital technology to contribute to each customer's life-long health, safety and comfort			–
	Foundation for sustainable value creation	Business integrity	● Promoting understanding of and confirming compliance with the Panasonic Group Code of Ethics & Compliance and internal rules, and complying with relevant laws ● Dissemination and appropriate operation of the whistleblowing system ● ● Protection and utilization of our intellectual property and respect for the intellectual property of third parties	Occurrence of serious compliance violations	Zero	Sustainability Data Book 2024 • Business Ethics P146 • Intellectual Property P128
		Supply chain management	● Elimination of waste and stagnation in the supply chain ● Strengthening of supply chain by promoting multiple suppliers and review of manufacturing sites			Sustainability Data Book 2024 • Risk Management P138
		Employee well-being	● Creating a safe, secure, and healthy workplace (by implementing safety and compliance and promoting health management) ● Encouraging employees' self-motivated endeavors and supporting their self-determined career formation (Providing opportunities for skill development and challenges, wider options for work schedules and remote work, and internal Group personnel moves through open recruitment) ● Promoting DEI (Diversity, Equity & Inclusion) (top management commitment, creating an inclusive work environment, support for each individual)	Occurrence of serious or grave accidents	Zero	Sustainability Data Book 2024 • Employee Well-being P83
				Employee engagement/employee enablement in the Employee Opinion Survey	the highest global standard	
		Corporate governance	● ● Evaluation of the effectiveness of the Board of Directors and implementation of improvement measures ● Promotion of constructive dialogue with shareholders ● Linkage of non-financial KPIs to executive remuneration	Enhancement of constructive dialogue with shareholders	Implemented	Corporate information site • Panasonic Holdings Corporation "Corporate Governance" • Corporate Governance Report
				Evaluation of the effectiveness of the Board of Directors and implementation of improvement measures	Implemented	
				Ratio of outside directors in the PHD Board of Directors	1/3 or more	
				Adoption of non-financial indicators in performance-based compensation for directors	Implemented	
		Respect for human rights	● Developing and thoroughly implementing the Panasonic Group Human Rights and Labour Policy ● Promoting human rights due diligence within the Group and its value chain based on global standards ● Promotion of engagement with stakeholders and appropriate disclosure of information	Promotion of correction of issues identified in human rights due diligence for each Group company which may cause forced labor	Implemented	Sustainability Data Book 2024 • Respect for Human Rights P76 • Responsible Supply Chain P109 • AI Ethics P119
				Rate of training on the prevention of forced labor at Group company sites that employ foreign migrant workers	100%	
		Cyber security	● Centralization of common cyber security functions across manufacturing, information systems, and product areas to strengthen countermeasures during normal times and incident responses during emergencies ● Gradual expansion of scope of cyber security countermeasures, including to supply chains	Provision of education and training for all employees to improve security awareness and promote behavioral change	More than four times a year	Sustainability Data Book 2024 • Cyber Security and Data Protection P152
				Collection and monitoring of threat and vulnerability information by an expert team, and implementation of necessary measures	Implemented	
				Incident response training by an expert team in anticipation of cyber attacks	More than once a year	
				Number of serious incidents	Zero	
Priority issues		Preparedness for geopolitical risks	● ● Monitoring of international situation and trends in policies, laws, and regulations in each country and geographic region to ascertain the impact on the Group's business and respond in a timely manner ● ● Closely monitoring and responding to changes in the business environment caused by economic security policies in each country in terms of business threats and opportunities			Sustainability Data Book 2024 • Risk Management P138
		Preparedness for infectious diseases and pandemics	● Formulating Group policies for each country based on analysis of its government policies, regulatory trends, infection conditions, etc., and setting and implementing detailed rules at each business site			
		Preparedness for natural disasters	● Enhancement of stockpiling and drills during normal times and establishment of a safety confirmation system; establishment of a Groupwide Emergency Response Headquarters system in the event of an emergency			

Sustainability Data Book 2024

Respecting Applicable Legislation, Global Standards, Norms, Guidelines, and Initiatives

The Panasonic Group conducts its business based on applicable legislation, as well as global standards, specifications, norms, guidelines, and various initiatives. The Panasonic Group signed the United Nations Global Compact.

These concepts are reflected in the Basic Business Philosophy and the Panasonic Group Code of Ethics & Compliance that form the guidelines for the company's business activities.

Global Standards, Norms, Guidelines and Initiatives

OECD Guidelines for Multinational Enterprises on Responsible Business Conduct	ISO26000	UN Global Compact
Code of Conduct of RBA (Responsible Business Alliance)	Japan Business Federation Charter of Corporate Behavior	Global Reporting Initiative (GRI) Standards
TCFD (Task Force on Climate-related Financial Disclosures)	RE100	Race To Zero
Universal Declaration of Human Rights	ILO Core Labour Standards	UN Guiding Principles on Business and Human Rights

Stakeholder Engagement

The Panasonic Group conducts dialogues with its wide range of stakeholders around the world on various aspects of its business. The Group incorporates the opinions it receives into its business activities and product creation.

Examples of Stakeholder Engagement

Customers	Business activities, Website, Customer care center/Call center, etc. Cf.) Sustainability Data Book > Customer Relations P121
Shareholders/ Investors	General meeting of shareholders, Financial results announcements, Strategy briefing, Group/ individual meetings, etc. WEB Investor Relations https://holdings.panasonic/global/corporate/investors.html
Suppliers	Procurement activities, Partner's meeting, CSR self-assessment, Supplier audit, etc. Cf.) Sustainability Data Book > Responsible Supply Chain P109
Employees	Employee opinion survey, Messages from senior management, Dialogues/networking event, Intranet & in-house SNS, etc. Cf.) Sustainability Data Book > Employee Well-being P83
Government/ Industry Organizations	Participation in business and industrial organizations, lobbying international organizations and governments, etc. Cf.) Sustainability Data Book > Environment > Activities to raise awareness of and valorize Avoided CO_2 Emissions P21 Sustainability Data Book > Respect for Human Rights > Participation in International and Industrial Partnerships P82

Environment

Policy

Contributing to society has been the management philosophy for the Panasonic Group ever since its founding, and we have been taking measures against pollution since the 1970s. We announced the Environmental management basic policy in 1991, and the Environmental Statement in 1993, clarifying our approaches to address global environmental issues as a public entity of society. Since then we have been carrying out initiatives including matters on global warming prevention and resources recycling corporate-wide, aiming to attain a sustainable, safe, and secure society.

After the completion of the Green Plan 2010 which was established in 2001, the Green Plan 2018 was established in 2010 to clarify our targets for fiscal 2019 (from April 1, 2018 to March 31, 2019) as well as an action plan for all employees in order to achieve the targets. The Green Plan 2018 will continue our initiatives in five areas: CO_2 reduction, resources recycling, water, chemical substances, and biodiversity.

In 2013, we introduced a new brand slogan, "A Better Life, A Better World," aiming to realize a better life for all its customers, and is promoting environmental initiatives as an important element in achieving that goal. Based on this, the Green Plan 2018 was revised in 2013, followed by the newly-established Environmental Action Guideline.

Furthermore, in response to rising demand by the society for CO_2 reductions following the 21st session of the Conference of the Parties (COP21) of the United Nations Conference on Climate Change, and to the need to make changes to our business structure, including growth in the automotive and B2B businesses, the Plan was revised again in 2016.

Additionally, we formulated the Environment Vision 2050 in 2017 to achieve "a better life" and "a sustainable global environment," aiming for a society with clean energy and a more comfortable lifestyle. Under the Vision, through the development of products, technologies, and solutions relating to energy creation, storage, saving, and management, we will work towards creation and more efficient utilization of energy which exceeds the amount of energy used.

Environment

We announced Green Plan 2021 in 2019, following completion of Green Plan 2018, with a focus on key issues for achieving the Panasonic Environment Vision 2050, and we have been working on the issues. On January 2022, we announced Panasonic GREEN IMPACT, our long term environment vision,founded based on Panasonic Group's belief that the top priority action for the entire Group should be focused on global environment issues including climate change, which is a pressing task for the entire world.

The Panasonic GREEN IMPACT is the result of a shift from the Panasonic Environment Vision 2050, with the aim of achieving carbon neutrality together with creating impacts from actions (ACT) that reduce CO_2 emissions from Panasonic Group as well as from various sectors of the society. To achieve Panasonic GREEN IMPACT, we are working on initiatives under our newly developed GREEN IMPACT PLAN 2024.

Environmental Policy

Environmental Statement

Fully aware that humankind has a special responsibility to respect and preserve the delicate balance of nature, we at Panasonic acknowledge our obligation to maintain and nurture the ecology of this planet. Accordingly, we pledge ourselves to the prudent, sustainable use of the earth's resources and the protection of the natural environment while we strive to fulfill our corporate mission of contributing to enhanced prosperity for all.

Environmental Action Guideline

Toward achieving a sustainable society, we will strive to develop our business through the creation of environmental value. For this purpose, we will address environmental challenges through our business activities and will expand our environmental initiatives based on collaboration with stakeholders.

(1) Initiatives to address environmental challenges
- We will reduce CO_2 emissions through production activities and products/services.
- We will work to efficiently use resources by pursuing Recycling-oriented Manufacturing.
- We will conserve water resources through efficient use of water and prevention of contamination.
- We will reduce the impact of chemical substances on human health and the environment.
- We will consider and conserve biodiversity.

(2) Initiatives based on collaboration with stakeholders
- We will provide products and services that create environmental value for customers with our technical strengths.
- We will expand our environmental contributions with our partner companies.
- We will deepen communications with local communities and work as a team to address environmental challenges.

Environmental Action Plan

Environmental action plan "GREEN IMPACT PLAN 2024" to realize Panasonic GREEN IMPACT (see pages 12)

We strive to grow and develop our business through the creation of environmental value for customers with our technical strengths while each and every employee follows the Environmental Policy to address environmental challenges. Therefore, collaboration with stakeholders including our partners is essential. We will continue to sincerely work on environmental sustainability management through further collaboration with stakeholders.

Mid-term to Long-term Environmental Vision

What we should be in the future as the Panasonic Group and solution for global environmental issues

The true mission of the Panasonic Group is to achieve both of 'material and spiritual prosperity', in other words 'an ideal society with affluence both in matter and mind' that is pursued by our founder Konosuke Matsushita in his entire life. In 1932, the founder declared his ambition to create an ideal society over a span of 250 years. Since then, taking over the founder's ambition, we have solved social issues by manufacturing useful products and providing useful services, etc., while seeking for happiness of individual customers. At present, the biggest obstacles preventing us from achieving our mission are global environment issues. In order to reduce depletion of limited natural resources and urgent problems caused by climate change or global warming as much as possible, it is indispensable to take actions to achieve net zero CO_2 total emissions in society at large as early as possible. Panasonic has acted promptly to fulfill our corporate responsibility and contribution; and in January 2022, we announced the Group's long-term environmental vision "Panasonic GREEN IMPACT (PGI)" that leads to achieve much greater contribution to definitely solve such problems and we have accelerated our activities to reduce environmental loads through our value chains, and at the same time, to contribute to reduce CO_2 emissions discharged from society and customers.

Regarding global environment issues, not only for global warming, but also for the depletion of limited natural resources, importance of confronting with their effects on our business activities, our customers, and society in the same manner is growing. Panasonic has worked on both effective use of resources and maximization of customer value for a long time. In order to recognize that improving resource efficiency contributes to decarbonization, reduce resource consumption, and set contribution to achieve sustainable society as basis of business operations, we established 'a Circular Economy (CE) Group Policy' and disseminated it internally and externally in November 2023. We will identify CE issues according to characteristics of each business division, and lead them to formulate and implement strategies and action plans based on the policy.

Circular Economy Group Policy (Excerpts from three circularity principles)

1. Maximize the product lifetime and maintain the material value with a focus on circular business models and product design, extended servicing, as well as through further enhancing recycling activities.
2. Minimize the use of materials and extend the usage of recycled and renewable materials.
3. Take a joint approach with customers and partners for establishing circularity-oriented business operations, information sharing, and product usage options.

Please visit here for the entire text.

Panasonic GREEN IMPACT

PGI is an overview of environmental strategy for our respective business fields back casted from the reforms to be implemented by 2030, looking ahead to creation of sustainable society by 2050. With a classification of PGI into fulfillment of own responsibilities (❶ OWN IMPACT), opportunities to contribute (❷ CONTRIBUTION IMPACT and ❸ FUTURE IMPACT), and positive ripple effects on our customers and society (+INFLUENCE), it was declared to create an impact by 2050 from our emissions reductions of more than 300 million tons[*1] in total for ❶, ❷ and ❸: that is approx. 1% of the global CO_2 emissions of 31.7 billion tons[*2] in 2020. We aim at 'to achieve net zero emissions for all of our operating companies (Scope 1 and 2 in ❶)' and 'to create avoided CO_2 emissions of approx. 100 million tons (❷) as our interim milestones, and we formulated "the GREEN IMPACT PLAN 2024", our action plan for 2022-2024.

The Panasonic Group aims to achieve both a better life and a sustainable global environment, by creating impacts from actions that reduce our own CO_2 emissions, contribute to avoiding CO_2 emissions of society, and realize a circular economy.

*1 2020 energy-derived CO_2 emissions (Source: IEA)
*2 The emissions factor is fixed to the 2020 emissions level in order to properly measure the amount of own efforts to CO_2 reduction.

❶ OWN IMPACT

We will achieve net zero emissions from all of our value chains (110 million tons[*3]), with decarbonization effects in society[*4]. Specifically, we will achieve net zero for total emissions from our business activities (Scopes 1, 2, and 3), including emissions from our operating companies (Scopes 1 and 2) by fiscal 2031, emissions from manufacturing components and materials (Scope 3, Category), and emissions in product use (Scope 3, Category 11).

*3 Fiscal 2021 actual results *4 Improvement in CO_2 emissions factor for electricity by respective electric power suppliers.

❷ CONTRIBUTION IMPACT

In our present business fields, we will contribute 100 million tons or more in avoided emissions from society and our customers. We will visualize the avoided emissions by each product or service, and use the avoided emissions as a common measure in society at large.

❸ FUTURE IMPACT

We plan to achieve avoided emissions of 100 million tons or more by creating new technologies and business fields.

+ INFLUENCE

These are communication activities to generate PGI. We will have positive ripple effects on reforms in the energy demands and supply, and decarbonization through transformation in behaviors of customers, relevant business operators, governments, and investors. Although the direct impact on reduction cannot be calculated at present, we will move forward in this direction, being convinced that this is part of our mission.

Environment

Environmental Action Plan "GREEN IMPACT PLAN 2024"

As milestones in reaching the 2050 reduction targets of 300 million tons set in "the Panasonic GREEN IMPACT," our long-term environmental vision, we set out the fiscal 2031 target linked to our groupwide business strategy, and formulated "the GREEN IMPACT PLAN 2024 (GIP 2024)," the three-year environmental action plan from fiscal 2023 to fiscal 2025, for which we are working on. Under GIP 2024, we have set out the fiscal 2025 targets for OWN IMPACT: CO_2 emissions reduction across our entire value chain (VC) (Scopes 1, 2 and 3), CONTRIBUTION IMPACT: Avoided CO_2 Emissions for customers and society and the Resource/Circular Economy (CE).

In OWN IMPACT, we plan to cut down CO_2 emissions from our entire VC of 110 million tons in fiscal 2021 to 31.45 million tons in fiscal 2031 and to 16.34 million tons in fiscal 2025 respectively as our businesses grow. As a part of this plan, we are aiming to achieve net zero CO_2 emissions in our factories ('Zero- CO_2 factories') for all of our operating companies by fiscal 2031 under the drive to achieve net zero emissions from our business activities (Scopes 1 and 2).

In CONTRIBUTION IMPACT, we plan to achieve avoided emissions for customers and society of 93 million tons* in fiscal 2031 and to 38.3 million tons in fiscal 2025*.

Key 3 activities for our Resources/CE are;

1. Maintain the global factory waste recycling rate constantly at 99% or higher (zero emissions)
2. Increase the total recycled resin used over three years to 90,000 tons
   (Double the total recycled resin usage of 43,300 tons over fiscal 2020 to 2022)
3. Newly establish at least 13 CE business models by fiscal 2025, aiming at efficient resource utilization and customer value maximization

Additionally, we plan to continue working on the issues of 'biodiversity', 'water', 'chemical substances', 'local communities', and 'compliance', paying attention to the scale of social issues and empathy with our customers and society and corresponding to our business fields and regional characteristics and needs.

* Calculated with emissions factor (IEA 2021) at the time of the PGI formulation (FY2021).)

Status of the second year of GIP 2024

The CO_2 emissions from our entire value chain (VC) increased to 126.52 million tons in fiscal 2024 (negative in OWN IMPACT) with increase of 19.01 million tons from 107.51 million tons in fiscal 2021. For the Scopes 1 and 2, there had been progress in both energy conservation and introduction of renewable energy with 44 Zero- CO_2 factories and CO_2 reduction of 0.68 million tons. Scope 3 emissions, which come from during use of our products, account for 70% of all of our own emissions, and have increased due to expansion of business fields subject to the calculation (increased by 5.1 million tons compared with fiscal 2021). On the other hand, the avoided emissions for our customers and society (CONTRIBUTION IMPACT) have reached 36.97 million tons, which is an increase over fiscal 2021, thanks to the growth of our core businesses and further visualization of the avoided emissions in our businesses.

In the area of resource/CE, our factory waste recycling rate reached 99.3% globally, maintaining our target figure. The amount of used recycled resin has remained at 29.6 thousand tons in total over two years since fiscal 2023. We are now working hard to make up the lost opportunities by strengthening our competitiveness, e.g., enhancing and stabilizing our supply chain from waste resin recovery, to reprocessing and reuse. Finally, we launched three new CE business models. This makes a total of 13 business models, which enabled us to achieve the fiscal 2025 target one year ahead of schedule.

GREEN IMPACT PLAN 2024 (Fiscal 2025 and 2031 targets, and Fiscal 2024 actual results)

(Mt = million ton)

Item				Fiscal 2021 results (Starting point of PGI)	Fiscal 2024 actual results GREEN IMPACT PLAN 2024	Fiscal 2025 targets GREEN IMPACT PLAN 2024	Fiscal 2031 targets
Material issues	CO_2 / Energy	**OWN IMPACT** CO_2 emissions reduction in our own Value Chain*2		(Starting point)	*6 **-19.01 Mt (12.08 Mt)**	**16.34 Mt**	*7 **31.45 Mt**
		Scopes 1 &2*1	Zero-CO_2 factories	Total 7 factories	Total 44 factories	Total 37 factories	
			CO_2 reductions	(Starting point)	**0.68 Mt**	**0.26 Mt**	
		Scope 3*1 (Category 11)	CO_2 reductions during use of our products by customers	(Starting point)	**-5.1 Mt**	**16.08 Mt**	
		CONTRIBUTION IMPACT Avoided CO_2 Emissions for society*3		**23.47 Mt**	**36.97 Mt**	**38.30 Mt**	**93.00 Mt**
	Resources/ CE* *Circular Economy	Factory waste recycling rate*4		98.7%	99.3%	99.0%	
		Recycled resin used*5 (Fiscal 2023 to 2025 total for GIP2024 targets)		15,200 tons	Fiscal 2023 to 2024 total 29,600 ton	Fiscal 2023 to 2025 total 90,000 ton	
		Circular economy business models and products (Total)		5 businesses	13 businesses	13 businesses	
Continuing challenge	Biodiversity	Reducing and restoring the impact of business activities on the ecosystem to become nature positive.					
		Procurement of sustainable raw materials, businesses that contribute to biodiversity green spaces, and products and services that contribute to biodiversity.					
	Water	Reducing water consumption in business activities and products/services					
	Chemical substances	Reducing the environmental impact of chemical substance's business activities and products					
	Local communities	Promoting environmental initiatives to contribute to local communities and educating the next generation					
	Compliance	Ensuring compliance with environmental laws and regulations					

*1 Classification according to the GHG protocol (Accounting and Reporting Principles). *2 Amount obtained by subtracting the amount of emissions in the relevant fiscal year from the amount of emissions in fiscal 2021. *3 Amount calculated by subtracting the lifetime CO_2 emissions after introduction from the lifetime CO_2 emissions assuming that the Group's products and services do not exist, using the IEC 2021 value as the emission factor. *4 Amount of resources recycled/(Amount of resources recycled + Amount of landfill). *5 Mass of recycled materials contained in the recycled resin used in our products. *6 Includes Scope 1, 2 and Scope 3 Category 11, plus increases or decreases in Category 1 (procurement), Category 12 (disposal), and other indirect emissions. The figures in the parenthesis is a comparison between fiscal 2023 results and fiscal 2021 results (starting point) reflecting the equivalent amount of emissions from the products whose calculations became available after 2021. *7 The CO_2 emissions factor for electricity calculated with the IEA World Energy Outlook's 2° C scenario.

Environment

Status of CO_2-related indicators in fiscal 2024

CO_2 emissions (upper part of figure)

Our CO_2 emissions in fiscal 2024 totaled 126.52 million tons, which was an increase of 19.01 million tons compared with 107.51 million tons in fiscal 2021 (negative in OWN IMPACT) This was significantly affected by our activities implemented as our responsibilities in the last 3 years, i.e., expansion of the items subject to our emissions reduction and refinement of the calculation formulas. On the other hand, the fiscal 2021 figure using the items subject to fiscal 2024 was 138.6 million tons. Therefore, this represents a reduction of 12.08 million ton over the three years since fiscal 2021.

The CO_2 emissions from during use of products (Scope 3, Category 11), which accounts for more than 70% of the entire emissions across the value chain, have increased to 91.03 million tons from 56 businesses in fiscal 2024, compared with 85.93 million tons from 33 businesses in fiscal 2021. This fiscal 2024 figure includes emissions from those businesses for which the emission calculation formulas were established in fiscal 2022 and later, and CFC emissions from refrigerant-related equipment during use by customers from fiscal 2023. We aim to reduce CFC emissions during use by spreading refrigerants with low environmental loads (CO_2 refrigerant/propane). In fiscal 2023 we also added the calculation methods to reflect negative impact from disposal of refrigerants after refining the calculation methods with an aim to collect more refrigerants from refrigerant-related equipment disposed by customers (Scope 3, Category 12). We will recognize the reduction targets in Scope 3 accurately as our Group's responsibilities, and we will continue to improve the accuracy of Scope 3 figures through reviewing the scope and the calculation methods.

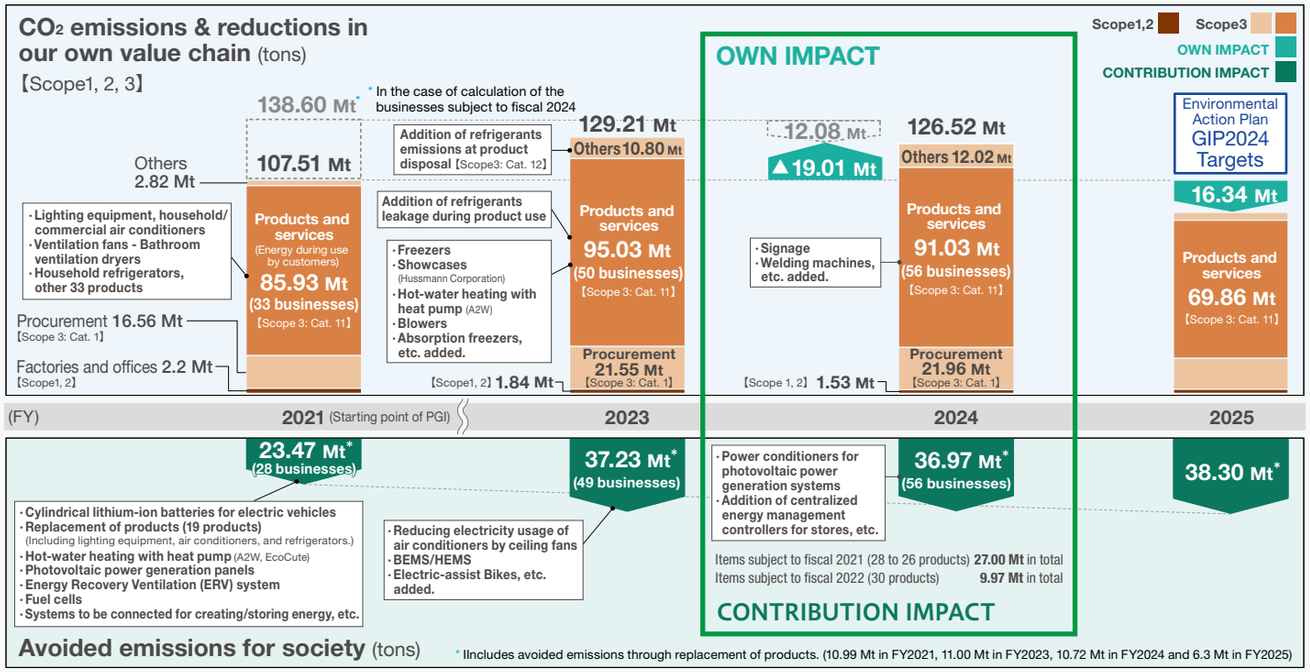
Avoided CO_2 emissions (lower part of figure)

The avoided CO_2 emissions from our products and services (CONTRIBUTION IMPACT) in fiscal 2024 reached 36.97 million tons, steadily approaching the fiscal 2025 target of 38.3 million tons. The number of businesses subject to this calculation has increased from 28 in fiscal 2021 to 56 in fiscal 2024. The total avoided emissions of 26 businesses, which we have been working on visualization (28 as of fiscal 2021), was 27 million tons in fiscal 2024. This was a 3.53-million-ton increase compared with 23.47 million tons in fiscal 2021. The main reason for this was the decrease in the avoided emissions from cylindrical lithium-ion batteries for in-vehicle use, which produce the biggest amount of avoided emissions in our Group, as a result of the refinement of the emission calculation methods from the viewpoint of their life cycle. (If the calculation method for cylindrical lithium-ion batteries for vehicles had not been refined, the figure would have been 28.70 million tons, an increase of 5.23-million-tons.) On the other hand, visualization has newly progressed in the 30 new businesses and produced 9.97 million tons of avoided emissions in fiscal 2024.

Panasonic GREEN IMPACT is our vision to aim at carbon neutrality together with customers and society by accumulating diligent efforts (ACT), taking our Group's responsibilities and opportunities seriously to prevent climate change as early as possible. We believe that reducing the 'emissions' and increasing the 'avoided emissions' should be accelerated at the same time, after we understand accurately and rationally that the 'emissions' and the 'avoided emissions' respectively have different concepts and utilization purposes, and our Group responsibilities (emissions) are not offset by contributions to our customers and society (avoided emissions), in other words, these two measurements are 2 sides of the same coins, i.e., inextricably linked.

The avoided emissions in particular still have a lot of issues to be addressed to become a measurement used commonly in society, as the flexibility in its calculation methods is high. Once calculation methods become standardized and turn out to be different from our methods, we will review our calculation methods, and updating our targets and numbers of the results using the standardized calculation methods, while regardless of updating calculation methods, we will contribute to the achievement of carbon neutrality of society by enhancing our competitiveness to reach the goals of each business. We will continue to report contents of changes and their progress in avoided emissions as proof of our accelerating efforts in both business transformation and growth.

GREEN IMPACT PLAN2024 (GIP2024): Status of CO_2-related indicators in fiscal 2024

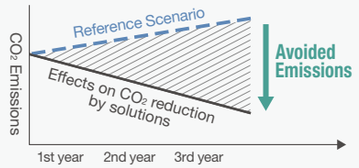


Environment

Avoided CO_2 Emissions

CONTRIBUTION/FUTURE IMPACT is commonly referred to as the avoided CO_2 emissions (hereafter, avoided emissions). Avoided emissions are an indicator of the value of the amount of assumed CO_2 emissions reduction made of customers and society through introducing our products and services, compared to the amount when not introduced (Reference Scenario, also called as the Baseline Scenario). Both 'emissions' and 'avoided emissions' are CO_2-related indicators; however, 'emissions' are a measurement of the CO_2 amount that should be reduced across our value chain (VC), while 'avoided emissions' measures the amount of contribution to decarbonization by our customers and society through our businesses. Thus, the methods of calculation and usage for these two indicators differ. Also, 'avoided emissions' cannot be used to offset the 'emissions' from VC of own company.

Definition of the Avoided Emissions[*1]



The avoided emissions are defined as positive impact on society by a solution in terms of CO_2 emissions reduction when comparing to those in the reference scenario where the solution is not used.

*1 We edited the definition based on the Guidance on Avoided Emissions by WBCSD (March 2023).

Formulation of international standards for the calculation methods for the avoided emissions are still in progress. We are actively involved in discussions[*2] aiming at establishing international standards, while developing, disclosing, and improving rational calculation methods based on the guidance and policy, and IEC discussions. In case that the standardized calculation methods will become different from our methods, we will of course comply with the adopted standards and work to achieve the targets after correction of our targets in accordance with such new standards. In addition, both our calculation methods and the evidence data stated in this data book have been verified by a third-party organization, in order to enhance the objectivity of the disclosed information.

The total CONTRIBUTION IMPACT of our products and services sold in fiscal 2024 was 36.97 million tons across our 56 businesses. This value was equivalent to the last year's figure in total as a result of the reduction amount caused by refinement that had made to the calculations related to cylindrical lithium-ion batteries for in-vehicle use (see page 16), despite the increase from the seven products and services newly quantified. Panasonic classifies CO_2 emissions reduction effects into four categories depending upon the type of contribution:

Electrification: Spreading electrified appliances and components that use energy more efficiently than those that use fossil fuels.
Replacements: Spreading products with improved energy efficiency while providing the same efficacy as conventional products.
Solutions: Optimizing power consumption throughout entire building spaces and facilities.
Others: Various contributions other than the above, including clean power generation, heat insulation, and reducing delivery.

Our current focus is on the Lifestyle business (including heat pump equipment, lighting equipment, refrigerators, and photovoltaic power generation systems) and the Energy business (including cylindrical lithium-ion batteries for in-vehicle use), which together comprise approximately 50% of Group sales. Although electricity demands increase as electrified appliances spread, by continuously increasing the efficiency of energy use in appliances themselves and the spaces they are connected to, we will reduce the load on grid power and promote renewable energy in each region.

*2 Such as the guidance and policies related to the avoided emissions published by WBCSD and the GX League in March 2023, and discussions in the IEC. (For more details, see page 21 Recognition of Avoided CO_2 Emissions and Activities to Develop Value, Standardization).

For further examples of our avoided emissions products that contribute to CO_2 reduction for customers and society, see the following website.

WEB https://holdings.panasonic/global/corporate/sustainability/environment/vision/product.html

To achieve the decarbonization of society, efforts by both energy power suppliers and users are indispensable. Assuming that use of renewable energy will increase through the efforts by energy power suppliers, we will improve energy efficiency in each of our various products and services, while contributing to energy use optimization in socioeconomic systems, such as in mobility, whole spaces of buildings, etc., and supply chain processes. We continue to calculate and disclose avoided emissions with rational methods as a proof of accelerating both the reforms and growth of our businesses to contribute to decarbonization.

The avoided emissions can be an indicator to identify companies and solutions that contribute to CO_2 emissions reduction by visualizing emissions across their VCs. Utilizing the avoided emissions as a part of business evaluation and adding the avoided emissions as deciding factor for investment should stimulate competition among businesses that can potentially contribute to decarbonization. We expect this will help build robust and efficient carbon-neutral VCs.

CONTRIBUTION IMPACT

[Unit: ton] Calculation example : See the following pages for further examples.

Category	Top 22 Businesses in FY2024	
Electrification 9.74 million in FY 2021 → 4 businesses 14.80 million	Cylindrical Lithium-ion Batteries for In-vehicle Use (Calculation example)	
	Hot-Water and Heating Systems with Heat Pump (A2W[*3]) (Calculation example)	
	Electrically-assisted Bikes	
	Hot-Water Heating with Heat Pump (EcoCute) (Calculation example)	
Replacements (Calculation example) <Energy efficiency performance> (Home appliances in general) 9.45 million in FY 2021 → 38 businesses 10.72 million	Household Air Conditioners	Washing and Drying Machines
	LED Lighting	Projectors
	Household Refrigerators	LCD TVs
	Electric Showers/Electric Water Heaters	CO_2 freezers
	Commercial Air Conditioners	Dryers
Solutions 2.42 million in FY 2023 → 5 businesses 2.27 million	Energy Recovery Ventilation (ERV) System <Reducing heat loss from the residential houses> (Calculation example)	
	Ceiling Fans <Improving energy efficiency in spaces>	
	BEMS[*4]/HEMS[*5] <Improving energy efficiency in space>	
	Centralized Energy Management Controllers in Stores <Monitoring and controlling of equipment>	
Others 6.01 million in FY 2023 → 9 businesses 9.19 million	(Calculation example) Vacuum Insulated Glasses <Reducing heat loss in spaces>; Home Delivery Communication Boxes <Reducing the number of redeliveries>	Photovoltaic Power Generation Systems (Panels and Power Conditioners)
		Fuel Cells
		Creation and Storage Collaboration System (Storage batteries)

Total 56 products and services: 36.97 million

[Reference] Our Businesses' Contribution to Carbon Neutrality (See page 34)

*3 Air to Water *4 Building Energy Management System *5 Home Energy Management System

Environment

Electrification Hot-Water and Heating Systems with Heat Pump (EcoCute, A2W*1)

*1 A2W (Air to Water) : Air-to-water Heat Pumps bound for Europe

Product life stages subject to avoided CO_2 emissions

Raw materials | Manufacturing | Transportation | **Use** | Disposal/Recycle

Sales regions: **Japan for EcoCute, and Europe for A2W**

■Overview

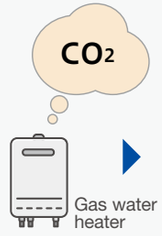
A heat pump is equipped with electrification technology that captures heat energy from the ambient air and transfers it to heat water or air utilizing the characteristic that temperature changes when gas is compressed or expanded. With the technology, the equipment with heat pump is 2.4 to 4.3 times more energy-efficient compared to the equipment uses heat energy from fossil fuel combustion.*2 Furthermore, on the premise that the ratio of renewable energy use in each energy sources will increase year by year as the electrified equipment with heat pump is spread, whereas CO_2 is always emitted from gas equipment in combustion of city gas, we will contribute to accelerate the transition to a decarbonized society.

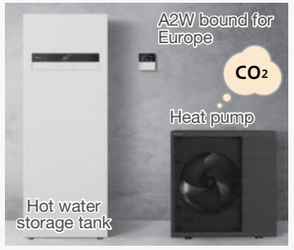
*2 Our own calculation based on information in METI's 'Top Runner Program'.

WEB https://www.enecho.meti.go.jp/category/saving_and_new/saving/enterprise/equipment/

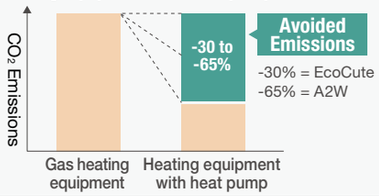
■Avoided CO_2 emissions mechanism

Compared to the average hot-water and heating systems with gas combustion type that are water heaters widely available in markets, our heating equipment with heat pump with equivalent capacity emit less CO_2 from the electricity used throughout their lifetimes, therefore, the difference of CO_2 emissions becomes avoided emissions.





Average CO_2 emissions from water & air heating energy by one gas heating equipment and one heating equipment with heat pump.



■Calculation formula of avoided emissions

Amount of activities | Avoided emissions for a given amount of activities | CO_2 emissions-related values and factors | Period

[Amount of activities] (Units)
The number of units that replaced existing gas heating equipment in the total annual sales volume*3

*3 Japan: Approximately 70% of sales are heating equipment with heat pump replacing gas heating equipment. (Source: Industrial association data).
Europe: 100% of sales are heating equipment with heat pump replacing gas water heaters.
(We deemed that the replacement of existing A2Ws can be ignored as the sales started in 2008.)

× (Annual city gas consumption per gas heating equipment (m^3) × City gas CO_2 emission factor (kg CO_2 /m^3)
− Annual power consumption per unit of the heating equipment with heat pump (kWh) × Electric power CO_2 emission factor per sales region (kg CO_2 /kWh)) × Period (Ten years)

Annual avoided emissions by one heating equipment with heat pump replacing a gas heating equipment.

- **Electric power** CO_2 emission factor: Japan - **0.487** kg/kWh, and Europe - **0.277** kg/kWh (Source: IEA 2021)
- **City gas** CO_2 emission factor: **2.240** kg/m^3 (Source: Document by Ministry of the Environment)

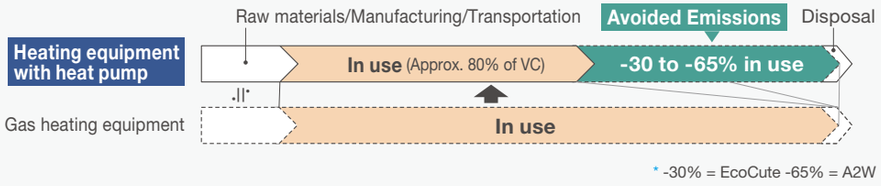
■Baseline (Subject to comparison)

CO_2 emissions from gas combustion to capture heat energy required for heating the same amount of water or air. Conventional gas by gas combustion is predominantly used in Europe where there are many cold climate areas. (Transformation of an A2W to its electrification is possible by using gas pipe used for the existing gas heating equipment.)

■Coverage of quantification (Way of thinking and its rationalization)

When the heating equipment with heat pump is in use. We deemed that CFP* of the equipment when it is in use can be ignored because both of a heating equipment with heat pump and a gas heating equipment show a relatively greater CFP when they are use.*4

*4 79.9% for 'in use' of CO_2 emissions in the value chain (VC) of the Panasonic heating equipment with heat pump. (FY2020 Panasonic actual result)



***CFP** (Carbon Footprint of Products): CO_2 emissions converted from GHG emissions throughout the entire product life cycle—from raw material procurement to disposal and recycling of a product and service (per one unit).

■Amount of activities (Unit)

EcoCute: The number calculated by the following equation: the annual sales volume in Japan x 70%*5 which is the replacement ratio of gas heating equipment with heating equipment with heat pump.

*5 Data from a Japanese industrial association. The calculation excludes the number of replacements of an end-of-life EcoCute with a new unit.

A2W: The number of annual sales of A2W in Europe (Unit)*6

*6 We deemed that replacement ratio of old A2Ws with new ones can be ignored as the sales started in 2008.

■Avoided CO_2 emissions per unit of amount of activities (Basic unit)

Regarding the annual energy consumption used for the same amount for heating water or air, which was converted to CO_2 emissions, difference between those of heating equipment with heat pump and gas heating equipment.

■Period (Flow method: Include entire lifetime CO_2 emissions of the product in its first sales year)

- The holding years of repair parts
- CO_2 emissions reduction effect continues during that period.

Electrification Cylindrical Lithium-ion Batteries for In-vehicle Use

Product life stages subject to avoided CO_2 emissions

Raw materials > Manufacturing > Transportation > **Use** > Disposal/Recycle

*The calculation formula has been revised from a life cycle perspective since disclosure Sustainability Data Book 2023.

Sales regions: **North America**

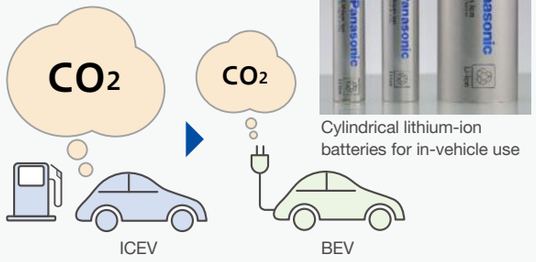
■Overview

Transition from internal combustion engine vehicles (ICEVs) to electric vehicles (EVs) is expected to hasten decarbonization in transportation sectors all over the world as EVs, in addition to their energy efficiency advantages*1, emit only small amounts of direct CO_2. In particular, Battery Electric Vehicles (BEVs) that do not use an internal combustion engine, employ a motor driven by electricity supplied from a rechargeable battery. Thus the rechargeable batteries that are equivalent to the fuel supply function in an ICEV, are recognized as one of the most important components of the BEV.

*1 Energy efficiency: The percentage of consumed energy that reaches to the wheels;
BEV: **87–91**% ICEV: **16–25**%.
Source: Yale Climate Connections. August,2022 "Electrifying transportation reduces emissions and saves massive amounts of energy"

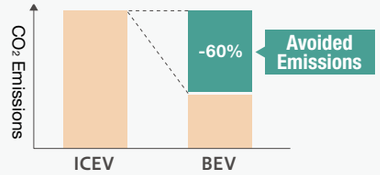
■Avoided CO_2 emissions mechanism

In the case that a BEV and an ICEV with our rechargeable batteries installed drives the same distance, a difference arises between the amount of CO_2 emissions converted from fuel consumed by the ICEV and the amount of electricity charged and discharged in the BEV because BEV's energy conversion efficiency to electricity is high.



Cylindrical lithium-ion batteries for in-vehicle use

CO_2 emissions throughout the entire product life cycle of an ICEV and a BEV in the U.S.



Refer to CCT (The international council on clean transportation)
Global-Vehicle-LCA-White-Paper-A4-revised-v2.pdf (theicct.org)

■Calculation formula of avoided emissions

Amount of activities | Avoided emissions for a given amount of activities | CO_2 emissions | Period

[Amount of activities] (Units)
The CO_2 emissions converted from the number of BEVs of the battery capacity sold per year

*2 Not only during use of batteries (driving the vehicle), but also at every stage from the mining of raw materials needed for production, manufacturing, transportation, and disposal.

$$\times \left(\underbrace{\text{CO_2 emissions for an ICEV throughout the entire product life cycle*2}}_{\text{(kg } CO_2 \text{ /km)}} - \underbrace{\text{CO_2 emissions for a BEV throughout the entire product life cycle*2}}_{\text{(kg } CO_2 \text{ /km)}} \right) \times \text{Lifetime mileage}$$

Avoided emissions per travel distance for one BEV replacing an ICEV

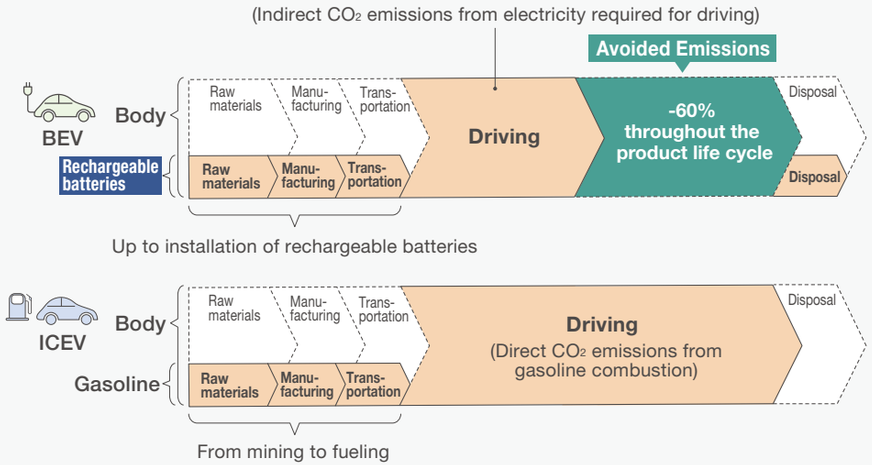
Average annual mileage respectively in Japan, U.S. and Europe x 10 years

■Baseline (Subject to comparison)

CO_2 emissions for an ICEV throughout the entire product life cycle including gasoline usage

■Coverage of quantification (Way of thinking and its rationalization)

The difference in total CO_2 emissions for BEVs and ICEVs compared in emissions at each stage for rechargeable batteries or gasoline from mining raw materials, disposal, recycling and emissions during driving respectively.



■Amount of activities (unit)

CO_2 emissions converted from the number of sold cylindrical lithium-ion batteries for in-vehicle use per year to the number of BEVs.

■Avoided CO_2 emissions per unit of amount of activities (Basic unit)

Difference in total CO_2 emissions per travel distance throughout the entire life cycle for one BEV replacing an ICEV.

■Period (Flow method: Include entire lifetime CO_2 emissions of the product in its first sales year in one time.)

Lifetime travel distance
= Average annual travel distance respectively in Japan, U.S. and Europe x Vehicle life (10 years)

■Avoided CO_2 emissions in fiscal 2024: 12.03 million tons

Replacements (Energy Saving) Energy-saving Effects from replaced Home Appliances

Product life stages subject to avoided CO_2 emissions

Raw materials > Manufacturing > Transportation > **Use** > Disposal/Recycle

Sales regions: **Japan, China, North America, Central and South America, Europe, Southeast Asia, Middle east, etc.**

■Overview

Improving efficiency of energy consumed by a large number of home appliances now widely used throughout society will reduce the load of local grid power for the use of appliances, lower the hurdle to transform to use renewable energy as their energy source. This facilitates transition to decarbonization society from demand sides. One of the characteristics of home appliances with high durability is that their dominant stage of CO_2 emissions (CFP*) in the life cycle is from energy use through the whole period in which product are used by customers and in society. This accounts for 80 to 90% of large home appliances such as lighting and refrigerators. Replacing the product used enough of the life with a new product that has equivalent function and performance in use together with improved energy efficiency will cause effect of reducing CO_2 emissions both from users and power suppliers.

■Avoided CO_2 emissions mechanism

Regarding electric products whose guaranteed year of durability is expired, the total amount of energy saved used in its product life time before and after replacing with a new product with equivalent functions is converted to CO_2 emissions.

Example of Hair Dryers

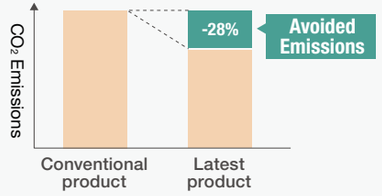
Annual power consumption 36.50 kWh EH-NA95

Annual power consumption 26.28 kWh EH-NA0J

Achieved fast-drying and airflow through improved performance while enhan the nanoeTM effect (28% energy consumed compa conventional products).

WEB https://panasonic.jp/hair/products/EH-NA0J.html

[Example] Comparison of CO_2 emissions converted from lifetime power consumption between conventional dryers and the latest products.



■Calculation formula of avoided emissions

Amount of activities | Avoided emissions for a given amount of activities | CO_2 emissions-related values and factors | Period

[Amount of activities] (Number of units)
The number of units sold per year*1

*1 'Before replacement' refers to the average penetration status of existing products that can be replaced with a new product with equivalent functions and performance at the time of the sale, per region. The amount of activities was broken down according to each situation and then totaled.

× (Annual power consumption of the product before replacement (kWh) − Annual power consumption of the product after replacement (kWh))

× CO_2 emission factor for electricity per sales region (kg CO_2 /kWh) × Period (5 to 10 years depending on the product)

Annual avoided emissions from energy-saving effect by one replaced product

CO_2 emission factors for electricity
(Source: IEA2021)
Unit: kg/kWh

Regions	Factors
Japan	0.487
Europe	0.277
North America	0.383
China	0.623
India	0.723
Asia and Pacific	0.386
Latin America	0.252
Middle East & Africa	0.616

■Baseline (Subject to comparison)

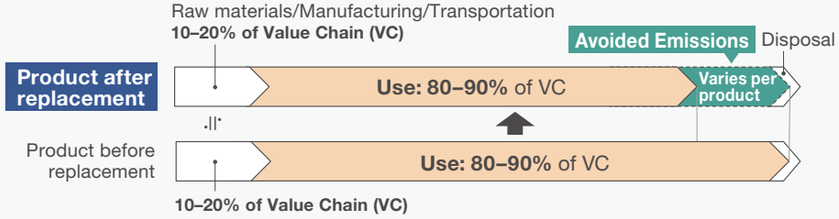
CO_2 emissions converted from lifetime power consumption of the average product in markets at the penetration rate of the product with functions and performance equivalent to the new product per sales region*2.

*2 Example: Dryers penetration rate per country, and the like.

■Coverage of quantification (Way of thinking and its rationalization)

When hair dryer is in use. The average CFP* of home appliances are dominant*3 'in use'. We deemed that we can ignore the impact from the CO_2 emissions difference between those from the products before and after the replacement.

*3 'in use' accounts for approx. 80 to 90% of CO_2 emissions in the home appliances value chain.



■Amount of activities (unit, peace, etc.)

The number of annual sales depending on the status (penetration rate, etc.) per sales region for the new product.

■Avoided CO_2 emissions per unit of amount of activities (Basic unit)

Difference between CO_2 emissions converted from lifetime power consumption*4 between those from the products before and after replacement in each sales region.

*4 Example: Rated power in design x annual 'time in use' etc.

■Period (Flow method: Include entire lifetime CO_2 emissions of the product in its first sales year)

- This was set by product, which can maintain holding a spare parts (5–10 years), optimum operational period for basic performance etc.
- CO_2 emissions reduction effect continues during the period.
- We deemed that 5 to 10 years for holding spare parts is a conservative estimate as the life of home appliances can be extended with appropriate use and maintenance.
- With the extended product life, further CO_2 emissions reduction effects are also expected because of efficient utilization of resources

*CFP (Carbon Footprint of Products): CO_2 emissions converted from GHG emissions throughout the entire product life cycle—from raw material procurement to disposal and recycling of a product and service (per one unit).

Solution (Reducing heat loss) Energy Recovery Ventilators (ERV) System

Product life stages subject to avoided CO_2 emissions

*1 Reduction in CO_2 emissions from reducing air conditioning heat loss from room spaces during the period of use of the products.

Raw materials > Manufacturing > Transportation > **Use*1** > Disposal/Recycle

Sales regions: **Japan, China, North America, and Europe**

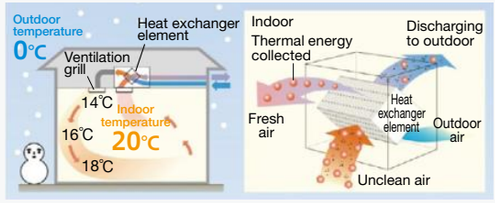
■Overview

To achieve decarbonization in the consumer and business sectors, it is important to reduce environmental impact from air conditioning at living spaces in houses and offices. Energy Recovery Ventilators (ERV) System reduces heat loss from the interior of buildings and provide comfort maintaining appropriate air quality at the same time. ERV System exchanges heat of indoor and outdoor with a heat exchange element during ventilation and either heat or cool the air before being taken into the building, which reduces air conditioning load. Moreover, the system is equipped with air purifier that is a high performance system. Therefore, ERV System is used in wide areas in residential, commercial, and office buildings, where high air tightness is required including Japan, the U.S., Europe, and China.

■Avoided CO_2 emissions mechanism

CO_2 emissions converted from the reduced amount of power or fuel consumption by adopting this ERV System in room spaces under the same conditions compared to those from average ventilation method for ventilation in the market.

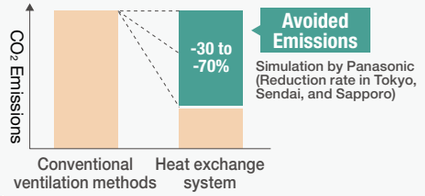
How ERV System works (winter)



* Efficiency varies according to model.

WEB https://sumai.panasonic.jp/air/kanki/kodatekicho/

CO_2 emissions converted from energy consumption with adjusted heat loss from ventilation



Simulation by Panasonic (Reduction rate in Tokyo, Sendai, and Sapporo)

WEB https://sumai.panasonic.jp/air/kanki/kabekakefan/

■Calculation formula of avoided emissions

Amount of activities | Avoided emissions for a given amount of activities | CO_2 emissions-related values and factors | Period

[Amount of activities]
Annual system installation volume (The number of heat exchange systems)

× (**Annual energy consumed by air conditioning in a residential house with conventional ventilation methods (volume of thermal loss)** (kWh or liters) × **CO_2 emission factors by electricity or fuel type in each sales region** (kg CO_2 /kWh or liters)

− **Annual energy consumed by air conditioning in a residential house with a ERV System (volume of thermal loss)** (kWh or liters) × **CO_2 emission factors by electricity or fuel type in each sales region** (kg CO_2 /kWh or liters))

Annual avoided emissions by installed one ERV System × **Period** (Ten years)

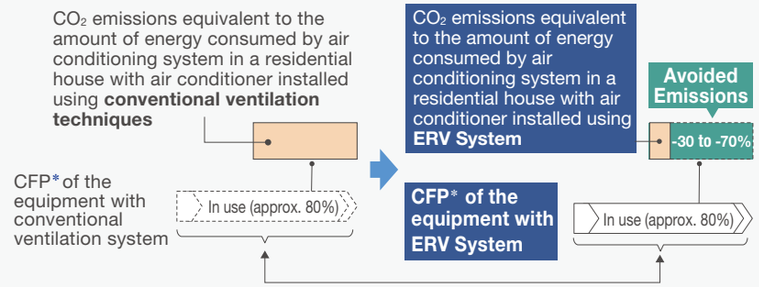
- CO_2 emission factor for **electricity**: **0.487** kg/kWh in Japan, **0.623** kg/kWh in China, **0.383** kg/kWh in North America, and **0.277** kg/kWh in Europe (Source: IEA 2021)
- CO_2 emission factor for **kerosene**: **2.49** kg/liter (Source: Data from Ministry of the Environment)

■Baseline (Subject to comparison)

CO_2 emissions converted from power and fuel consumption per each sales region from the use of air conditioners in a residential house where the current average ventilation systems in the market is installed.

■Coverage of quantification (Way of thinking and its rationalization)

Difference 'in use' . 'in use' account for the dominant (approx. 80%) of the CFP* of ventilators,, and effects from other than 'in use' are equivalent with other ventilators. Hence, we deemed that their CFPs when not 'in use' can be ignored.



Both systems ventilate same amount of air using a fan (i.e. CFPs* are equivalent)

***CFP** (Carbon Footprint of Products): CO_2 emissions converted from GHG emissions throughout the entire product life cycle—from raw material procurement to disposal and recycling of a product and service (per one unit).

■Amount of activities (unit)

The number of annual sales of heat exchange units, which is the core function of the system.

■Avoided CO_2 emissions per unit of amount of activities (Basic unit)

We calculated the average air conditioning load from an average ventilation method in the living space of a residential house in Japan using our simulation for each sales region.
We then determined the difference in the volume of energy consumed by system operation for air conditioning in living spaces between the conventional ventilation method and the energy exchanged method, and multiplied it by the CO_2 emission factors for electricity or fuel*1 by each sales region.

*1 Kerosene was used as the fuel.

■Period (Flow method: Include entire lifetime CO_2 emissions of the product in its first sales year in one time.)

- Designed lifetime of ERV System (10 years)
- CO_2 emissions reduction effect continues during the period.

Environment

Others (Reducing heat loss) Vacuum Insulated Glass (VIG)

Product life stages subject to avoided CO_2 emissions

*1 Reduction in CO_2 emissions from reducing loads in cooling or heating in the building during the period of use of the products.

Raw materials > Manufacturing > Transportation > **Use*1** > Disposal/Recycle

Sales regions: **Japan**

■Overview

One effective means of achieving decarbonization in the consumer and business sectors is through reducing the air conditioning load at spaces in residential houses and offices by maintaining stable room temperatures through improvement of building insulation. According to our estimation, heat loss through the windows in all heat loss in an average detached house in Japan accounts for 30 to 40%. Our Vacuum Insulated Glass (VIG) achieves high insulation while at the same time maintaining its thinness, that can be adopted for existing openings (windows) in buildings as they are. Therefore, VIG has a potential to offer high applicability to a wide range of room spaces in different types of both new and older buildings.

■Avoided CO_2 emissions mechanism

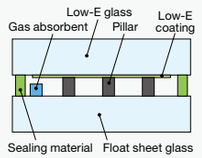
Vacuum insulated glass (VIG) shows significantly higher thermal insulation compared to those of single-pane glass and Low-E multi-pane glass.*2 CO_2 emissions converted from the reduced amount of power of electricity required for operation of air conditioning equipment by installation of the VIG for glass material of buildings.

Vacuum Insulated Glass (VIG)

*2 The overall heat transfer coefficient, or U-value

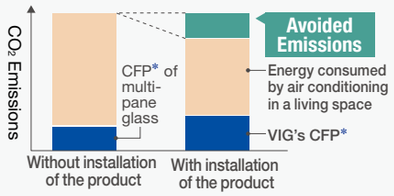
1/4 of multi-pane glass

VIG: 0.7 w/ m²·k
Multi-pane glass: 2.9 w/ m²·k



Vacuum insulated glass structure

Comparison of CO_2 emissions from energy consumed by air conditioning in a residential house with/without VIG windows, taking account of the glass's CFP.*



■Calculation formula of avoided emissions

Amount of activities | Avoided emissions for a given amount of activities | CO_2 emissions-related values and factors | Period

[Amount of activities] (m²)
Amount of VIG sold per year

× (Power consumed by air conditioning in a residential house with single-pane or Low-E multi-pane glass*3 per year (kWh/ m²) − Power consumed by air conditioning in a residential house with VIG*3 per year (kWh/ m²))

× CO_2 emission factor for electricity (kg CO_2 /kWh) × Period (Designed lifetime)

CO_2 emission factor for electricity Japan **0.487** kg/kWh (Source: IEA 2021)

Annual avoided emissions achieved by installation of 1 m² of VIG

− (VIG's CFP*,*4 (kg CO_2 / m²) − Single-pane or Low-E multi-pane glass's CFP*,*4 (kg CO_2 kWh/ m²))

*3 Calculated based on our simulation using data from the Architectural Institute of Japan.
*4 Calculated based on data from the Flat Glass Manufacturers Association of Japan, by Panasonic.

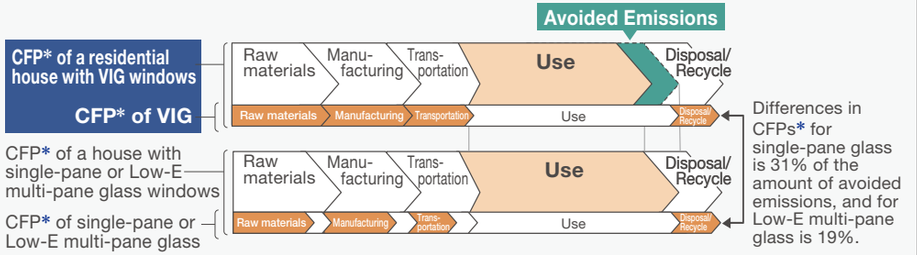
■Baseline (Subject to comparison)

CO_2 emissions converted from electricity consumed by air conditioning operations in the entire space of a respective residential house in Japan.

For the installation of VIG, it is set that VIG replaces single-pane glass when reforming a house, and replaces Low-E multi-pane glass when building a new house.

■Coverage of quantification (Way of thinking and its rationalization)

- In use: CO_2 emissions derived from electricity consumed by air conditioning in an entire residential house.
- Glass's CFP*: VIG's CFP* is greater than that of single-pane or Low-E multi-pane glass, however, there are no CO_2 emission from the glass in use.
  The difference between the CFPs* from VIG and single-pane glass is 31% of avoided emissions, and the difference between VIG and Low-E multi-pane glass is 19% of avoided emissions. These differences were subtracted from the avoided emissions, instead of ignoring them.



■Amount of activities (m²)

Amount of VIG sold per year

■Avoided CO_2 emissions per unit of amount of activities (Basic unit)

- In use: Differences in electricity consumed by air conditioning in residential houses per different type of glass.
  Note: Annual power consumption was calculated by us, using a simulation of a two-story wooden house with a floor space of 120 m² based on standard weather data from the Architectural Institute of Japan using air conditioning heat load computing software.
- CFPs* for glass: Calculated by ourselves, per type of glass based on data from the Flat Glass Manufacturers Association of Japan.

■Period (Flow method: Include entire lifetime CO_2 emissions of the product in its first sales year in one time)

- Designed lifetime of VIG.
- CO_2 emissions reduction effect continues during the period.
- We believe that the CO_2 emissions effects are estimated from a conservative view because the life of a Japanese residential house is generally deemed much longer.

***CFP** (Carbon Footprint of Products): CO_2 emissions converted from GHG emissions throughout the entire product life cycle—from raw material procurement to disposal and recycling of a product and service (per one unit).

Others (Reduction of redelivery)

Home Delivery Communication Box

Product life stages subject to avoided CO_2 emissions

*1 Reduction of CO_2 emissions by home delivery services during the period of use of the products

Raw materials > Manufacturing > Transportation > **Use*1** > Disposal/Recycle

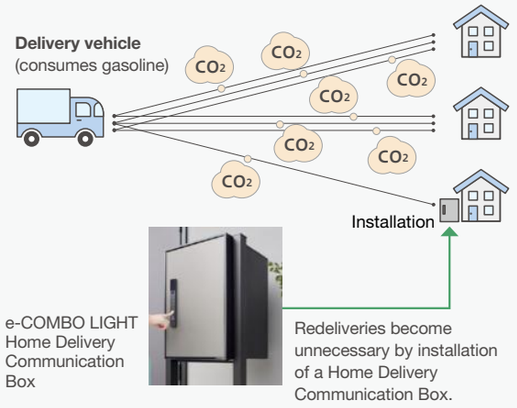
Sales regions: **Japan**

■Overview

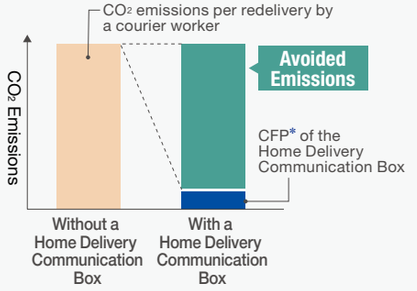
In the household business sector in Japan, because of increase in e-commerce trading and increase in the time when none is at home along with changes in lifestyle, load for distribution on couriers is on increase as the number of redelivery of goods increases. Installation of a Home Delivery Communication Box at home can avoid redelivery of goods, lowers the burden for the parcel receivers, and decreases the working hours of couriers workers. At the same time, it reduces CO_2 emissions from energy consumption such as fuel for deliveries, which contributes to reduction of load in local distribution networks and decarbonization.

■Avoided CO_2 emissions mechanism

Reduction of CO_2 emissions from energy consumption (combustion of fossil fuel such as gasoline) required for courier workers to redeliver goods, by avoiding redeliveries.



CO_2 emissions with and without one Home Delivery Communication Box
(CO_2 emissions from a vehicle on redelivery by the courier worker and CFP* of the Home Delivery Communication Box)



■Calculation formula of avoided emissions

Amount of activities | Avoided emissions for a given amount of activities | Values related to CO_2 emissions | Period, etc.

[Amount of activities] (Units)
The number of Home Delivery Communication Boxes sold per year.

× (Avoided emissions per vehicle per redelivery (0.46 kg/redelivery) × Annual number of redeliveries × Period)

* Verified data by Ministry of Land, Infrastructure, Transport and Tourism (MLIT)

* Verified data by Panasonic

(Designed lifetime of the product)

− CFP* of a Home Delivery Communication Box

* Estimated by Panasonic

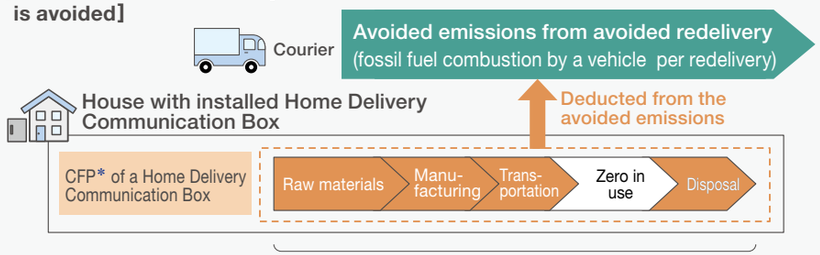
■Baseline (Subject to comparison)

CO_2 emissions converted from the average energy consumption from redelivery of goods by courier workers, in the case that the receivers of the goods did not receive the goods at the first delivery as they were not at home where a Home Delivery Communication Box is not installed.

■Coverage of quantification (Way of thinking and its rationalization)

When the box is in use (avoided emissions from avoided redelivery by installation of a Home Delivery Communication Box). Although the box emits no CO_2 when it is in use, the CFP* of the box itself is 20% of entire avoided emissions (by our estimation). However, this was not included in the avoided emissions as it is an additional effect.

[Situation where redelivery is avoided]



The CO_2 emissions occur additionally (Approx. **20**% of the avoided emissions)

■Amount of activities (unit)

The number of Home Delivery Communication Boxes sold per year

■Avoided CO_2 emissions per unit of amount of activities (Basic unit)

- Avoided emissions per redelivery: **0.46** kg (Source: Verified data by MLIT)
- The number of redeliveries: Verified data by Panasonic

■Period (Flow method: Include entire lifetime CO_2 emissions of the product in its first sales year)

- Designed lifetime of a Home Delivery Communication Box.
- CO_2 emissions reduction effect continues during the period.
- We deemed that the design life of the Home Delivery Communication Box is a conservative estimate for CO_2 emission effects as the box's life can be extended further with appropriate use and maintenance.

***CFP** (Carbon Footprint of Products): CO_2 emissions converted from GHG emissions throughout the entire product life cycle—from raw material procurement to disposal and recycling of a product and service (per one unit).

Environment

Activities to raise awareness of and valorize Avoided CO_2 Emissions

Under the current GHG Protocol, it is possible to evaluate CO_2 emissions from our business activities; however, it does not take into account the contribution to society through our business (opportunities, i.e., business chance) as of now. On the other hand, although there is a concept of the avoided emissions, in reality awareness of the avoided emissions is still low in society and no uniformed standard for the avoided emissions has been established. Therefore, it is a must to establish a structure to facilitate and encourage respective corporations efforts to decarbonation (technical development and innovation), as well as to contributes to the acceleration of the realization of a carbon-neutral society by preparing environment where respective corporation's contribution to decarbonization is properly evaluated.

Our environmental vision, Panasonic GREEN IMPACT (PGI), sets out the CO_2 emissions reduction targets not only for our company but also for society as a whole. It is important to spread significance of the avoided emissions as 'a standard measurement' to evaluate the corporation's contribution to decarbonization efforts and expand awareness of the avoided emissions, together with stakeholders such as corporations and financial institutions who share the same ambitions. Therefore, we are currently implementing the following activities regarding the avoided emissions towards its global standardization, and raising and spreading its awareness

Standardization Activities

International Electrotechnical Commission (IEC)

In September 2020, activities of standardization of a new IEC standard proposed by Japan's proposal started. Specifically, the activities are calculation of the avoided emissions from new technologies, such as AI, IoT, and a digital twin; provision of requirements for the calculation methods; establishment of requirements for communications and information disclosure, and preparation of an international standard IEC63372 titled "Quantification and communication of GHG emissions and emission reductions/avoided emissions from electric and electronic products and systems - Principles, methodologies, requirements, and guidance." A voting has started since May 2024 on the Committee Draft IEC TC111 (Environmental standard for electrical and electronic equipment and systems). If all goes well, the new IEC standard is expected to be published in the early half of 2025. The Panasonic Group has involved and worked on the above activities from their initial stage.

World Business Council for Sustainable Development (WBCSD)

WBCSD is a global organization of approximately 200 leading companies committed to sustainable development, working together to contribute to transformation to sustainable society. Endorsing the principles of WBCSD, Panasonic Holdings Corporation (PHD) joined WBCSD in 2022 to accelerate the Panasonic Group's PGI activities. In response to the Guidance on Avoided Emissions issued by the WBCSD in March 2023, Panasonic is working in close collaboration with the member companies for revising the standards and promoting activities to disseminate the avoided emissions.

WEB **Panasonic Holdings Joins WBCSD (World Business Council for Sustainable Development)**
https://news.panasonic.com/global/press/en221007-2

GX League*

With the aim to establish a system whereby the opportunities for Japan's corporations contributions to climate change such as emissions reduction by their products and services provided to markets is properly evaluated and ultimately to achieve global carbon neutrality, Panasonic, as a leading member of the GX Business Working Group, has participated in the GX League following to the last year, in the area of rulemaking for market creation that is one of the GX League activities.

To expand awareness of the avoided emissions that is one of the disclosure items used in the Panasonic Group's long-term environmental vision in evaluating opportunities related to climate change, we jointly published with other GX league member company a collection of use examples by financial institutions in December 2023, and in May 2024 a virtual collection of recommended information disclosure by our operating companies, following to "the Basic Policy for disclosure and evaluation for opportunities related to climate change" published in fiscal 2023.

* GX stands for 'Green Transformation'. In February 2022, the Industrial Science and Technology Policy and Environment Bureau of the Ministry of Economy, Trade and Industry (METI) announced the GX League Basic Concept. GX League was launched as an apparatus where the company groups who are proactively working for GX with players in industry, government, academia and financial institutions challenge towards GX as a whole to discuss transformation of a whole society, economic and environmental system and implement activities to create new markets.

WEB **Establishment of the GX League Business Working Group and Appointment of PHD as a Leader – Building a Framework and Promoting Evaluation and Disclosure on Climate-Related Opportunities**
https://news.panasonic.com/jp/topics/204865

Appeal of the avoided emissions at international events

As a result of our fiscal 2023 activities for raising awareness and dissemination of the avoided emissions at international events, the activities were clearly stated in the 2023 G7 outcome documents.

We have continued working to raise awareness and valorize the avoided emissions in fiscal 2024.

Environment

■ G7 Ministers' Meeting on Climate, Energy and Environment in Sapporo

In April 2023, "There is value in acknowledging avoided emissions." was clearly stated in the outcome documents.

■ G7 Hiroshima Summit

In May 2023, "We also encourage and promote private entities' work to foster innovation contributing to the emissions reductions of other entities through decarbonization solutions." was clearly stated in the outcome documents.

■ GGX x TCFD Summit

At the GGX x TCFD Summit sponsored by the METI as an international event integrating the Global Green Transformation (GGX) meeting and the Task Force on Climate-related Financial Disclosures (TCFD) meeting, held in October 2023, Panasonic Group participated in the panel discussion as a panelist on the themes of corporate problem-solving capabilities and the avoided emissions. Our panelist explained that the avoided emissions are a benchmark for measuring the contribution of each business to solving climate change issues and use of the benchmark will lead to decarbonization of the entire society. He also referred to that while there is a growing interest in the avoided emission as a measurement to evaluate the level of corporations contribution to decarbonization as the avoided emissions was clearly stated in the G7 Summits outcome documents, the avoided emissions are significant in terms of fairness and comparability for corporations.

■ COP28 (The 2023 Conference of the Parties of the United Nations Framework Convention on Climate Change (UNFCCC))

In December 2023, Panasonic Group participated in the METI-sponsored seminar at the Japan Pavilion and actively involved in discussions with WBCSD, GFANZ (Glasgow Financial Alliance for Net Zero, a global alliance of leading financial institutions engaged in for acceleration of economic decarbonization), BlackRock, and other related organizations. In the seminar with a theme of "Tech for Transition," we discussed rulemaking and technology related to the avoided emissions. In the seminar on "appropriate evaluation of the avoided emissions towards a net zero society," we suggested that, for the financial industry to utilize the avoided emissions as an indicator in evaluating business enterprises and projects, the calculation method should be standardized in order to facilitate a fair and easy comparison for corporations.

WEB **Panasonic Holdings Uses COP28 Discussions, Exhibition to Broaden Global Understanding of Avoided Emissions**
https://news.panasonic.com/jp/stories/15099

■ CES2024

At the CES 2024 Conference held in January 2024, Panasonic Group announced its intentions to continue to lead society, establish the concept of the avoided emissions, make rules in the area, and ultimately to contribute to its dissemination of the avoided emissions throughout the world, touching upon its participation in the G7 Hiroshima Summit.

WEB **Communicating our corporate stance on making social contributions to both "resolving issues in the global environment" and "lifelong health, safety and comfort" — CES 2024**
https://news.panasonic.com/jp/stories/15238

Environmental Governance

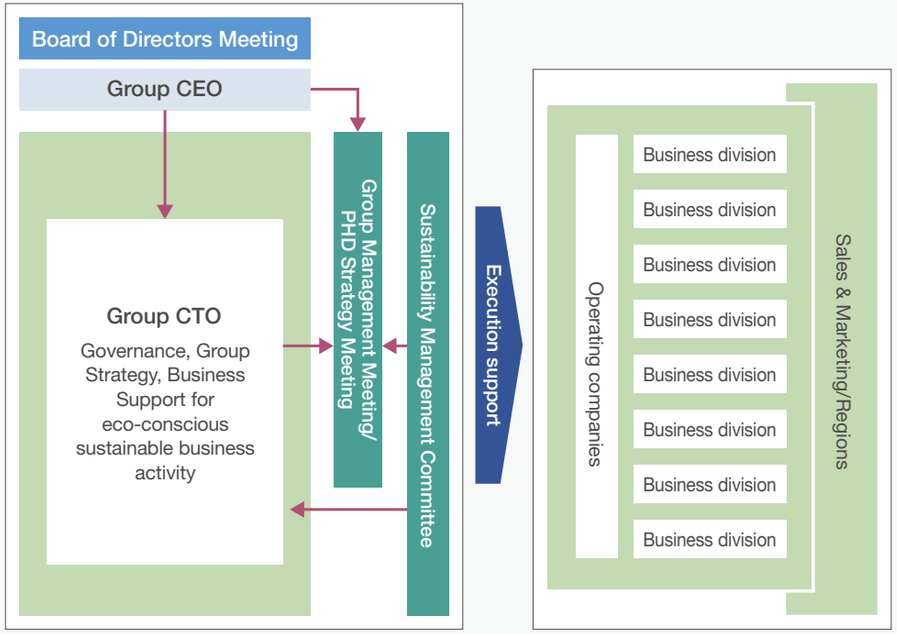
Promoting Group-wide Environmental Sustainability Management Centering on PDCA

Striving for the creation of a sustainable society, we are following our initiative under the Group Chief Technology Officer (CTO) (Tatsuo Ogawa Executive Officer, as of April 2024) and working to fulfill our corporate social responsibility through eco-conscious business activities as well as resolve environmental issues such as climate change, resources, water, etc. through our products and services. The Panasonic Group formulates its annual environmental management policy in accordance with the Group's management policy, "Panasonic GREEN IMPACT"—our long-term environmental vision announced in fiscal 2023, our Environmental Action Guidelines and the GREEN IMPACT PLAN 2024—our environmental action plan. Our environmental policy is shared annually across the entire organization through the policy presentation led by the Group CTO, who is delegated authority by the Group CEO. Operating companies and business divisions establish their own environmental policies and targets based on the Group management policy and "Panasonic GREEN IMPACT", and plan and promote their activities accordingly. The progress and results of activities for the key environmental targets we pledged to society to achieve under the Environmental Action Plan, GREEN PLAN 2024 are examined and determined on the directions, issues, and particularly key measures in the Group Management Meeting where top management such as the Group CEO and presidents of the operating companies participate. Matters of special importance are deliberated on by the Board of Directors Meeting.

Panasonic GREEN IMPACT, our Group's long-term environmental vision as stated above, was put through this process and was released in April 2022. In promoting our environmental sustainability management activities in Panasonic Group, we have built a structure to promote implementation of such activities collaborating other departments in the entire Group through determination by the Sustainability Management Committee (established in December 2021) led by the Group CEO. For activities organized by theme, we have set up committees specifically for dissemination of our environmental policy and targets to all members of the Group without fail, deliberation on how to respond to issues, and chemical substances management used in our products. We started our Sustainable Management Promotion Consortium activities in September 2020 as opportunities for volunteers to resolve sustainability issues and integrating business growth, which are underway, building consultative reporting ties with the Sustainability Management Committee as mentioned above. (approx. 960 participants)

In principle, results of activities relevant to environmental targets are gathered and assessed on a monthly basis as environmental performance data, to identify the achievements, and additional measures are taken as needed. Feedback of annual performance data is given internally and disclosed externally after review, onsite audits, and independent assurance by a third-party. Moreover, reviews and feedback from stakeholders are utilized in subsequent measures to ensure further continuous improvement.

Promotion System of Environmental Sustainability Management in Fiscal 2025



* See page 5 for more details on Promotion System of Sustainability Management

Environmental Management Systems

Implementation of Environmental Sustainability Management Based on Environmental Management Systems (EMSs)

As the foundation of environmental sustainability management, Panasonic Group set up EMS at all of our manufacturing sites across the world in fiscal 1999, and has continued to have the respective sites ISO14001 certified since then.

Moreover, in order to further strengthen the environment management world-wide, we set up EMS also at all of our nonmanufacturing sites; in principle, the respective sites also have obtained ISO 14001 certification. In October 2011, we published the Environmental Management System Establishment Guidelines that summarizes the EMS concepts for different business forms such as manufacturing, sales and services, and head office administration, aiming to build the EMS in accordance with the Basic Rules for Environmental Affairs on a global scale. Based on the Guidelines, we are implementing Environmental Sustainability Management to achieve the targets set in the Green Impact Plan 2024.

Panasonic Automotive System Co., Ltd., Panasonic Industry Co., Ltd. and Panasonic Energy Co., Ltd. provide seminars for their members to learn the basics of the EMS, and training for auditors to work at different levels, such as internal and chief auditors. Due to the COVID-19 pandemic, holding trainings in conventional assembly form was impossible from fiscal 2021. The remote training scheme has enabled employees who could not participate in training because of time constraint participate in the training actively, resulting in highly effective training. Since fiscal 2024 when the pandemic subsided, holding training in face-to-face form has been possible, and some of our operating companies restarted training in hybrid form with face-to-face and online, utilizing merits of both forms. Furthermore, each operating company is upgrading its program contents to implement and enhance their management on sits. Such programs include practical programs including various methods such as roleplaying, and audit-related programs such as on audit policy and focused auditing points aiming to standardize internal auditors skills at high level.


Seminars for nurturing internal auditors

Acquired status of the ISO 14001 Certification (as of March 31, 2024)

Region	Number of certifications obtained*1		Total
	Manufacturing	Non-manufacturing	
Japan	20	10	30
North America & Latin America	13	0	13
Europe & CIS	7	1	8
Southeast Asia, & Oceania	34	8	42
China & Northeast Asia	43	1	44
India, South Asia, Middle East & Africa	6	1	7
Total	123	21	144

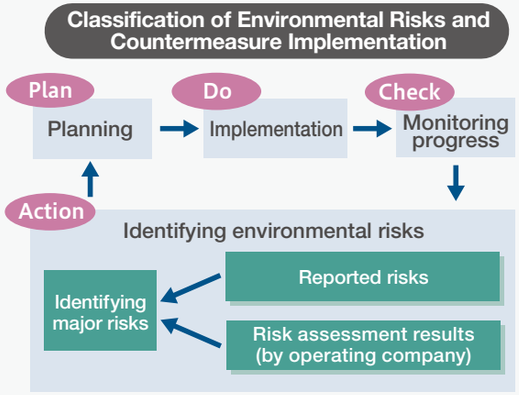
*1 The above number includes the one for integrated certification. The number of acquired status varies every year depending on the situation such as reorganization or closure of BDs, or promotion to acquire integrated certification.

PDF **Panasonic Group ISO 14001 Certification Sites**
https://holdings.panasonic/jp/corporate/sustainability/pdf/eco_isolist2023.pdf

Environmental Risk Management

Group-wide Systems to Manage Environmental Risks

As a tool to continuously reduce environmental risks, Panasonic Group has established an Environmental Risk Management System specific to each operating company. In accordance with the basic risk management policy for all Panasonic group operating companies (see pages 138-139), we promote identification of environmental risks and group-wide risk management each year, and ensuring quick responses to reported environmental risks.



To identify environmental risks and implement the management system, environmental risks are identified for each operating company and for each region in the world each year. From these risks, environmental risks on a Panasonic group-wide level are selected. The risks that show a high level of frequency or seriously impact business management are designated as major risks and prioritized in planning and executing risk reducing measures. These measures are implemented for each major risk, and progress is monitored and followed up on a quarterly basis in the PDCA cycle.

When an environmental risk is found, the relevant operating company, related job functions, and local companies collaborate to promptly implement emergency measures and recurrence prevention measures adapted to the risk level. Also, the management flow in case of risk discovery is standardized to prevent the occurrence of secondary risks as a result of confusion.

Environmental Compliance Management at Factories

Panasonic Group manages environmental systems in full compliance with laws and regulations. We regularly measure emissions of gas, wastewater, noise, odor, etc., and introduce preventative measures for cases that may lead to serious violations. Furthermore, key human resources are developed for information sharing among the operating companies/business divisions, environment-related job functions, and local companies, to ensure exhaustive compliance with legislation related to factory environment management in respective countries where our manufacturing sites are located. Specifically, activities to share information as well as specialized training are conducted for factory management officers in charge of the management of chemical substances, waste, wastewater, and exhaust gas, either by country or by region in Japan, Europe, China, and Southeast Asia. Field surveys on laws and regulations using checklists were conducted on a global scale to confirm comprehensive implementation of environmental compliance, and we also conducted verification of the effectiveness of various measures.

As a result of these measures, there were 4 violations of environment-related regulations across the world in fiscal 2024. In response to the violation, we promptly reported the violation to the authority, and at the same time, implemented measures against the causes to fulfill the criteria. We continue our efforts for thorough legal compliance and the prevention of any recurrence.

Case of Violations of Laws and Ordinances (e.g., excess of the standard legal level) in Fiscal 2024

Region	Environmental pollution					Other	Total
	Air	Water quality	Noise	Odor	Waste	Permission / Approval	
Global (including Japan)	2	0	0	0	2	0	4
(Japan)	(0)	(0)	(0)	(0)	(0)	(0)	(0)

Compliance with Environmental Regulations Relating to Products

We manage compliance with regulations relating to our products through a quality management system. Compliance with regulations is ensured with our Products Assessment System which incorporates environmental performance targets such as customer demands for environmental performance, the energy efficiency labeling program, and third-party certification systems, as well as evaluation of compliance with regulations on chemical substance management, energy efficiency, 3R, and recycling, to (1) set up overview for achieving targets at the product planning stage, (2) define concrete targets at the design planning stage, and confirm compliance at the design stage, (3) conduct interim assessment at the design completion stage, and (4) conduct final assessment at the mass production decision-making stage. In compliance with the RoHS regulations on 10 hazardous chemical substances, regular acceptance inspections are being conducted for purchased parts and goods and our suppliers are audited under our environmental quality assurance system. These are designed in cooperation with our suppliers to improve the management of chemical substances in our products. However, unfortunately, a violation related to the restricted substances in our products was found in fiscal 2024. The restricted substance content was derived from an upper stream supplier (a supplier in higher-tier) who has not directly contacted with Panasonic Group in the supply chain. Due to the

Environment

difficulty of clearly understanding the state of quality control at suppliers in higher-tier, we believe strengthening the quality control system (audit system and training of the suppliers in higher-tier) at a supplier who directly contracted with the Group (Primary suppliers) is important to eliminate such violations. Therefore, our Quality, Environment, and Procurement Divisions will work to ensure further product compliance management and take recurrence measures, taking lead in collaboration with other relevant divisions for providing support to our primary suppliers.

Measures Against Soil and Groundwater Contamination and Air Pollution

In the latter half of the 1980s, soil and groundwater contamination due to chlorinated organic solvents was detected at some Panasonic group sites. In response, we have conducted anticontamination activities across the Group. Specifically in 1991 we created the Manual for Preventing Contamination of Soil and Groundwater and began conducting necessary surveys and measures. In 1995 we discontinued the use of chlorinated organic solvents, and in 1999 created Guidelines on the Prevention of Environmental Pollution to ensure there would be no recurrence of similar problems at our sites. In fiscal 2003 we began enhancing our surveys and measures to comply with relevant laws and regulations, including the Soil Contamination Countermeasures Act, which was enforced in Japan in 2003, and in fiscal 2004 started implementing measures to place all our bases across the globe under management supervision with regard to soil and groundwater.

Specifically, we conduct onsite inspections and interviews at the bases, in addition to surveying their use of volatile organic compounds (VOCs) and heavy metals. Furthermore, we implement surface soil surveys within the premises. For the sites where contamination was detected beyond the regulatory pollution standards, we conduct detailed borehole surveys to identify the boundaries of the contaminated areas and take remedial measures.

As a result of these efforts, we were able to place all our bases under management supervision in 2008. Furthermore, in fiscal 2011, the management supervision scheme was purpose-specifically reorganized and reinforced to establish a new management supervision scheme. With the highest priority given to preventing dispersion of pollution beyond our premises, this new scheme is implemented across all operating sites to further improve the level of measures against contamination.

Soil and Groundwater Risk Management Policy

Conditions subject to management supervision	Procedure
Pollution dispersion prevention beyond Panasonic premises	1. Conduct historical surveys 2. Determine and install monitoring wells at the premises' borders 3. Analyze groundwater at the borders 4. Check possibility of pollution from external sources 5. Report to management department 6. Determine the external pollution dispersion prevention methods 7. Install the external pollution dispersion prevention methods 8. Install assessment wells 9. Begin assessments (monitoring)
Thorough pollution source elimination	10. Conduct brief status check 11-1. Horizontal direction detailed analysis 11-2. Vertical direction detailed analysis 12. Determine the magnitude of pollution 13. Discuss the areas and methods of purification 14. Conduct purification and install pollution dispersion prevention measures 15. Monitor pollution source (groundwater) after purification 16. Report purification completion to management department

Soil and Groundwater Pollution Surveys and Remedial Measures for Fiscal 2024

Region	Number of sites that completed remedial measures	Number of sites currently taking remedial measures
Global (including Japan)	4	40
Japan	(4)	(35)

In addition to the above, Panasonic Group is also working on responses to air pollution.

Besides the efforts making in factories as matters of course, we are working as a company to comply with the Act Concerning Special Measures for Total Emission Reduction of Nitrogen Oxides and Particulate Matter from Automobiles in Specified Areas (Act No. 70 of 1992), which regulates nitrogen oxides (NOx) and particulate matters (PM) emitted from company cars owned and/or managed by Panasonic Group. The company cars owned and/or managed by Panasonic Group business sites in Japan are centrally managed on the group-wide vehicle management system. Annually required reports are submitted through the vehicle management system. Also each business site undertakes thorough regular vehicle checkup and fuel economy management on these cars, as well as taking the initiative in reducing air pollution, such as by advising employees on eco-driving techniques and hosting related workshops, and promoting introducing hybrid cars.

Initiatives for PCB Pollution

Our initiatives for PCB pollution are introduced on the following website.

WEB https://www.panasonic.com/global/corporate/sustainability/eco/governance/risk.html

Response to TCFD

Panasonic Group endorsed the TCFD recommendations*1 in May 2019. As Panasonic Group recognizes risks and opportunities concerning climate change as a critical management issue, we identify our business risks and opportunities and verify business resilience and strategy by thoroughly analyzing the scenarios, considering the TCFD's recommendation. We also disclose information on thematic areas recommended by TCFD, i.e., 'governance', 'strategy', 'risk management', and 'indices and targets', assuming future engagement with investors, etc.

*1 TCFD: an abbreviation of Task Force on Climate-related Financial Disclosures. The task force was set up by the Financial Stability Board (FSB) in response to a request by the G20 Finance Ministers and Central Bank Governors. TCFD published its recommendations in 2017.

Governance

Panasonic Group system to promote group-wide environmental sustainability management is headed by board of directors, so that information on group-wide environmental sustainability management from all of the operating companies are reported to the board of directors.

Also, the progress and results of activities for the key environmental targets we promised to society to achieve under the GREEN IMPACT PLAN 2024 (GIP2024) are examined and determined on the directions, issues, and particularly key measures in the Group Management Meeting where Group CEO, presidents of operating companies, and senior managers participate. Matters of special importance are deliberated on by the Board of Directors Meeting.

Our long-term environmental vision "Panasonic GREEN IMPACT (PGI)", was put through this process and was released in April 2022. In promoting our environmental sustainability management, we have built a system with which all operating companies and business sites members effectively collaborate and promote group-wide activities through determination by the Sustainability Management Committee (established in December 2021) led by the Group CEO. For activities organized by theme, there are specific committees for disseminating our environmental policy and targets to all members in the Group, for deliberating on how to respond to issues, and for managing the chemical substances used in our products.
See page 23 for more details.

Strategy

We analyzed impacts on certain items of Panasonic Group Businesses that are likely to affect climate change, based on our assessment of the risks and opportunities in Panasonic Group business operations. The results were used to develop a social scenario for the year 2030, focusing on matters with the greatest impact. We then used the scenario as the basis for examining strategies, and verified the business resilience in our strategy.
See pages 30-33 for more details.

Panasonic GREEN IMPACT (PGI) is our transition plan to low-carbon economy as a Panasonic group. To support this transition, we have set up short-term targets in our Green Impact Plan (GIP) 2024. We have also set out following medium-term targets.

- Make our total CO_2 emissions (Scope 1 and Scope 2) net-zero by 2030.
- Reduce CO_2 emissions from use of our products that Panasonic Group sold by 30% compared with the 2019 level by the year 2030.

We would like to introduce specific examples as our contribution to energy reduction and energy transformation in society.

The first is an example of our energy reduction activities for product use in Scope 3; that is, action on lighting equipment that emit large volumes of CO2. In addition to the conventional lighting that is designed to "light up a plane" such as a floor or desktop, by using an index for 'feeling of brightness in space' and knowhows of "optical control technology" and "spatial presentation with proper lighting at a right place" that are developed based on our accumulated research results on comfortability, we will achieve energy reductions of up to 30% without compromising comfort.

The next is an example of our contribution to energy transformation in society through electrification. To speed up energy transformation in society, the demand side must itself push for electrification by replacing fossil fuel-fired equipment with electric devices. For instance, the heat pump water heater is capable of warming up water by using a heat pump to collect heat from the air efficiently, minimizing the electric power consumption. The heat pump can be used not only in new houses, but also in existing houses that use oil or gas-fired boilers without replacing the pipework. Electrification increases opportunities to make effective use of electric power derived from renewable energy sources. In addition to that frequency of utilizing opportunity to use energy derived from renewable energy sources increases thanks to the electrification, storing unstable supply of renewable energy as the warm water enables energy time shift and mitigates the load on the power grid, thus contributing to wider use of renewable energy resources.

PDF **Panasonic's Sustainable Management (Group CEO Briefing, January 2022)**
https://holdings.panasonic/global/corporate/investors/pdf/20220106_sustainability_e.pdf
See pages 41-44 for initiatives for Scope 1 and Scope 2.

Environment

Risk Management

As a tool to continuously reduce environmental risks, Panasonic Group is working to establish operating company-specific Environmental Risk Management Systems, in accordance with the basic risk management policy for all Group companies (see pages 138-139). The management policy includes identification of environmental risks and group-wide risk management each year, and ensuring quick responses to reported environmental risks. In addition, The Panasonic Group is promoting risk management based on the same process at Panasonic Holdings Co., Ltd. (PHD) and operating company. The PHD Enterprise Risk Management Committee conducts deliberations from the perspective of the Group's management and business strategies and social responsibilities, and decides the Group's significant risks. In fiscal 2024, strategic risks in Panasonic Group's significant risks such as climate change, environmental regulations and development of circular economy, and operational risks such as natural disasters and supply chain management have been addressed.
See page 25 for more details.

Metrics and Targets

The Panasonic Group has set its medium- to long-term targets for reducing greenhouse gas emissions which were accredited SBT*2 2.0°C in October 2017. Furthermore, in May 2023, our new greenhouse gas emissions reduction target was accredited as SBT 1.5°C.

*2 SBT: an abbreviation of Science Based Target. It is a target to reduce GHG emissions in consistent with scientific knowledge toward the goals to limit the increase of global temperature to less than 2.0°C, or less than 1.5°C if possible, above pre-industrial levels.

GHG emissions reduction targets (SBT 1.5°C accreditation)

	Targets	Progress rate
Emissions from Panasonic Group business activities (Scopes 1 and 2)	Reduce by 90% by 2030 (compared to FY2020) 2019: 2,311 kt	38%
Emissions from use of Panasonic Group products (Scope 3)	Reduce by 30% by 2030 (compared to FY2020) 2019: 106,309 kt	—*3

*3 Progress rate not calculated due to increase in emissions because of expansion of products subject to calculation (see page 13)

Moreover, regarding indices related to climate change, we are discussing to set targets for following each item.

• Transition risk

In response to a rise in the awareness of environmental issues, we are particularly focusing on the risks associated with the introduction and expansion of environmental regulations and policies in the international community. The rise in energy procurement costs, forced purchase of emission credits, increase in manufacturing costs because of switching to use materials with lower environmental impact, and commoditization of low-carbon products, resulting from the introduction of carbon pricing, such as a carbon tax and the Emission Trading System, are all may adversely affect our Group's business operations and performance. In addition, any delay in taking action to take measures against these environmental issues may lead to a loss of business opportunities to expand in the European and other markets as well as a loss of business opportunities as a result of trade halts. Furthermore, our drive to use tax deductions, subsidies and other methods to gain business opportunities under regulatory systems for energy security assurance and climate change measures in these countries may adversely affect our Group's business since we will not be able to receive fruitful results as we expected.

• Physical risk

Each operating company assesses and monitors natural disaster risks, as well as their emergency responses to those risks. Each operating company also established financial assessment standards on the scale of the impact of the potential risks, rating the risk as high when the impact is more than 10 billion yen and as medium or low according to the impact risk.

• Climate-related business opportunities

As the target set under our PGI announced in April 2022, we will strive to reduce CO_2 emissions, with a aim of by 2050, achieving reduction impact of more than 300 million tons that is 'approx. 1%' of the total CO_2 emissions discharged all over the world as of now, through group business activities.

In addition to our business operations in automotive battery business for environmentally friendly vehicles, aiming to reduce huge amount of CO_2 emissions and activities to reduce CO_2 emissions by the air quality and air conditioning business in Europe, in 2022 we started up an experimental facility under 'our RE100 solution' that had been designed to supply 100% of the power needed for a fuel cell manufacturing plant with renewable energy from hydrogen and photovoltaic power generation,*4 aiming at locally producing energy and consuming the energy locally.

• Capital allocation

Panasonic Group plans to invest 600 billion yen for the three years from 2022 to 2024 under our medium- and long-term business strategies, mainly in automotive battery business that is

Environment

in our priority investment areas. Following the investment in automotive battery business, we have air quality and air conditioning business and supply chain management software business that we invest in our priority investment areas.

Our automotive battery business will play a central role for PGI by developing a supply chain with lower environmental impact and increasing avoided emission by such business growth. As for our air quality and air conditioning business, we plan to expand the business in the European market where measures against climate change have been implemented, by focusing on air-to-water systems that will contribute to reducing CO_2 emissions. As for our supply chain management software business, we will contribute to reducing the environmental impact by eliminating waste and delays in the supply chain.

PDF **Panasonic Group Strategy Briefing by Group CEO (May 18, 2023)**
https://holdings.panasonic/global/corporate/investors/pdf/20230518_groupstrategy_e.pdf

• Internal carbon pricing

Panasonic Group introduced internal carbon pricing (ICP) in March 2022 for capital investment, with a setting the price of CO_2 emissions at 6,000 yen/t-CO_2.*5 We plan to increase the installation of energy-saving facilities and renewable energy-fueled equipment, including photovoltaic power generation, while maintaining economic rationality that is consistent in the future, by considering the impact of future carbon taxation and the like. As for further expansion in the scope of our activities and price setting, we will determine in line with our business decisions.

In order to accelerate our competitiveness in businesses contributing to 'carbon neutrality (decarbonization)' and 'circular economy', Panasonic Corporation, one of our Panasonic Group companies, introduced the ICP scheme where CO_2 emissions reduction in Scope 3 in our entire value chain and avoided CO_2 emissions contribute to society are used as criteria for investment decision, to its divisional company Living Appliances and Solutions Company on a trial base in fiscal 2024. Under the ICP scheme, respective Operating Company or Business Division introduces the scheme on its own to be suited to own individual business characteristics, in addition to taking into account capital investment decision in Scopes 1 and 2 common to Panasonic group, setting the CO_2 price at 20,000 yen/t-CO_2 with priority to long-term investments. We plan to gradually roll out the ICP scheme, expanding to all Panasonic Corporation from fiscal 2025.*6

• Remuneration

Since April 2022, we have adopted a new performance evaluation system for executive remuneration of directors and executive officers of the holding company and of the presidents of the operating companies. The evaluation items for performance-based remuneration include those related to sustainability viewpoint such as environmental contributions. One of the examples of the contribution to our environmental performance index is reduction of CO_2 emissions in our own value chain.

*4 See WEB https://news.panasonic.com/global/press/en220427-1
*5 Subject to change because of market conditions
*6 WEB https://news.panasonic.com/jp/press/jn230602-2

Strategic Resilience through Scenario Analysis

To verify the strategic resilience of our business, Panasonic Group initially analyzed their impacts of climate change risks and conducted a scenario analysis based on the result of the impact analysis.

In the course of the impact analysis, we listed every possible impact on our business from climate change or measures against climate change, and then identified the risks and opportunities brought by such impacts by Panasonic Group's major businesses. The following table lists risks and opportunities by business, and integrated results of the different impacts of climate change (Table 1).

Table 1 Extracted Risks and Opportunities

			Risks	Opportunities
Transitional risks	Policies/laws and regulations	Acceleration of carbon pricing	- Energy procurement costs increase. - Competition from low-carbon businesses intensifies toward carbon neutrality.	- Energy procurement costs stabilize because of increased demand for renewable energy. - Businesses related to fuel cells, energy-saving products, solution services, and energy management expand.
		Accelerated shift to electric vehicles	- As more firms enter the automotive business, competition intensifies. - Increased demand for automotive batteries intensifies material procurement competition. - Higher cost of automotive batteries production reduces car business profitability and pressurize costs of components.	- Electric vehicle-related markets expand.
	Reputation	Increased environmental awareness among consumers	- Insufficient environmental efforts and promotion lead to unsupported by consumers. - Value shift from purchasing to leasing decreases sales.	- Recognition as a sustainable company and of sustainable products attracts more customers. - Businesses related to low-carbon products, eco materials, and energy management expand.
		Increased risk to reputation	- Insufficient efforts in decarbonization reduce business opportunities.	- Recognition of environmental technologies and products increases business opportunities.
	Technologies	Expansion of renewable energy usage	- Investment in facilities with renewable energy increases.	- Highly efficient solar cells open new markets.
		Expansion of carbon-free power generation	- Production energy procurement costs increase. - Regional disparity of carbon-free power generation lead to review the strategies of production sites.	- CO_2 emissions reduction throughout product lifecycles encourages shift to electric vehicles leading to related market expansion.
		Spread of ZEH/ ZEB	- Low-carbon products in housing equipment become mere commodities.	- Increased opportunities to provide energy management & total solution services through housing equipment and home appliances. - Demand for heat insulation materials increases.
		Replacement with low-carbon products	- Increases development costs of lightweight and robust materials for competitive low-carbon products.	- Increases demand for materials that contribute to reduction of energy consumption.
		Streamlining of supply chain	- Expanded capital investment puts stress on balance sheet.	- Demand for energy management systems increase. - Lowered prices from reduced production costs increase sales.
	Markets	Response to depletion of resources	- Delay in recycling and reuse technologies increases costs. - Resource recycling does not suit consumers' tastes.	- Business models change to circular economy- based models. - Demand for recycled resources increases.
Physical risks	Chronic	Constant temperature rise	- Poor health of employees reduces productivity. - High energy consumption from excess usage of air conditioners puts off consumers.	- Businesses related to healthcare, air conditioning and ventilation, energy management, housing, and cold chain expand.
	Acute	Physical risk management related to climate change	- Suspension of operations at our factories. - Negative impact on supply chain.	- Demand for needs of resilient infrastructure increases. - Fuel cell business with resilience expands. - Disaster-resilient manufacturing by managing risks with BCPs.

Environment

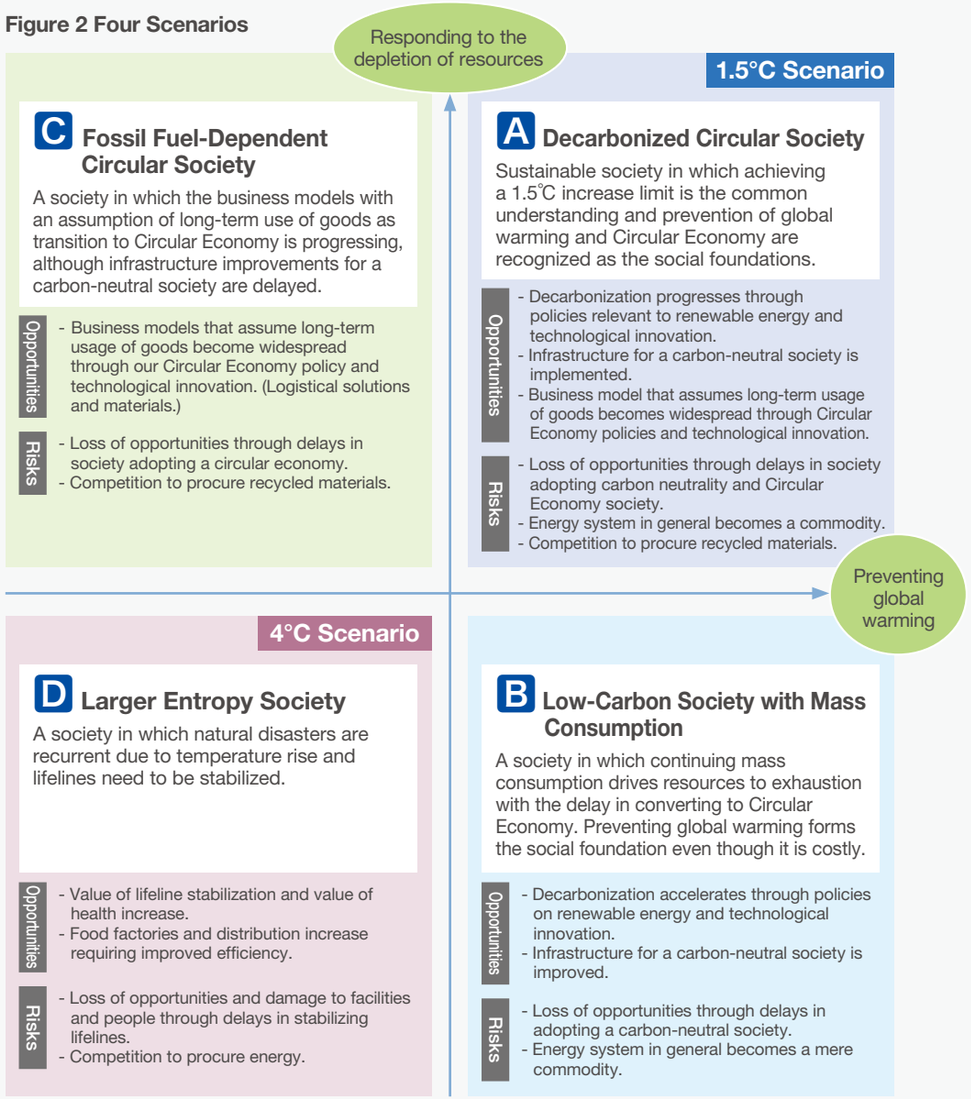
The following figure shows the impact analysis results of climate change risks (Figure 1) regarding the results of analyzed factors based on the identified risks and opportunities and analyzed impact on our businesses.

Figure 1 Impact Analysis of Climate Change Risks

Risk categories related to climate change		Strong	Impact on our businesses	Extremely strong
Transitional risks	Markets			● Response to depletion of resources
	Policies/laws and regulations		• Acceleration of carbon pricing	• Progressive shift to electric vehicles → ● Prevention of global warming
	Technologies	• Expansion of carbon-free power generation	• Expansion of renewable energy usage • Replacement with low-carbon products • Streamlining of supply chain	• Spread of ZEH/ZEB
	Reputation		• Rise of environmental awareness among consumers • Increase of reputational risks	
Physical risks	Acute		• Physical risk management related to climate change	
	Chronic	• Constant temperature rise		

We extracted "response to depletion of resources" and "prevention of global warming" from the climate change viewpoint and identified their materiality as factors that have an extremely high impact on our business. Setting these two factors as the axes of a matrix, we created four scenarios toward 2030 in the following quadrants (Figure 2). We defined a society in which global warming is prevented and response to depletion of resources is taken as 'the 1.5°C scenario', and a society in which global warming is advanced and resources are depleted as 'the 4°C scenario'.

Figure 2 Four Scenarios



Environment

The society named as a A Decarbonized Circular Society is equivalent to the 1.5°C scenario. If A continues to deplete resources, society becomes a B Low-Carbon Society with Mass Consumption. If A increases global warming, society becomes a C Fossil Fuel-Dependent Circular Society. Scenario D a Larger Entropy Society is equivalent to the 4°C scenario.

Fuller descriptions of each set of social conditions are given below.

A Decarbonized Circular Society

● **Impact on industries**

Concurrent progress of legislation and technological innovation related to preventing global warming and creating a circular economy help to form a related infrastructure for a carbon-neutral society and Circular Economy. This encourages investment in decarbonization in automotive and real estate industries, and advances the shift to business models that assume long-term use of goods in industries involved in the supply chain. It is also expected that not only products but also the construction of sustainable towns designed for carbon neutrality and Circular Economy will attract investment.

● **Changes in customer value**

Consumers: Eco-consciousness, cost reduction, ethical, on-demand usage, etc.

Corporations: Eco-consciousness, cost reduction (energy saving, asset-light approach, better fuel efficiency, etc.), effect and efficiency enhancement (maximization of customer value, i.e. better experience value, etc.).

B Low-Carbon Society with Mass Consumption

● **Impact on industries**

Progress of carbon-related legislation (NEV/ZEV laws and ZEH/ZEB subsidy policies, etc.) and technological innovation (reduced cost of renewable energy and storage batteries, etc.) encourages standardization for decarbonization in the automotive and real estate industries and attracts investment. This helps the shift to electrification and a renewable energy infrastructure. Adoption of renewable energy and hydrogen also expands.

● **Changes in customer value**

Consumers: Eco-consciousness, cost reduction (energy saving, better fuel efficiency, etc.).

Corporations: Eco-consciousness, energy saving and better fuel efficiency (downsizing, weight-reduction, high density and capacity, high efficiency, etc.).

C Fossil Fuel-Dependent Circular Society

● **Impact on industries**

Progress in technological innovation of waste plastic and for a circular economy (data linkage, material recycling, etc.) and their related legislation eliminate waste in the supply chain and encourage a shift to a circular economy. Corporations involved in the supply chain (manufacturers, distributors, etc.) change their business models from sales and consumption-based models to those that assume long-term usage of goods, including leasing, sharing, and repair. Products made of recycled resources become mainstream backed up by the formation of waste collection networks and material recycling systems.

● **Changes in customer value**

Consumers: Eco-consciousness, ethical, on-demand usage, etc.

Corporations: Effect and efficiency enhancement (maximization of customer value, i.e. better experience value, etc.), cost reduction (energy saving, asset-light approach, etc.).

D Larger Entropy Society

● **Impact on industries**

Changes in rainfall amounts and patterns make it difficult to control the yield and quality of agricultural products. This encourages a shift to demand and supply matching consumption, which eliminates waste in distribution. Deterioration of living and working environment and increases in illness due to constant temperature rises expand demand for companies related to indoor environments and health (building, home appliances, healthcare, etc.). In response to the increase in natural disasters, investment in infrastructure resilience to maintain the supply chain will increase.

● **Changes in customer value**

Consumers: Lifeline stabilization and resilience enhancement, health.

Corporations: Productivity enhancement, demand and supply matching, supply chain resilience.

We can address the risks and opportunities corresponding to the above scenarios through any of our seven main operating companies shown below.

1. Panasonic Corporation
   (Home appliance business, Air quality and air conditioning business, Food distribution business, Smart Energy System business, Electrical facility materials business)
2. Panasonic Automotive Systems Co., Ltd.
3. Panasonic Connect Co., Ltd.
4. Panasonic Energy Co., Ltd.
5. Panasonic Industry Co., Ltd.
6. Panasonic Entertainment & Communication Co., Ltd.
7. Panasonic Housing Solutions Co., Ltd.

Environment

For each type of society, we have formulated strategies for our seven operating companies from the viewpoint of climate change. Some of the strategies are listed below, with the applicable society type indicated by the corresponding scenario from A to D.
The total sales of the respective operating companies for fiscal 2024 are also shown as financial information.

1. Panasonic Corporation

Sales for fiscal 2024: 3,494.4 billion yen

1-1 Living Appliances and Solutions Company

- Build a circular value chain with customers through products and services. A B C
- Achieve extension of the product life cycle and improve customer engagement looking ahead of circular economy. A C

1-2 Heating & Ventilation A/C Company

- Provide the optimum and highest air and water quality values with low environmental impact, not found in conventional air conditioning, with a combination of our unique air and water technologies. A B C D
- Create unprecedented value with water and air heating systems with heat pump (A2W), chillers, and combination of air quality and air conditioning in the air conditioning business of water circulation type to contribute to improvement for decarbonization and air quality values. A B C D

1-3 Cold Chain Solutions Company

- Promote energy conservation offering comprehensive support for our energy monitoring system covering from system installation to operations and maintenance. Our equipment refurbishing service prolongs system usage while contributing to a circular economy. A B C
- Accelerate development of natural refrigerants with lower environmental impact through wider use of CO_2 refrigeration equipment. A B

1-4 Electric Works Company

- Provide a sustainable and safe and secure facility infrastructure based on our wiring fixtures to contribute to electrification and disaster-resilient society with zero environmental impact in the world. A B C D

1-5 Direct Control (Hydrogen Related Businesses)

- Achieve local production for local consumption of energy by developing a decentralized energy package business utilizing hydrogen. A B D

2. Panasonic Automotive System Co., Ltd.

Sales for fiscal 2024: 1,491.9 billion yen

- Contribute to electrification of vehicles through power chargers with high voltage/output using power electronics technology and devices that improve vehicle's weight saving and rate of electricity consumption. A B C D
- Promote to make own products more energy efficient and further expand the range of products that use recycled resin materials. A B C
- In our sites that achieved net zero CO_2 emissions, we are further reducing energy usage through energy-saving activities and increasing the ratio of non-external dependency on renewable energy supply. Start operation using renewable energy purchased from a corporate power purchase agreement (PPA), and raise our non-external dependency rate of renewable energy to 10% by 2025. A B

3. Panasonic Connect Co., Ltd.

Sales for fiscal 2024: 1,202.8 billion yen

- Reduce waste energy and waste goods by supply chain orchestration, including streamlining corporate customers' logistics and responsive tuning of demand and supply. A B
- Offer solutions to improve energy efficiency and automation at corporate customers. A B

4. Panasonic Industry Co., Ltd.

Sales for fiscal 2024: 1,042.6 billion yen

- Develop and supply products that contribute to electrification of vehicles and improvements in vehicles electricity consumption rate and milage. A B
- Reduce environmental impact through development and provision of products that contribute to product/equipment downsizing, light weight, low energy loss, and longer product life. A B C
- Reduce CO_2 emissions by promoting energy conservation and increasing use of renewable energy in manufacturing activities. A B

5. Panasonic Energy Co., Ltd.

Sales for fiscal 2024: 915.9 billion yen

- Increase avoided CO_2 emissions, by increasing the number of electric vehicle users through improving the competitiveness of our automotive batteries and enhancing our production capacity, and promoting electrification of power equipment such as construction machine through modularization and systematization of batteries for industrial use. A B C
- Reduce to half the carbon footprint in fiscal 2031 comparing the fiscal 2022 level by making Zero- CO_2 Factories at own sites, locally procuring materials for lithium ion batteries, and establishing circular economy business models. A B C

6. Panasonic Entertainment & Communication Co., Ltd.

Sales for fiscal 2024: 243.1 billion yen

- Promote energy-saving per product category by introducing devices with high energy efficiency, improving their control methods, and the like. A B
- Promote circular economy through expansion of refurbishing businesses, acceleration for using recycled resin, adoption of eco packaging, and the like. A C

7. Panasonic Housing Solutions Co., Ltd.

Sales for fiscal 2024: 446.1 billion yen

- Reduce CO_2 emissions in our value chain by thorough implementation of energy-saving initiatives and electricity generation, and at the same time, enhance product ranges that contribute to CO_2 emissions reduction in society. A B
- Increase use of recycled materials, plant-derived materials, and the like for resource circulation. A C

The scenario analysis found that either of the businesses in our group can respond to the situation even if any of the 4 scenarios of the societies is achieved. In other words, the analysis successfully verified the resilience of our business strategies. The analysis also helped us understand that we can contribute to building a sustainable society through our businesses. We continue our efforts to build the 1.5℃ world, represented by our society A.

Environment

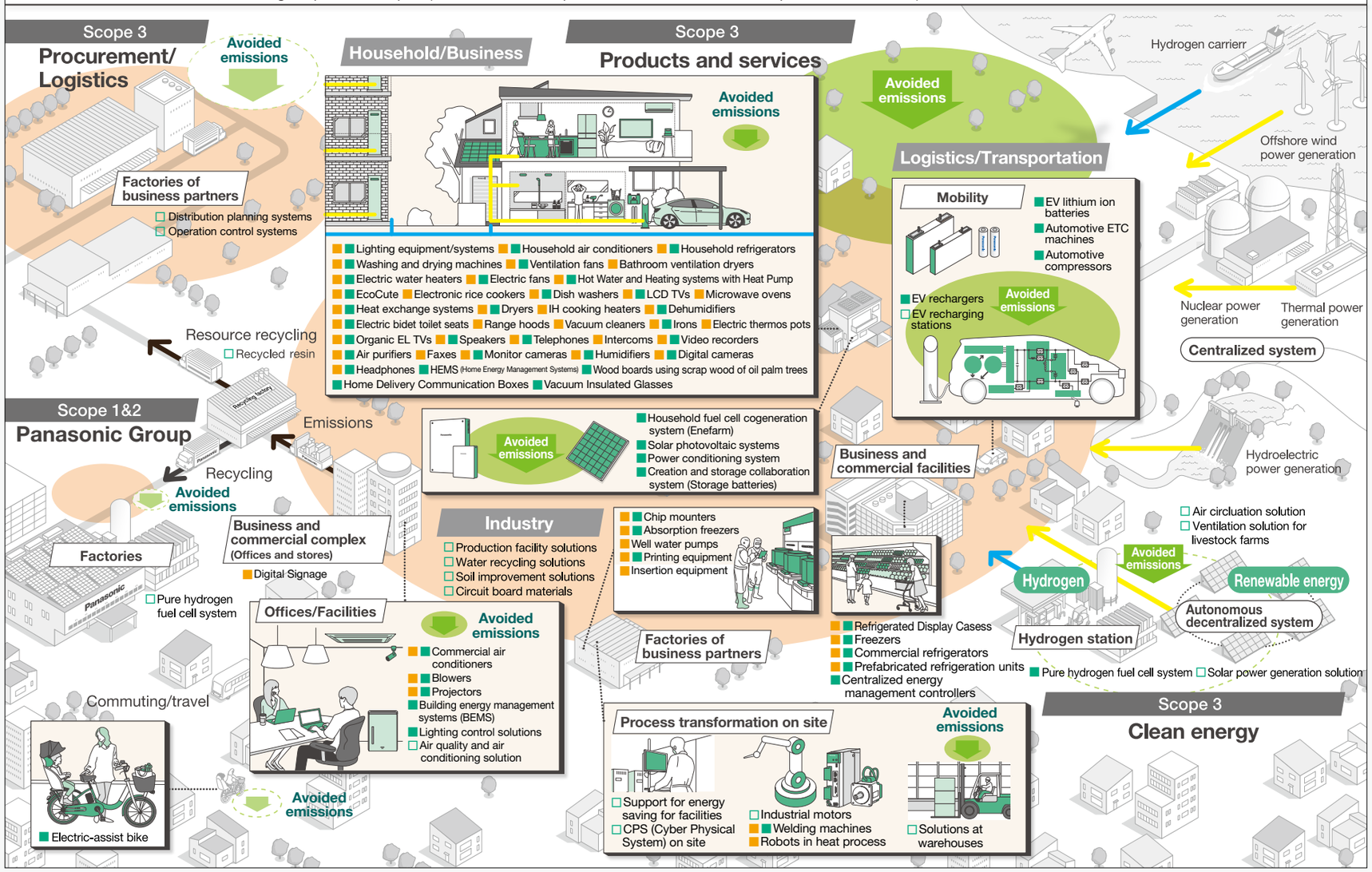
Our Businesses' Contribution to Carbon Neutrality

(From FY2024 business results)

Amount of GHG emissions / Reduced amount (Estimates indicated by ◌)
Products with emissions / Products with avoided CO_2 emissions / The products with avoided CO_2 emissions that are not included in the total
Flow of electricity / Flow of hydrogen / Flow of emitted recyclables

* The size of circle indicates size of GHG emissions amount.
* The amount of GHG emissions and reduced amount were calculated from the energy usage amount.

Scope 1 Panasonic Group's direct emissions of GHGs (Fuel combustion and industrial processes). Scope 2 Panasonic Group's indirect emissions from using electricity, heat, and steam provided by third parties.
Scope 3 Other indirect emissions, excluding Scope 1 and Scope 2 (emissions from third parties involved in Panasonic Group's business activities).



* The number of businesses with emissions or avoided emissions does not match with the number stated in "the GREEN IMPACT PLAN 2024" on pages 12-14 because of sub categorization for calculation in businesses such as those for heat exchange systems, electric fans, microwave ovens, and display cases.
As the extracted business fields are the fields whose positive and negative impact on climate change are obvious, names and their coverage may differ from those in the business segments used in the TCFD-related reports.

Environmental Information Systems

Integrated Management of Corporate Environmental Information

In order to implement the PDCA cycle for environmental sustainability management, it is essential to collect a significant amount of data, such as amounts of used energy, waste, valuables, discharged and transferred chemical substances, and used water, etc. at each business site in a prompt and accurate manner.

Panasonic Group has built and introduced an environmental performance system, the Eco System (Factory), to globally collect and manage environmental data from all of own business sites. With this system, monthly CO_2 emissions are managed in particular, allowing checking the progress of initiatives and identifying issues. The system plays an important role in achieving the reduction of CO_2 emissions by sharing the information and taking measures.

The Eco System (Factory) is also functioning as a scheme for sharing information on the status of compliance among sites across the world. In the event of complaints from local community residents or when a specific value exceeds ordinance regulated levels, as soon as the person in charge at the business site inputs the data on the system, information of the data is instantaneously e-mailed to relevant persons at the operating companies and the Quality & Environment Division of Panasonic Operational Excellence Co., Ltd. Thereby, the system enables rapid information-sharing and appropriate actions.

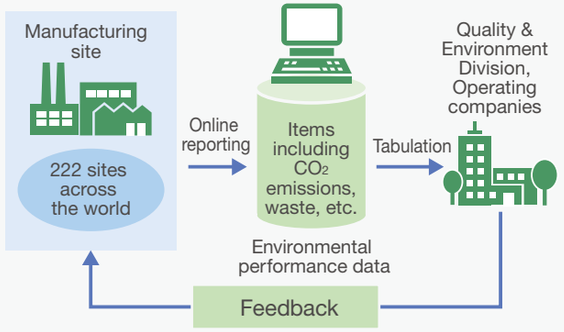
In addition, Panasonic Group newly established an environmental information infrastructure, aiming to store and share the data necessary for promotion of Panasonic GREEN IMPACT, and for disclosure and appeal of the environmental data, in order to respond to legal demands appropriately and efficiently for environmental information disclosure and stakeholders' requests. The infrastructure centrally manages the information related to calculation and tally of CO_2 emissions across the entire value chain (Scopes 1, 2, and 3), as well as information on the avoided emissions.

As for products, legislation relating to chemical substances in products is becoming more stringent in the world, for example, and communication and disclosure of chemical information in the EU supply chain are mandatory under the REACH Regulations. The Panasonic Group has developed own management system for chemical substances in products based on industry-standard information handling methods in order to respond to a wide range of regulations and requirements.

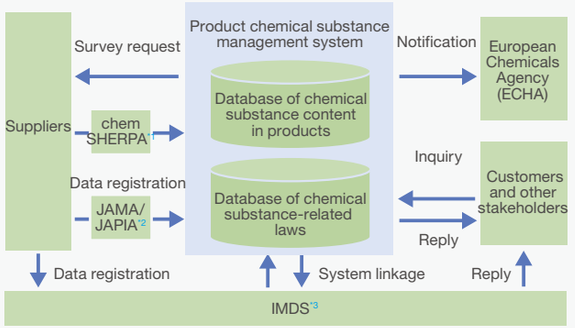
In January 2017, we renewed our product chemical substance management system to adopt chemSHERPA[*1] based on EC62474, the international standard on material declaration for electrical and electronic equipment, i.e., declaration of information of chemical substances and materials comprise such products. Along with the expansion of Panasonic Group's automotive business, we also adopted the JAMA/JAPIA integrated data sheet,[*2] the standard material data format for the Japanese automotive industry. These adoptions enabled us to respond to increasingly complex and diverse regulations covering the chemical substances used in products in a variety of fields. In addition, to strengthen the response to laws and regulations on chemical substances in products relevant to our automotive businesses, in October 2020 we enhanced the function to operate in conjunction with IMDS,[*3] the standard system for the global automobile industry.

Furthermore, under the EU Waste Framework Directive, the requirements for information disclosure on substances of very high concern (SVHC[*4]) to waste disposal companies and consumers have been enhanced, and registration of SVHCs with the SCIP[*5] database of the European Chemicals Agency (ECHA) has become compulsory (starting on January 5, 2021). For handling registration with the SCIP database, we have strengthened the system-based coordination of information and started registration via the Panasonic Group system.

Mechanism of the Eco System (Factory)



Mechanism of the Product chemical substance management system



*1 New chemical information format led by METI and recommended by the Joint Article Management Promotion-Consortium (JAMP).
*2 A standardized survey datasheet for contained chemical compounds in Japan's automotive industry. The JAPIA Standard Material Datasheet prepared and introduced by the Japan Auto Parts Industries Association (JAPIA) is currently used as its successor tool.
*3 International Material Data System: Material data system for the automobile industry that are operated on a global scale.
*4 Substances of Very High Concern
*5 Substances of Concern In articles as such or in complex objects (Products)

Overview of Environmental Impact and Environmental Accounting

Overview of Environmental Impact from Business Operation

In order to mainly manufacture and market electrical and electronic products, Panasonic Group consumes petroleum and electricity as energy sources and resources as raw materials of parts and components. As a result, we emit CO_2 and wastes into the environment.

Production: 222 manufacturing sites and 75 non-manufacturing sites

Logistics: Logistics stage of procurement, production, marketing and waste by partner companies and Panasonic.

Product use: Lifetime power consumption (a) of major products*9 with large amounts of energy use and CO_2 emissions (b) associated therewith.

a = Annual power consumption of a model sold*10 x Sales quantity x product life*11

b = Annual power consumption of a model sold*10 x Sales quantity x product life*11 x CO_2 emission factor*12

Recycling: Recycling of products means to use by oneself or to make into a state available for sale or free of charge the components and materialsof a separated product.

*1 Figures from photovoltaic, wind, and biomass sources including the amount of renewable energy adopted to manufacturing and non-manufacturing sites of own group . Heat pumps not included.
*2 Target substances include all substances in the Panasonic Group Chemical Substances Management Rank Guidelines (For Factories).
*3 The factors related to fuels are based on "the Guidelines for Calculation of Greenhouse Gas Emissions (version 4.7)" published by the Japanese Ministry of the Environment.
The latest figures from the "IEA Emissions Factors 2023" issued by the International Energy Agency (IEA) is used for the CO_2 emission factors for electricity purchased from different countries use.
*4 Release amount: Includes emissions to air, public water areas, and soil.
Transfer amount: Includes transfer as waste and discharge into the sewage system. Recycling that is free of charge or recycling where we pay a fee for treatment under the Waste Management and Public Cleaning Law is included in "Transfer." (Different from the transferred amount reported under the PRTR Law.)
*5 Intra-region outside Japan not included.
*6 Figures for Japan.
*7 Air conditioners, TVs, refrigerators/freezers, and washing machines/clothes dryers
*8 As for personal computers, PC 3R Promotion Association collects and recycles PCs under the joint scheme with member companies.
*9 Household air conditioners, commercial air conditioners, lighting equipments and lamps, household refrigerators, commercial refrigerators, LCD TVs, washing and drying machines, fully-automatic washing machines, dish washer and dryers, IH cooking heaters, EcoCute, bathroom ventilation dryers, humidifiers, dehumidifiers, air purifiers, ventilation fans, electric fans, electronic rice cookers, microwave ovens, electric bidet toilet seats, irons, hair dryers, electric showers, electric water heaters, under-rug heaters, vacuum cleaners, electric water boilers, range hoods, projectors, mounting machines, Digital Signage, Welding Machine, Welding Robot, Component Insertion Machine, Screen Printer, Mobile Computer, etc.
*10 For each product category, the model that was sold in the largest quantity in the region was selected.
*11 Number of years during which spare parts for the product are available (defined by the Panasonic Group).
*12 Regional CO_2 emission factors (kg-CO_2/kWh) used: 0.463 (Japan); 0.277 (Europe); 0.368 (North America); 0.610 (China & Northeast Asia); 0.713 (India & South Asia); 0.382 (Southeast Asia & Oceania); 0.271 (Latin America); and 0.612 (Middle East & Africa).
*13 Hussmann Parent Inc. and its consolidated subsidiaries not included.

Overview of Environmental Impact from Business Operation

INPUT	Suppliers	OUTPUT
Energy: ★4.5 TWh Purchased electricity 3.08 TWh including renewable energy ★0.72 TWh*1 Production of renewable energy in our own sites ★0.07 TWh Town gas 68.0million m³ LNG 9.9 kt LPG 4.5 kt Heavy oil 7.0 Ml Light oil 1.9 Ml Kerosene 1.6 Ml Volatile oil 0.1 Ml Steam 373 TJ Hot water 37 TJ		CO_2: 1.37 Mt*3 GHGs other than CO_2 from energy use (CO_2-equivalent): 101 kt*13
Resources Recycled resin:17.2 kt Recycled iron: 83 kt	Production	Total wastes including revenue-generating waste: 258 kt Landfill: 1.5 kt
Water: 13.87 million m³		Water discharged: 10.60 million m³
Chemical substances: 187.6 kt*2*13		Release and transfer of chemical substances: 3.438 kt*4*13
Energy: 1.32 MWh*5 Biodiesel fuel: 1.27 kl*5	Logistics	CO_2: global 741 kt domestic ★115 kt
Electricity: 172.1 TWh	Product use	CO_2: 91.03 Mt
Collected products: 151 kt*5*7*8 CRT TVs: 3 kt Plasma/LCD TVs: 9 kt Air conditioners: 34 kt Refrigerators/freezers: 56 kt Washing machines/clothes dryers: 46 kt	Recycling	Recycled products: 113 kt*5*7 Metals: 83 kt Glass: 1 kt Other: 28 kt Generated waste: 37 kt*5

GHGs from the Whole Supply Chain (by Scope)

We calculate our GHG emissions across the supply chain for Scopes 1, 2, and 3, respectively, according to the GHG Protocol and the guidelines provided by the Ministry of the Environment.

Our CO_2 emissions in fiscal 2024 Scopes 1 to 3 were reduced by 2.69 million tons compared with those in fiscal 2023. This was affected by the increase of CO_2 emissions in some categories, while approximately 0.32 mission tons of the CO_2 emissions in the Scopes 1 and 2 were reduced through implementation of steady activities for energy conservation at each factory (Refer to P41-44), and 4 million tons of the CO_2 emissions in the category 11 was reduced due to decrease of the number of sales units.

We continue to disclose our emission data for transparency.

*14 Direct emissions from facilities owned and controlled by the Panasonic Group (e.g., emissions from use of town gas or heavy fuel oil).
*15 Emissions from production of energy consumed at facilities owned and controlled by the Panasonic Group.
*16 Other indirect emissions, excluding Scope 1 and Scope 2.
*17 Including Scope 1 and Scope 2 from FY2023
*18 Figures for Japan
*19 8,838 (kt) are due to the influence of CFC
*20 6,058 (kt) are due to the influence of CFC

Category		Emissions (kt)	
		FY2023	FY2024
Scope 1*14		406	316
Scope 2*15		1,433	1,207
Scope 3*16	1. Purchased goods and services	21,543	21,954
	2. Capital goods	880	1,546
	3. Fuel- and energy-related activities	212	243
	4. Upstream transportation and distribution	887	741
	5. Waste generated in operations	0.1	1
	6. Business travel	32	31
	7. Employee commuting	111	107
	8. Upstream leased assets	–*17	–*17
	9. Downstream transportation and distribution	61*18	146
	10. Processing of sold products	153	234
	11. Use of sold products	95,029	★91,027*19
	12. End-of-life treatment of sold products	7,537	7,860*20
	13. Downstream leased assets	–	–
	14. Franchises	–	–
	15. Investments	928	1,108
	total	127,371	124,995
	Scope 1-3 total	**129,209**	**126,518**

Numerical values in units of (t) are introduced on the following website.
WEB https://holdings.panasonic/global/corporate/sustainability/environment/governance/data.html#scope

Environment

Environmental Accounting

Panasonic Group globally collects data on its environmental conservation costs and economic benefits obtained through its environmental activities in relation to generated/controlled environmental impact. This data is internally utilized as basic information for our continuing environmental sustainability management.

Environmental Accounting for Fiscal 2024

Environmental conservation in factories	
Investments*21	3,791 million yen
Expenses*21*22	128 million yen
Economic benefit*23	907 million yen

*21 Includes all investments relating to environmental conservation. The difference or appropriate portions (divided proportionally) are not calculated.
*22 Expenses include a cost of capital investment depreciation. For example, if latest energy-saving facilities were installed, the value includes depreciation for the first year but not for the second year and later.
*23 The economic benefit represent the cost of energy savings achieved through energy conservation, which translates into cost reductions that contribute to climate change mitigation.

Environmental Conservation Benefits for Fiscal 2024 (in physical terms)

Categories	Emission reduction	Reference indicator: environmental impact	
		Fiscal 2023	Fiscal 2024
CO_2 emissions from production activities	260 kt	1.63 Mt	1.37 Mt
Human Environmental Impact	45 kcount	431 kcount	386 kcount
Landfill of waste	0.8 kt	2.3 kt	1.5 kt
Water consumption	1.47 million m^3	15.27 million m^3	13.87 million m^3

Fiscal 2024 data on the reduced amount of electricity and effect of reduced electricity costs through our energy-saving products are as shown in the chart below.

Economic Effects for Customers for Fiscal 2024

Electricity cost reduction from product usage (global)	
Reduced amount of electricity*24	46.7 TWh
Reduced electricity costs*25	1256.7 billion yen

*24 Calculated under the same conditions as when determining the size of contribution in reducing CO_2 emissions through energy-saving products (see page 12).
*25 Electricity costs were set for each region based on IEA Statistics.

Panasonic Group published a new vision "Panasonic GREEN IMPACT" in January 2022, with the intention to realize the vision linking with our business activities. Therefore, approximately 490 billion yen for the group-wide total R&D expenses in fiscal 2024 will be invested mostly for promoting "Panasonic GREEN IMPACT".

Eco-conscious Products and Factories

Initiatives for Eco-conscious Products (Green Products)

Panasonic Group conducts an environmental assessment to evaluate the product in advance in terms of its possible detrimental effects to the environment from the development stage. In the product environmental assessment, the five environmental issues specified in the Environmental Action Guideline have been set as assessing items for the whole product life cycle.

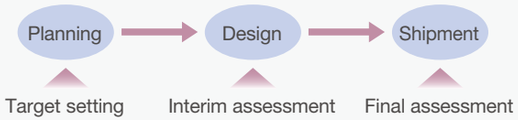
For global warming in particular that has been a big issue these days, we are working on eco-conscious products to achieve a target set to achieve 'an impact from our emissions reductions of more than 300 million tons by 2050' under our long-term environmental vision, 'Panasonic GREEN IMPACT'.

As for CO_2 emissions in our Group value chain, it is important to enhance energy-saving performance of products during product use, since most of the emissions are discharged when the products are in use. In the Energy Conservation Grand Prize 2023, Panasonic group companies won awards for three themes in the Product and Business Model category; e.g., a METI Minister's Award, which is the highest award, for the GX compatible Refrigerator 9X Series, and an award for the household air conditioners that is a three consecutive years winning following the 2021 METI Minister's Award and the 2022 ECCJ Chairperson's Award.

Category	Award	Recipient	Theme
Product/ Business Models	METI Minister's Award (Energy conservation field)	Panasonic Corporation Living Appliances and Solutions Company	Cloud-controlled GX compatible Refrigerator 9X Series
	ECCJ Chairperson's Award	Panasonic Corporation Heating & Ventilation A/C Company	Development of individual air conditioning system 'Hybrid GHP' to maximize use of renewable energy.
	ECCJ Chairperson's Award	Panasonic Corporation Residential System Equipment Business Division, Heating & Ventilation A/C Company	'Eolia 24XS/HX Series' air conditioner that pursues both energy conservation and user comfort

WEB **Panasonic Honored with Highest Ranking METI Minister's Prize in Energy Conservation Grand Prize 2023**
https://news.panasonic.com/jp/press/jn240201-1

Products Assessment System



Product Environmental Assessment		
Items for assessment		Assessment criteria
(1) Products	Prevention of global warming	CO_2 emissions and energy saving
	Effective utilization of resources	Resource saving, light weight/downsizing, number of reused parts, durability, amount of recycled resources used, structure of easiness for removing batteries, structure to recovery/recycling, etc.
	Water and biodiversity conservation	Water saving, consideration for biodiversity
	Comparison with competitors' products	
(2) Production process (of relevant products)	Prevention of global warming	CO_2 emissions and energy saving
	Effective utilization of resources	Resource saving, mass of packaging materials to be wasted, amount of resources used, amount of waste from factories, etc.
(3) Packaging	Effective utilization of resources	Resource saving, light weight/downsizing, amount of foamed plastic used, amount of recycled resources used, etc.
(4) Instruction manual	Effective utilization of resources	Resource saving, light weight/downsizing, amount of recycled resources used
(1) (2) (3) (4)	Management of chemical substances	Panasonic Group Chemical Substances Management Rank Guidelines (for products and factories)
LCA*1		Global warming
Information management		Green procurement, information provision across the supply chain, etc.

Laws/regulations and criteria, guidelines, and environmental action plan of Panasonic Group

*1 Life Cycle Assessment: Method of quantitatively assessing the environmental impact of products at each life cycle stage.

Environment

In B2B businesses that Business Divisions for Automotive Systems, Connect, Industry, and Energy that engage in, we are receiving more and more requests to provide data for our customer companies to achieve their sustainability targets. We also conduct a carbon footprint (CFP) assessment that is a quantitative analysis and an assessment using conversion of GHG to CO_2 emissions discharged from the each stage of the product life cycle upon request from our customers.

Initiatives for Eco-conscious Factories (Green Factories)

Panasonic Group We are leading Green Factories (GF) activities in its efforts to cut down the environmental load caused by manufacturing. On the assumption of compliance of laws and regulations in each factory, concretely we formulate a plan to reduce environmental loads in manufacturing activities, such as amounts of CO_2 emission, generated wastes and valuables, water consumption, and discharged and transferred chemical substances, conduct Progress management for total reduction amount with intensity of discharged amount and the like, and improve the activities. Thereby, we intend to achieve reduction of environmental loads and increase of our business at the same time. In fiscal 2011, we started the GF assessment system*2 aiming to further improve GF activities by visualizing the progress status in each factory.

In addition, Panasonic Group shares information on global activities for reducing environmental loads, relevant laws and regulations, and social trends through the Manufacturing Environmental Information Sharing Group. In Europe, Southeast Asia, China, and Latin America, we hold information exchanges and competitions on best practices by region to reduce environmental impact (presentation of awards for best practices and roll-out of good examples to other regions). By doing so, we promote GF activities suited to the issues in each region to expand and accelerate the activities.

Cross-Company Mutual Environmental Audit (CCMEA)

As measures to strengthen the group-wide foundation aiming at improving the structures with energy efficiency, we have developed a BA (Before/After) chart search system to share and spread knowhow across the world on the Internet. With the system, each factory can register and share their best practices concerning managing CO_2, waste, chemical substances, water, etc. In addition to the above, in response to environmental regulations, as a new activity to further ensure regulatory compliance in our sites, particularly those in China and Southeast Asia where we have numerous productions sites, we conduct a Cross-Company Mutual Environmental Audit that is carried out by our factories located in the same region, crossing the operating company's boundary. In India, full-scale introduction of the CCMEA started in 2023. The CCMEA were carried out in our 27 sites across the world in fiscal 2023, and has been rolled out to other sites. We had continued these activities during the COVID-19 pandemic, combining online meetings taking account of infection status in different regions, and were thus able to reduce risks and improve interactive skills. As the pandemic is settling down, we conduct the CCMEA effectively utilizing both online and offline, e.g. our Group members from Japan participated in the regional on-site audits. We aim to further enhance the environmental activities by accelerating to carry out the mutual audits worldwide, and encouraging mutual learning among members through ensuring compliance with relevant laws and regulations, as well as utilizing expertise accumulated in our Group companies.

*2 The GF assessment system enables factories to evaluate themselves on a five-point scale across 19 environmental activity items, classified into six basic groups: emissions reduction; environmental performance enhancement; reduction activities; risk reduction; human resource development; and management. Factories then compare their self-assessment results with the results from other factories to obtain a relative assessment to identify issues to be addressed and determine corrective measures. The system was improved in fiscal 2014, in the way that items to assess could be added to the standard 19 items as required by each operating company. For example, a Company may implement tasks concerning compliance with environmental laws and compliance management to strengthen risk management in its factories. Then, in the assessment questionnaire, they can set questions with their own standard values stricter than the legal requirements, for example, for their ventilation systems or other facilities that control air and water quality.

Reducing CO_2 Emissions in Factories

Reducing the Amount of Energy Used and CO_2 Emissions in Business Activities

To achieve Panasonic GREEN IMPACT, Panasonic Group has been working on toward making zero-CO_2 factories[*1] by promoting our efforts internally and externally to realize net zero CO_2 emissions at own sites in all our operating companies by 2030.[*2]

For this medium term, we established the GREEN IMPACT PLAN 2024. As our efforts for OWN IMPACT Scope 1 and 2, we have increased the number of zero-CO_2 factories to 37, aiming to reduce 260,000 tons of CO_2 emissions. In the Zero-CO_2 Factory Promotion Taskforce we started up in September 2021. The taskforce aims to create and provide Group-wide measures to accelerate the creation of zero-CO_2 factories. The Taskforce consists of the Energy Saving Working Group (WG) that promotes a range of energy-saving measures, the Renewable Energy Utilization WG that assess the usage expansion of renewable energy in each site, and the Renewable Energy Procurement WG that promotes the procurement of renewable energy. With the participation of related sectors, our manufacturing, procurement, and environment specialists work together to support the united efforts of all operating companies. During this fiscal year, we held seminars to introduce internal excellent examples and the latest information on energy saving and energy recycling to Group members. We also hold study session by region outside Japan.

We also participate in the Keidanren Carbon Neutrality Action Plan, a voluntary action plan to alleviate global warming promoted by the entire electric and electronics industry. The industry set a target of an "average 1% improvement in energy intensity in factories and large offices per year towards 2030" and we are now working steadily to save more energy in factories and offices.

*1 The Panasonic Group's zero-CO_2 factories means realization of net zero CO_2 emissions from factory production across the world. This will be attained by promoting our conventional energy saving activities (e.g. using LED lighting), advanced energy saving technologies, such as Factory Energy Management System (FEMS), productivity improvement, and innovative manufacturing. Other means include a combination of the following efforts: promoting renewable energy usage, such as by adopting photovoltaic power systems, energy storage modules, and hydrogen fuel cells; procuring 100% renewable energy-sourced electricity; and obtaining environmental values. The Panasonic Group publishes, both internally and externally, our accelerating efforts towards reaching our goal of net zero CO_2 emissions in all the operating companies' sites by 2030.

*2 Panasonic's direction: To become a top runner in the fields of "environment" and "high usability in business."
WEB https://news.panasonic.com/global/stories/2021/90376.html

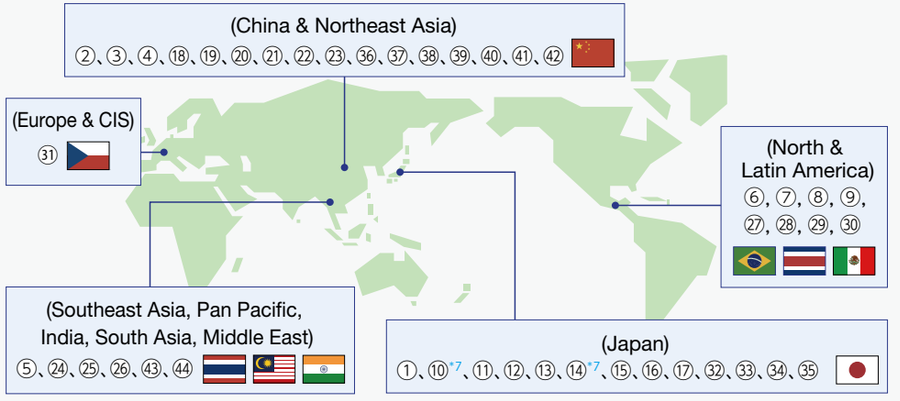
Increasing the number of zero-CO_2 factories

After realizing the group's first zero-CO_2 factory in fiscal 2019, Panasonic Group has realized 9 zero-CO_2 factories in 5 regions[*3] by fiscal 2022. Since then, it has entered the phase to increase the number of zero-CO_2 factories: to 31 factories in fiscal 2023; in fiscal 2024, total 44 factories[*4] - 13 factories in Japan, 16 factories in the China and Northeast Asia region, 6 factories in the Southeast Asia, Pacific, India, South Asia, Middle East, and Africa regions, 8 factories in the North America and Latin America regions, and 1 factory in Europe and CIS. This has exceeded the GIP2024 target of 'a total of 37 factories achieving zero CO_2 emissions'.

As a fiscal 2024 example, Nishikinohama Factory, Panasonic Energy Co., Ltd. has achieved net zero CO_2 emissions[*5] since fiscal 2024 when it started operation of photovoltaic panels installed over the entire rooftop for maximum use of renewable energy, aiming at manufacturing in harmony with the environment. For introducing a 2 MW-class photovoltaic power generation system, a new method that does not require significant remodeling works of the transformer substation in the factory was invented and introduced, which contributed to achievement of significant reduction in the construction costs and the construction period.[*6] The factory will further accelerate efficient and clean manufacturing by implementing energy management for the entire factory through installation of pure hydrogen fuel cell generators and energy storage systems for.


Photovoltaic power generation systems at Nishikinohama Factory, Panasonic Energy

Global map of zero-CO_2 factories



*3 Five regions are: Japan; China & Northeast Asia; Southeast Asia, Pan Pacific, India, South Asia, Middle East; North & Latin America; Europe & CIS.

*4 ★As of now, 44 factories have realized zero-CO_2 factories.
Up to fiscal 2022:① Panasonic Eco Technology Center, ② Panasonic Energy (Wuxi) Co., Ltd., ③ SANYO

Environment

Energy (Suzhou) Co., Ltd., ④ Panasonic Manufacturing (Beijing) Co., Ltd., ⑤ Panasonic Energy (Thailand) Co., Ltd., ⑥⑦⑧ Panasonic Brazil (three factories; San Jose, Manaus and Extrema), ⑨ Panasonic Centroamericana S.A.
Fiscal 2023: ⑩ Panasonic Center Tokyo, ⑪ Panasonic Automotive Systems Co., Ltd. Matsumoto Region, ⑫ Panasonic Automotive Systems Co., Ltd. Tsuruga Region, ⑬ Panasonic Automotive Systems Co., Ltd. Shirakawa Region, ⑭ Panasonic Automotive Systems Co., Ltd. Yokohama Building, ⑮ Panasonic Energy Co., Ltd. SUMOTO Factory, ⑯ Panasonic Energy Higashiura Co., Ltd., ⑰ Panasonic Energy Nandan Co., Ltd., ⑱ Panasonic Electronic Devices (Jiangmen) Co., Ltd., ⑲ Panasonic Industrial Devices (Tianjin) Co., Ltd., ⑳ Panasonic Industrial Devices Materials (Guangzhou) Co., Ltd., ㉑ Panasonic Industrial Devices SUNX Suzhou Co., Ltd., ㉒ Panasonic Automotive Systems (Dalian) Co., Ltd., ㉓ Panasonic Automotive Systems (Suzhou) Co., Ltd., ㉔ Panasonic Automotive Systems Asia Pacific (Thailand) Co., Ltd., ㉕Panasonic Automotive Systems Malaysia Sdn. Bhd., ㉖ Panasonic Energy India Co., Ltd., ㉗ Panasonic Automotive Systems Monterrey Mexico S.A.de C.V., ㉘ Panasonic Automotive Systems de Mexico S.A. de C.V., ㉙ Panasonic Automotive Systems Reynosa Mexico S.A.de C.V., ㉚ Panasonic Energy Mexico S.A. de C.V., ㉛Panasonic Automotive Systems Czech, s.r.o.
Fiscal 2024: ㉜ Panasonic Industry Co., Ltd., Motomiya Factory, ㉝ Panasonic Energy Co., Ltd., Suminoe Factory, ㉞ Panasonic Energy Co., Ltd., Tokushima Factory、㉟ Panasonic Energy Co., Ltd., Nishikinohama Factory, ㊱ Panasonic Motor (Zhuhai) Co., Ltd., ㊲ Panasonic Motor (Hangzhou) Co., Ltd., ㊳ Panasonic Industrial Devices Taiko (Shenzhen) Co., Ltd., ㊴ Panasonic Industrial Devices (Qingdao) Co., Ltd., ㊵ Panasonic Manufacturing (Xiamen) Co., Ltd., ㊶ Panasonic Industrial Devices Materials (Suzhou) Co., Ltd., ㊷ Panasonic Industrial Devices Materials (Shanghai) Co., Ltd., ㊸ Panasonic Industrial Devices Singapore Pte. Ltd., ㊹ Panasonic Carbon India Co. Ltd.

*5 Press Release November 20, 2023
WEB https://news.panasonic.com/global/press/en231120-2

*6 Press Release February 1, 2024
WEB https://news.panasonic.com/jp/topics/205544

*7 Non-manufacturing sites

Activities for Increasing the Amount of Renewable Energy Use

To increase the amount of renewable energy in our business use, Panasonic Group has been actively promoting installation of renewable energy facilities in our own sites and renewable energy procurement from external suppliers.

The amount of renewable energy adopted at our sites[*8] in fiscal 2024 marked 67 GWh.

Installation of renewable energy facilities has been actively encouraged in our own sites across the world in a way to suite to the regional characteristics. Particularly, photovoltaic power generation systems are recommended for installation wherever possible. The major achievement was installation of photovoltaic power generation systems in Japan.

Panasonic Industry Co., Ltd. at Saga site introduced a photovoltaic power generation system, adopting a Power Purchase Agreement (PPA) model. The system installed this time, comprises 5,984 photovoltaic panels in total that generate 3,011 kW. We will utilize renewable energy with the system.


Photovoltaic power generation systems at Saga Site, Panasonic Industry

For further examples of our renewable energy usage, see the following website:
WEB https://holdings.panasonic/global/corporate/sustainability/environment/carbon-neutral/site.html

Procurement of renewable energy from external sources has been also promoted across the globe. In Japan, at our own site, we are an electricity user, and at the same time, an electricity retailer (registration number: A0136). Since 2005, we have been supplying power to our own sites, factories, and offices. Utilizing our knowhows and experience of electricity procurement and trading that we have accumulated to date, we procure 100% renewable electricity generated from wind, etc., as well as electricity with environmental value such as those with non-fossil fuel energy certificates and credits to offset CO_2 emissions from fossil fuel. This effort contributed to converting factories in Japan, China, and Southeast Asia to zero-CO_2 factories. Furthermore, the photovoltaic power station with approx. 18,000 kW capacity for use at our own sites that we determined to develop in fiscal 2022 started its operations for Panasonic Energy Co., Ltd., in February 2023. In fiscal 2024, operations of power stations (with approx.11,500 kW capacity) for Panasonic Automotive Systems Co., Ltd., and Panasonic Industry Co., Ltd started. Moreover, operations of another power stations with a capacity of 18,000 kW will be started in fiscal 2025. As described above, we continue to contribute to expanding use of electricity from new renewable energy sources. We also started selling to Panasonic Group employees in Japan, electricity derived from practically 100% renewable energy in fiscal 2021.
WEB https://news.panasonic.com/jp/topics/204036.html

In August 2019, Panasonic Group joined "RE100"[*9], an international initiative that brings together companies committed to sourcing 100% renewable electricity for their global business operations. We aim to switch all the electricity used in our sites across the world to that sourced from 100% renewable energy by 2050. Progress in fiscal 2024 was 24.3%.

*8 The amount from photovoltaic energy, wind power, and so on are included. The amount from heat pumps is excluded.

*9 Press release on August 30, 2019.
Panasonic Joins RE100 Aiming for Business Operations with 100% Renewable Energy
WEB https://news.panasonic.com/global/press/data/2019/08/en190830-2/en190830-2.html

Activities for reducing energy use and CO_2 emissions

To ensure implementation of reduction of the amount of energy used and CO_2 emissions, it is important to visualize trend of the energy consumption of each facility in factory and the effects of the measures for specific emissions reduction. To date, we are working on CO_2 reduction by adopting more than 40,000 measurement equipment systems and Factory Energy Management System (FEMS) at all of our global manufacturing sites, promoting METAGEJI (Meter and Gauge)[*10], which visualizes and analyzes energy consumption. An example of factory energy-

Environment

saving support service is on the following website.
WEB https://www.panasonic.com/global/corporate/sustainability/eco/co2/service.html

Panasonic Corporation is conducting a demonstration experiment of the RE100 solution*11 using pure hydrogen fuel cells in Kusatsu Factory, Shiga. Moreover, Panasonic Energy (Wuxi) Co., Ltd. (PECW) in China, has been conducting demonstration experiment of pure hydrogen fuel cells that supply both electricity and heat. Panasonic Manufacturing United Kingdom (PMUK) in the United Kingdom plans to start a demonstration of power supply and demand operation in 2024*12 to use 100% renewable energy for energy consumed in business activities by in-house power generation using pure hydrogen fuel cells and photovoltaic cells. For the demonstration at PMUK, 21 pure hydrogen fuel cells of 5 kW type (total output: 105 kW), photovoltaic cells (300 kW), and storage batteries (1 MWh) will be newly installed, and the power supply and demand operation in Cardiff, UK will be monitored according to the changes in weather and fluctuations in electrical power demand, with the aim of achieving RE100 for the Microwave Oven manufacturing plant. By using pure hydrogen fuel cells, we will not only reduce installation space and secure a stable power source, but also further improve energy efficiency by using heat generated during hydrogen power generation for heating and hot water supply. Through the demonstration of RE100 solutions at PMUK, we will develop solutions that best suit the regional characteristics and build relationships with local partners and business customers related to the hydrogen business.


PMUK RE100 Solution

Panasonic Corporation Hikone Factory is steadily reducing CO_2 emissions by changing the production methods for shaver blades. To achieve a deep shave, the shaver's outer blade has a complex and high precision shape with two different thicknesses. For manufacturing the blade, after pressing a stainless steel plate, the plate was bent by applying heat. As bending the plate without heating causes scratches, cracks, and variation in quality, bending the plate at an ambient temperature without scratches, etc., was a challenging task. However, a new bending process method at an ambient temperature is possible now thanks to our accumulated expertise in technology and experience, and a development of pressing conditions for bending the plate that took almost 2 years. With the new method, the electricity consumed for heating has been reduced , and at the same time, one process of the conventional processes in manufacturing blades was eliminated, in other words, shortened its production time.

The Panasonic Group will continue to accelerate necessary activities to achieve Panasonic GREEN IMPACT, e.g. proactively developing and adopting environmentally low-impact energy and methods.

*10 METAGEJI is a coined word created by the Panasonic Group which refers to visualizing energy consumption and implementing measurable reduction measures by adopting measurement instruments, such as meters and gauges.

*11 Press Release (May 24, 2022)
WEB https://news.panasonic.com/global/press/en210524-2

*12 Press Release (August 14, 2023)
WEB https://news.panasonic.com/jp/press/jn231114-1

Activities at Factories

Panasonic Energy Kaizuka Co., Ltd. produces lithium-ion batteries (LIBs) used in EVs has been working on reduction of CO_2 emissions to achieve Panasonic GREEN IMPACT across organizational divisions, while improving productivity to respond to the increasing market demands for EVs in recent years. A Carbon Neutrality Promotion Committee initiated by the Facility Management Division that manages facilities such as power generators was jointly launched at 3 sites: Panasonic Energy Suminoe Factory, Wakayama Factory, and Kaizuka Factory. The committee where professionals in the fields of factory and production technologies participates, has been promoting 'activities for production with minimum energy'. Concretely, for reduction of energy consumption in basic unit through enhancing product efficiency, we established efficient drying conditions using scientific methods in the application process of electrode materials that had been a bottleneck in enhancing product efficiency in the production process of electrode substrates, so that the application speed has been increased. This method can be transferred to overseas factories such as in the U.S., where LIBs are produced on a large scale. We also achieved a reduction of the standby energy consumption of charging and discharging devices in the test process by eliminating unnecessary processes after reviewing the operational procedure. Moreover, to enhance the use ratio of renewable energy in and outside of factory premises, we started working on introducing photovoltaic power station to factory premises, while purchasing photovoltaic electricity sourced from outside of our factory through an offsite PPA.


Members from Panasonic Energy Kaizuka

Activities to provide supports for energy-saving in China region

The Chinese government announced its long-term state policy that includes carbon peak out and carbon neutrality, focusing on further reduction of CO_2 emissions. With many business sites in China, the Panasonic Group has been earnestly promoting a three-year energy-saving support initiative in the country since fiscal 2023 with the aim of realizing efficient energy-savings across the entire region in line with China's long-term state policy. More specifically, at our model sites we are lowering CO_2 emissions by undertaking energy-saving assessments in collaboration with experts from within and outside the Group and strengthening the training of personnel to equip them with extensive


Diagnosis of energy saving diagnosis in China region

Environment

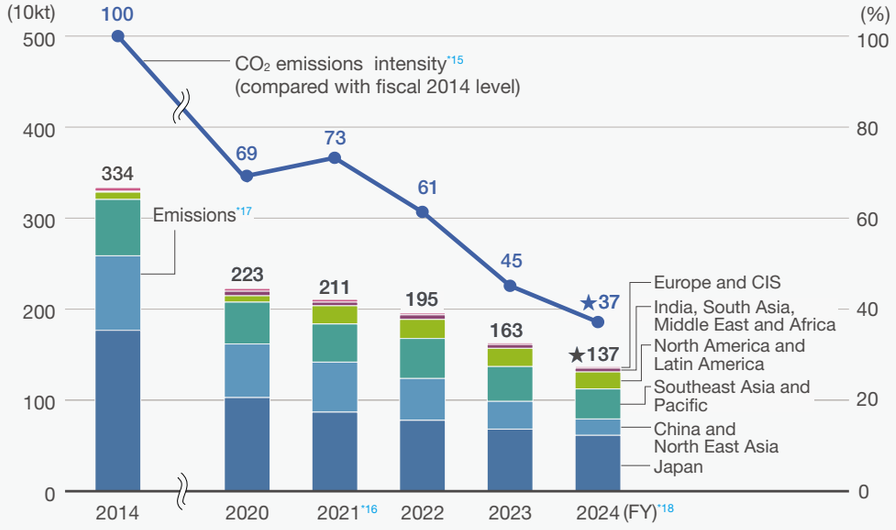
knowledge of energy saving. We select best practices from those implemented at our business sites considering commonality and roll-out of respective cases based on the information or knowledge acquired from results of the diagnoses, and distribute such information to the sites in the region, which promote thorough utilization of the information in own energy saving activities in respective business sites. We are also implementing activities for visualization of energy-saving activities and efficient dissemination of the information, by improving the infrastructure for energy efficiency such as installation of portable measurement equipment and development of a database with case examples in terms of energy efficiency. To realize even more zero-CO_2 factories, we will continue to press ahead with energy-saving efforts at high speed and at low cost in a bid to enhance the level of energy saving in global regions.

Fiscal 2024 Results

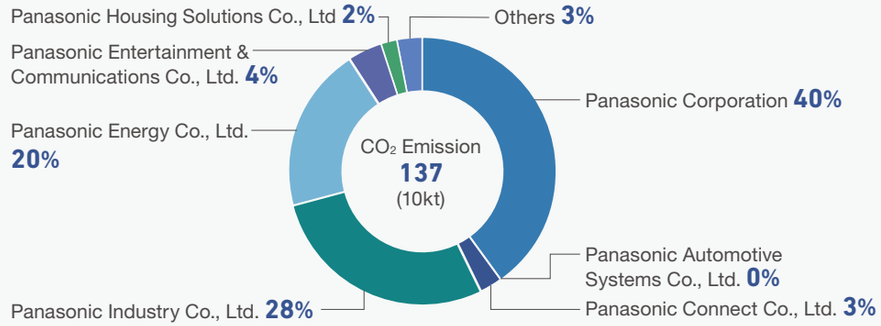
These efforts in fiscal 2024 resulted in 4.5 TWh*13 of the energy used in business activities, and the amount of CO_2 emissions was 1.37 Mt. The fiscal 2023 investment to reduce the amount of energy used and CO_2 emissions by the efforts was 3.7 billion yen.*14

*13 In fiscal 2021, the unit used to measure the energy consumed in business activities was changed from TJ to TWh. The consumed power is measured in kWh and the consumed fuel is measured using its calorific value and then converted to electrical power units at 3.6MJ/kWh. These two values are then totaled.
*14 The total amount includes all investments concerning reduction of the amount of the energy used and CO_2 emissions. Note that differences or proportions of the investment are not calculated.

CO_2 Emission in Business Activities and CO_2 Emission (by region) Per Intensity



CO_2 Emission in Business Activities (by operating company)*19



*15 We calculated the improvement rate of the 'CO_2 emissions intensity' versus that of fiscal 2014', which was obtained by dividing CO_2 emissions by the sales volume of all Group companies.
*16 Includes emissions of Panasonic Corporation of North America after FY2021
*17 The CO_2 emission relevant to fuels was obtained by calculating with the factors stated in the "Guidelines for Calculation of Greenhouse Gas Emissions" published by Japan's Ministry of Environment. The factors for purchased electricity by country per fiscal year defined in "CO_2 emissions from fuel consumption" by International Energy Agency (IEA). The FY2014 factors in the Book 2017 were used for FY2014. The FY2018-2021 factors in the Book 2019 were used for FY2018-2021. The IEA Emissions factors 2021 were used for FY2022, the IEA Emissions factors 2022 were used for FY2023, and the IEA Emissions factors 2023 were used for FY2024.
*18 Includes non-manufacturing sites after FY2023
*19 In the case that net zero CO_2 emissions is achieved in the middle of the FY, the CO_2 emissions results before the FY will remain.

Breakdown of Total GHG Emissions (CO_2-equivalent) in Business Activities (by category)*20

[Unit: kt]

			FY2022	FY2023	FY2024
Scope 2 Energy sources			1,723	1,433	★1,207
Scope 1	CO_2 from energy sources		232	224	★216
	CO_2 from non-energy		106	183	★101
	(non-Energy Sources)	*CO_2*	*1*	*1*	*1*
		HFC	*101*	*180*	*97*
		SF_6	*3*	*2*	*2*
		NF_3 and others	*2*	*1*	*1*
Carbon offset by credit			-12	-26	-57
Total			2,048	1,812	1,465

*20 The emissions of GHG other than CO_2 from energy sources by Hussmann Parent Inc. and its consolidated subsidiaries, Panasonic Corporation of North America, and non-manufacturing sites are not included.

Resources

Promotion of Circular Economy

Alongside changes in customer lifestyles, there is now a growing global trend for customers to use only specific functions of a product, rather than using or owning the whole product. In Europe, building a circular economy for sustainable economic growth has become a major economic strategy, in a move away from continuous resource consumption. This trend is spreading around the world along with the change in customers' sense of values. Amid this development, the Panasonic Group is introducing the idea of circular economy and moving forward in efforts to promote effective utilization of resources and maximization of customer value.

The circular economy activities we promote have two aspects: 1) creation of circular economy businesses, and 2) evolution of recycling-oriented manufacturing.

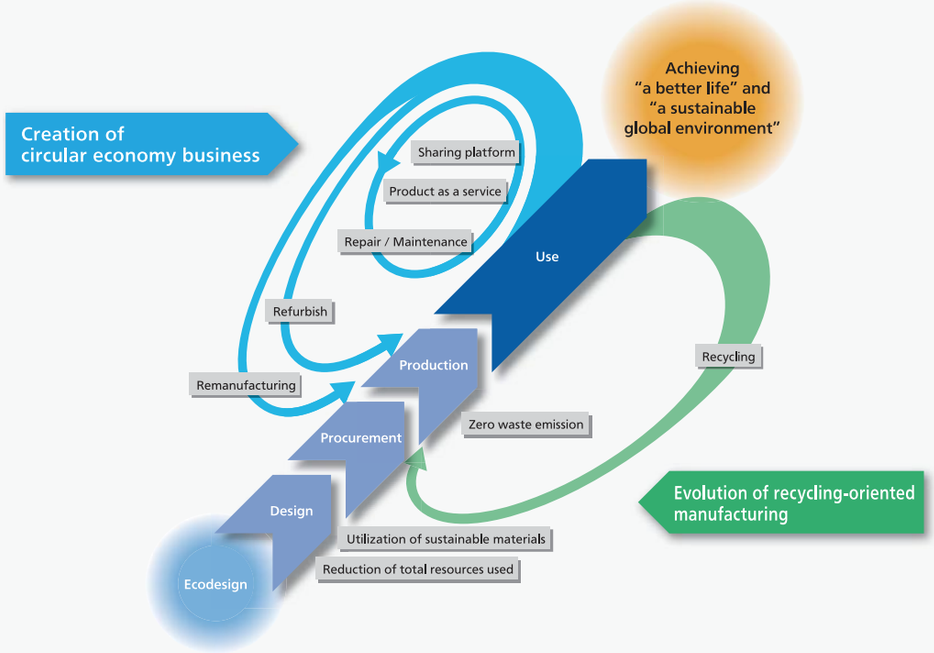
In order to realize the new value of using only product functionalities instead of using or owning the whole product, we will strive to create circular economy businesses. These include a "Sharing service", where multiple users use the same individual product, a "Product as a service" where services are fulfilled based on functions, and "Repair and Maintenance, Refurbish and Remanufacturing", where functions, values, and the lifecycle of a product are utilized in the most efficient manner by recycling or reusing the product itself or the components used in the products.

Alongside this, we continue to implement recycling-oriented manufacturing by reducing the total amount of resources used, utilizing sustainable resources, and striving towards zero waste emissions. Furthermore, we will develop recycling-oriented manufacturing to a higher level by using innovative materials and the latest digital technologies.

With all these activities, we aim to realize both "A better life" and a "Sustainable global environment" towards Panasonic GREEN IMPACT PLAN, based on an ecodesign concept which maximizes customer value in use by increasing resource efficiency at each process in design, procurement, and production.

[Concept for the Actions toward Circular Economy]

We will promote effective utilization of resources and maximization of customer value by creating circular economy business and evolving recycling-oriented manufacturing.



As specific activities, we continue to work towards achieving the resource-related targets listed in GREEN IMPACT PLAN (GIP) 2024. We plan to adjust our existing businesses along the circular economy aspects as outlined in our concept above. We are also using the same mapping with future new businesses, and aim to establish at least 13 new circular economy business models by 2024.

We plan to improve materials to meet both the characteristics requirements and environmental safety, ensure stable supplies, advance production technology to use new materials, and improve recycling technology, through which we aim to achieve a total of more than 90k tons of recycled resin (cumulative from FY2023-2025). Additionally, zero waste emissions are important

Environment

for us as a part of efficient usage of resources and we will continue our efforts to achieve a factory waste recycling rate of 99%.

We established the Global Circular Economy Project in April 2020, led by Panasonic Europe, with the aim to accelerate conversion of the Group's business into a circular economy model. In 2023, the project was reorganized into a new system due to the increasing necessity of applying the principles of a circular economy throughout our business management, driven by a deepening understanding of such principles. Understanding of the principles of a circular economy penetrated through our businesses and established an important foundation to formulate the Circular Economy Group Policy in November 2023, as well as to integrate the Circular Economy business into Panasonic GREEN IMPACT.

Creation of Circular Economy Business

We strive to promote the efficient use of resources and to maximize customer value. Thus, we are working to create businesses based on a circular economy model. One of the business models created is "product as a service" for our display refrigerators and freezers. Instead of selling them to supermarkets and other food retailers, we offer "food refrigeration" as a service based on a monthly charge. The service also offers a refurbishment scheme for food retailer chains, through which we replace old display refrigerators and freezers in one store with newer models in use at another store after thorough inspection and refurbishment. The service package can be tailored to suit customers' particular requests and store conditions. Furthermore, this service includes a "monitoring service" that supports energy conservation in stores through digitally monitoring the operational status of displays and other types of refrigerators and freezers, and physical services, such as maintenance and repairs, and replacement suggestions for older items.

These services are expected to reduce maintenance and energy costs, and at the same time it will facilitate cheaper, low-budget store renovations by making business management more efficient.

Road tunnels are an indispensable social infrastructure in our life. We provide a total air ventilation solution to maintain a clean air flow in the tunnel environment, as well as a maintenance service[*1] for such ventilation equipment. The service offers regular checks and overhauls on the air ventilation equipment, including the jet fans used as a part of the above solution, thereby minimizing functional deterioration from aging and ensuring product safety over a longer period of time.


Jet fans

We refurbish home appliances, such as washing machines, refrigerators, and TVs, collected after use, to a reusable state for reselling.[*2] Those products that satisfy the high quality standards set by the Panasonic Group are then made available for sale. For example, TVs are inspected to ensure they do not carry any scratches, damage, or missing parts in the main body and accessories that could cause a malfunction. They are also thoroughly cleaned, and the image quality is checked. Any failed parts are replaced, and all the products are tested for product safety. To meet the Group standards, the display output is adjusted, and performance tests are conducted. Only after all these processes have been completed, the products are finally put on sale for customers.

As another subscription model, we started a service for our rental housing, "noiful," in January 2022. Noiful[*3] offers a rental service for the latest home appliances pre-installed in a rental property, including support services to explain how to use the appliances, repairs and replacements, and appliance cleaning when moving in and out. In addition to the conventional home appliance package, from March 2024 we started a new full-furnishing plan that offers residences complete with furniture and home appliances.[*4] In the domestic real estate market, housing stock is on an increasing trend due to the population decrease etc. This becomes a range of social issues, such as an increase in aging buildings and more vacancies. Noiful offers "plentiful life without owning" to tenants, enabling people to move houses more easily, which should help invigorate the rental housing market. This novel solution also contributes to solving the social issue of increasing vacancies by adding a value to the rental property for owners and management companies. Noiful is also designed to be a business model offering a recurring and stable high income, and new value to the three parties usually involved in the business: property owners, management companies, and tenants. The reuse and recycling of home appliances reduces environmental impact by eliminating the necessity of disposal and contributes to building a sustainable society and life.


Subscription service "noiful"

Products containing a significant amount of recycled materials are also considered as a part of our circular economy businesses, as they contribute to efficient resource utilization. One such product example is a series of our cordless vacuum cleaners. The MC-NS10KE is a new cordless stick vacuum cleaner with the Clean Dock exclusively designed by the Panasonic Group. It was released on December 6, 2023, as a model with the use of recycled resin increased to around 40% of the entire product.[*5] In February 2024, we released another circular economy focused model, the MC-PB60J cordless stick bag-type vacuum cleaner. It contains 95% recycled resin (biomass content, etc.) and acquired the industry's first Biomass Mark as a domestic home cordless stick cleaner (by our research as of February 29, 2024).[*6]


MC-PB60J

Environment

In June 2022, we began installing collection boxes for used dry batteries at 31 local 7-Eleven stores in Thailand, in cooperation with CP ALL Plc., the operator of 7-Eleven. In March 2024, we established a scheme to recycle the collected used dry batteries manufactured by us, in partnership with UMC Metals Ltd., a Thai steelmaker. This initiative allows us to melt our dry batteries, which do not contain environmentally harmful substances, and recover reusable materials, thereby contributing to efficient resource utilization. As of June 2024, we have achieved a total of 1,000 collection box locations at 7-Eleven stores.

The Panasonic Group will participate in the 2025 Japan World Exposition (Expo 2025 Osaka, Kansai, Japan). Our pavilion, "The Land of NOMO", was constructed under the theme of "Pavilion Born of Three Circulation" and will actively make of use recycled materials recovered from used home appliances, offcuts and waste materials from factories, and other products made from scrap developed by the Panasonic Group.*7 Materials used during construction of the Panasonic Group Pavilion will be returned to the recycling scheme after the Expo with the aim of achieving the Japan Association for the 2025 World Exposition's recycling rate target of 98.1% (by weight).


Conceptual image of the pavilion

As described above, we are working to create circular economy businesses. We completed mapping out the relationships between our existing businesses and a circular economy based on the analytical method that we developed in fiscal year 2020. According to this mapping, we are steadily converting our businesses to a circular economy structure and three more circular economy businesses were created this fiscal year in addition to our ten existing ones. We are continuing to expand the scale of our circular economy business.

1	Subscription services for refrigerator/ freezer display cases
2	Subscription services for cooling box for pharmaceuticals
3	Akari E Support services (LED Lighting leasing service)
4	Battery management business in the PC subscription services
5	Effective utilization of owned buildings
6	Business development of mixed cellulose plastics
7	Refurbishment services with Lawson
8	Subscription services for home appliances (noiful)
9	Use of factory wastes for parts
10	Adoption of paper-based battery packaging and used dry batteries recycling
11	Maintenance service for air ventilation systems in road tunnels
12	Refurbishment of washing machines, refrigerators, TVs, etc.
13	Vacuum cleaners made with recycled resin

*1 See WEB https://www2.panasonic.biz/jp/air/fan/douro/
*2 See WEB https://ec-plus.panasonic.jp/store/page/product/refurbished2307/
*3 See WEB https://news.panasonic.com/jp/press/data/2022/01/jn220119-1/jn220119-1.html
*4 See WEB https://news.panasonic.com/jp/press/jn240314-6
*5 See WEB https://ec-plus.panasonic.jp/store/page/contents/cleaner-NS10KE-sus/
*6 See WEB https://panasonic.jp/soji/products/stick/mc-pb60j.html
*7 See WEB https://news.panasonic.com/jp/press/jn230712-1

Evolution of Recycling-Oriented Manufacturing

We use many kinds of resources, including iron (28% of total resources used) and plastic (11% of total resources used), because of our wide range of products and businesses, from home appliances, components such as semiconductors and batteries, housing, and B2B solutions.

In recycling-oriented manufacturing, we are further working on reducing the input of virgin resources, while increasing the amount of recycled resources. And in that context, we are working to establish a circular system according to resource type and features.

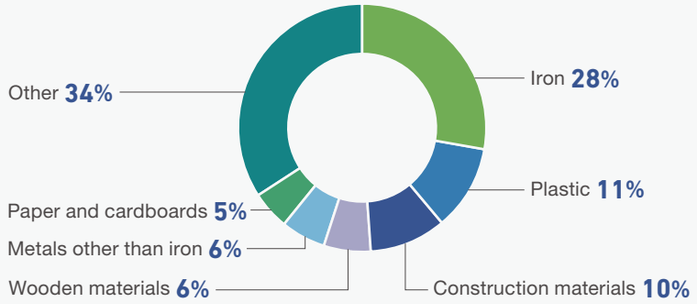
Furthermore, we are clarifying recycled resource use by identifying the volume of each type of resource used across the Panasonic Group. For example, in the case of recycled resin, we used approx. 17.2 kt of recycled resin in our products in fiscal 2024. In order to achieve the respective GREEN IMPACT PLAN (GIP) 2024 target, we worked on responding to the characteristic required for components, ensuring a stable supply, devising ways to use at the manufacturing site, and developing recycling technologies.

As for the factory waste recycling rate*8, we had traditionally set different targets for Japan and countries outside Japan according to the relevant local infrastructures. However, given increased awareness of the importance of zero waste emission activities, we have set a globally standardized target since fiscal year 2011 and are taking steps to improve the standard level of waste recycling across the entire Group. The factory waste recycling rate in fiscal year 2024 was 99.3% compared to our target of more than 99%, achieving the target (see page 51). We will continue to implement measures to achieve the zero waste emissions.

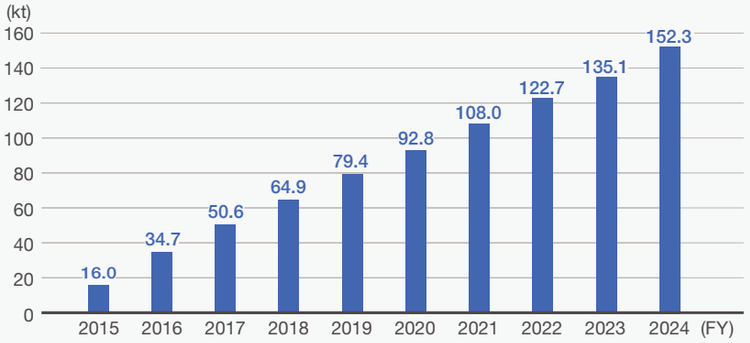
*8 Factory waste recycling rate = Amount of resources recycled/(Amount of resources recycled + Amount of landfill)

Environment

Breakdown of Input Virgin Resources Used in Fiscal 2024 (by category)



Results of Recycled Resin Usage (Cumulative total from fiscal 2015)



Reduction in Resources Used

To minimize the use of resources for production, we continuously look to reduce the weight of our products. Through the Product Environmental Assessment (see page 39), we have been promoting resource saving from the product planning and design stage, such as using less resources, making our products lighter and smaller, and using less components. We also implement various measures from the standpoint of resource recycling throughout the product life cycle, such as component reuse, longer durability, use of recycled resources, easier battery removal, and labels necessary for collection/recycling.

Examples of weight reduction and recyclable product design are also introduced in the following website.

WEB https://www.panasonic.com/global/corporate/sustainability/eco/resource/recycling_oriented_manufacturing.html

Use of Sustainable Materials

Under the concept of "product-to-product", we are enhancing our initiatives of utilizing resources recovered from used products. As for resin, we promote the reuse of resin recovered from our used home appliances (refrigerators, air conditioners, washing machines, and TVs) for our products. We also started recycling scrap iron recovered from used home appliances in our products in 2013.

Examples of "Products to Products" and inventions to streamline and automate the process of recovering resources from used products are introduced in the following website.

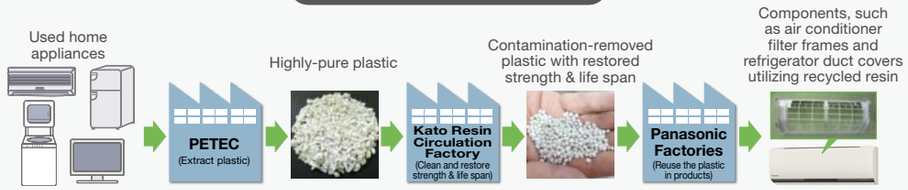
WEB https://holdings.panasonic/global/corporate/sustainability/environment/resources/recycling_oriented_manufacturing.html

WEB **Our Approach to Resources Recycling**
https://holdings.panasonic/global/corporate/sustainability/environment/resources-recycling.html

Enhanced Use of Recycled Resin

To efficiently utilize resin recovered from used home appliances in addition to metals such as iron, copper, and aluminum, our recycling factory, Panasonic Eco Technology Center Co., Ltd. (PETEC), and Kato Plastic Recycling Factory of the Living Appliances and Solutions Company work together for resin recycling.

Process of Resin Recycling



Using technologies such as our original near-infrared identification technology, PETEC is capable of sorting shredder residue of waste home appliances into three major types of resins with different purposes and properties—polypropylene (PP), acrylonitrile butadiene styrene (ABS), and polystyrene (PS)—at a material purity of over 99%.

The recycled single resins sorted and recovered at PETEC are then transferred to the adjacent Kato Plastic Recycling Factory to be further purified and processed to recover their chemical properties. Kato Plastic Recycling Factory is a manufacturing and development site that demonstrates promotion of use of recycled resin at our Living Appliances and Solutions Company, a home appliance manufacturer and seller. The factory plays an important role in

Environment

enhancing recycled resin utilization by developing recycling technologies, such as a more efficient method that improves the performance of recycled resin. Generally, the strength and lifespan of resin deteriorate over time. This is why its chemical properties have to be recovered to the level of new resin to make them usable as materials and components in new products. Because of the differences in the physical properties required by different products, we have been examining the properties of recycled polypropylene, polystyrene and acrylonitrile butadiene styrene, and have developed technologies to create new formulas for resin components, adding our own proprietary antioxidant and mixing recycled resin with new resin. To increase usage of recycled plastic across Panasonic Group, we plan to find recycled plastic suppliers based on the recycled plastic development and quality assessment techniques cultivated in our Kato Plastic Recycling Factory.

Near-infrared sorting machine that can sort three types of resin simultaneously

Development and Use of New Sustainable Materials

Cellulose fiber can be derived from various natural resources, such as wood residues from forest thinning, and other organic wastes, and it is now drawing attention as a resource with low environmental impact. In fiscal 2019, we developed a composite polypropylene (PP) resin containing plant-derived cellulose fiber as an additive. Also, we developed a molding material mixed with plant-derived cellulose fiber. This new material is used in the frame parts of our cordless stick-type vacuum cleaner and contributes to its reduced weight, one of the most important features of the product. In fiscal 2020, the content of the cellulose fiber could even be increased to more than 55% while maintaining the whiteness of the material thanks to our special processing technology.

In fiscal 2021, we further advanced the technology to increase the amount of cellulose fiber, and established a process that enables 70% cellulose fiber composition, along with a technology that can smoothly mold the material into products. These technologies increase the plasticity of the material despite the high content of cellulose fiber, enabling product designs intended to feature the natural feel of the material. (The product received the MEXT Minister's Prize under the FY2021 50th Japan Industrial Grand Prize held by Nikkan Kogyo Shimbun, Ltd.) Sales of sample molding materials of kinari CeF70-PP and kinari70 started in March 2023, and kinari70 began mass production and sales as kinari70-PP.

We successfully established a commercial level of technology to mix a high density plant-based cellulose fiber into resin. We then applied the same technology to mix cellulose fiber into plant-based resin (bio-polyethylene) and successfully developed 90% high density cellulose fiber composition materials. Mixing a high density cellulose fiber into soft bio-polyethylene enabled us to achieve the same strength as our conventional kinari, but in a white color. This molding material, made of 90% or more biomass content, was named kinari90 and sample sales started in January 2024.

To produce fully biodegradable composition materials, we combined plant-based cellulose fiber with biodegradable resins. Conventional biodegradable resins have more restricted applicability compared to generic resins, such as polypropylene, due to their lower strength and durability. When mixed with cellulose fiber, such biodegradable resins show poor fluidity, therefore their application became even narrower. We developed composition materials that offer biodegradability and high plasticity to the level of 1 mm-thick molding, by blending multiple biodegradable resins, including plant-based polylactide resin, with appropriate additives.


Cellulose fiber composition materials with a biomass content of 90% or more

Just in the same way as conventional kinari, the new material is also available as white pellets that can be colored as required.

The new material has been certified as a biodegradable biomass plastic by the Japan BioPlastics Association.

In the area of housing materials, we exclusively developed a wood-based flooring substrate that utilizes 100% recycled wooden materials (excluding glue) made from construction waste and unused materials. Thanks to our wide-ranging processing technologies, we successfully created a substrate with high density with superior solidity compared with general plywood and which offers excellent scratch and dent resistance. The starch in wooden materials can attract insects (lyctus), however, our product is insect resistant as it has a low starch content. The substrate also offers excellent scratch and dent resistance and is therefore ideal for coping with wheels on chairs and furniture. The board's tongue and groove structure is also designed to deliver easy installation. Further, a part of the sales revenue from this sustainable flooring is donated to Gunma Prefecture's forestry fund. The entire life of the floorboarding is consistent with an approach. This product can reduce the consumption of natural materials and also contributes to preserving biodiversity (see page 57).

We intend to develop more new products with this technology, focusing also on developing new recyclable resources.

WEB **Developed a high density cellulose fiber composition material which has flexibility in design**
https://news.panasonic.com/jp/press/data/2019/07/jn190708-1/jn190708-1.html

WEB **Commenced sales of samples of kinari, high density cellulose fiber composition materials**
https://news.panasonic.com/jp/press/data/2021/12/jn211201-2/jn211201-2.html

WEB **Jointly developed ECOALF, the sustainable fashion brand of Sanyo Shokai Ltd.**
https://news.panasonic.com/jp/press/data/2022/03/jn220330-2/jn220330-2.html

Environment

WEB **Jointly developed the K-WORLD ism products with Panasonic Production Engineering Co., Ltd.**
https://news.panasonic.com/jp/press/data/2022/04/jn220419-3/jn220419-3.html

WEB **Developed 70% high density cellulose fiber composition materials**
https://news.panasonic.com/jp/press/data/2021/02/jn210204-1/jn210204-1.html

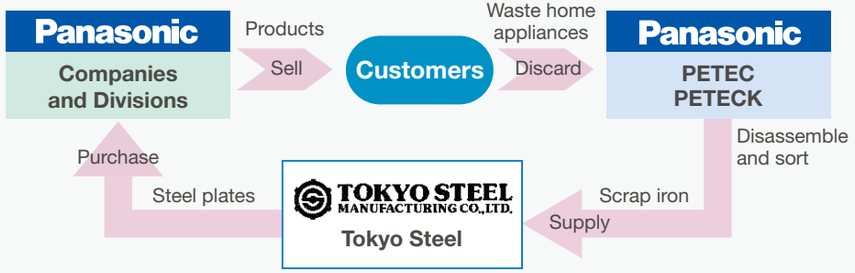
WEB **Sample sales of cellulose fiber molding material kinari 90 (90% or more biomass content) and mass production sales of kinari70-PP started**
https://news.panasonic.com/jp/press/jn240116-1

WEB **Developed 90% high density cellulose fiber composition materials.**
https://news.panasonic.com/jp/press/data/2022/03/jn220318-2/jn220318-2.html

Building a Recycling Scheme for Scrap Iron

Jointly with Tokyo Steel Co., Ltd., we started a recycling scheme for scrap iron in July 2013. In this scheme, we recover the scrap iron from used home appliances and Tokyo Steel makes it into steel sheets. We then purchase the sheets back as a material for our products. Supplying scrap iron for recycling and repurchasing the recycled iron is the first scheme of its kind in the Japanese electrical manufacturing industry.

Self-recycling Scheme for Electric Steel Plates

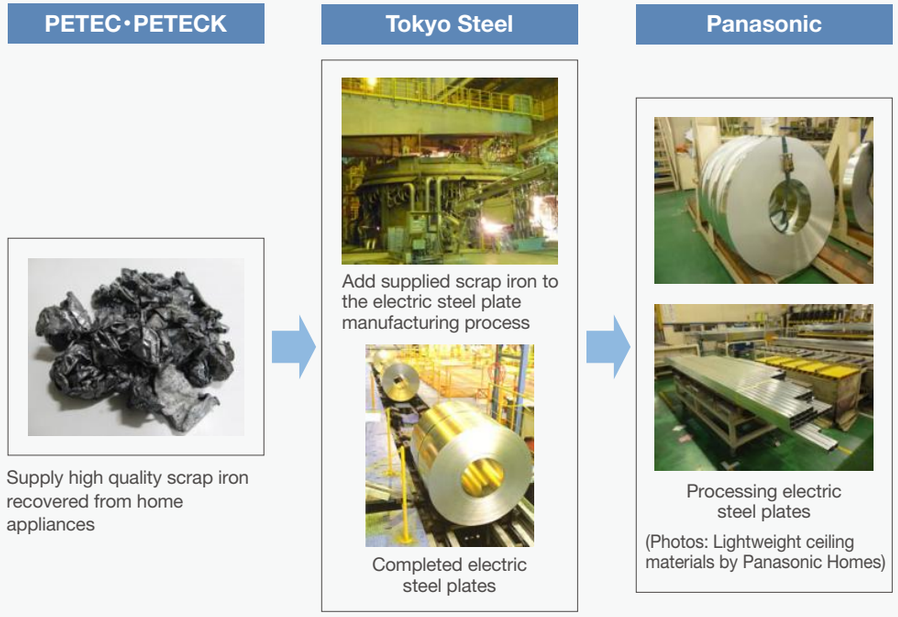


Specifically, scrap iron from home appliances collected and treated at PETEC and Panasonic Eco Technology Kanto Co., Ltd. is supplied to Tokyo Steel, where the scrap iron is processed into electrical steel plates.*9 We procure the recycled steel plates and utilizes them in products.

Discussions with Tokyo Steel commenced in 2010, and we have worked together since then to improve the quality of recycled iron to a level sufficient for production use, as well as developing the technology to improve the applicability of the recycled iron. From this we identified the optimum application of the electrical steel plates, and refined its specific features (e.g. shape, strength, and weldability) to meet application-specific requirements. Use of thin electrical steel plates in our products was first made possible in 2011. Through this close collaboration, we materialized this recycling scheme in 2013, a scheme where a home appliance recycling company that we own supplies scrap iron to be used to make electrical steel plates.

The amount of scrap iron we initially supplied to Tokyo Steel was about 50 t per month. In fiscal 2024, it reached over 2.5 kt per year, and the recycled steel is being used in our Group products, including washing machines and ceiling materials for housing.

Self-recycling Scheme Process



The increase in electrical steel plate usage leads to an increase in the usage of scrap iron, which is one of the most important resources in Japan. In addition, producing steel plates from scrap iron emits much less CO_2 compared with producing steel plates from scratch. This scheme also stabilizes the procurement price, because the price of scrap iron supplied from PETEC and the price of electric steel plates procured from Tokyo Steel are determined by the scrap iron fluctuation rate agreed between the two companies. We will further expand this recycling scheme for more efficient resource utilization, CO_2 emissions reduction, and stabilization of procurement prices.

*9 Steel produced from scrap iron melted and refined in an electric arc furnace.

Zero Waste Emissions—Improving Factory Waste Recycling Rate

From the viewpoint of effective usage of resources, we believe that generation of waste and revenue-generating waste at factories must be minimized, even if such waste could be sold as valuable commodities. Based on this belief, we identify the amount of generated waste (including both revenue-generating waste and factory generated waste) and classify it into: (1) recyclable

Environment

waste (including those that can be sold and those which can be transferred free of charge or by paying a fee), (2) waste that can be reduced by incineration or dehydration, and (3) landfill (waste with no option other than being sent to landfills). We reduce the emission of waste by boosting yield in our production process and increasing the recycling rate of our waste materials. Accordingly, we strive globally toward achieving our Zero Waste Emissions from Factories*10 goal by reducing the amount of landfill to nearly zero. We have reinforced such efforts particularly in China and other Asian countries, where many of our factories are located.

With the waste plastic import control introduced in China, the volume of material being recycled has dropped, leading to an increase in landfill waste disposal. As a result of various activities, the factory waste recycling rate in fiscal 2024 was 99.3%, achieving the 99% target in our GPI 2024. In addition to the waste plastic recycling, we will introduce more recycling activities which aim to maintain and improve the factory waste recycling rate. (Example: PEW Ikeda Denki*11)

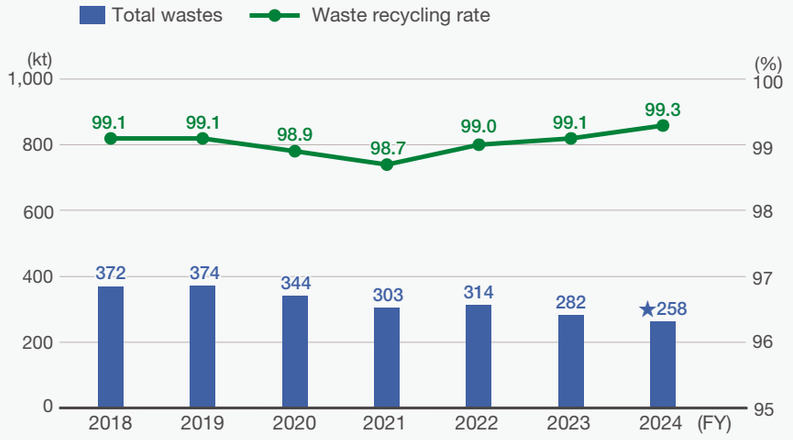
As a means to reduce the generation of waste, we are fostering resource-saving product design. In our production activities, we are engaging in resource loss reduction, employing our own unique material flow analysis methods. We consider materials that do not become products and excessive use of consumables as resource losses, and make the material flow and lost values for each process visible in order to resolve the issues in close collaboration with the design, manufacturing, and other relevant business divisions. In the future, we will promote further reductions in resource losses through the Resource Loss Navigation, our original system developed to automatically display information to help reduce resource losses.

As an initiative to reduce the amount of final disposal of waste and valuables, we will reduce the amount of materials that are particularly difficult to recycle, such as thermosetting resins. We are also strictly adhering to waste sorting practices in production processes to further expand the reuse of resources.

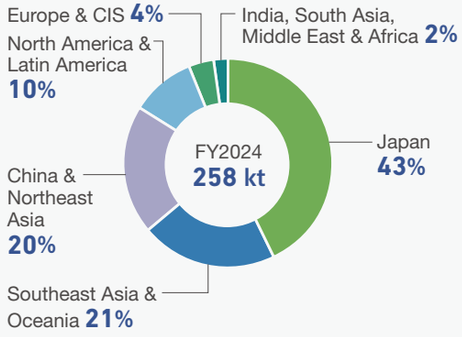
Because waste recycling rates in our overseas factories lag behind those in Japan, we have worked to improve the average level of recycling activities by sharing information within and between regions outside Japan. Specifically, in addition to accelerating the information sharing on waste recycling issues between our local factories and group companies in Japan, we also promote the sharing of excellent examples and know-how among our factories across regions by utilizing BA Charts*12 prepared by each region, following our long-standing approach toward CO_2 reduction activities.

*10 Definition by the Panasonic Group: Recycling rate of 99% or higher. Recycling rate = Amount of resources recycled/(amount of resources recycled +amount of landfill).
*11 WEB https://panasonic.co.jp/ew/environment/3r_pewi/
*12 A chart-format summary of comparisons between "before and after" implementation of waste reduction and recycling measures.

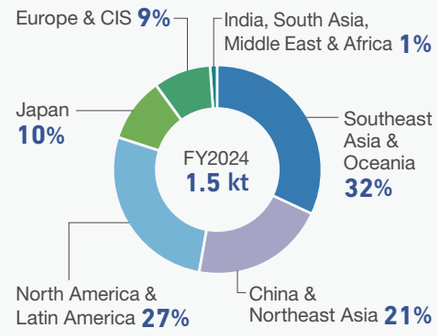
Amount and Recycling Rate of Total Wastes Including Revenue-generating Waste



Breakdown of Total Wastes Including Revenue-generating Waste (by region)



Breakdown of Landfill (by region)



Environment

Breakdown of Total Wastes Including Revenue-generating Waste for Fiscal 2024 (by category) (kt)

Items	Total wastes	Recycled	Landfill
Metal scrap	112	111	0.2
Paper scrap	29	29	0.2
Plastics	34	33	0.7
Acids	14	9	0.05
Sludge	8	7	0.1
Wood	24	24	0.02
Glass/ceramics	3	3	0.05
Oil	9	8	0.06
Alkalis	15	13	0.02
Other *13	10	9	0.2
Total	258	246	1.5

*13 Combustion residue, fiber scraps, animal residue, rubber scraps, debris, ash particles, items treated for disposal, slag, infectious waste, polychlorinated biphenyls (PCBs), waste asbestos.

Global Initiatives for Used Product Recycling

For the purpose of efficient use of natural resources and prevention of environmental pollution, many countries around the world have been enacting recycling laws and developing their recycling systems. Examples include: the Law for Recycling of Specified Kinds of Home Appliances (Home Appliance Recycling Law) and the Act on the Promotion of Effective Utilization of Resources in Japan, the WEEE (Waste Electrical and Electronic Equipment) Directive in the European Union, and recycling-related laws in many states in the United States as well as in China. In addition to complying with the Basel Convention which controls the transfer of hazardous waste to non-OECD countries as well as with related laws in respective countries, the Panasonic Group strives to establish the most efficient recycling system in each country that is in line with its local recycling infrastructure, including the utilization of third parties.

Product recycling results in fiscal 2023 are as shown below. As for the situation outside Japan, with the decrease in the volume of collection and recycling due to recent reforms of business areas in various countries, the weight of collected products is on a flat or downward trend.

FY2023 Results

Japan Processed approx.	151.3 kt of four kinds of used home appliances
USA Collected approx.	77 t of used electronic products

Product Recycling Initiatives in Japan


Machine to turn over air conditioner outdoor units at PETECK

In response to the Home Appliance Recycling Law of 2001, which covers four specified kinds of home appliances*14, manufacturers were grouped into two groups, Group A and Group B, to collect and recycle the four specified kinds of used home appliances. We belong to Group A, and to work on recycling, we have established Ecology Net Co., Ltd. jointly with Toshiba Corporation to operate and manage a geographically dispersed recycling network through the effective use of existing recycling facilities nationwide. This management company supervises 326 designated collection sites (shared by Group A and Group B) and 30 recycling plants, based on consignment from Group A manufacturers (18 companies including the Panasonic Group). Additionally, we invest in Panasonic Eco Technology Center Co., Ltd. (PETEC), Panasonic Eco Technology Kanto Co., Ltd. (PETECK), and Chubu Eco Technology Co., Ltd. (CETEC)*15 and exchange information with product manufacturing divisions to develop easy-to-recycle designs, as well as conducts research and development to efficiently recover and supply more resources. In fiscal 2023, we recycled approx. 151.3 kt of the four specified used home appliances.

Although the statutory recycling rate*16 is being raised in phases, our recycling plants have been achieving recycling rates higher than the legal requirement by reviewing and improving recycling equipment and processes in view of the characteristics and materials of respective products as well as higher recycling efficiency.

In the summer of 2019, PETECK automated a part of its air conditioner processing line, using an articulated robot to turn over and transfer air conditioner outdoor units during the dismantling process. The recognition device identifies the position and size of the outdoor unit, and based on the identified information the articulated robot picks up and moves the unit to the standard dismantling process or to the process for dismantling special items such as window-type units. This has enabled safe and efficient air conditioner processing, relieving workers of dangerous work that required physical strength to turn outdoor units (weighing 33 kg in average) upside down. As for PETEC, it promotes high grade single-plastic recycling using plastic recognition equipment.

See pages 48-49 for more details.

*14 Air conditioners, TVs, refrigerators/freezers, and washing machines/clothes dryers.
*15 PETEC is a company fully invested by the Panasonic Group, and PETECK and CETEC are joint ventures between Mitsubishi Materials Corporation and the Panasonic Group.
*16 Statutory recycling rate = Recycling rate specified by law (Valuable resource weight/Total weight of used home appliances).
The statutory recycling rates were raised in 2009 and 2015, and are currently at least: 80% for air conditioners, 55% for CRT TVs, 74% for LCD and plasma TVs, 70% for refrigerators and freezers, and 82% for washing machines and clothes dryers.

Environment

WEB Overview of Recycling of Specified Used Home Appliances (Japan)
https://holdings.panasonic/global/corporate/sustainability/environment/resources/recovery/recycling.html
WEB Panasonic Eco Technology Center Co., Ltd. (PETEC)
https://panasonic.net/eco/petec/

Efforts in the Europe / CIS Region

In 2023, we collected approx. 32.20 kt[*17] of used products covered by the WEEE Directive across Europe.

Circular Economy is the key driving factor for future waste legislations in Europe. Recycled content becomes increasingly important in Europe and will be more and more included into national laws and tender processes. If products don't meet certain Circular Economy criteria, the recycling fees will increase. If products are easy to recycle, contain recycled material, easy to repair, etc., the recycling fees will decrease.

Panasonic is considering how to prepare our business for such new recycled material requirements. For instance, this includes ensuring stable material supplies with guaranteed quality. In addition, we intensified the internal discussion about the impacts on product design, the enhanced reuse of products and components, or how to further improve and simplify the recyclability of products.

*17 Calculated by multiplying the weight of collected products per collection system by our market share in terms of weight per collection system.

Efforts in North America

The Panasonic Group continues its leadership role in establishing and operating a recycling system for waste batteries and consumer electronic products in North America. Following the startup of a state recycling law in Minnesota in July 2007, we established the Electronic Manufacturers Recycling Management Company, LLC (MRM), jointly with Toshiba Corporation and Sharp Corporation in September of the same year, and began recycling TVs, PCs, and other electronic equipment.

With collaborative ties to several recycling companies, MRM operates collection programs on behalf of numerous companies across 20 states and the District of Columbia. The cumulative total of collection by MRM has exceeded 1.6 billion lbs. (approximately 726 kt) since its inception in 2007. With the changes in our business strategies in the US, our remaining collection obligations are de-minimis, MRM will continue operating its collection programs on behalf of the manufacturers it serves.

As for waste batteries, we established Call2Recycle in 1994 jointly with other battery manufacturers, and now provide recycling programs for rechargeable batteries throughout the US and Canada. Call2Recycle provides collection program and a robust retail collection network for over 600 companies, and collected more than 69 kt of primary and rechargeable batteries in the US and Canada since the organization's inception.

Recycling end-of-life products in Canada started in 2004 with the Alberta Government Extended Producer Responsibility (EPR) Regulation. Since then a total of ten provinces and two territories have legislated WEEE, each with their own unique parameters and requirements. In an effort to harmonize these programs, Panasonic Canada takes an active role in the governance of the Electronic Product Recycling Association, a not-for-profit management organization. The currently active provincial EPR programs have proven to be very effective in diverting e-waste as reflected in 2020 totals, where 109.41 kt in Canada were collected.

Efforts in China

In China, it has been announced that the collection of the Waste Electrical and Electronic Products Processing Fund, which was based on the Regulations on the Administration of the Recovery and Disposal of Waste Electrical and Electronic Products implemented since 2012, will be temporarily suspended after January 1, 2024. In the future, subsidies for waste appliance processing to recovery and disposal companies will be paid from the national general public budget (mainly from taxes).

The government is paying attention to and considering responses to related policies such as the Promotion Plan for the Extended Producer Responsibility System announced in January 2017, the Law on the Prevention and Control of Environmental Pollution by Solid Wastes enforced in September 2020, and the demonstration of the Waste Appliance Recycling Target Responsibility System involving six major local home appliance companies since 2022.

Efforts in Southeast Asia and Oceania

Vietnam

The Law on Environmental Protection 2020 sets out requirements for a wide range of environmental issues, including the enhancement of e-waste management in Vietnam. The Government has also issued "Decree 08/2022 Detailing a Number of Articles of the Law on Environmental Protection" and "Circular 02/2022/QD-TTg Detailing the Implementation of a Number of Articles of the Law on Environmental Protection" under the Law on Environmental Protection 2020 which took effect since 10 January 2022 and requires producers/ importers to contribute financially for waste treatment of primary batteries from 1 January 2022. PSV has since made the necessary financial contribution for primary batteries placed in the market in 2022 to ensure proper waste treatment for these batteries. Moving forward, producers/ importers will also be required to contribute financially or self-manage e-waste recycling for rechargeable batteries from 1 January 2024 and electronic products from 1 January 2025.

PSV has since made the necessary financial contribution for primary batteries placed in the market to ensure proper waste treatment for these batteries. Additionally, we are working with Recycling Vendors to consider 2 options: financial contribution or self- recycling for rechargeable batteries and electronic products.

Panasonic Sales Vietnam will work closely with the Vietnamese government to take the necessary

Environment

actions for compliance to the Law on Environmental Protection and to support the implementation of an effective waste treatment and e-waste recycling scheme.

Australia

The National Television and Computer Recycling Scheme (NTCRS) was established in Australia in 2011. Effective since 1 July 2021, the NTCRS has been superseded by the Recycling and Waste Reduction (Product Stewardship –Televisions and Computers) Rules 2021 made under the Recycling and Waste Reduction Act 2020, which will provide a new legislative framework to manage waste, recycling and product stewardship. Currently, the national framework covers televisions and computers, including printers, computer parts and peripherals.

Panasonic Australia (PAU) partnered with Ecycle Solutions, a co-regulatory arrangement approved by the Australian government to fulfill its obligation under the national scheme, since May 2021. Between January 2023 and December 2023, 22 tons of e-waste were recycled.

Since April 2021, PAU has also joined the Battery Stewardship Council (BSC) as a member. As part of obligations of a member, PAU has also been contributing to recycling costs for batteries imported, including 91 tons of batteries imported between January to December 2022.

Singapore

The Resource Sustainability Act introduced in Singapore in 2020 requires producers of regulated consumer products to join the licensed Producer Responsibility Scheme (PRS), which started in July 2021. For Compliance Year 3 (July 2023 – June 2024), a Collection Target of 60% (of weight supplied) was set for regulated Large Household Appliances (LHAs) and 20% for Portable Batteries. Panasonic Singapore has been working closely with the authorities and PRS operator to ensure the smooth implementation of the PRS. A total of 6,490 tons of regulated e-waste were collected by the PRS operator, of which LHAs comprised of a total of 90% by weight between January to December 2023.

Other Countries in Southeast Asia and Oceania

Regulators in Malaysia, Thailand, the Philippines, and New Zealand are also gearing towards the global trend of mandating end-of-life product recycling. Discussions with regulators and industry bodies are in progress. We hope to contribute to the formulation of sustainable e-waste management policy in each country through engagement with local governments and industry associations and participation in pilot recycling projects.

Efforts in India

In India, the new e-waste recycling law has been implemented by the Ministry of Environment, Forests and Climate Change (MoEFCC) from the 1st of October 2017, with Extended Producer Responsibility (EPR) targets based on end-of-life (EoL) defined in the e-waste (Management) rules 2016. To fulfill the compliance, we will collect and recycle waste home appliances through the "I Recycle" program already established by Panasonic India (PI).

We have also been taking part in the Consumer Electronics and Appliances Manufacturers Association (CEAMA), which promotes an analysis of current recycling activities in India as well as a long-term plan for waste problem solutions.

We are having various dialogues with the Indian government, jointly with CEAMA, about the EPR target and EoL definition for recycling management.

We are also actively engaged in different active associations including the Federation of Indian Chambers of Commerce and Industry (FICCI) and Confederation of Indian Industry (CII) to establish an even more efficient and robust recycling system and to submit industry comments to the Indian government for a better governance system.

Efforts in Latin America

In response to a growing trend in stricter environmental laws in Latin American countries, discussions on the establishment of recycling laws and actual enforcement are being conducted.

In Brazil, a sectoral agreement on home appliances was concluded in October 2019, and a Federal Decree specifying a system to collect and recycle household electrical and electronic equipment was enforced in January 2021. As one of the main members of a waste home appliance management body (ABREE), we collaborated in the establishment of a reverse logistics system (a system to collect used products), and promotes efficient collection and treatment of used products.

The target for 2023 was reached by collecting and treating 46,8 tons which represents 100% of tonnage goal in accordance with sectorial agreement. For 2024, the target is double the previous year, representing 12% of the tons put in the market. As of March 2024, 20,02k tons have been collected and treated, which represents 22,12% of achievement so far.

In Peru, under the recycling law that came into force in 2016, we joined a nonprofit waste management organization (ASPAGER) as a leading member, and started a used-product recovery program.

In Colombia, a framework law for home appliance recycling was enacted in 2018. We have been a member of a used-product collection program (Red Verde/Lumina) conducted by an industry group (ANDI) since 2014, prior to the enactment of operational rules. The target for 2024 is 806 tons and at January end it was already collect 260 tons, which represents 32% of achievement.

In Mexico, a collection program is implemented under the government-approved recycling management plan.

In Chile, the legislation is being considered, and preparations for setting up a collection program are underway through continuous discussions with the government.

Biodiversity Conservation

Ways of Thinking about Biodiversity

Our social lives and business activities are based on various benefit provided by the natural capital (NCP: Nature's contributions to people). It has been recognized that conservation of biodiversity is as important as measures for climate change and resource recycling and they are closely linked each other in establishing a society where humans and nature coexist in harmony which is a long-term vision of the Sustainable Development Goals (SDGs) and the United Nations Convention on Biological Diversity.

In December 2022, "the Kunming-Montreal Global Biodiversity Framework (GBF)" was agreed in the UN Biodiversity Conference (COP 15) held in Montreal.

Aiming to achieve the 2050 Vision for 'a world living in harmony with nature', the framework covers the 2030 mission, which aims to 'take urgent action to halt and reverse biodiversity loss.' The international targets to achieve a nature-positive world by 2030 are 'the GBF targets' and 23 action-oriented global targets were determined in the COP15.

As the biodiversity goal in our GREEN IMPACT PLAN 2024 (GIP2024), we set targets to reduce the impact from business activities on the ecosystem for its recovery, aiming at a nature positive world as a front runner.

Three Targets in GIP2024

Targets		SDGs
Sustainable procurement of raw materials	Promote sustainable procurement of wood and paper, etc.	12,13,15,17
Utilization of greenery in business sites (land use)	Utilize greenery in business sites, considering conservation of biodiversity	13,15,17
Products and services	Offer products and services that contribute to conservation of conservation	11,12,15,17

We will continue to work on activities for biodiversity conservation while clarifying our business dependencies and impacts on nature following the standards set by the Taskforce on Nature-related Financial Disclosures (TNFD), Science Based Targets for Nature (SBTs for Nature), and the like.

The Green Impact Plan that is reviewed and revised every three years is equivalent to the Biodiversity Action Plan (BAP) under the Convention on Biological Diversity

Initiatives for Sustainable Procurement of Raw Materials

Firstly, we plan to include our consideration for biodiversity protection in Procurement Department's "Green Procurement Standards" to ensure that these practices are carried out across our whole supply chain.

In regard to procurement for wood, we discussed extensively with Worldwide Fund for Nature (WWF) Japan over our green procurement; and formulated the "Panasonic Group Green Procurement Guidelines for Wood" aiming for conservation of biodiversity and sustainable use of natural resources in 2010. Based on these guidelines, we conduct an annual survey on wood material procurement among our suppliers.

In fiscal 2022, we exchanged opinions about sustainable material procurement with WWF Japan. In the discussion with WWF Japan, we confirmed growing importance of environmental and social (human rights) considerations, in addition to importance of compliance with laws and regulations for our timber procurement. This discussion also gave us an opportunity to think about future measures.

Exclusion of timbers and wood materials whose regulatory compliance in their logging has not been confirmed (Category 3)

The survey results in fiscal 2024 are as follows.

Green Procurement Guidelines for Wood Consulted and Formulated with WWF

Total procurement of timber and wood materials	199 thousand m^3

Environment

PDF **"Green Procurement Guidelines for Wood"**
https://holdings.panasonic/jp/corporate/about/procurement/green/pdf/green_wood_J.pdf

WEB **"Green Procurement Standard"**
https://holdings.panasonic/global/corporate/about/procurement/green.html

WEB **How to respond to the "Act on Promoting the Distribution and Use of Legally Harvested Wood and Wood Products" (called Clean Wood Law) (Japanese)**
https://www2.panasonic.biz/es/sumai/law/cleanwood/

Activities for Land Use

Once an ecological network that connects greenery in our business divisions, neighboring woodlands and parks is formed, living things such as birds, butterflies, and dragonflies in each area can move around wider areas for flowers and water through the ecological networks, and their habitats are expanded. Green areas in our business divisions have a lot of potential to contribute to conserving biodiversity in that area. In particular, hardly any natural environments where wild animals can live and breed remain in urban areas. Therefore, even small areas of green in corporate premises can become a precious habitat of a variety of living things if they have indigenous vegetation and a watery environment.

Acquisition of Eco-Certification Based on Quantitative Evaluation from external accredited body

Panasonic Corporation's Living Appliances and Solutions Company's (LAS) Kusatsu site in Shiga Prefecture, obtained an eco-certificate from the Association for Business Innovation in harmony with Nature and Community (ABINC)*1 in March 2018, as a business site for its contribution to biodiversity. In the course of assessment, we received high ratings for how we are making green corridors to be suited to diversified living creatures by appropriately conserving the natural environment, keeping invasive non-native species under proper management by continuously monitoring to understand their status, and the active use of woodland nearby the factory, in liaison with external eco-related organizations and local people, such as the local public bodies and primary school students.

In the monitoring survey we have conducted since 2011, 840 species of flora and fauna were confirmed. At the same time, the survey result has indicated that the woodland is an important biotope in the area where urbanization is taking place, which contributes to the formation of local ecological networks. In addition, our continuing implementation of the environmental learning program on acorns for elementary school students was highly evaluated; and won an Award of Excellence in the 2nd ABINC award held in January 2020, as an 'activity contributing to the biodiversity mainstreaming'.

<External certifications and awards>
- Acquired three stars under the Shiga Biodiversity Action Certification Program (2018)*2
- Acquired ABINC certification (March 2018); the first certification renewal (February 2021) and the second certification renewal (February 2024)
- Received an Award of Excellence in the 2nd ABINC Awards (January 2020)

*1 ABINC is a certification system by third-party evaluation on greenery improvement and management at business divisions based on the land use score (biodiversity quantitative assessment tool in environmental assessment) and Guidelines for Sustainable Business Sites developed by the Japan Business Initiative for Biodiversity (JBIB).

*2 Shiga Biodiversity Action Certification Program is the first system in Japan for rating wide range of activities conducted by business enterprises in the area of biodiversity conservation with 1 to 3 stars granted by governor.

<Participation in international activities 30by30 Alliance for Biodiversity>

In March 2022, we joined the 30by30 Alliance for Biodiversity which is a global efforts and initiated by Japan's Ministry of the Environment (MoE), to conserve at least 30% of own land as natural environmental area, and at least 30% of own ocean by 2030, as we believed our natural symbiosis woods 'Shizen Kyosei no mori' would contribute to the 30by30. In October 2023, our 'Shizen Kyosei no mori' was officially certified as 'a natural symbiosis site' by the MoE. It will be also listed in the international database as an 'other effective area-based conservation measure (OECM)*3'.

WEB **News release by the MoE on October 6, 2023. Certification Results for 'Natural symbiosis site' (Shizen Kyosei Site) in the first half of fiscal 2024**
https://www.env.go.jp/press/111067.html

*3 OECM: Other Effective area-based Conservation Measure Areas other than national parks and other already protected areas that would contribute to biodiversity protection, such as shrine or temple woodlands, woodlands owned by companies or which form part of company premises, rural village zones, etc. Japan's 30by30 would include national parks and other protected areas.

"Shizen Kyosei Site" certification logo mark

WEB **Biodiversity Conservation Ecological Network Concept**
https://www.panasonic.com/global/about/sustainability/environment/ecology/kusatsu_factory.html

ABINC Certification

Three-star rating in Shiga Biodiversity Action Certification Program SHIGA PREF. BIODIVERSITY


LAS's Sustainable Forest

Environment

Initiatives for Products and Services

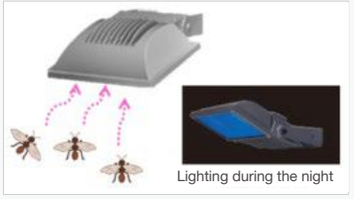
Contributing to Biodiversity Conservation through Lighting

The Lighting Business Division of Electric Works Company, Panasonic Corporation develops and sells lighting products that care for the environment and biodiversity.

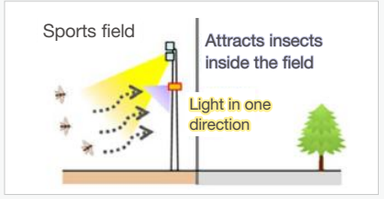
LED Insect Attractor (Product name: Mushi Keeper)

An insect attractor lures insects away from shops, warehouses, and sports fields, where they gather because of the lights, in order to reduce damage and nuisance caused by insects. Conventionally, the device attracted insects with a UV fluorescent lamp and killed them with a high voltage grid. In June 2021, the company launched an LED insect attractor (Mushi keeper). The product's UV and blue LED lights attract and retain insects, enabling reduction of insect damage and without killing them. This helps protect the ecosystem as the insects can return to nature. Conventional insect killers emitted light in all directions, attracting excessive insects. However, this newly adopted LED can emit light in the desired direction only, contributing to protecting biodiversity by its efficient insect attraction. The LED insect attractor has been confirmed to have a higher performance of insect attraction according to the insect attractiveness index.*4

*4 The insect attractiveness index is a theoretical index and does not represent the actual number of insects attracted by the light. (Source: AOKI, S. et al. (2005) Evaluation of Insect Attractiveness by New Index. Proceedings of 2005 Annual Conference of The Illuminating Engineering Institute of Japan, 284.)



LED insect attractor (keep attracting with UV + blue lights)



Emits a directional light to attract insects efficiently

WEB **LED Insect Attractor: Mushi Keeper**
https://www2.panasonic.biz/ls/lighting/outdoor/invites-insects/

Developing IDA-certified LED Light

An LED security light and street light designed by the Lighting Business Division to minimize light pollution were approved as Dark Sky Friendly Lighting by the International Dark-Sky Association (IDA)*5 in February 2020. This was the first such achievement by a Japanese manufacturer*6. One of the approval criteria requires that lighting must have a correlated color temperature of 3,000 kelvin and lower (warm color) not only to reduce light pollution but also to lessen any adverse impact on wildlife.

IDA "Dark Sky Approved"

*5 As IDA-certified lighting made by a Japanese manufacturer (according to IDA Tokyo, as of February 20, 2020).

*6 The International Dark-Sky Association: The leading global organization addressing light pollution.

"Guidelines for Countermeasures against Light Pollution" (issued in March, 2021), by Japan's Ministry of Environment. Panasonic Group cooperated to formulate the guidelines.

PDF https://www.env.go.jp/air/hikarigai-gaido-R3.pdf.pdf

Firefly-Friendly Street Lighting

Preceding our IDA-certified LED light, we had already developed an LED light with a spectrum and optical properties that had less impact on fireflies in 2016 and installed the LED lights on streets in different municipalities. According to the study made in Numama, Zushi City, Kanagawa Prefecture, the number of fireflies observed increased from 68 in the previous year to 145*7.


Street lights in Zushi City are replaced with firefly-friendly LED lights

*7 The light was designed purely to minimize disturbance to the firefly habitat and does not guarantee for improving growth of fireflies or increase of the population.

Floor Boards Made from Wood 100% Recycled from Construction Waste Unused Wood Materials, and the like

Panasonic Housing Solutions Co., Ltd. is reducing its use of natural materials to preserve wood resources. 'Sustainable Board' is a new, eco-friendly material that uses 100% recycled wood (excluding adhesives) from construction waste and unused wood materials on a wood-based flooring substrate.

WEB https://holdings.panasonic/global/corporate/sustainability/environment/biodiversity.html#biodiversity_04_01

WEB **Flooring: Eco-conscious material**
https://sumai.panasonic.jp/interior/floor/concept/detail.php?id=eco_coordination

Environment

Development of World's First Fiber Board Made from Oil Palm Waste*8

In March 2022, we announced the world's first technology to produce fiber board from oil palm waste as PALM LOOP*9 and started market testing in the domestic furniture area. In fiscal 2025, we will start activities to roll out the technology across the world, based in Malaysia where oil palm wastes are supplied

1. We can contribute to reducing methane gas and otherGHG generated by decaying oil palm waste.
2. We developed a technology to produce fiber board from oil palm waste.
3. We can prevent deforestation to create new farming areas through utilization of waste material.

We will contribute to alleviating global warming by reducing 'GHG emissions' and preventing'deforestation'.

WEB **Development of world's first fiber board made from wastes of oil palm trees**
https://news.panasonic.com/jp/press/data/2021/11/jn211115-1/jn211115-1.html

WEB **Launching our PALM LOOP™ technology that can produce fiber boards from wastes of oil palm trees**
https://news.panasonic.com/jp/press/data/2022/03/jn220317-1/jn220317-1.html

WEB **The special PALM LOOP website**
https://panasonic.co.jp/phs/technology/palmloop/

*8 Based on our research as of March 2022.
*9 PALM LOOP™ is a trademark of Panasonic Corporation.

The cellulose fiber resin 'kinari' was featured as an example of the Ministry of the Environment's Transition Strategies toward a Nature Positive Economy

The MoE officially announced its Transition Strategies toward a Nature Positive Economy in March 2023. Our cellulose fiber resin 'kinari' (55 - 90% natural fiber content) was featured in the collection of reference materials titled "Case studies: Upcycling biomass (including wastes) and other materials to replace plastics." provided in the announcement. Expected business scale for this material as material is from several billions to several tens of billions of yen per year (estimated by Panasonic Group).


Mold sample of 'kinari'

PDF **Transition Strategies toward a Nature Positive Economy & collection of reference materials**
https://www.env.go.jp/content/000213094.pdf

'Kinari' is featured on Page 49.

Conservation of Biodiversity through Collaboration with and Support for NGOs and NPOs

Introduction of MSC-ASC certified sustainable seafood at employee canteens

The Panasonic Group has been involved in marine protection activities*10 for some 20 years through collaboration with WWF Japan. Main activity at present is continual supply of MSCand ASC-certified*11 sustainable seafood*12 to employees' canteens that started for the first time in Japan at Panasonic headquarters in March 2018. In this fiscal year, the situation remains difficult for the activity, e.g., some canteens had started serving sustainable seafood forced to stop serving the sustainable seafood due to the decreased number of employees using canteens as the number of employees working from home increased, and impact of price hike. As difficulties continued, sustainable seafood was newly introduced to only one of the Panasonic Group sites this year, making an accumulated total of 57 sites. As for our continued support for other companies adoption of sustainable seafood into their canteens, the running total of the canteens of partner companies using sustainable seafood has exceeded 50, making more than 100 when combined with our roup's accumulated total.



Cumulative total of sites offering the menu exceeded 50


Deep fried oysters made in Tokura, South Sanriku; the oysters obtained Japan's first ASC certificate (Panasonic supported the activity.)

In addition to corporate canteens, Yokohama City University COOP has obtained the MSC-ASC certification with the Panasonic Group's support and corporation, and started serving the sustainable seafood at the university canteen for the first time in Japan's university in 2022. Sustainable seafood is now creating a new trend and is expanding its market.

By expanding availability of sustainable seafood such as serving it at corporate canteens, conducting awareness-raising activities periodically and continuously for employees and the next generation about sustainable seafood and the IUU fishing issues*13 , and facilitating transformation of behaviors of our employees and the public at large as consumers through communication via media, and the like, we contribute to 'SDG 14: Life below Water' and promotes to make the topic of biodiversity mainstream.

<External awards>
Champion in the Initiative Category of the 1st Japan Sustainable Seafood Awards (November 2019)

Environment

*10 Including supports for the conservation of the tidal flats in Ariake Sea (2001 to 2006) the Yellow Sea Ecoregion (2007 to 2015), and the reconstruction of aquaculture industry in environmentally friendly manner at Minami Sanriku, Tohoku (2014 to current).
*11 MSC certification is certified by Marine Stewardship Council for sustainably and properly managed fisheries. ASC certification is certified by Aquaculture Stewardship Council for responsible fish farming to minimize environmental load on the environment and society.
*12 Seafood that has been certified sustainable production with MSC and ASC certification and managed under CoC certification*14
*13 IUU fishing issues: Fishing that is illegal, unreported and unregulated. It is one of the international issues that threaten the effectiveness of resources management.
*14 CoC is the acronym for Chain of Custody. Certification on securing management and traceability in processing, distribution, and marketing.

WEB **References on sustainable seafood**
https://news.panasonic.com/jp/topics/204140.html

Promotion of activities for conservation of biodiversity around the world through NGOs and NPOs

Continuing protecting satoyama and rivers through citizen networks

The Panasonic Group companies located in Japan, and their labor unions and retiree association conduct a variety of environmental protection activities as Panasonic ECO RELAY Japan (PERJ) in a one team.


Activities at Yodo River


Unitopia Sasayama Satoyama Revitalization Activity

Since its foundation in October 2010, PERJ has been working with a variety of stakeholders*15 to conserve local environments through efforts such as Hirakata City Hotani Satoyama Conservation Activity; Tanba Sasayama City Unitopia Sasayama Satoyama Revitalization Activity; Kadoma City Eco Network Activity; and Osaka City Yodo River and Johoku Wand*16 Conservation Activity. During these years, we have received the following awards in recognition of our contribution to nurturing the next generation to act for the environment under collaborations with local companies, universities, and citizen groups. In our work to contribute to a sustainable global environment and society, we will continue activities that lead to the conservation of biodiversity and satoyama focusing on 'forests', 'greenery areas' and 'water'.

<External awards>
- Hirakata City Environment Award (February 2018)
- Biodiversity Action Grand Prize (December 2018)
- Kadoma City Environment Award (February 2019)
- Osaka City Environment Award (February 2020)

*15 Wand is terrain just like a small pond surrounded by river structures, although Wand is connected to a mainstream of the river. Wand provides stable habitats for fish and other aquatic life, and at the same time, it is breeding grounds for a variety of plants.
*16 Collaborating with numerous stakeholders, including NPOs, citizen groups, universities, administrative bodies, local governments, research institutes, corporations, and local farmers.

WEB **Panasonic ECO RELAY Japan (PERJ)**
https://www.panasonic.com/jp/corporate/sustainability/citizenship/environment/perj.html

WEB **Unitopia Sasayama Satoyama Revitalization Plan**
https://unitopia-sasayama.pgu.or.jp/ecorelay/

WEB **One of the Panasonic Group's corporate citizen activities (environment-related social contribution activities by Panasonic business sites and employees across the world).**
https://panasonic.co.jp/citizenship/activity/environment/

Participation in Biodiversity Initiatives

The Panasonic Group has been participated in biodiversity initiatives and related industry organizations, as shown below. This is to accurately understand biodiversity policies in Japan and global trends concerning biodiversity, such as the Post-2020 Biodiversity Framework of the Convention on Biological Diversity, TNFD, and SBTN through study meetings. We feed these domestic and global policies back into Panasonic Group businesses and assess opportunities and risks. We also make an appeal about activities by Japanese corporations through the Convention on Biological Diversity under the COP.

<Participation>
- Participating in TNFD Forum.
- Keidanren Committee on Nature Conservation: Keidanren Initiative for Biodiversity Conservation. The Panasonic Group also participates in the initiative.
- Japan Business Initiative for Biodiversity (JBIB)
- Biodiversity Conservation Committee of the Japan Association of Industries and Environment
- Biodiversity Working Group of four Electrical and Electronic Industry Associations*17

Keidanren Initiative for Biodiversity logo mark

Additionally, Panasonic Holdings Corporation is participating in the Clean Ocean Material Alliance (CLOMA) to accelerate innovation in solving marine plastic waste issues.

*17 Four industry associations: The Japan Electrical Manufacturers' Association (JEMA), Japan Electronics and Information Technology Industries Association (JEITA), Communications and Information Network Association of Japan (CIAJ), and Japan Business Machine and Information System Industries Association (JBMIA).

Water Resource Conservation

Ways of Thinking about Water Resource Conservation

It is said that available fresh water is only about 0.01% of the Earth's total water resources. We understand that the water crisis is one of the global risks, considering further increase in water consumption because of economic growth and population increases in near future.

As risks of extreme water shortages is becoming higher as one of social issues, the Panasonic Group has been working to conserve water resources both in its products and production activities, in order to fulfill its social responsibility and to reduce risks in the management. Our Environmental Policy (see page 10) sets that we make efforts to conserve water resources by using water efficiently and preventing water pollution. We are working hard to reduce water usage in our business activities and through our products and services by setting water resource conservation in Our GREEN IMPACT PLAN 2024 as one of the continuing efforts. As for risk management, we had conducted water conservation activities, aiming to complete our water risk assessment at all our production sites by fiscal 2019, and have completed 100% of the assessments.

Specifically, we evaluated the scale of water risk at all regions where our production sites are located, in order to identify and mitigate effects of water on our business activities. In the evaluation, we utilized evaluation tools such as Aqueduct supplied by the World Resources Institute (WRI) and the Water Risk Filter supplied by the Worldwide Fund for Nature (WWF), which can evaluate risks in various aspects; not only from physical risks such as water shortages, but also from the risks in water-related regulations as well as reputation risks in each region. We also made use of public databases available from respective national governments. In areas with higher water risks, we collected information through public local information as well as through hearings with relevant organizations, etc. By conducting detailed analyses and close examination of the local information and the site data including water use volumes, we, more specifically, identified the effects on our business activities. We steadily proceeded processes of the water risk assessments, and in fiscal 2018, completed water risk assessments at all of our production sites of the Panasonic Group and confirmed that none of our production sites is under water stress. At present, no water risks that could affect the Panasonic Group's business activities have been reported. Yet, we will continue to make efforts to reduce water consumption in our production activities in the future under the water risk assessment that had been implemented.

For promoting these activities, the Panasonic Group have established a structure for the promotion of environmental management, including water management (see page 23). We are now conducting environmental activities using PDCA cycle under the structure, and are upgrading the environmental management level. In addition, we have organized an Environmental Risk Management Structure to continuously reduce environmental risks; under the structure, we (1) identify environmental risks and promote risk management in the whole Panasonic Group every fiscal year and (2) promptly respond to the risk when it arises (see page 25). Through these activities, we will continue to manage our environmental risks.

Moreover, the Panasonic Group has participated in the Water Project, a public-private partnership project aimed at boosting awareness of water conservation, which was launched under the initiative of Japan's Ministry of the Environment in 2014. Objectives of the project are to maintain a sound water cycle and promote its recovery. The project distributes water-related activities conducted by corporations, and water-related information including importance of water. The Panasonic Group will work in cooperation with the Japanese government and other companies to conserve water resources.

Water Resource Conservation through Products

By thoroughly analyzing the use of water through our products, we have developed functionalities that allow a considerable amount of water conservation by utilizing water at a maximum level through improvement of water flow control and cyclic use. We continue to develop products with low water usage.

Example of water-saving products are introduced in the following website.
WEB https://www.panasonic.com/global/corporate/sustainability/eco/water.html

Initiatives for Water Resource Conservation through Production Activities

By collecting and reusing wastewater from our manufacturing processes and air conditioning systems, the Panasonic Group has been reducing the amount of makeup water used and wastewater effluent. Through these activities, we reduce environmental loads on water resources due to the intake and effluent of water in production activities.

As many regions around the world are threatened by water shortages, the Panasonic Group has been conducting production activities, balancing water resource conservation in focused regions.

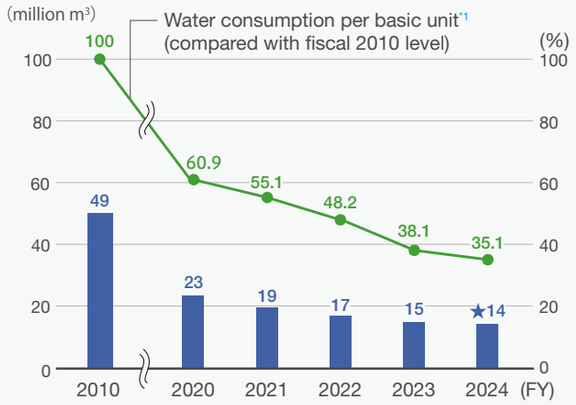
The amount of water used at factories in fiscal 2024 resulted in 13.87 million m^3, which is reduced by 9.2% versus the fiscal 2023. The water used at our factories per basic unit of production[*1] got better year-on-year thanks to positive effects of the structural reform.

Environment

Our use of recycled water[*2] in fiscal 2024 was 4.73 million m³, accounting for 34.1% of the total amount of water used. The amount of discharged water in fiscal 2022, 2023 and 2024 resulted in 13.39 million m³, 11.78 million m³, 10.60 million m³, respectively.

*1 Water used at factories per basic unit of production = Water used at factories/Production volume.
*2 The calculation excludes the water circulating for a single purpose (e.g., water in a cooling tower).

Water Consumption in Production Activities and Water Consumption Per Basic Unit



Note: Then-SANYO Electric and Panasonic Liquid Crystal Display not included in fiscal 2010.

FY2024 Breakdown of Water Consumption (by region)

(10 thousand m³)

Region	Consumed	Municipal water/ industrial water	Groundwater	Rivers/lakes	Discharged	Sewer systems	Waterways
Japan	743	288	456	0	639	167	472
China & Northeast Asia	292	290	1	0	197	144	53
South East Asia, & Oceania	264	237	27	0	166	125	40
North America & Latin America	50	35	15	0	41	37	4
Europe & CIS	11	9	1	0	9	9	0
India, South Asia, Middle East & Africa	27	2	25	0	8	8	0
Total	★1,387	862	524	0	1,060	490	570

Panasonic Industry Co., Ltd. (52 sites), uses the highest amount of water in all operating companies in the Panasonic Group. The company managed to achieve a year-on-year decrease of 16.4% in water consumption (5.41 million m³) in fiscal 2024, thanks to their focused efforts and business restructuring. The achievement rate for reducing the amount of water used per basic unit by using recycled water in factories, etc., was 100%.

Against the backdrop of the increasing occurrence of natural disasters in recent years, such as earthquake and flood disasters, Panasonic Industry Co., Ltd. Saga site achieved a reduction of environmental risk and environmental impact, considering a possible chemical leakage from the outdoor storage site in the company premises. This was accomplished by replacing their water purification system, which used a chemical-based regeneration method for the ion-exchange resins, to a system that uses an electrical regeneration method. At the same time, the company installed a wastewater collection system that separates the wastewater generated by the water purification into concentrated wastewater and collection water. The company is now able to reduce the water consumption for the entire factory by 61.8 thousand m³ per year by reusing the collection water.

Device Solutions Business Division Saga, Panasonic Industry Co., Ltd.

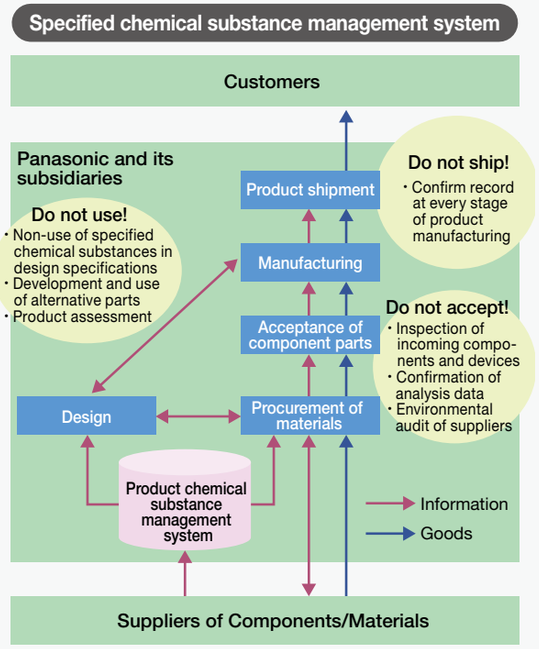

Water purification system with electrical resin regenerator

The Panasonic Group will continue our efforts to conserve water resources.

Chemical Substance Management

Approaches to Reducing the Environmental Impact of Chemical Substances

In order to prevent contents of hazardous substances prohibited under the EU RoHS Directive*1, and the like in Panasonic Group's products, it is important not only to pay attention to the contents at the stage of product design, but also to ensure that specified substances are not contained in products to purchase. Therefore, the Panasonic Group has rolled out the "Do not accept! Do not use! Do not ship!" campaign throughout the each production process from designing to shipment inspection in production activities at business sites across the world since October 2005. Specifically, as for the stage of inspection for incoming components, we have established a mechanism to check and analyze whether specified chemical substances are included by introducing an analyzer.



In addition, we have supported to establish a Product Chemical Substances Management Structure, by periodically conducting environmental audits for suppliers of components/materials which may have high risks of containing specified chemical substances.

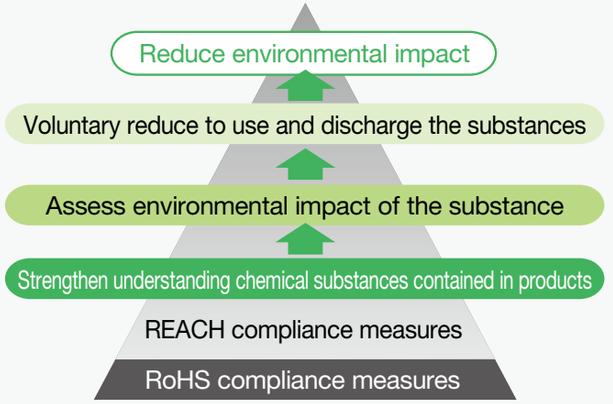
Meanwhile, as represented by the enforcement of the REACH regulation*2 in the European Union, the world implemented measures toward the goals agreed at the World Summit on Sustainable Development (WSSD) held in 2002, which is to produce and use all chemical substances in a manner that minimizes their impact on human health and the environment by 2020. Although the subsequent discussion was delayed as the conference could not be held due to the COVID-19 pandemic, in the fifth International Conference on Chemicals Management (ICCM5) held in in Germany September 2023, a new international framework that succeeds the activities up to 2020 was discussed; concerning appropriate chemical management, a new international frame work for voluntary and diverse actors to be involved was formulated. Panasonic Group has been supporting the precautionary approach proposed in the Rio Declaration at the Earth Summit in 1992, and has continued its efforts for appropriate chemical management on a global scale even after 2020 that is the final target year of the WSSD framework. Furthermore, in order to continue implementation of product manufacturing in line with our basic policy of reducing the use of chemical substances that might adversely affect human health and the environment throughout their lifecycles, we determined chemical management in our GREEN IMPACT PLAN 2024 as one of our continuing issues, and we are constantly working to reduce environmental loads of the chemicals used in our business activities and products. As for concrete activities, we have worked to comply with relevant regulations such as EU RoHS as a matter of course. In addition, we have worked to reduce adverse environmental impact originated by our group products as much as possible by (1) trying to understand hazardous substances contained in our products, (2) evaluating these substances on their environmental impact, and (3) voluntarily reducing or discontinuing their use in case of any environmental risks of the substances. We will continue to implement appropriate chemical management of such chemical substances while monitoring global environmental trends.

*1 Directive on the Restriction of the use of certain Hazardous Substances in electrical and electronic equipment
The RoHS Directive currently restricts use of the following ten substances beyond the specified concentrations shown in parentheses:
lead (0.1%), cadmium (0.01%), mercury (0.1%), hexavalent chromium (0.1%), polybrominated biphenyls and polybrominated diphenyl ethers (0.1%), four phthalates (DEHP, BBP, DBP, and DIBP) (0.1%).
However, the RoHS Directive allows exemptions from its restrictions for a limited time if substitution is technologically or scientifically impossible. Exemptions stipulate specific restrictions in details on the use, concentration limit, and time frame for each substance.
<Exemption examples>
Lead: Glass, ceramics, and high-temperature soldering used in electronic components.
Mercury: Cold-cathode tubes used in LCD backlighting and fluorescent lighting.
Note that vehicles and batteries are not subject to the restrictions under the EU RoHS Directive.
The EU End of Life Vehicles Directive details restrictions for vehicles and the EU Battery Directive (amended and promulgated as EU Battery Regulation in July 2023) details restrictions for batteries.

*2 Regulations on the registration, evaluation, authorization, and restriction of chemical substances.

Environment

Process to Reduce the Environmental Impact of Chemical Substances



In order to definitely implement such activities described above, we issued our Chemical Substances Management Rank Guidelines that specifies prohibited chemical substances and management substances concerning products and activities at factories. We request to take actions to the chemical substances in accordance with the guidelines, not only to Companies in the Panasonic Group, but also to our suppliers. In fiscal 2013, we added Level 3 of prohibited substances to the category of the Chemical Substances Management Rank Guidelines (For Products). We not only consider nonuse of the prohibited substances, or the substances to be prohibited under laws and regulations, but we also consider prohibiting concerned substances that may adversely affect human health and the environment in the future. Further, we are striving to comply with relevant laws and regulations, and mitigate effects of toxic substances on human health and the environment by increasing the number of globally prohibited substances (Level 1) beyond boundaries of countries subject to the applicable laws and regulations from 21 substances/groups in fiscal 2015 to 30 substances/groups in fiscal 2024.

The Chemical Substances Management Rank Guidelines (For Products) and relevant documents, which includes clear description of prohibited substances and management substances, is available in PDF file for your downloaded from the following website. (Green Procurement).

WEB Green Procurement (Download of Chemical Substances Management Rank Guidelines (For Products)) in PDF file
https://holdings.panasonic/global/corporate/about/procurement/green.html

Chemical Substances Management Rank Guidelines (For Products)

Rank		Definition
Prohibit	Level 1	(1) A substance contained in products that is prohibited by existing laws and regulations; or a substance where the upper limit of concentration is specified. (2) A substance that will be prohibited in products by laws and regulations or where the upper limit of concentration will be specified within one year after the revision date of this Guidelines. Note that there is a case that a substance is specified as the Level 1 prohibited substance more than 1 year before the enforcement date, because of the enforcement dates of the law and the Rank Guidelines.
	Level 2	Substances other than those specified as Level 1 and to which either of the following criteria applies: (1) Substances to be prohibited in products after a certain period by a treaty, law, or regulation. (2) Substances that are prohibited in products by the Panasonic Group prior to the effective period specified by a treaty, law, or regulation. (3) Substances whose use is voluntarily restricted by the Panasonic Group.
	Level 3	Any substance other than those specified as a Level 1 or Level 2 Prohibited Substance that is under review for prohibition by laws, regulations, etc., and the clarification of substitution-related issues as well as the timing for prohibition will be reviewed by the Panasonic Group in light of future legislation trends.
Manage		Substances whose actual use in products needs to be understood and for which consideration needs to be given to human health, safety and hygiene, adequate treatment, etc. The intentional use of these substances is not restricted, but their use and contained concentration must be monitored.

Note: the laws, regulations and the substances subject to the above table are chemical substances specified as Class I Specified Chemical Substances under the Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc., the EU RoHS Directive, Annex XVII of the EU REACH Regulation, etc. For more details, see the chapter 6 'Specified Managed Substances' in the Chemical Substances Management Rank Guidelines (For Products).
As for the hazardous substances whose manufacturing is prohibited under the Japan's Industrial Safety and Health Act, they are managed in accordance with the Specified Managed Substances in the Chemical Substances Management Rank Guidelines (For Factories)

Chemical Substances Management Rank Guidelines (For Factories)

Rank	Definition
Prohibit	Use of the following substances should be immediately discontinued: Carcinogens for humans Ozone depleting substances Substances whose use is prohibited by Panasonic Chemical substances designated as Class I Specified Chemical Substances by the Japanese Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. Substances whose manufacture is prohibited by the Japanese Industrial Safety and Health Act Substances whose manufacture and use are prohibited by international treaties
Reduce	Substances whose use, release and transfer should be identified and reduced. Substances other than prohibited substances that might pose risks to human health and the environment.

Note: Covered legislation include: PRTR Act (chemical substances), environmental criteria under the Basic Environment Act; the Industrial Safety and Health Act; and the Stockholm Convention. For more details, see the contents on The Aim of Establishing the Chemical Substances Management Rank Guidelines (For Factories) in the Chemical Substances Management Rank Guidelines (For Factories).

Environment

History of Panasonic Group's Initiatives to Reduce the Environmental Impact of Chemical Substances

Social trends

- 1989: The Montreal Protocol entered into force
- 1992: Earth Summit in Rio de Janeiro—Agenda 21
- 1996: Discontinuance of the use of specified chlorofluorocarbons by industrialized countries
- 2002: WSSD in Johannesburg
- 2004: Stockholm Convention entered into force
- 2006: The RoHS Directive entered into force
- 2007: The REACH Regulation entered into force

Panasonic Group — 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020

All products

- 1992: Discontinued use of PVC resin in packaging materials
- March 2003: Discontinued use of lead in solders globally*3
- October 2005: Discontinued use of six RoHS substances globally*3
- March 2009: Discontinued use of PVC in internal wiring of new products to be sold in Japan*3
- March 2011: Discontinued use of PVC in internal wiring of new products globally*3
- July 2018: Discontinue use of the four phthalates specified by the RoHS Directive in new products globally
- July 2019: Elimination of use of PFOA globally

Individual products

- 1991: Released mercury-free manganese dry cells
- 1992: Released mercury-free alkali dry cells
- 1995: Discontinued use of CFC refrigerant in refrigerators globally
- 2002: Discontinued use of HCFC refrigerant in air conditioners (Japan)
- 2004 Refrigerators in Japan market became fluorocarbon-free (Japan)
- 2006: Released lead-free plasma display panels
- 2010: Released fluorocarbon-free freezers using CO_2 refrigerant and compatible display cases
- 2013: Released air conditioners using new refrigerant R32 with low Global Warmer Potential (GWP) (Japan)
- 2023: Released hot-water heater with heat pump that employs R290 natural refrigerant (on the European market)

Chemical substances used at factories

- 1996: Discontinued use of chlorinated organic solvents
- 1997: Began identification work for PRTR
- 1999: Launched the "33/50" reduction activity*4
- 2004 (Japan): Achieved Voluntary Action Plan Reduced use by 75% Reduced release and transfer amount by 62% compared to fiscal 1999 level
- 2010 (Global): Achieved Voluntary Action Plan Reduced release and transfer amount of key-reduction target substances by 46% compared to fiscal 2006 level

*3 Excluding applications where the quality such as safety cannot be ensured, or applications where the material is designated by laws and regulations.
*4 A reduction activity that promotes cutbacks in the use, release, and transfer of chemical substances by 33% in three years and by 50% in six years, compared to the fiscal 1999 level.

Management of Chemical Substances in Products

To minimize the environmental impact of chemical substances contained in products, we endeavor to identify chemical substances used in the components and materials of our products. In addition, for substances that are prohibited in products in major developed countries because of laws and regulations such as the European RoHS Directive, we manage the substances not to be used and/or contained in our products by designating them as prohibited substances except the substance for specific usage which is unavoidable to use its substitution. We will also conduct environmental impact assessments for the managed substances contained in our products. As for a substance whose impact on human health and/or the environment cannot be ignored, we plan to reduce or prohibit use of the substance.

Continuously updating information concerning chemical substance contents

The electrical and electric products The Panasonic Group manufactures and sells consist of various raw materials and components supplied through a long supply chain from material manufacturers to many component manufacturers.

To contribute to the achievement of the global targets set at the WSSD and the new framework adopted by ICCM5, it is important for us to disclose and communicate information on the chemical substances used in our products across the supply chain, for which we must promote cross-industrial initiatives to establish and disseminate an effective system.

The Panasonic Group is a member of the Joint Article Management Promotion consortium (JAMP). Approximately 500 major companies from various industries, such as chemical, component, and equipment manufacturers are also members of JAMP. We are proactively formulating, utilizing, and disseminating chemical substance management standards and systems through this organization.

The Panasonic Group has started up a product chemical substance management system in fiscal 2005. From July, 2009, our 10,000 suppliers of materials and components provided us the data on chemical substances contained in their products, using JAMP's data transmission formats (JAMP_AIS and JAP_MSDSplus).

Meanwhile, in Japan alone, the workload of upstream suppliers increased, as a number of hazardous substance inspections were carried out throughout the supply chain using own company format. Having recognized the issues obtained from the inspections, 'chemSHERPA' (a new scheme for information communication for chemical substances in products) was proposed in 2015. Because the format adopted for chemSHERPA complies with IEC62474, the international standard on material declaration (a declaration of specific information about composition of the materials and chemical substances in the product) for the electrical and electronic machinery industry and their products, Panasonic Group agreed to use chemSHERPA format; and in January 2018, started full-scale use of chemSHERPA as a data gathering format. With the supply chain expanding to a global scale, it is particularly important for overseas suppliers to deepen their understanding on the handling of hazardous chemical substances. Therefore, our Group carried out education programs for persons in charge of chemical substance management and suppliers at more than 100 of our business sites in ten countries including China and other Asian countries. At the same time, the Panasonic Group completed conversion from JAMP format to chemSHERPA by June 2018.

WEB **chemSHERPA website:** https://chemsherpa.net/english
(The JAMP website was merged into chemSHERPA on March 15, 2019)

Environment

While the Japanese automotive industry has been using the JAMA/JAPIA sheet*5 to share information on chemicals used in products in the supply chain, IMDS*6 is actually the defacto standard material data system used by the international automotive industry. With the backdrop of the Japanese automotive industry now shifting to IMDS from JAMA/JAPIA sheets, in October 2020 the Panasonic Group undertook a full data migration to IMDS for use in our automotive business. We held seminars to more than 200 suppliers and completed a successful data migration. This means that the Panasonic Group can now obtain data for the materials in the components received from our suppliers through IMDS into our management system for the chemical substances in our products, and, at the same time, we can deliver product chemical data to our customers. The system thus makes for easier material data communications throughout the supply chain.

Companies that procure electronic components need to fully understand the information on the substances contained in the components at the point of selection or usage in order to comply with the EU RoHS Directives and REACH regulations. Particularly, as the REACH Substances of Very High Concern (SVHC) List is updated every six months, those companies expect their suppliers to speedily provide information on the latest substance to the Panasonic Group. In order for the companies adopting our group's electric components to speedily and effectively understand the information on chemical substance contents, the Panasonic Group has published a table of RoHS and REACH compliance status on our website since November 2012. The table covers our RoHS Directive compliance information and the substances designated in the RoHS/REACH Confirmation Report for all our major generic electronic components.

*5 The standard material data format in the Japan's automotive industry (standardized by the Japan Automobile Manufacturers Association and the Japan Auto Parts Industries Association).
*6 International Material Data System: Material data system for automotive industry that is globally used.

WEB RoHS / REACH Confirmation Report for major generic electronic components
https://industrial.panasonic.com/ww/downloads/rohs-reach

For products covered by the Act on the Promotion of Effective Utilization of Resources of Japan, the Panasonic Group does not manufacture, import, or sell products that contain specified chemical substances which exceeds the limited value in non-exempt parts. For more details, see Information on the Content of Specified Chemical Substances below.

WEB Information on the Information on the Content of Specified Chemical Substances (Japanese)
https://holdings.panasonic/jp/corporate/sustainability/environment/chemical/jmoss.html

In June 2015, the Act on Preventing Environmental Pollution of Mercury was enacted to implement measures agreed in the Minamata Convention on Mercury. The act requires manufacturers of products containing mercury to provide information such as labelling as manufacturers responsibility, so that such products are appropriately sorted and discharged when being disposed of. In order to communicate information concerning the mercury used in our products to customers, the Panasonic Group opened the webpage to provide our information based on the Act on the Preventing Environmental Pollution of Mercury, in May 2017.

PDF PDF file of the Act on Preventing Environmental Pollution of Mercury
https://members.wto.org/crnattachments/2015/TBT/JPN/15_2560_00_e.pdf#search=%27Act+on+Preventing+Environmental+Pollution+of+Mercury%27

WEB Information Based on the Act on Preventing Environmental Pollution of Mercury (Japanese)
https://holdings.panasonic/jp/corporate/sustainability/environment/chemical/jmoss/mercury.html

Assessing the Impact of Chemical Substances

Scientifically identifying the impact on human health and the environment of products containing chemical substances is vital to the development of products with low environmental impact. We are engaging in activities designed to assess the levels to which customers are exposed to substances of very high concern (SVHC), as well as safety during product usage 2011, we have assessed effects of ceramic fibers used in certain models of commercial microwave ovens. As part of our efforts to comply with the EU REACH regulation which requires preparing information for the safe use of products containing a certain amount of SVHC, we have created and publicized the safety assessment document. The exposure was considered to be nominal with little concern for any effects on human health. Furthermore, usage of ceramic fibers in our products was discontinued in December 2010.

PDF Product Safety Assessment Report
https://holdings.panasonic/global/corporate/sustainability/pdf/RCF_Professional_microwave_oven.pdf

Other than described above, we continue to conduct a Product Safety Assessment as a part of our responses to the U.S. State of California's Proposition 65 that aims to protect the state's citizens from chemical substances. Specifically, we conducted an exposure assessment experiment on diisononyl phthalate (DINP) in 2016, and on a brominated flame retardant (TBBPA: Tetrabromobisphenol A) in 2017, then created an exposure assessment tool based on the experiment results. As a result of the assessment, we confirmed that our products do not adversely affect users of our group products, i.e., customers. We are utilizing the exposure assessment tool to confirm product safety and to respond to relevant regulations.

Reduction in Use and Discharge of Chemical Substances

Fluorocarbons (CFC) used as refrigerants, insulating materials, and the like for freezers and air conditioners, have properties which are known to cause ozone layer depletion and global warming. Therefore, the Panasonic Group had devoted to developing the technology to use CO_2 as a refrigerant which has extremely low effects on ozone depletion and global warming, and has sold a home water heater using the low CO_2 refrigerant since 2001.

Environment

Although the low CO_2 refrigerant is suitable for heating to maintain a certain degree of temperature, it was difficult to be used in refrigerators and freezers, especially in large commercial equipment due to insufficient cooling efficiency and size. However, with support from the New Energy and Industrial Technology Development Organization (NEDO), the Panasonic Group developed a refrigeration system using CO_2 refrigerant, and has delivered CFC-free freezers and refrigeration showcases to supermarkets and convenience stores with the CO_2 refrigerant in Japan since 2010. We have also commercialized high-power freezers designed for distribution warehouses and food factories, and have been expanding their market opportunities with wider scope of their usability from domestic to international.

For wall-mounted home air-conditioners (AC), we are promoting changing over from non-inverter types of AC, not only to more eco-friendly inverter types of AC with high energy-efficiency, but also to the AC with new refrigerant R32 whose Global Warming Potential (GWP) is low. In fiscal 2020, we introduced into Hong Kong's window air-conditioner market new models with the industry's first inverter system using the new R32 refrigerant, which has contributed to reduce environmental loads.

OCU-CR2001MVF, a fluorocarbon-free freezer using CO_2 refrigerant

FPW-EV085, a display case compatible with a fluorocarbon-free freezer

Window air-conditioner unit with the new R32 refrigerant, CWHZ180YA

An air-to-water heat pump that utilizes R290 natural refrigerant for residential use

In addition, as measures against ozone depletion caused by HCFCs, a refrigerant called R410 that does not deplete the ozone layer was used in room air conditioners; however, this substance has an issue of its very high very high Global Warming Potential (GWP). Therefore, the Panasonic Group developed a model that uses a new refrigerant R32, which has a lower GWP and introduced it launched sales of the model in 2013. Furthermore, PT. The Panasonic Manufacturing Indonesia, which owns the factory for manufacturing room air conditioners in Indonesia, redesigned its production facility that used an ozone-depleting HCFC refrigerant R22 to one using R32 in fiscal 2015, and started supplying new R32-based air conditioners. Thereby, we contributed to the Indonesian government's initiative to eliminate the use of HCFCs.

In May 2023, we started manufacturing air-to-water heat pumps that utilizes R290 natural refrigerant (propane) for residential use, which has extremely low Global Warming Potential (GWP), as the first Japanes manufacture. In this fiscal year, we plan to introduce new products, and lineup expansion of our product is underway.

Restriction on Use of PVC Resin

Polyvinyl chloride (PVC) is a material of concerns to the generation of hazardous substances from inappropriate disposal, as well as the harmful effects of certain additive agents (phthalates) used to render PVC more pliable. In light of the significant potential for inappropriate disposal of the PVC resin used in the internal wiring of products, due mainly to difficulties associated with the sorting of this resin from used products, we have switched our new products launched from April 2011 to non-PVC.

List of Our PVC-free Products
https://holdings.panasonic/jp/corporate/sustainability/pdf/eco_pvclist2023.pdf

Restriction on Use of Phthalates

Phthalates are often used in PVC products, and the use of four phthalates[*7] was restricted under the EU RoHS Directive from July 22, 2019. Panasonic Group classified these substances as Level 1 Prohibited Substances in our Chemical Substances Management Rank Guidelines Ver. 11 (for products) issued in July 2018, and delivery of materials and components contain the phthalates was prohibited from July 22, 2018. We have classified other phthalates as Level 3 Prohibited Substances, and are promoting their substitution. Since phthalates have a migration characteristic (where a substance from another article migrates through contact), materials may be contaminated by migration from production facilities as well as process equipment containing the four phthalates, which are specified as Level 1 Prohibited Substances. Accordingly, we also discussed introducing preventive measures against contamination through contact. To build a structure for incoming inspection for phthalate, we amended the standard for incoming inspection and determined to conduct incoming inspections on supplied components with a high risk of containing phthalates, such as PVCs, elastomers and glues. We have already selected and assessed an analyzer for phthalates to use for these inspections, and installed the analyzer at our business division. The phthalates contained in Panasonic Group's products exported to Europe used to be as high as 10t. However, total elimination of the phthalates has been completed as of March 31, 2019.

*7 Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP), and Diisobutyl phthalate (DIBP).

Activities to Reduce Negative Environmental Impact at Factories

The Panasonic Group has been working to minimize environmental impact by identifying the hazardous substances used in our products, assessing the impact of such use, and voluntarily discontinuing the use or reducing the release of such substances. Since 1999, we have been

Environment

conducting the 33/50 Reduction Activity to materialize reduction by 33% in three years and by 50% in six years. In Japan, we started promoting reduction of amounts to use, release, and transfer specified chemical substances at our factories in fiscal 2000. Against the target in our voluntary action plan, a reduction by 50% from the fiscal 1999 level, we achieved a 75% reduction in the chemical substance use and a 62% reduction in the release and transfer in fiscal 2005. Since then, we have been continuing the activity, focusing on substances with particularly large amounts of release and transfer, setting a voluntary action target of reduction by 30% compared to the fiscal 2006 level. As a result, we achieved a 46% reduction in the amounts of release and transfer of specified key reduction-target substances across all factories worldwide in fiscal 2011.

Reflecting international trends in chemical substance management, our reduction measures have focused increasingly on particularly hazardous substances from fiscal 2011. Our Chemical Substances Management Rank Guidelines (for Factories) was established in 1999 as a guideline to help manage the above chemical substance reduction activities. In Version 1, the guidelines specified a list of chemical substances to be managed, mainly focusing on carcinogenic substances. The guidelines were later updated to Version 2 in 2000 to include rules concerning the Japan PRTR Law. Version 3, introduced in 2004, additionally covered a list of substances specified by chemical substances management legislation in Japan. The chemical substances covered by Version 4 and later from 2009 are those specified in legislation on human health and environmental impact in Japan, the U.S., and Europe, as well as those specified under international treaties.

Under our Chemical Substances Management Rank Guidelines (For Factories), we have focused our management on select chemical substances that are hazardous to human health and the environment. Further, the Panasonic Group created a unique indicator, the Human Environment Impact,[*8] which is used globally in all our factories. Conventionally the chemical substances were managed by "quantity," such as usage amount or emissions/release. However, such quantity-based management has a problem in that some highly hazardous substances do not become subject to reduction or management if the usage amount was small, and therefore would fall out of the scope of impact assessments. In addition, the toxicity criteria varied according to substance types and regional legislation, which made standardized management across the Group difficult. To address this issue, we worked together with experts from both within and outside the Group, reclassified chemical substances based on an overall assessment of their hazardousness, and specified a hazardousness factor for each classification. Specifically, we set a hazard classification to each substance by utilizing carcinogen risk assessments issued by international organizations, together with publicly available hazard information and lists of ozone depleting substances. For substances that have multiple hazard information items, the item ranked with the highest hazard risk is used for classification. We utilize this Panasonic Group internal indicator as the Human Environmental Impact indicator to promote efforts to ensure reduction of highly hazardous substances with greater environmental impacts, such as carcinogens and ozone depleting substances, according to the risk level. The Panasonic Group Chemical Substances Management Rank Guidelines is also available on the website on Panasonic Group Green Procurement activities to promote collaboration with our suppliers, encouraging them to offer materials that do not contain hazardous substances.

WEB **Green Procurement (PDF file Download of Chemical Substances Management Rank Guidelines (For Factories))**
https://holdings.panasonic/global/corporate/about/procurement/green.html

*8 Human Environmental Impact = Hazardousness factor x Release and transfer amount

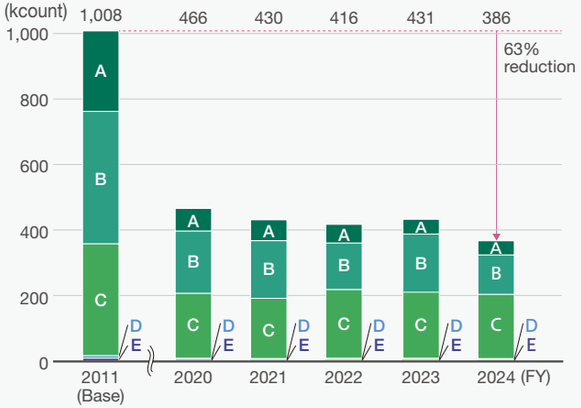
Further, we maintain our compliance in different countries by obtaining the latest information about the various chemical regulations enforced in each country through our regional headquarters and local industrial organizations. As for the VOC regulations amended in China in 2020, we successfully completed compliance confirmation and replacement with compliant components in each business division thanks to cooperation from local suppliers.

Classification of Hazards

Classification	Hazards*9	Hazardousness factor
A	Carcinogenicity/Ozone layer depletion	x 10,000
B	Serious or direct impact	x 1,000
C	Medium impact	x 100
D	Small or indirect impact	x 10
E	Minor impact or not assessed	x 1

*9 In addition to carcinogenicity, hazards to human health include genetic mutation, reproductive toxicity, and acute toxicity. In addition to ozone depleting substances, hazards to/substances with impact on the environment include ecological toxicity, substances that impact global warming, and substances that generate photochemical oxidants.

Human Environmental Impact

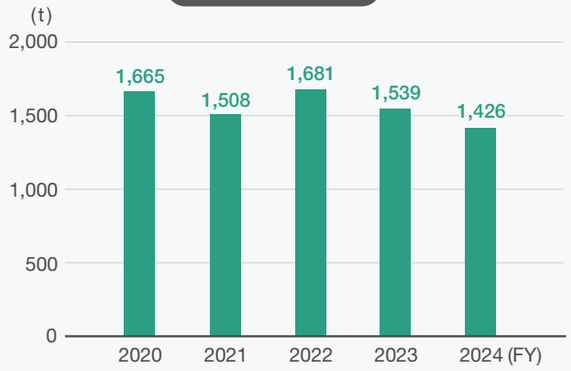


Note: Overseas sites of former SANYO Electric not included in fiscal 2011.

Environment

In fiscal 2024, we were able to reduce Human Environmental Impact by 63% compared with fiscal 2011 by the following methods: improving the yields, promoting recycling, optimizing the spraying control in the coating process and reducing the number of coating failures, changing the resin materials and improving its injection volume, reducing the amount of cleaning solvent through making the cleaning automatic, and improvement in the process by introducing components/materials containing less hazardous substances, and the like. We will continue to implement our activities to minimize emissions of the substances with high environmental loads from our production activities.

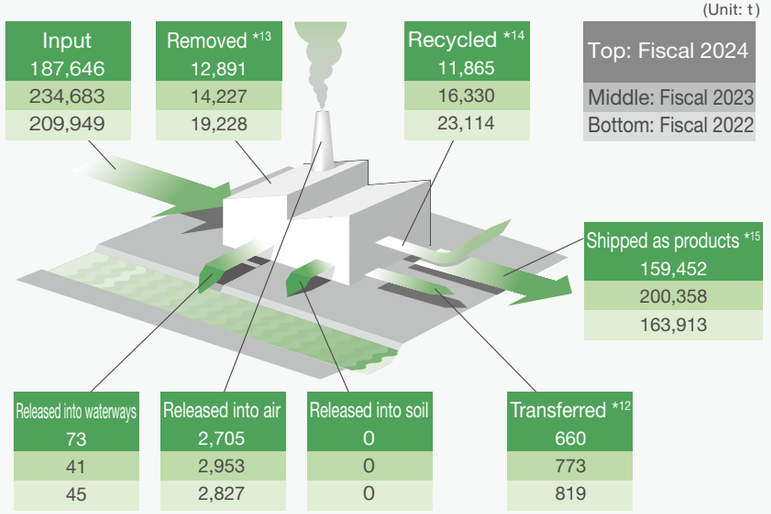
VOC*10 Emissions



*10 Emissions of Volatile Organic Compounds (VOC) into the air caused by use. The calculation covers 100 major VOC substances that Panasonic Group selected from those listed in the Air Pollution Control Act.

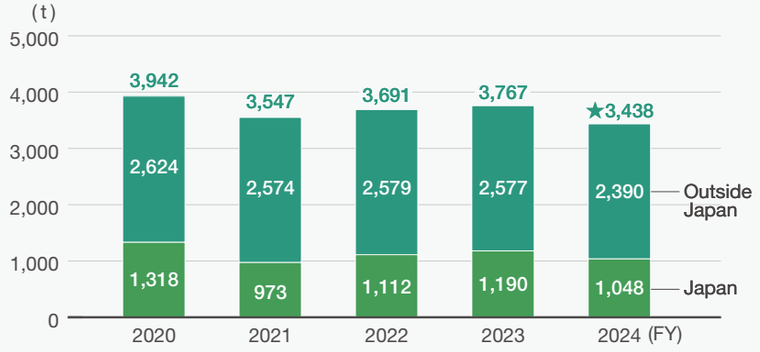
Material Balance of Substances in the Management Rank*11

(Unit: t)



*11 Based on the Chemical Substances Management Rank Guidelines (for factories). Includes all the substances specified in the Pollutant Release and Transfer Register Act.
*12 Includes substances transferred as waste, as well as those discharged into the sewage system. Recycled amount which is free of charge or accompanies treatment cost under the Waste Management Law is included in "Recycled." (Different from the transferred amount reported under the PRTR Law.)
*13 The amount of substances converted into other substances through neutralization, decomposition, or other chemical treatment.
*14 The amount of substances recycled with revenue, as well as those recycled free of charge or with any payment.
*15 The amount of substances that have been changed to other substances as a result of chemical reactions, and/or those that are contained in or accompanied with products and shipped out of factories.

Release/Transfer of Substances Requiring Management*16



*16 Hussmann Parent Inc. and its consolidated subsidiaries not included.

Collaboration Across the Supply Chain

Collaboration with Suppliers and Transportation Partners

As the Panasonic Group backed by a number of suppliers, we must consider the environmental impacts of our entire supply chain, and not just of our own operations. Through our coordination efforts with suppliers and transportation partners, who form an integral part of our business operations, the Panasonic Group strives to minimize our environmental impact across the entire supply chain, focusing on the reduction of CO_2 emissions, resource recycling, chemical substance management, and biodiversity conservation.

Activities for Green Procurement

Activities for Green Procurement since the publication of the "Green Procurement Standards" in 1999, the Panasonic Group has been promoting the manufacture of eco-conscious products in partnership with our suppliers. In the "Green Procurement Standards", we set up groups of suppliers who support the Panasonic Group's Environmental Policy in supplying products and goods in order to materialize the targets in supplier collaboration with our Group. In addition to cooperation in 'reducing environmental loads in supplier's business operation areas' and 'sharing achievements through collaboration with the Panasonic Group', we are asking our suppliers to 'seek the cooperation of upstream business partners' to expand the scope of activities of reducing environmental impact throughout the entire supply chain. In September 2019, we revised "the Green Procurement Standards" to deepen and widen their influence throughout the entire supply chain—beyond our Group and across society—following the Panasonic Group's environmental action plan.

We also published "Panasonic GREEN IMPACT" in fiscal 2022, regarding information about our contribution to CO_2 emissions reduction from Panasonic Group's business activities and from society in general, indicating our determination by setting our own targets to achieve both 'a better life' and 'a sustainable global environment' at the same time. We will expand this effort throughout the supply chain. In fiscal 2024, we submitted a letter to all of approximately 13,000 suppliers who have business with Panasonic Group across the globe to deepen understanding of our activities of 'Panasonic GREEN IMPACT'.

In response to more stringent and expanded regulations such as EU RoHS Directive, the

Panasonic Group has been engaging in continual environmental quality assurance audits of our suppliers since 2005 to improve the management level throughout the entire supply chain. In fiscal 2024, we conducted the audits at some 1,000 suppliers and have supported their efforts to upgrade their management levels for chemical substances in products.

WEB **Green Procurement Standards**
https://www.panasonic.com/global/corporate/management/procurement/green.html

Estimation and Reduction of Environmental Impacts in Business Activities by Suppliers

In order to assess greenhouse gas (GHG) emissions across the entire supply chain (scope 3[*1]), the Panasonic Group made original calculations based on the Greenhouse Gas Protocol, the international accounting standard for GHG emissions. Since fiscal 2012, the Panasonic Group has estimated its overall GHG emissions in the upstream range by multiplying the volume of materials purchased with the resource-specific GHG emissions per basic unit based on the Input-Output Table published by the Japanese government. The estimation results based on fiscal 2024 data is 21.96 Mt, roughly 14 times the GHG emissions of our Panasonic Group's own production activities.

*1 Other indirect emissions, excluding Scope 1 (direct emissions from facilities owned and controlled by the Panasonic Group) and Scope 2 (emissions from production of energy consumed at facilities owned and controlled by the Panasonic Group).

To reduce CO_2 emissions with our suppliers, Panasonic Group is actively procuring low-carbon materials for aluminum ingots, and irons/steels, such as aluminum ingots refined using hydroelectricity, and recycled irons. In fiscal 2024, we managed to reduce approximately 58,000 tons of CO_2 emissions.

Scheme to Procure and Supply Aluminum Ingots Produced using Hydroelectricity.

Our group have managed to stably procure and supply raw materials of aluminum products to be used for air conditioners, showcases, etc., utilizing a centralized purchasing system. From fiscal 2022, we have been procuring aluminum ingots refined using hydroelectricity through the centralized purchasing system and supplying it to aluminum processing manufacturers, which is an example for achieving CO_2 emissions reduction, while maintaining a stable procurement price. This is the first initiative in Japan's electrical manufacturing industry.

More specifically, we import aluminum produced at overseas aluminum refineries using hydroelectricity, to Japan. Then, we supply the imported aluminum to multiple aluminum rolling/extrusion manufacturers in Japan to process them to aluminum plates, etc. Finally, our group procures the processed aluminum products from the manufactures to utilize them in our products.

CO_2 emissions of the aluminum ingots refined using hydroelectricity is reduced to one third of the CO_2 emissions compared to those refined using conventional thermal power. Various aluminum products processed from the aluminum ingots become one of our various products in different forms such as air conditioners fin materials, aluminum frames for housing facilities, and lithium-ion battery casings. Since fiscal 2022, we have maintained a consistent supply of more than 8,000 tons of aluminum refined using hydroelectricity in Japan, thereby reduction of CO_2 emissions by 57,000 tons per year has been achieved. Procurement of such aluminum ingots under our metal

Environment

supply scheme utilizing a group-wide centralized purchasing system also stabilizes the price of aluminum ingots in the market.

Sharing Achievements through Collaboration with the Panasonic Group

Since fiscal 2010, Panasonic Group has been working together with our suppliers in ECO-VC Activity[*2] for procurement, aiming to reduce GHG emissions and achieve Recycling-oriented Manufacturing while also streamlining costs. This activity was expanded to China and other regions in Asia where full-fledged operation started in fiscal 2013, and further extended to a global scale in fiscal 2015. On its 15th anniversary in 2024, we renamed the ECO-VC Activity as 'ECOVC' to reposition it as an activity for value creation with our suppliers.

We have stored case examples of ECOVC in a database for broader and effective use throughout the Panasonic Group. At the same time, as for outstanding activities, we provide awards in occasions such as 'ECOVC awards and information exchange meeting'. Furthermore, the Panasonic Group formulated "an Environment Vision 2050" in 2017 to achieve 'a better life' and 'a sustainable global environment' compatibly, aiming for societies where residents use clean energy and live a more comfortable lifestyle. Under the vision, through the development of products, technologies, and solutions relevant to energy creation, storage, saving, and management, the Panasonic Group has worked towards creation and more efficient utilization of energy which exceeds the amount of energy used.

We added renewable energy to conventional evaluation items such as energy conservation (CO_2 emission reduction), cost reduction, resources conservation and use of recycled materials in fiscal 2019. In addition, since fiscal 2024, we have promoted decarbonization and reduction of CO_2 emissions in conjunction with the Panasonic Green Impact, collaborating with our suppliers. We will continue this ECOVC with our suppliers aiming to achieve CO_2 emissions reduction of 110 million tons from OWN IMPACT by 2050, as described in the "Panasonic GREEN IMPACT".

*2 ECO-VC Activity: Value Creation Activities

Environmental Achievements Made through Proposals

Items	FY2020	FY2021	FY2022	FY2023	FY2024
Number of proposals	772	430	332	264	236
CO_2 reductions derived from proposals	280 kt	110 kt	50 kt	80 kt	927 kt
Use of recycled resources derived from proposals	100 t	5 t	1,500 t	600 t	37,000 t
Reduction in resources used derived from proposals	19.9 kt	323 kt	255 kt	40 kt	19 kt

Collaboration with Environmental NGOs

Following the announcement of the "Panasonic GREEN IMPACT", we further enhanced collaborative work with environmental NGOs overseas and deepened our CSR efforts in the supply chain.

Particularly in China, where the number of suppliers of our group is large and there are strong demands in the society for suppliers to properly respond to environmental matters, we are continually working together with the suppliers to reduce environmental loads by from requesting corrective actions as items require improvement for the issues found in the audit, and confirming whether the items are improved, aiming at further pursuing responsible procurement activities. Through confirming these CSR and environment items on sites, we will continue to comply with new regulations, social norms, and corporate ethics, and conduct procurement activities that fulfill our social responsibilities such as for human rights, labor, safety and health, and global environmental conservation.

Main activities to date

2016	Started collaboration with a Chinese NGO. Held Panasonic Group briefings on our CSR Procurement Policy and China's environmental regulations for approximately 400 suppliers in Guangzhou, Dalian, and Shanghai, in the same year.
2018	Conducted on-site environmental audits that focused on suppliers responsiveness to environmental issues, together with CSR audits for approximately 20 suppliers per year.
2020	Continually implemented on-site and online audits for more than 20 suppliers per year.
2023	Reinforced the on-site audits at suppliers sites through the Group-wide Supply Chain Compliance Project.

In addition, we are continually improving suppliers CSR and environmental issues, collaborating with an environmental NGO in China, the Institute of Public & Environmental Affairs (IPE), through periodically sharing information on the latest laws and regulations in working group meetings, as well as requesting the suppliers with records of non-compliance for improvement every month.

In the Suppliers Green Supply Chain Evaluation ranking (CITI[*3] and CATI[*4]) that has been published by IPE since fiscal 2015, the Panasonic Group has consistently listed in the top rank each year. Panasonic has been ranked as the second best in the CITI and as the top in the CATI for the household appliances industry (total 37 brands) in fiscal 2024.

*3 CITI : The Green Supply Chain Corporate Information Transparency Index
*4 CATI : The Corporate Climate Action Transparency Index

Environmental Data

■Energy

*See Page 36

		FY2022	FY2023	FY2024
Energy		4.9 TWh	4.7 TWh	4.5 TWh
	Purchased electricity	3.35 TWh	3.23 TWh	3.08 TWh
	including renewable energy	0.24 TWh	0.47 TWh	0.72 TWh
	Installation of renewable energy facilities in our own sites	0.04TWh	0.06 TWh	0.07 TWh
	Town gas	70 million m^3	71 million m^3	68 million m^3
	LNG	9.9 kt	8.8 kt	9.9 kt
	LPG	6.4 kt	5.6 kt	4.5 kt
	Heavy oil	7.7 Ml	6.9 Ml	7.0 Ml
	Light Oil	2.4 Ml	2.0 Ml	1.9 Ml
	Kerosene	1.9 Ml	1.8 Ml	1.6 Ml
	Volatile	0.1 Ml	0.1 Ml	0.1 Ml
	Steam	486 TJ	434 TJ	373 TJ
	Hot Water	53 TJ	49 TJ	37 TJ

■CO_2 Emission in Business Activities

*See Page 44

		FY2022	FY2023	FY2024
CO_2 Emission in Business Activities		1.95 million ton	1.63 million ton	1.37 million ton
	Japan	0.78 million ton	0.69 million ton	0.60 million ton
	China and North East Asia	0.46 million ton	0.30 million ton	0.19 million ton
	Southeast Asia and Pacific	0.44 million ton	0.38 million ton	0.33 million ton
	North America and Latin America	0.21 million ton	0.20 million ton	0.19 million ton
	India, South Asia, Middle East and Africa	0.005 million ton	0.04 million ton	0.04 million ton
	Europe and CIS	0.02 million ton	0.01 million ton	0.01 million ton

■Breakdown of Total GHG Emissions (CO_2-equivalent) in Business Activities

*See Page 44

		FY2022	FY2023	FY2024
Scope 1				
	CO_2 from energy sources	232 kt	224 kt	216 kt
	CO_2 from non-energy	106 kt	183 kt	101 kt
	CO_2	1 kt	1 kt	1 kt
	HFC	101 kt	180 kt	97 kt
	SF_6	3 kt	2 kt	2 kt
	NF_3 and others	2 kt	1 kt	1 kt
Scope 2 Energy sources		1,723 kt	1,433 kt	1,207 kt
Carbon offset by credit		-12 kt	-26 kt	-57 kt
Total		2,048 kt	1,812 kt	1,465 kt

■GHGs (by Scope)

*See Page 37

		FY2022	FY2023	FY2024
Scope 1		338 kt	406 kt	316 kt
Scope 2		1,723 kt	1,433 kt	1,207 kt
Scope 3		98,050 kt	127,371 kt	124,995 kt
	1. Purchased goods and services	14,114 kt	21,543 kt	21,954 kt
	2. Capital goods	694 kt	880 kt	1,546 kt
	3. Fuel- and energy-related activities	229 kt	212 kt	243 kt
	4. Upstream transportation and distribution	953 kt	887 kt	741 kt
	5. Waste generated in operations	2 kt	0.1 kt	1 kt
	6. Business travel	16 kt	32 kt	31 kt
	7. Employee commuting	20 kt	111 kt	107 kt
	8. Upstream leased assets	19 kt	—	—
	9. Downstream transportation and distribution	18 kt	61 kt	146 kt
	10. Processing of sold products	—	153 kt	234 kt
	11. Use of sold products	81,493 kt	95,029 kt	91,027 kt
	12. End-of-life treatment of sold products	496 kt	7,537 kt	7,860 kt
	13. Downstream leased assets	—	—	—
	14. Franchises	—	—	—
	15. Investments	—	928 kt	1,108 kt
total		100,110 kt	129,209 kt	126,518 kt

■GHG emissions reduction targets (SBT 1.5°C accreditation) Progres rate

*See Page 28

	FY2022	FY2023	FY2024
Emissions from Panasonic Group business activities (Scope 1 and 2)	—*1	23 %	38 %
Emissions from use of Panasonic Group products (Scope 3)	—*1	—*2	—*2

*1 Because the 1.5℃ target has not yet been approved
*2 Progress rate not calculated due to increase in emissions because of expansion of products subject to calculation

■RE100 Progress rate

*See Page 42

	FY2022	FY2023	FY2024
RE100 Progress rate	6.7 %	15.6 %	24.3 %

■Logistics

*See Page 36 and https://holdings.panasonic/global/corporate/sustainability/environment/logistics.html

		FY2022	FY2023	FY2024
Energy		1.75 TWh	1.50 TWh	1.32 TWh
Biodiesel fuel		4.98 kl	9.89 kl	1.27 kl
CO_2 Emission: global		953 kt	887 kt	741 kt
	International transportation	313 kt	246 kt	215 kt
	intra-region outside Japan	524 kt	518 kt	411 kt
	Japan	116 kt	123 kt	115 kt
Transportation Amount by Transportation Method (Japan)		990 million tons-kilometers	850 million tons-kilometers	770 million tons-kilometers
	Air	0.2 million tons-kilometers	0.3 million tons-kilometers	0.2 million tons-kilometers
	Truck	924 million tons-kilometers	793 million tons-kilometers	713 million tons-kilometers
	Ship	59 million tons-kilometers	57 million tons-kilometers	51 million tons-kilometers
	Railroad	6 million tons-kilometers	6 million tons-kilometers	5 million tons-kilometers

Environment

■Resources

*See Page 36, 51-52

	FY2022	FY2023	FY2024
Recycled resin	14.7 kt	12.4 kt	17.2 kt
Recycled iron	93 kt	87 kt	83 kt
Total wastes including revenue-generating waste	314 kt	282 kt	258 kt
Landfill	2.9 kt	2.3 kt	1.5 kt
Factory waste recycling ratio	99.0 %	99.1 %	99.3 %

■Recycling

*See Page 36

		FY2022	FY2023	FY2024
Collected products		167 kt	162 kt	151 kt
Recycled products		124 kt	123 kt	113 kt
	Metals	90 kt	89 kt	83 kt
	Glass	2 kt	2 kt	1 kt
	Other	32 kt	32 kt	28 kt
Generated waste		43 kt	39 kt	37 kt

■Water

*See Page 61

		FY2022	FY2023	FY2024
Water Consumed		17.24 million m^3	15.27 million m^3	13.87 million m^3
	Municipal water/industrial water	11.22 million m^3	9.60 million m^3	8.62 million m^3
	Groundwater	6.02 million m^3	5.67 million m^3	5.24 million m^3
	Rivers/lakes	0 million m^3	0 million m^3	0 million m^3
recycled water		2.54 million m^3	1.55 million m^3	4.73 million m^3
Water discharged		13.39 million m^3	11.78 million m^3	10.60 million m^3
	Sewer systems	5.76 million m^3	5.39 million m^3	4.90 million m^3
	Waterways	7.63 million m^3	6.39 million m^3	5.70 million m^3

■Chemical substances

*See Page 67-68

		FY2022	FY2023	FY2024
Input		209,949 t	234,683 t	187,646 t
Release		2,872 t	2,994 t	2,778 t
	Released into waterways	45 t	41 t	73 t
	Released into air	2,827 t	2,953 t	2,705 t
	including VOC emissions	1,681 t	1,539 t	1,426 t
	Released into soil	0 t	0 t	0 t
Transfer		819 t	773 t	660 t
Recycled		23,114 t	16,330 t	11,865 t
Shipped as products		163,913 t	200,358 t	159,452 t
Removed		19,228 t	14,227 t	12,891 t
Human Environmental Impact		416 kcount	431 kcount	386 kcount

■Environmental Accounting

*See Page 38

		FY2022	FY2023	FY2024
Environmental conservation in factories				
	Investments	2,006 million yen	6,590 million yen	3,791 million yen
	Expenses	58 million yen	155 million yen	128 million yen
	Economic benefit	889 million yen	1,655 million yen	907 million yen
Environmental Conservation Benefits (in physical terms)				
	CO_2 emissions from production activities	165 kt	320 kt	260 kt
	Human Environmental Impact	14 kcount	▲15 kcount	45 kcount
	Landfill of waste	0.5 kt	0.6 kt	0.8 kt
	Water consumption	1.95 million m^3	1.97 million m^3	1.47 million m^3
Economic Effects for Customers (Electricity cost reduction from product usage)				
	Reduced amount of electricity	32.8 TWh	30.9 TWh	46.7 TWh
	Reduced electricity costs	596.2 billion yen	783.5 billion yen	1256.7 billion yen

■Number of the ISO 14001 Certification

*See Page 24

		FY2022	FY2023	FY2024
Number of certifications obtained		130	149	123
	Manufacturing	22	128	21
	Non-manufacturing	152	21	144

■Case of Violations of Laws and Ordinances

*Global (Japan) *See Page 25

		FY2022	FY2023	FY2024
Environmental pollution		1 (0)	3 (0)	4 (0)
	Air	1 (0)	2 (0)	2 (0)
	Water quality	0 (0)	0 (0)	0 (0)
	Noise	0 (0)	0 (0)	0 (0)
	Odor	0 (0)	0 (0)	0 (0)
	Waste	0 (0)	0 (0)	2 (0)
Other	Permission /Approval	0 (0)	1 (0)	0 (0)

■Soil and Groundwater Pollution Surveys and Remedial Measures

*Global (Japan) *See Page 26

	FY2022	FY2023	FY2024
Number of sites that completed remedial measures	2 (2)	1 (1)	4 (4)
Number of sites currently taking remedial measures	40 (35)	42 (37)	40 (35)

History of Environmental Activities

Era	Year	Panasonic Group	World	Japan
~1970s	1967			• Basic Law for Environmental Pollution Control enacted
	1968			• Air Pollution Control Law enacted
	1970	• Pollution Survey Committee established		• Water Pollution Control Law enacted • Waste Disposal and Public Cleansing Law enacted
	1971			• Environment Agency established
	1972	• Environmental Management Office established	• U.N. Conference on Human Environment held in Stockholm (Declaration of Human Environment adopted)	
	1973		• First oil shock occurred	
	1975	• Environmental Management Regulations enacted		
	1979		• Second oil shock occurred	• Energy Conservation Law enacted
1980s	1985		• Vienna Convention for the Protection of the Ozone Layer adopted	
	1987		• Montreal Protocol on Substances that Deplete the Ozone Layer adopted • World Commission on Environment and Development (the Brundtland Commission) advocated the concept of sustainable development	
	1988	• CFC-reduction Committee established		• Ozone Layer Protection Law enacted
	1989	• Environmental Protection Promotion Office established		
1990s	1991	• Matsushita Environmental Charter (Environmental Statement and Code of Conduct) enacted • Matsushita Product Assessment adopted and implemented		• Keidanren Global Environment Charter enacted by Japan Federation of Economic Organizations • Law for Promotion of Effective Utilization of Resources enacted
	1992	• Environmental Policy Committee established	• The Earth Summit held in Rio de Janeiro, Brazil; Agenda21 and Rio Declaration on Environment and Development adopted • United Nations Framework Convention on Climate Change adopted	
	1993	• Matsushita Environmental Voluntary Plan (Year 2000 targets) adopted • Matsushita Group' global environmental internal audits launched		• The Basic Environment Law enacted
	1995	• Acquired Environmental Management System Certification at AV Kadoma Site (first in the Matsushita Group)	• First Conference of Parties to the U.N. Framework Convention on Climate Change (COP1) held in Berlin	• Containers and Packaging Recycling Law enacted
	1996		• ISO 14001 International Standard on Environmental Management Systems launched	
	1997	• Corporate Environmental Affairs Division (CEAD) established • Environmental Conference established (held semi-annually)	• COP3 held in Kyoto and adopted the Kyoto Protocol	• Keidanren Appeal on the Environment announced by Japan Federation of Economic Organization
	1998	• Love the Earth Citizens' Campaign commenced • Recycling Business Promotion Office established • First environmental report (1997) published		• Home Appliance Recycling Law enacted (took effect in 2001) • Law Concerning the Promotion of the Measures to Cope with Global Warming enacted • Energy Conservation Law revised: Top Runner Approach introduced
	1999	• Green Procurement launched • Chemical Substances Management Rank Guidelines established • Acquired ISO14001 Certification in all manufacturing business units		• PRTR (Pollutant Release and Transfer Register) Law enacted
2000s	2000	• Lead-free Solder Project commenced • Held first environmental exhibition for general public in Osaka	• Global Reporting Initiative (GRI) issued The Sustainability Reporting Guidelines	• Basic Law for Establishing the Recycling-based Society enacted • Law for Promotion of Effective Utilization of Resources enacted
	2001	• Environmental Vision and Green Plan 2010 adopted • Held Environmental Forum in Tokyo and Freiburg,Germany • Panasonic Eco Technology Center launched	• Reached final agreement on the actual rules of Kyoto Protocol in COP7 held in Marrakesh	• Reorganized into the Ministry of the Environment • Law Concerning Special Measures against PCBs enacted
	2002	• Panasonic Center Tokyo opened	• Johannesburg Summit (Rio+10) held	• Kyoto Protocol ratified • Vehicle Recycling Law enacted • Law for Countermeasures against Soil Pollution enacted
	2003	• Declared 'Coexistence with the Global Environment' as one of the twin business visions • Factor X advocated as an indicator for Creating Value for a New Lifestyle • Completely introduced lead-free soldering globally • Super GP Accreditation System launched • Achieved zero waste emissions in Japanese manufacturing business sites (ongoing program) • Held Environmental Forum in Tokyo	• EU's WEEE Directive was enacted	
	2004	• Environmental Vision and Green Plan 2010 revised • PCB Management Office established • Superior GP Accreditation System launched		• Prohibited manufacturing and use of products containing asbestos in principle
	2005	• Participated in Expo 2005 Aichi, Japan as an official sponsor • Green Plan 2010 revised • Continued with the nationwide Lights-out Campaign • 3R Eco Project launched • Completed the elimination of specified substances (6 substances) in products • Matsushita Group's Green Logistics Policy established • CF Accreditation System introduced	• Kyoto Protocol entered into force	• Expo 2005 Aichi, Japan held • National campaign against global warming "Team –6%" launched • Marking for the presence of the specified chemical substances for electrical and electronic equipment (J-Moss) established

Environment

Era	Year	Panasonic Group	World	Japan
		• Panasonic Center Osaka opened • Eco & Ud HOUSE opened • Installed the first commercial household fuel cell cogeneration system in the new official residence of the Japanese Prime Minister • Won the first place in Nikkei Environmental Management Survey		
	2006	• Environmental specialist position established • ET Manifest introduced into all manufacturing sites of Panasonic in Japan • Realized lead-free plasma display panels and introduced them to the market • Full-fledge introduction of biodiesel fuel in logistics	• Restriction of Hazardous Substances (RoHS) Directive took effect in EU	• Relief Law for Asbestos Victims enacted • Energy Conservation Law revised: new cargo owner obligations, widened product scope of its application, and top runner standard revision
	2007	• Energy conservation activities at our factories in Malaysia approved as CDM project by the U.N. • A new environmental mark 'eco ideas' introduced • Panasonic Center Beijing opened • Environmental Forum in China held • "Declaration of Becoming an Environmentally Contributing Company in China" announced • Panasonic 'eco ideas' Strategy announced	• The Fourth Assessment Report of the Intergovernment Panel on Climate Change (IPCC) released • Registration, Evaluation, Authorisation and Restriction of Chemicals entered into force in EU • Framework for CO_2 reduction agreed at Heiligendamm Summit (G8) • The Bali Road Map for the post Kyoto Protocol agreed at COP13 • Administration on the Control of Pollution Caused by Electronic Information Products (China RoHS) came into effect	• 'Cool Earth 50' announced by Prime Minister Abe • '21st Century Environment Nation Strategy' formulated • 'The Third National Biodiversity Strategy of Japan' formulated • 'Ministerial ordinance partially amending the Enforcement Regulation of the Waste Management and Public Cleansing Law' promulgated • 'Domestic Emissions Trading Scheme Review Committee' established • 'The Second Fundamental Plan for Establishing a Sound Material-Cycle Society' formulated
	2008	• Established the Corporate CO_2 Reduction Promoting Committee • Held environmental exhibitions, 'eco ideas' World • Home Appliances Company announced environmental statement in which named its Kusatsu site as 'eco ideas' Factory • Announced 'eco ideas' Declaration in Europe • Established Environmental Strategy Research Center	• G20 (conference of key countries' environmental and energy ministers) held • Hokkaido Toyako Summit held	• Cool Earth Promotion Program • Mislabeling incident of waste paper pulp percentage • Long-term Energy Demand and Supply Outlook announced • Japan's Voluntary Emission Trading Scheme started
	2009	• Opened the 'eco ideas' House to demonstrate a lifestyle with virtually zero CO_2 emissions throughout the entire house • Announced the Asia Pacific 'eco ideas' Declaration • Announced 'eco ideas' factories (in Czech, Malaysia, Thailand, and Singapore) • Sanyo Electric joined the Panasonic Group	• China WEEE law promulgated • New framework for countermeasures against global warming on and after 2013 (post-Kyoto Protocol), the Cophenhagen Accord, was adopted at the COP15 (Copenhagen conference) • Seeking to emerge from the Lehman collapse, countries throughout the world accelerated actions for the Green New Deal	• Energy Conservation Law amended: Covered area expanded from factories to commercial sector facilities • Flat-panel TV and clothes dryer added as covered products under the Home Appliance Recycling Law • 'Eco point' system started

Era	Year	Panasonic Group	World	Japan
2010s	2010	• Announced "Vision looking to the 100th anniversary of our founding in 2018" • Announced new midterm management plan, "Green Transformation 2012 (GT12)" • Announced 'eco ideas' Declarations (Latin America, Asia Pacific, and Russia) • Established 'eco ideas' Forum 2010 in Ariake, Tokyo • Commenced business of Factory Energy Conservation Support Service • Announcement of Green Plan 2018 • Panasonic ECO RELAY Japan (PERJ) launched.	• COP10 held in Nagoya—Nagoya agreement made • APEC meeting held in Yokohama • Ruling party lost in US midterm election—changes in anti global warming policy • Cancun agreement made in COP16—Post-Kyoto framework still to be discussed	• Draft legislation of Basic Law of Global Warming Countermeasures submitted but remained in deliberation • Obligatory greenhouse gas emissions reduction started as a part of Tokyo Emissions Trading Scheme • Waste Management and Public Cleansing Law amended: self treatment regulations tightened • Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. (CSCL) and Law concerning Pollutant Release and Transfer Register (PRTR) amended
	2011	• Announced North America & Taiwan 'eco ideas' Declarations • Announced establishment of Panasonic Dadi Dowa Summit Recycling Hangzhou Co., Ltd. • Announced the Fujisawa Sustainable Smart Town Project • Established Corporate Electricity Saving Division that bridges functions across the organization	• Rare earth prices soared • Revised RoHS directives enforced in EU • COP17 (Durban Climate Conference): Agreement made on long-term future of the scheme, and the second commitment period for the Kyoto Protocol (Japan announced non-commitment)	• Home appliance eco-point incentive program finished • The Great East Japan Earthquake • Revised Air Pollution Control Act and Water Pollution Control Act enforced • Act on Special Measures Concerning Procurement of Renewable Electric Energy by Operators of Electric Utilities enacted (Feed-in tariff system to be enforced July 2012)
	2012	• Business reorganization due to full acquisition of Panasonic Electric Works and SANYO Electric • Commenced sales of Resources Recycling-oriented Product series • Terminated production of household incandescent light bulbs • Establishment of Environmental Management Group, Environment & Quality Center, Global Manufacturing Division • Communication of 'eco ideas' Declaration (Vietnam)	• United Nations Conference on Sustainable Development (Rio +20) • "Doha Climate Gateway" adopted at COP 18 Doha 2012, to lay down a future legal framework in which all nations can participate by 2020 and onwards • Revised WEEE Directive implemented in Europe	• The Recycle Resource Project, national campaign by Ministry of the Environment, commenced • 2012 Japan Tax Reform Bill enacted (Environment tax came into force in October 2012) • Feed-in tariff for recyclable energy put into effect
	2013	• Announced new midterm management plan Cross-Value Innovation 2015 • Announced new brand slogan "A Better Life, A Better World" • PETEC's home appliance recycling reached a cumulative total of 10 million units • Announced 'eco ideas' factory (Philippines)	• Phase I of the Kyoto Protocol ends. Japan's target expected to be achieved in combination with forest CO_2 absorption and application of the Kyoto Protocol mechanisms. • Minamata Convention on Mercury to internationally regulate import and export of mercury adopted at UN conference • IPCC Fifth Assessment Report (Working Group 1) announced the possibility of human activity being the principal cause of global warming observed since the mid-20th century is "extremely high." Global average surface temperature is expected to rise as high as 4.8°C • COP 19 Warsaw reaffirmed participation of all nations in the future framework of the Convention for 2020 and later. Nations were asked to submit emission pledges well in advance of 2015	• Home Appliance Recycling Law for small household appliances enforced • Basic Plan for Establishing a Recycling-Based Society implemented • Keidanren's "Action Plan Towards Low-Carbon Society" started (until FY 2021) • Amended Law Concerning the Rational Use of Energy and Amended Law Concerning the Promotion of the Measures to Cope with Global Warming established. Amended Act on the Rational Use and Management of Fluorocarbons promulgated (June) • Voluntary Action Plan by the electric and electronics industry terminated. Achieved improvement by 48% in CO_2 emissions per basic unit in average actual production output for fiscal 2009–2013 (compared with fiscal 1991 level) to the target of 35% • Japan announced in November its fiscal 2021 reduction target of 3.8% over fiscal 2006 and registered this with UNFCCC Office (but with a possible review of the tentative target, which does not include possible resumption of nuclear power plant operations)

Environment

Era	Year	Panasonic Group	World	Japan
	2014	• Panasonic DADI DOWA Summit Recycling Hangzhou Co., Ltd., started operation • Opening of Fujisawa Sustainable Smart Town • Announced Eco Declaration (Southeast Asia & Pacific) • Communication of housing & town development at the International Greentech & Eco Products Exhibition & Conference (IGEM) (Malaysia)	• Targets for product environmental regulations in Europe begin to shift from energy saving to resource efficiency and environmental impact • EU Parliament reelection results in the appointment of Mr. Jean-Claude Juncker as President of the European Commission. Review of the circular economy package was decided. • IPCC 5th Assessment Report analyzed that the current multiple ways to achieve control of global temperature rise to less than 2°C cannot be materialized unless the target becomes nearly zero by the end of the century. Attention to "adaptation" is growing. • COP12 Convention on Biodiversity, PyeongChang concluded the interim assessment of the Aichi Biodiversity Targets as "progress has been made but remains inadequate" • COP 20 (Peru) reached agreement on the policy of developing reduction targets based on common rules for publication of "a new legal framework beyond 2020 applicable to all Parties"	• The amended Energy Conservation Act was enforced, incorporating action on power conservation during peak periods into existing qualitative reduction targets • Phase II of the Commitment to a Low Carbon Society, a voluntary program promoted by Keidanren as measures against global warming, was newly established in response to government request, setting the target year to 2030 • Toyota Motor launched fuel-cell vehicle MIRAI into the commercial market
	2015	• Won Zayed Future Energy Prize 2015 • Wonder Japan Solutions (Tokyo) held for the first time • Announced the introduction of indirect contributions through housing, automotive, and B2B solutions in the size of contribution in reducing CO_2 emissions • Announced the Tsunashima Sustainable Smart Town development project, together with Yokohama City and Nomura Real Estate Development Company	• Paris Agreement on the international legal framework for global warming control from 2020 and later was adopted at COP21 (Paris) • 2030 Agenda for Sustainable Development was adopted at the UN Summit, focusing chiefly on sustainable development goals (SDGs)	• Draft proposal to cut greenhouse gases by 26% over 2013 levels as its 2030 greenhouse gas reduction target announced by the Japanese government • COOL CHOICE, a new nationwide movement for greenhouse gas reduction, started
	2016	• Establishment of Environmental Management Department, Quality & Environment Division • Announced R&D 10-Year Vision • Revised Green Plan 2018 • Announced participation in Future Living Berlin, the first Smart City project in Germany • Announced collaboration with Tesla Motors for solar batteries	• G7 Toyama Environment Ministers' Meeting held; ministers representing the G7 nations and the EU discussed policies on seven themes including resource efficiency and 3R, biodiversity, climate change, and related measures • UK decided to leave the EU (Brexit) in a national referendum • GRI announced "GRI Standard," the new guidelines for CSR reports • COP 22 held in Marrakesh, Morocco. Agreement reached on establishing a rulebook to make the Paris Agreement effective by 2018 • Donald Trump won the US presidential election • COP 13, the 13th meeting of the Conference of the Parties on Biological Diversity, held in Cancun, Mexico	• The 2016 Kumamoto Earthquake • The Plan for Global Warming Countermeasures was decided by the Cabinet. Direction of Japan's global warming countermeasures to achieve the Intended Nationally Determined Contributions under COP 21 was clarified. Long-term goal of reducing greenhouse gas emissions by 80% by 2050 was set • Act on Promotion of Global Warming Countermeasures was amended; focuses on promoting the enhancement of Cool Choice, the reinforcement of international cooperation, and regional global warming countermeasures
	2017	• Announcement of Panasonic Environment Vision 2050 • Opening of Tsunashima Sustainable Smart Town	• France, UK, and China announced the prohibition of sales of gas and diesel cars and the conversion to EVs in the future	• Revision of the Charter of Corporate Behavior delivering on the SDGs through the realization of Keidanren Society 5.0
	2018	• Announcement of Monozukuri (Manufacturing) Vision • Achievement of zero-CO_2 factories at Panasonic Eco Technology Center Co., Ltd. (PETEC), Panasonic Energy Belgium N.V. (PECBE), and Panasonic do Brazil (PANABRAS)	• COP24 was held. The policy based on the Paris Agreements to be uniformly applied to all member countries was adopted	• The fifth Basic Environment Plan was decided by the Cabinet. Set up six cross-field strategies utilizing the concepts of SDGs
	2019	• Announcement of Green Plan 2021 • Participation in 'RE100', an international initiative for the use of 100% renewable energy as electricity used in business operations	• UN Climate Action Summit was held. Rising trend of achieving net zero greenhouse gas emissions, with a target of limiting global temperature rise to 1.5°C • COP25 was held in Spain. The statement urging governments to increase the GHG reduction targets was adopted	• G20 Osaka Summit was held. "Osaka Blue Ocean Vision", which aims to further reduce pollution caused by marine plastic wastes, was shared
2020s	2020	• Launched a Global Circular Economy Project to accelerate corporate-wide activities to build a circular economy • Started Sustainable Management Promotion Consortium where internal members who are interested in sustainablity get together to discuss related topics. • Achieved zero-CO_2 factory in PEC (Wuxi) in China.	• Countries accelerated their decarbonization efforts and subsequently announced carbon neutrality statements. • EU released a new battery regulation proposal.	• Announced carbon neutrality by 2050. • Formulated "Green Growth Strategy Through Achieving Carbon Neutrality in 2050."
	2021	• Environment Vision transformed to GREEN IMPACT. • Set up Sustainability Management Committee led by the Group CEO.	• COP26 was held in UK. Countries agreed to aim for 1.5°C target for global warming.	• Announced reduction of GHG emissions by 46% below FY2013 levels by FY2030 and continuing strenuous effort in its challenge toward a 50% reduction as Nationally Determined Contributions (NDCs). • Formulated the Sixth Strategic Energy Plan.
	2022	• Announced impact targets to reduce CO2 emissions in the world by 2050 that is the target year set in the Panasonic Green Impact. • Announced the Green Impact Plan 2024. • Automotive Systems Co., Ltd. achieved zero carbon at all its sites worldwide.	• COP 27 was held in Egypt. • COP 15 in Canada; the Kunming-Montreal Global Biodiversity Framework (GBF) was adopted. • IPCC announced its Sixth Assessment Report.	• The Japan's government announced 'its basic policy toward achieving GX (Green Transformation)'. • METI announced 'its Growth- Oriented, Resource-Autonomous Circular Economy strategy'. • Keidanren announced 'Towards Green Transformation (GX)'.
	2023	• Group CEO talked in a seminar at the Japan Pavilion in COP28 (Dubai), about significance of the avoided emissions and necessity of its global standardization. • Sustainable Forest in the Kusatsu site was certified as "Shizen Kyosei Site" by Japan's MoE. • Panasonic Group Circular Economy (CE) Policy was formulated.	• Importance of recognition of the avoided emissions is mentioned explicitly in the respective outcome documents of G7 Ministers' Meeting on Climate, Energy, and Environment in the G7 summits in Sapporo and Hiroshima. • TNFD published its final recommendations such as information disclosure on biodiversity. • ISSB published its final sustainability disclosure standards.	• Japan's MoE launched Decokatsu (National Movement for New and Valuable Lifestyles leading to Decarbonization). • Japan's MoE started to certifying sites where biodiversity has been conserved by private sector's initiatives, etc., as "Shizen Kyosei Site".

Respect for Human Rights

Sustainability Data Book 2024

As a comprehensive electronics manufacturer, Panasonic Group develops, produces, sells, and provides services in relevant sectors through close cooperation with Group companies in Japan and abroad. All our business activities depend on the support of many people, including our Group employees*, customers who use our products and services, suppliers involved in procurement and sales, and our business partners. Therefore, our business activities may impact them positively or negatively. Under our management philosophy that “a company is a public entity of society,” we recognize that we cannot allow ourselves to develop the expense of these people, and that we have a responsibility to protect their rights and contribute to the well-being and happiness of these people.

Furthermore, as a global company operating worldwide, we comply with all applicable laws and regulations in our business activities while considering the human rights of all our stakeholders and respecting internationally recognized human rights as expressed in the International Bill of Human Rights and the International Labour Organization’s (ILO) Declaration on Fundamental Principles and Rights at Work. We strive to prevent, mitigate, and correct any possible negative impact our business activities, products, services, or related transactions have on individuals, workers, and society.

We also seek our suppliers and business partners to understand and implement our human rights and labour compliance policies; in cooperation with our partners, we strive to monitor supply chain risks and take appropriate measures to prevent, mitigate, and correct the occurrence of such risks.

Specifically, we conduct following activities, in consultation with external experts as appropriate:

- Formulating and reviewing human rights policies;
- Raising awareness on human rights and conducting human rights due diligence;
- Responding to human rights risks in the supply chain;
- Establishing and operating grievance mechanisms;
- Engaging with stakeholders.

Respect for human rights is one of the utmost material sustainability issues to the Group. For more details, see the “Materiality” section (page 6).

Respect for Human Rights

* Employees: All regular and contract employees having employment relationships with any Panasonic Group company, all temporary staff and seconded employees working under the control and supervision of any Panasonic Group company, and all board directors, executive officers, executive counselors, fellows, corporate auditors, supervisory board, and corporate advisors or equivalent person appointed by any Panasonic Group company.
The definition also includes employees of key companies subject to some Group HR and other systems.

Policy

Panasonic Group established the Panasonic Group Human Rights and Labour Policy (the "Human Rights and Labour Policy"), referencing the below international standards and incorporating external experts' opinions. This policy states that, predicated on compliance with international standards and the laws and regulations of each country that apply to our business activities and transactions, we are committed to respecting internationally recognized human rights; identifying, preventing, and correcting human rights violation risks; promoting remedy and other measures for victims; creating a rewarding working environment; and engaging in dialogue on these issues with various stakeholders. Following this policy, we have established internal rules, developed a promotion system, and advanced specific initiatives for respecting human rights and creating a rewarding work environment.

Moreover, the Panasonic Group Code of Ethics and Compliance ("Code of Ethics and Compliance") defines the commitments that all Group employees must fulfil and positions respect for human rights as our social responsibility. We strive to raise awareness of this responsibility.

■Main international standards used as reference:

- The United Nations' Guiding Principles on Business and Human Rights
- The United Nations' International Bill of Human Rights (Universal Declaration of Human Rights, International Covenant on Civil and Political Rights, and International Covenant on Economic, Social and Cultural Rights)
- ILO Declaration on Fundamental Principles and Rights at Work and ILO Fundamental Conventions (Core Labour Standards)

WEB Panasonic Group Human Rights and Labour Policy
https://holdings.panasonic/global/corporate/sustainability/social/human-rights/policy.html

WEB The Panasonic Group' Code of Ethics & Compliance, 5. Our Social Responsibilities, 1. Respecting human rights
https://holdings.panasonic/global/corporate/about/code-of-conduct/chapter-5.html

We will regularly, and periodically as necessary, review and improve these policies based on the opinions of external experts, relevant stakeholders, and their representatives. Most recently, we revised our Human Rights and Labour Policy in August 2023 under the advisement of internal and external experts. This revision was meant to respond to the ILO's adding occupational health and safety to its Core Labour Standards and to enhance and consolidate efforts to prevent forced labour in the supply chain. After reviewing the changes with the Group and its operating companies' management and labour unions, the Group CEO approved and proclaimed the policy.

The Group's Human Rights and Labour Policy is available in Japanese and English on our website.

We also demand that all our suppliers respect human rights by complying with the Panasonic Supply Chain CSR Promotion Guidelines.

WEB The Panasonic Supply Chain CSR Promotion Guidelines
https://holdings.panasonic/global/corporate/about/procurement/for-suppliers/pdf/guideline_E.pdf

Responsible Executive and Framework

As of August 2024, the executive officer responsible for the Group's initiatives to respect human rights is the Group Chief Human Resources Officer (CHRO). Our operating officers' compensation are linked to relevant KPIs which reflect their responsible filed in sustainability. In fiscal 2024, human rights and labour compliance initiatives is a part of our short- and medium-term performance-linked compensation metrics for Group CHRO. For more details, please see "Employee Well-being" chapter (page 83).

The Sustainability Management Committee, chaired by the Group CEO, discusses crucial human rights issues and reports them to the Group Management Committee and the Board of Directors. The Board of Directors also oversees these issues. In fiscal 2023, the Sustainability Management Committee discussed the responses to legislation in various countries regarding human rights and labour, and in fiscal 2024, the Committee discussed the challenges in the Social-related information disclosure.

We have identified human rights and labour compliance and supply chain management as the Group Major Risks for fiscal 2025, with efforts to mitigate these risks at all business sites. For more on risk management, see the "Risk Management" chapter (page 138).

We have established an organization overseeing the Group's day-to-day efforts to respect human rights through human rights and labour initiatives within the Strategic Human Resources Department (*) under the Panasonic Holdings (PHD) CHRO. This organization works with all Group operating companies to promote initiatives at business sites in cooperation with related functions but primarily with HR. For more details on our supply chain initiatives, see the "Responsible Supply Chain" chapter (page 109).

* Starting April 1, 2024, the Social Sustainability Department will oversee the Group's human rights and labour initiatives after a reorganization.

Respect for Human Rights

Raising Awareness

Panasonic Group has translated its Code of Ethics and Compliance, which includes respect for human rights, into 22 languages and provides regular opportunities for employees to learn about it at the time of entry into a company and promotion. In fiscal 2024, we provided trainings for all employees, with 150,000 taking part. Furthermore, starting in fiscal 2023, the Human Resources Division, a critical relevant division, added human rights and labour compliance as a basic training elective for Group HR employees in Japan. We also provide training for all seconded employees, including management personnel, posted from Japan to overseas subsidiaries to ensure they understand the Group's initiatives and Human Rights and Labour Policy, as well as international standards and the laws of each country regarding corporate responsibility to respect human rights (474 employees participated in fiscal 2024). Additionally, we have conducted training in Asian countries—the area where most of our manufacturing operations are located—for production and human resources managers (29 managers in China and 20 Managers in India attended in fiscal 2024).

WEB **The Panasonic Group's Code of Ethics & Compliance Chapter, 5. Our Social Responsibilities, 1. Respecting human rights**
https://holdings.panasonic/global/corporate/about/code-of-conduct/chapter-5.html

Human Rights Due Diligence

To respect the human rights of the stakeholders in its business activities, products and services, and transactions, the Group conducts human rights due diligence based on the UN Guiding Principles on Business and Human Rights and in reference to the OECD Due Diligence Guidance for Responsible Business Conduct. We incorporate input from external experts and stakeholders in formulating related mechanisms and processes.

The Group recognizes the need to identify human rights issues across its business activities, including its value chain and has begun analysing priority issues. We operate globally in a wide range of business areas, so some of our businesses have extensive supply chains. We recognize the risk that workers in our Group's manufacturing sites and these supply chains may be in vulnerable positions or unsafe working conditions in different countries or regions. Therefore, we begin with initiatives at our Group manufacturing sites and in our supply chains. For more details on our supply chain initiatives, see the "Responsible Supply Chain" chapter (page 109).

We engage in dialogue, discussion, and collaboration with relevant internal and external stakeholders regarding our established frameworks and their continuous improvement. Moreover, we adequately disclose our initiatives on our official website and through relevant reports and other communication channels.

Risk Assessment * Revised in April 2025

Self-Assessment of Group Manufacturing Sites

In fiscal 2022, we conducted a detailed self-assessment of human rights and labour issues at almost all of our overseas manufacturing companies to gain a bird's eye view of the Group's risks. The questions we asked referenced the self-assessment metrics from the Responsible Business Alliance (RBA) that applied to the Group. Through this process, we gained a general understanding of human rights and labour issues. However, we recognized that we need a more detailed understanding of issues to quickly address them.

In light of this recognition, in fiscal 2023, we reviewed and added questions to our list before conducting another detailed self-assessment of some manufacturing sites in Japan selected by our operating companies alongside the overseas manufacturing subsidiaries of our operating companies (a total of 127 companies and sites). This self-assessment aimed to identify potential and actual human rights issues for corrective actions. The operating companies completed corrective actions for the identified issues by March 31, 2024, following the improvement plans formulated by the relevant subsidiaries and sites.

In fiscal 2024, we conducted self-assessments, including progress checks of the corrections for issues identified in fiscal 2023, at all Group manufacturing companies and manufacturing sites in Japan and overseas. We also collected responses from almost all of them (completed at 202 companies and sites so far). PHD will evaluate the collected results, and the relevant subsidiaries and manufacturing sites will complete the correction of identified issues by the end of fiscal 2025, under the supervision of the operating companies.

Training

We conduct regional and thematic training to prevent issues identified through human rights due diligence. In fiscal 2024, we conducted training in Malaysia on preventing forced labour. The 240 participants included managers and staff in human resources, accounting, purchasing, legal, manufacturing, and other areas within our Malaysian and Singaporean subsidiaries. Additionally, we collaborated with the United Nations Development Programme (UNDP) to conduct training in Malaysia for 182 members of internal management teams and others on business and human rights, the basics of human rights due diligence, and the Group's human rights initiatives, including our Human Rights and Labour Policy.

We will continue to identify priority issues and regions and conduct appropriate training.

PDF **Panasonic Holdings Corporation and UNDP Malaysia collaborate to conduct Human Rights and Environmental Due Diligence training**
https://news.panasonic.com/uploads/tmg_block_page_image/file/20124/en231102-2-1.pdf

Respect for Human Rights

See “Raising Awareness” (page 78) for more on our efforts to raise awareness of human rights and “Responsible Supply Chain” (page 109) for details on our supply chain initiatives.

Addressing Key Human Rights Risks

As Panasonic Group operates globally in a wide range of business domains, we face various human rights risks along the value chain, as described below. We consider that it is important to take a risk-based approach to address these risks. We consider forced labour and occupational health and safety as the specific risks to be prioritized at our manufacturing companies and sites based on their business characteristics and past self-assessment results. Our process for prioritizing identified potential and existing human rights risks is as follows:

1) List all aspects of human rights issues that the Group’s activities could adversely impact;
2) Evaluate the severity (scale, scope, and remediability) and likelihood of occurrence (based on publicly available data and past self-assessment results);
3) Collaborate with external and internal stakeholders to review the validity of methods and results.

In fiscal 2025, we will prioritize our efforts to address the above risks while continuing our efforts for those below.

Moreover, we will continuously improve our process for identifying material risks, and review the results of our efforts, especially in the event of imminent human rights risks, to ensure immediate prevention/mitigation/remediation of identified human rights risks as soon as possible.

Prohibiting Child Labour and Protecting Young Workers

Our Human Rights and Labour Policy includes a clear expectation to work toward the effective eradication of child labour.

When we hire employees, in addition to complying with all applicable laws, we also require the staffing firms, suppliers, and other companies we work with to do the same. We also do not permit any midnight work, heavy labour, or dangerous labour for workers under 18 years old.

Providing Employment Opportunities to Young People

We provide young job seekers with career education, human resource development with industry-academia collaboration, and employment opportunities through internships and other programs.

In Japan, the Panasonic Career Design Program provides young people with opportunities to think about their careers. We also offer students about to graduate an internship program to provide them with real work experience.

All our Group companies in China also offer internship programs and accept university students at business sites during their long holidays. These programs provide opportunities for students to learn about real business challenges and to propose ideas for solutions.

WEB **Panasonic Group’s New Recruitment Brand Slogan and New Graduate Recruitment Plan for Fiscal 2025 (Japanese only)**
https://news.panasonic.com/jp/press/jn230313-2

Efforts to Protect the Rights of Children

Through the programs below, we show respect for the human rights of children and supports their healthy growth.

- Programs supporting employees raising children
WEB https://holdings.panasonic/global/corporate/sustainability/diversity-equity-inclusion/support-worklifebalance.html
- Providing products that support people raising children
WEB https://holdings.panasonic/global/corporate/universal-design/products/declining_birth_rate.html
- Safe and secure, child-friendly product design that is conscious of healthy development (Japanese only)
PDF https://www.panasonic.com/jp/corporate/technology-design/ud/pdf/KIDSDESIGN_pamphlet2021.pdf
- Corporate citizenship activities that safeguard and support the rights of children
We are committed to fostering the next generation through corporate citizenship activities, such as funding scholarships and offering career education programs.

Details on corporate citizenship activities
WEB https://holdings.panasonic/global/corporate/sustainability/citizenship.html
- Support for at-home learning: Panasonic Kids’ School (Japanese only)
WEB https://holdings.panasonic/jp/corporate/sustainability/citizenship/pks/ouchide.html

Prohibiting Forced Labour

Our Human Rights and Labour Policy clearly states the prohibition of “any and all forms of forced labour.” We recognize that migrant workers who cross national and regional borders to work at our manufacturing sites and in our supply chain are particularly vulnerable. In light of this recognition, while Panasonic Group respects the human rights of such workers, we promote efforts to establish a recruitment and employment environment free from forced labour and unfair treatment, following all applicable laws, regulations, and internal rules and referencing international standards and guidelines the ILO and other organizations established. In fiscal 2024, we revised our internal rules to better clarify the procedures for initiatives to prevent forced labor throughout our supply and value chains and the roles PHD, Panasonic Operational Excellence (PEX), and operating companies should play in these initiatives. Specifically, in the unlikely event that the Group or a third party, such as a supplier or business partner, is found to be engaged in, or suspected of being engaged in, forced labour or any of the 11 ILO Indicators

Respect for Human Rights

of Forced Labour*, our internal rules stipulate that we must promptly address the negative impact on human rights, including by working to cease, correct, or mitigate such conduct or providing remediation for the victims.

Malaysia is known for having many foreign migrant workers and a high potential for forced labour. Thus, management and human resources managers at our Group companies in Malaysia formulated policies and standard operating procedures for the ethical recruitment and employment of foreign migrant workers based on the expert advice, technical support, and training delivered by the International Organization for Migration (IOM), the UN Migration Agency, and other experts. Through identifying and remediating issues by checking the on-site operational status of policies and manuals, they are working to establish compliance related to human rights and labour. Some specifics from this policy are as follows:

- Prohibiting companies from retaining passports and other personal documents;
- Prohibiting foreign migrant workers from paying recruiting and hiring fees;
- Providing safe and sanitary dormitories.

Furthermore, in fiscal 2024 under PHD's guidance, we began to address human rights risks—particularly forced labour in our value chain such as service providers—and added to our contracts with business partners a requirement for compliance with respect for the human rights of employees in the value chain and the right for us to audit this compliance. In fiscal 2025, we plan to pursue capacity building for our suppliers with the support of IOM.

For countries with potential risks, we interview each manufacturing company about their efforts and use our experience in Malaysia to provide advice on and check the status of corrective measures. In fiscal 2023, we provided advice and guidance in Singapore and Taiwan. In fiscal 2024, we also held study sessions for human resources staff and issued notices to human resources managers in Japan to alert them to the risk of human rights violations in accepting foreign technical intern trainees.

In the supply chain, we make similar requests to our suppliers through the Panasonic Supply Chain CSR Promotion Guidelines. For more details, see the "Responsible Supply Chain" chapter (page 109).

* The 11 ILO Indicators of Forced Labour: abuse of vulnerability, deception, restriction of movement, isolation, physical and sexual violence, intimidation and threats, retention of identity documents, withholding of wages, debt bondage, abusive working and living conditions, and excessive overtime

Prohibition of Discrimination and harassment

Our Human Rights and Labour Policy clearly seeks to eliminate discrimination in the field of employment and occupation. Moreover, in our Code of Ethics and Compliance, the Group prohibits discrimination, behaviour that leads to discrimination, and harassment on the basis of age, gender, race, skin colour, beliefs, religion, social status, citizenship, ethnicity, marital status, sexual orientation, gender identity and expression, pregnancy, medical history, viral infection status, genetic information, disability status, political affiliation or orientation, labour union affiliation, veteran status, or any similar status or characteristic. We also strive to raise awareness of this prohibition. By doing so, we work on creating workplaces where it is possible for diverse talents to form critical partnerships with mutual respect and work together dynamically.

In Japan, we are engaged in the following efforts to prevent sexual discrimination, including sexual harassment, as well as harassment based on power differentials, and to comply with the Act for Eliminating Discrimination against Persons with Disabilities in order to create a more fair, equal, and pleasant workplace:

- Establishing, publishing, and thoroughly implementing sexual harassment policies
- Distributing leaflets and manuals on sexual harassment
- Holding seminars and training on preventing sexual harassment and harassment based on power differentials, and workplace culture revitalization
- Conducting training for managers on not engaging in harassing behaviour and how to respond to reports of harassment
- Running LGBTQ-related training
- Distributing educational materials to help employees understand the difficulties of and necessary considerations for people with disabilities

For more details, please see the "Employee Well-Being" chapter (page 83).

About hiring decisions

We work to continuously improve awareness with reference to the laws and guidelines for each country and make sure we apply them consistently based on the appropriateness, ability, and desire of the candidate. After identifying issues, we strive to correct them in the short term while ensuring that we take measures to prevent recurrence through awareness-raising and education.

Respect for the Freedom of Association and the Right to Collective Bargaining

Our Human Rights and Labour Policy clearly expresses our support for freedom of association and the effective recognition of the rights to collective bargaining. In each country and region, we make efforts to establish healthy relations with employees and to solve their issues by active dialogue with them. In addition, based on our Human Rights and Labour Policy, we pursue ways to respect internationally recognized human rights principles at our locations in countries that do not legally permit the formation of labour unions.

Respect for Human Rights

In Japan

PHD and each Group companies have stipulated in their collective agreements concluded with the labour unions representing PHD and Group company employees that unions retain the right to organize, collectively bargain, and strike, as well as prohibitions on discrimination against union members and interference with union activities. The union membership rate is 75.2% of all managers and employees, rising to 97.7% of all non-managerial employees.

Based on a common understanding that the Company's sound development, improvements in labour and welfare conditions for employees, and social development are inseparable, the Company and the Union have established a system of Union participation in management based on equality and robust trust between labour and management. The Company and the Union discuss essential management matters in Labor-Management Council.

In Europe

Following an EU directive* adopted in 1994, we have set up a voluntary labour agreement to provide a venue for healthy discussion between labour and management. We have also established the Panasonic European Employee Congress (PEEC). Employee representatives and company representatives also meet to exchange opinions and discuss business issues including management strategies and living support for employees.

* EU directive: A directive that obliges all companies employing 1,000 or more employees in two or more European Union countries to establish a pan-European labour-management consultation committee.

In China

Nearly all Group-affiliated companies in China have labour unions (gōnghuì). We hold regular opinion exchanges and discussions surrounding compensation, welfare and benefits, training, and the like through initiatives including periodic labour-management dialogues, proactive joint labour-management recreational events, and advance briefings to unions concerning critical management decisions, with a focus on building good relations between labour and management.

Occupational Health and Safety

"Realizing a safe and healthy work environment" is also a priority, as stipulated in our Human Rights and Labour Policy. The fiscal 2024 revision of our Human Rights and Labour Policy was meant to respond to ILO's adding occupational health and safety to its Core Labour Standards. For more details, please see "Creating a safe, secure, and healthy workplace" in the "Employee Well-being" chapter (page 83).

Managing Working Hours

We have included provisions in our work rules related to proper management of working hours, break times, overtime work, holidays, leave, and other matters based on labour laws in each country and labour-management agreements (e.g. collective bargaining agreements). Our work rules also prohibit forcing workers to work overtime without their agreement as a form of present or suspected forced labour.

In Japan, the standard working day is set at 7.75 hours per day, and any extra hours worked are eligible for extra pay, going beyond the minimum required by law. We have also established internal working hour management standards that are even stricter than legal standards as part of our efforts to eliminate excessive overwork.

We also provide more annual paid leave than legally required, and employees may accumulate up to 50 days of remaining leave. We have made our system more flexible to accommodate individual needs for using annual leave, such as making hourly or half-day leave available.

On top of these system enhancements, we address the physical and mental health management of employees by allocating human resources in ways optimized for preventing uneven overtime workload distributions among specific employees, and by providing additional medical examinations for employees who have worked long hours.

Wage Management

We have established guidelines for compensation system design and aims to achieve competitive compensation levels, wherein we have set guidelines for appropriate wages, allowances, bonuses, and other types of occasional compensation or retirement pay, all based on national laws governing labour, labour-management agreements (such as collective agreements), and the like.

We also establish work rules for each country in compliance with all wage-related laws and regulations concerning minimum wages, statutory benefits, and overtime. We operate according to these regulations, pay employees directly for an agreed-upon period at agreed-upon time and provide employees with notifications of pay through pay statements or electronic data.

Furthermore, in countries and regions where the law permits monetary penalties, we recognize and allows these penalties as an option of disciplinary action. However, this permission is predicated on the penalty procedures and amounts being set within legal limits.

Respect for Human Rights

Grievance Mechanism

To ensure that complaints about human rights violations are addressed promptly and enable redress, Panasonic has established a global hotline (with service in 32 languages) for our employees, business partners, or other external stakeholders to report any compliance violations (including human rights or labour violations) they notice or suspect. This hotline uses an external, independent system that prevents the identity of the internal or external person reporting being revealed, and we have internal rules in place such that we are careful to protect the confidentiality of such reports and to make sure that the person reporting the violation does not suffer any acts of retaliation and detrimental treatment. For more details, see the “Whistleblowing System” in the “Business Ethics” chapter (page 146).

In addition, to encourage wider acceptance of complaints from outside our group, we participate in the industry joint grievance platform established by the Japan Electronics and Information Technology Industries Association (JEITA) CSR Committee. For more details, see the “Systems for Whistleblowing and Seeking Consultation” section under “Responsible Supply Chain” chapter (page 109).

WEB **Japan Center for Engagement and Remedy on Business and Human Rights (JaCER)**
https://jacer-bhr.org/en/index.html

Participation in International and Industrial Partnerships

Panasonic Group has been a participant in the United Nations Global Compact since January 2022. In addition to declaring 10 fundamental principles in four different fields, including human rights, we are working to make our efforts related to human rights and labour reference international standards, and we fulfil our duty to communicate with the public by disclosing the progress and results of those efforts.

We also joined the Responsible Business Alliance (RBA)—an international CSR organization involved in the electronics, ICT, and automotive sectors—in October 2021 and utilize their self-assessment tools and guidance document for solving of issues. Furthermore, we participate in the Responsible Mineral Initiative (RMI) under RBA, for the promotion of responsible mineral procurement.

In 2023, the Group entered into a strategic global partnership with the United Nations International Organization for Migration (IOM)—a specialized UN agency with a proven track record of assisting in the responsible recruitment and employment of foreign workers in Malaysia—to improve the rights of migrant workers in the supply chain.

Panasonic Group is working to build a highly reliable management system through the above efforts.

The Group actively communicates its views on efforts to respect human rights through liaison with domestic and international organizations. In fiscal 2024, PHD personnel participated in the Business and Industry Advisory Council (BIAC; an OECD public advisory body), led the Corporate Sustainability Committee of the Japanese Business Council in Europe (JBCE) as vice-chair, and continued contributions to policies related to human rights and due diligence in Europe. PHD has also provided speakers at the Responsible Business, Human Rights and Decent Work in Asia conference co-hosted by the ILO and the Ministry of Economy, Trade and Industry (METI) and a human rights conference organized by the Human Rights Commission of Malaysia (SUHAKAM).

WEB **United Nations Global Compact**
https://www.unglobalcompact.org/what-is-gc/participants/149557-Panasonic-Corporation

WEB **Responsible Business Alliance (RBA)**
https://www.responsiblebusiness.org/about/members/

WEB **Business at OECD (BIAC)**
https://www.businessatoecd.org/about-us

WEB **Japan Business Council in Europe (JBCE)**
https://www.jbce.org/en/

WEB **The Human Rights Commission of Malaysia (SUHAKAM)**
https://suhakam.org.my/

Employee Well-being

Panasonic Group is committed to realizing happiness and job satisfaction by creating a work environment where every Employee*1 can work in a safe, secure, and healthy state with their individuality respected and eliminating the risk of infringement on their rights and opportunities through unfair treatment, discrimination, or prejudice. Nurturing and motivating the precious “people” that society entrusts to us is the foundation of our management. To this end, we envision being “the Best Place to Work where diverse talents work at their best,” regardless of gender, age, nationality, or any other differences.

*1 Within this section, the following list of stakeholders are collectively referred to as “Employees”: (1) all regular and contracted employees having employment relationships with any Panasonic Group company: (2) all temporary staff and seconded employees working under the control and supervision of any Panasonic Group company; and (3) all board directors, executive officers, executive counselors, fellows, corporate auditors, supervisory board, and corporate advisors or equivalent person appointed by any Panasonic Group company. It also includes employees of key companies subject to some Group HR and other systems.

Policy

Since its founding, the Panasonic Group has valued the concept of “making people before products.” Toward our Group’s aspiration, “realizing an ideal society offering material and spiritual affluence,” we establish the well-being of each and every employee so that they can practice our Basic Business Philosophy. That is the human capital management of the Panasonic Group.

Practicing of the Basic Business Philosophy is conducted by “autonomous responsible management,” which consists of “employee entrepreneurship,” which has individuals take on challenges based on their personal sense of responsibility, and “participative management through collective wisdom,” which asks people to share their wisdom by telling others what needs to be said. We call this our Groupwide management strategy, through which each operating company hones their competitiveness.

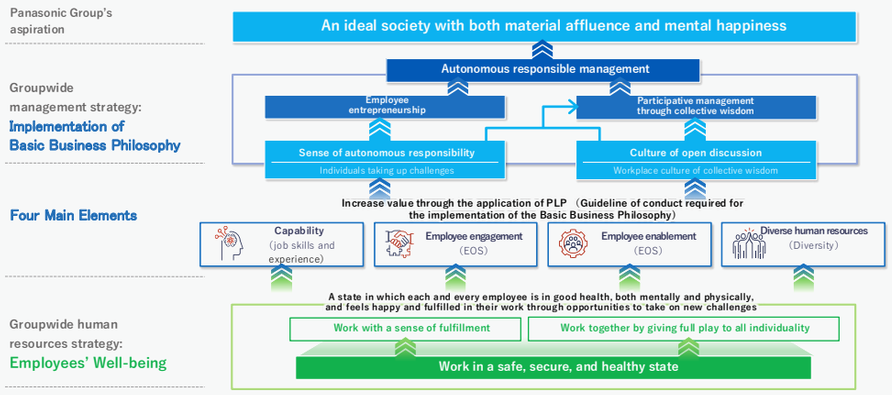
Our Groupwide “Mindset Required for the Implementation of Management that Enables Each Employee to Reach Their Full Potential*2” defines the mindsets for “all personnel responsible for developing employees”, as well as for “all management staff responsible for

Employee Well-being

developing the organization." The details of practicing of compliance, which is the basis of this Mindset, are based on the Panasonic Group Code of Ethics & Compliance. And to value every individual's diversity and encourage individuality, the details are specified in our "Panasonic Group DEI (Diversity, Equity & Inclusion) Policy.*3" Moreover, we have "Panasonic Leadership Principles (PLP)*4" that work as a set of guidelines of conduct for each and every employee to follow in their efforts to put the Basic Business Philosophy into practice toward the establishment of an ideal society. We will further increase value for society by implementing specific actions.

The four key elements that enhance this added value are "capability (ability development at each level)," "employee engagement (a willingness to take on challenges)," "employee enablement (an environment where employees can best leverage their abilities and work comfortably)," and "diverse human resources." The source of these elements is "employee well-being," a state in which every individual is healthy in mind and body and feels happy and fulfilled through challenging opportunities. Realizing employee well-being is an aim of our Groupwide HR strategy, through which we create added value and work under the three pillars of ensuring that our members can work "in a safe, secure and healthy state," "with a sense of fulfillment," and "together by giving full play to all individuality."

*2 Refer to "Work with a sense of fulfillment ~Encouraging employees' self-motivated endeavors and supporting their self-determined career development~." (Page 92)
*3 Refer to "Work together by giving full play to all individuality ~Promoting DEI (Diversity, Equity & Inclusion)~." (Page 100)

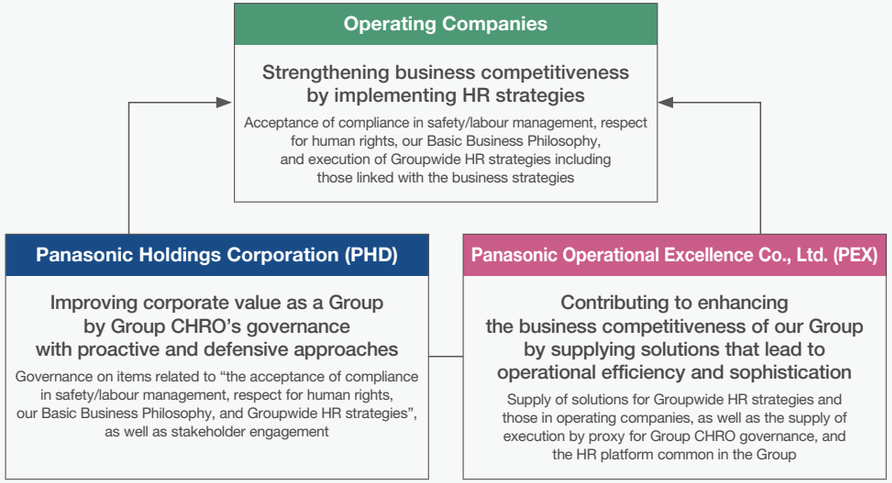


*4 Refer to "Implementation of Basic Business Philosophy." (Page 85)

Responsible Executive and Framework

The executive responsible for creating and promoting the HR strategy of Panasonic Holdings Corporation ("PHD") and the entire Group is the Executive Officer who is the Group Chief Human Resources Officer ("Group CHRO"). The PHD Strategic Human Resources Department is responsible for planning and formulating strategies across the Group. At the same time, the HR departments at the operating companies and their affiliated divisions have the same responsibilities at the organizational level and manage day-to-day operations.

Under the holding company structure, effective April 2022, each operating company must build an optimal business structure for the industry, customers, and competitors it faces in strict compliance with the concept of autonomous responsible management. Each operating company is responsible for the planning and execution of human resource strategies, including acquiring human resources, compensation and evaluation systems, organizational development, and promoting human resource development. Meanwhile, PHD is responsible for supporting the operating companies from the perspective of corporate governance and stakeholder engagement. Panasonic Operational Excellence Co., Ltd. ("PEX") also assists the operating companies by providing solutions to enhance competitiveness.



Sustainability Data Book 2024

Employee Well-being

As the governance, the Group CHRO monitors “compliance with safety/labor and respect for human rights”, “penetration of our Basic Business Philosophy”, and “Groupwide HR strategies.” To this end, the Group CHRO holds 1 on 1 meetings with the CHROs in each operating company and reviews the content of the HR strategies reported by these operating company CHROs to their respective boards of directors. Moreover, the Group CHRO reports on the progress and new initiatives in Groupwide HR strategies at the PHD Board of Directors Meeting where active discussions are ongoing.

Key Groupwide Indicators

The Group’s key indicators linked to “employee well-being” are as follows: employee engagement, employee enablement, the ratio of female managers (in Japan[*5]), and the number of occupational accidents. Furthermore, the rate of diversity (female employees, employees who are non-Japanese citizens, and mid-career hires) in the management team (Executive Officers and the members of the management meeting) of each operating company will be added to the key indicators.

Employee Opinion Survey (EOS)

Favorable Response Rates for “Employee Engagement” and “Employee Enablement” (%)

The employee engagement and employee enablement indicators represent the favorable response rate (%) as measured in the Employee Opinion Survey (“EOS”, an annual survey of all global employees with approximately 157,000 responding in fiscal 2024.). We have set the goal for fiscal 2030 as the highest global standard (80% or more). The survey results have been trending upward year by year. In fiscal 2024, the indicator showing a favorable response rate was 68% for employee engagement and 66% for employee enablement.

The ratio of female managers (in Japan[*5]) is 7.0%. We will continue our efforts toward ensuring diversity in the management team and at manager level.

The occupational accident figures included no fatal accidents, two serious accidents, and no severe accidents. We will continue to promote safe, secure, and healthy workplaces to eliminate fatal, serious, and severe accidents.

The questions used to measure employee engagement and employee enablement are as follows:

- Employee Engagement: willingness to work beyond expectations, motivation from the company or the supervisor, pride to work in this company, intention to recommend this company as a good place to work, intention to work in this company over a long period.
- Employee Enablement: challenging and interesting work, making good use of skills and abilities, workplace enhancing productivity, barriers at work

Regarding the questions in “Employee Engagement”, there has been a large increase in the favorable response rates for “willingness to work beyond expectations” and “intention to recommend this company as a good place to work” since fiscal 2020. It can be analyzed that this is the result of our Groupwide initiatives starting in fiscal 2020, “A Better Dialogue” and “1 on 1 Meetings” (mentioned later) having contributed to enhancing the motivation of each employee. Of the questions in “Employee Enablement”, major improvement can be seen in “workplace enhancing productivity” and “barriers at work” since fiscal 2021. The cause of the improvement is possibly due to the promotion of remote work during the COVID-19 pandemic, including hybrid work styles of face-to-face and remote work in view of better productivity.

*5 PHD, PEX, and the seven operating companies

Implementation of Basic Business Philosophy

To help every member put the Basic Business Philosophy into practice, the Panasonic Group has introduced “Panasonic Leadership Principles (PLP).” The PLP are created as a common language for easier understanding by our Group employees so that they can take concrete actions according to the Philosophy even if they have various backgrounds. The PLP will be linked with each measure of human resource management such as recruitment, development, evaluation/treatment, and transfer/assignment to enhance the value of the experience for each and every employee so that they can evolve and grow further.

Employee Well-being

Sustainability Data Book 2024

Panasonic Leadership Principles

As individuals brought together by the Panasonic Group, regardless of whether or not we are managers responsible for a team, each of us shall provide leadership and contribute to efforts to use the collective wisdom of all individuals toward the realization of an ideal society with richness both in matter and mind. To this end, we will continuously review and improve the Panasonic Leadership Principles that serve as our guidance for acting accordingly every day throughout the Panasonic Group.

PLP	Expected Behavior
Customer Focus	We shall always think from a customer's perspective. In order to keep customers happy, we will deeply understand the potential problems that they have yet to identify, look ahead to their ideal future, and continue to take actions that far exceed their expectations.
Drives Vision	Without being bound by the status quo, we shall boldly envision our ideal future beyond the imagination of others around us. Even if it seems difficult, we will never give up and work toward the achievement of an ideal future while exploring all the possibilities.
Builds Trust	With the awareness that we are members of society, we will gain trust by acting in good faith without arrogance. We shall not neglect even the smallest details and always do what is right for society in mind. Moreover, we will humbly learn from all affiliates, cooperate with them, and enhance each other through respectful dialogue, aiming to achieve social progress.
Strategic Thinking and Behavior	We shall detect signs of change without being preoccupied with the matters at hand, thereby seeing the big picture of society and thinking flexibly. We will not make rash decisions or take a short sighted approach such as thinking about actions to be taken based on the status quo, and will always promote and practice mid to long term thinking. We will open up new business opportunities by always taking interest in social and technological progress and by evaluating and honing our skills, which will serve as our strengths in an endeavor to keep ahead of changes.
Best Work Processes	Without being satisfied with the status quo, we shall promote the visible measurement of productivity in all situations, thoroughly pursue such an effort, and achieve results, which will always make us proud that our work offers the world's best quality. To this end, we will consider the status quo as a decline and continue to boldly improve any unsatisfactory work processes without hesitation.
Ownership	No matter how menial our tasks may seem, we will be aware that we are the managers of our own jobs and act accordingly. We will find meaning in each task and never say, "That's not my job." We will continue to act with a sense of autonomy for our happiness and that of the organization as well as the well being of all individuals concerned.
Evolution	We will not depend on our current capabilities and experience , but will continue to expand our horizons, learn, and change. Instead of being bound by convention and making excuses about why we cannot pursue these objectives, we will explore ways to achieve them. We will become challengers rather than bystanders or critics and support the challenges of others around us.
Harmonizes Wisdom	In order to create more wisdom, we shall listen to other parties' opinions with an open mind and say what needs to be said with respect for them. We will promote rapid and optimal decision making without fear of disagreement with others.
Welcomes Uniqueness and Differences	We shall consider differences as strengths, and welcome diversity and use it to our advantage to create new value. We will become aware of our preconceptions and biased views and promote fair decision making independent of such ways of thinking.
People First	We shall explore and achieve an ideal state through daily practice and humble reflection. We will not force our opinions and methods on team members, but believe in their potential and fully trust them to do a job. When performing tasks, we will make it a top priority to ensure the health and safety of ourselves and team members. We will look after and help each other to establish a pleasant work environment for all team members.
Drives Results	We shall be keenly aware of our roles and missions, and always confirm the goal to be achieved and the degree to which we have realized it. We will never overlook our behavior when it runs counter to our achievement. No matter how difficult the challenge we face, we will fearlessly take prompt action to ensure the achievement of results.

Work in a safe, secure, and healthy state
～Creating a Safe, Secure, and Healthy Workplace～

The Panasonic Group's policy is to ensure the health and safety of the Group employees in accordance with the Panasonic Group Code of Ethics & Compliance ("Code of Ethics & Compliance") that was created and maintained by the Board of Directors of Panasonic Holdings Corporation, and the Panasonic Occupational Health and Safety Policy ("Health and Safety Policy") communicated by the Group CEO. The Health and Safety Policy is applied across the entire Group to ensure the health and safety of permanent employees, as well as dispatched employees and contractor's employees by rolling them out at all group companies. We also strive to ensure the safety of all persons not affiliated with Panasonic when they visit our workplaces.

WEB **Panasonic Group Code of Ethics & Compliance**
Chapter 2. Our Workplace, 1. Respecting each other, 2. Safeguarding health and safety
https://holdings.panasonic/global/corporate/about/code-of-conduct/chapter-2.html

WEB **Panasonic Group Human Rights and Labour Policy**
https://holdings.panasonic/global/corporate/sustainability/social/human-rights/policy.html

WEB **Panasonic Group Occupational Health and Safety Policy**
https://holdings.panasonic/global/corporate/sustainability/social/health-and-safety/policy.html

To put these policies into practice, we have established the Health and Safety Management Rules for the Group, thereby building a foundation for health and safety management activities with the aim of both preventing workplace accidents and maintaining or improving the health of employees so that they can contribute to business development. These rules apply to all work performed at business sites within the Panasonic Group. Additionally, to ensure thorough compliance, we are also working to prevent harassment in accordance with the laws and regulations of each region.

We also make sure that everyone from the Groupwide perspective, domestic or abroad, is well informed about our initiatives by distributing messages about the year's events from the Group Health and Safety Management division during National Safety Week in July and National Occupational Health Week in October each year.

Creating a Safe and Secure Workplace

Risk Assessment Initiatives (Japan)

The Panasonic Group conducts regular risk assessments at least once annually for mechanical equipment, chemical substances, and the like according to the Occupational Health and Safety Act in order to identify hidden risks such as the potential for workplace accidents, injuries or illness and reliably reduce the risks in order of greatest priority. Moreover, cases of occupational accidents that have occurred within our Group are shared on the intranet immediately after happening for the horizontal deployment of countermeasures. Then, the related activities are implemented at each

Employee Well-being

workplace to prevent the recurrence of such cases. Each of our business sites in Japan has a Health and Safety Committee composed of both employees and management (representatives of the union committee and the company committee) which is charged with investigating measures to prevent danger to workers, prevent the causes and recurrence of workplace accidents, prevent damage to workers' health, promote the maintenance or improvement of workers' health, and other similar topics. To prevent workplace accidents among contractors' employees operating on our premises, we also regularly hold Health and Safety Meetings with those contractors operating on our premises and manage health and safety overall, including facilitating communication between operations.

Promoting External Certification

◇ISO45001

Workplaces within the Panasonic Group are working to obtain ISO 45001 certification, a process which involves clarifying the roles of all employees using the standard, setting goals and driving health and safety activities forward while also conducting regular reviews by the head of the business site, revising those activities based on those reviews. As of the end of 2023, 183 out of the Group's 225 manufacturing sites globally have obtained ISO 45001 certification, and in fiscal 2025, nine manufacturing sites are planned to either obtain ISO 45001 certification or transition from OHSAS 18001 or other standards to ISO 45001.

◇Outstanding Organization for Health and Productivity (Japan)

In Japan, the Group has been working on efforts toward being recognized as Certified Health and Productivity Management Organization by the Ministry of Economy, Trade and Industry. As of March 2024, all the operating companies are recognized as being an Outstanding Organization. Furthermore, Panasonic Connect Co., Ltd. and Panasonic Corporation are recognized as White 500 (Top 500 companies excellent in their initiatives within the large enterprise category). The Panasonic Group positions health and productivity management as an important measure for "Management that Enables Each Employee to Reach Their Full Potential" and works to promote the "mental and physical health" of our employees and their families while fostering a workplace culture where all employees can thrive. We also support the well-being of our employees and leverage it as a driving force in our corporate activities toward realizing an ideal society offering material and spiritual affluence.

2024 健康経営優良法人 Health and productivity

2024 健康経営優良法人 Health and productivity ホワイト500

WEB List of Panasonic Group's work sites in 2024 (in Japanese only)
https://phio.panasonic.co.jp/health/excellentList/index.html

◇WELL Certification*1

The Panasonic Group has received the following international certifications for our creation of well-being-oriented workplaces where all employees can do their best work.

- Jan. 2021: Panasonic Life Solutions Company (Osaka, Japan) WELLv2 pilot, Gold
- Jan. 2022: Panasonic Yizhuang Manufacturing (Beijing, China) WELL Health Safety Rating
- Jan. 2022: Matsushita Memorial Museum (Beijing, China) WELL Health Safety Rating
- Jan. 2022: Panasonic System Communication Company (Beijing, China) WELL Health Safety Rating
- Mar. 2022: Panasonic Tokyo Shiodome Building (Tokyo, Japan) WELL Health Safety Rating
- July 2022: Panasonic Hiroshima Nakamachi Building (Hiroshima, Japan) WELL Health Safety Rating
- Jan. 2023: Panasonic Wellness Smart Town (WST) Showroom (Jiangsu, China) WELL Performance Rating
- May 2023: Panasonic Electric Equipment (Jiangsu, China) WELLv2 Platinum
- Aug. 2023: Panasonic Wellness Smart Town (WST) Showroom (Beijing, China) WELL Performance Rating

*1 Established in 2014 by the U.S.-based International WELL Building Institute (IWBI), a public benefit corporation, this is an office space assessment system that aims to create better living environments by incorporating the perspective of "human health" into the design, structure, and use of spaces. There are four certification levels in WELLv2: platinum, gold, silver, and bronze. The WELL Health Safety Rating assesses the health and safety of a space, while the WELL Performance Rating assesses indoor environmental quality, including light, sound, and air. There are no certification levels except for WELLv2.

Safety

◇Providing the Guidelines for Formulating Equipment Safety Standards

To prevent the risk of occupational accidents involving equipment, we identify risks and implement protective measures from the design stage of the equipment based on the Equipment Safety Standards, when developing, introducing, or purchasing new production equipment and technology/quality evaluation equipment or devices at our business sites. After multiple conformity assessments using our unique evaluation tools, the Health and Safety Committee reviews the conformity assessment at the final use stage, ensuring that we use equipment that meets safety standards. The "Guidelines for Formulating Equipment Safety Standards" provide global guidelines for the "Equipment Safety Standards" of each business site, and systematize international machinery safety standards, laws, and regulations, safety know-how accumulated within the company, and measures to prevent the recurrence of accidents. The Equipment Safety Standards Revision Committee, composed of experts from the production technology department and the human resources and safety department of each Group company, meets annually to discuss revisions, updates, and publicize the standards (translated into multiple languages). In addition, we ensure work safety by conducting compatibility assessment of hazards related to the potential for harm resulting from incompatibility with human behavioral characteristics and capabilities, and by taking ergonomic considerations and measures into account in the usage environment.

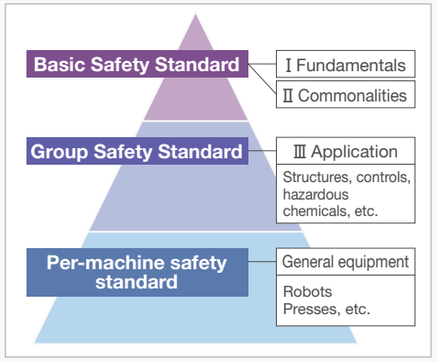
Employee Well-being

Sustainability Data Book 2024

System of Guidelines for Formulating Equipment Safety Standards

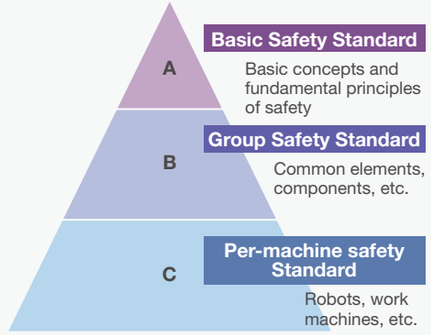
Diagram of the Equipment Safety Standards at Panasonic

- Uses the same system of standards at International Safety Standards 10S/IEC (Guide 51)
- Annually reviewed, updated, and publicized internally



Reference:

International Safety Standards ISO/IEC (Guide 51) JISZ8501



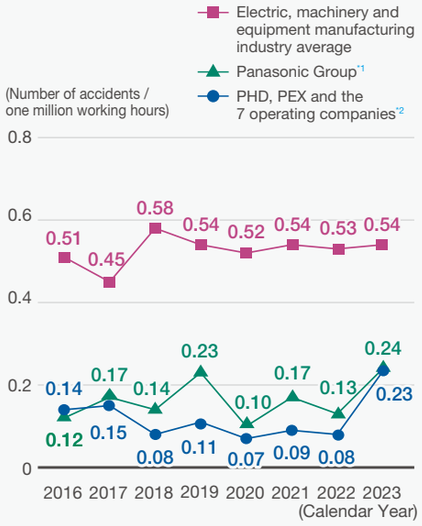
◇Response to Workplace Accidents

When a workplace accident occurs, the Panasonic Group follows our “Steps to Take in an Emergency Situation Like an Industrial Accident” and the Operating Site Supervisory Health and Safety Administrator where the workplace accident has occurred makes a prompt and accurate report to the Operating Company Supervisory Health and Safety Administrator. We have established mechanisms to manage workplace accidents at each site globally, report serious workplace accidents that happen within 24 hours and monitor them for 365 days, and share case studies and the like on workplace accidents with the entire Group. At work sites where a workplace accident has occurred, in addition to investigating the cause and implementing measures to prevent it from happening again, the details of the accident are shared within the entire Group to enable other operating sites to undertake preventive measures with reference to past accidents.

◇Serious/Severe Accidents in Recent Years and Prevention Measures

Regardless of our continuous initiatives to eliminate serious accidents (those causing long-lasting physical disability) and severe accidents (those involving at least three employees), in fiscal 2024 there were two serious accidents, one of which involved a contractor’s employee (No severe accidents occurred). Panasonic Group recognizes these accidents as a critical issue to be addressed. The primary cause of serious accidents is work being performed without stopping the equipment when performing non-standard operations such as adjustments or maintenance on production equipment, leading to fingers and hands being caught in moving parts of equipment. Such accidents account for approximately 80% of the total number of accidents, and we have found that production equipment installed before the introduction of the Equipment Safety Standards especially require safety measures. To prevent the same accidents from happening again, we make sure that employees are well-informed of the message from the Group’s CEO and our guidelines for safe work during non-standard operation and disseminate information about the application of the Group’s Equipment Safety Standards, and we are implementing our Equipment Safety Education System in order to train up individuals who can develop, practice and establish equipment risk assessments and safety technologies on the production floor. Specifically, our certified instructors use three training programs: (a) training for employees who develop and install equipment, (b) training for employees who use equipment, and (c) in-house Equipment Safety Standards workshops. To promote equipment safety in China and Asia, activities to train employees in charge in each region have already started. We are considering expanding our activities to locations in each global region.

Lost-Time Injury Frequency Rate (Japan)



Intensity Rate (Japan)

(Calendar Year)

	2016	2017	2018	2019	2020	2021	2022	2023
Electric, machinery and equipment manufacturing industry average	0.05	0.02	0.02	0.01	0.05	0.01	0.02	0.01
Panasonic Group*3	0.054	0.004	0.005	0.004	0.035	0.005	0.003	0.005
PHD, PEX and the 7 operating companies*4	0.107	0.004	0.005	0.005	0.001	0.004	0.002	0.003

*1 *2 *3 *4 Dispatched employees included since CY 2020

Employee Well-being

Sustainability Data Book 2024

Number of Fatal Accidents (Global)

(Fiscal Year)

	2018	2019	2020	2021	2022	2023	2024
Group Employee	0	1	0	1	0	0	0
Dispatched employee	0	0	1	0	0	0	0
Contractor's employee	0	0	0	0	0	0	0

Number of Serious/Severe Accidents (Global)

(Fiscal Year)

		2018	2019	2020	2021	2022	2023	2024
Serious accidents	Japan	0	1	3	3	4	3	0
	Outside of Japan	4	2	9	6	1	8	2
Severe accidents	Japan	0	0	0	1	0	0	0
	Outside of Japan	0	0	0	0	0	1	0

◇Equipment Safety Education System

	Learning about international standards		Learning about Group standards
Course title	Seminar on Equipment Safety for Engineers (Makers of equipment)	Seminar on Equipment Safety for Managers (Users of equipment)	Workshop on Equipment Safety Standards
Target participants	**Production engineers who primarily design and improve equipment (including those responsible)** • Production process engineering • Equipment maintenance • Health and safety, etc.	**Those in production engineering or safety who primarily manage the use of equipment** • Production process engineering • Equipment maintenance • Health and safety • Production line leaders, etc.	**Anyone learning about the Group's policies for drafting, updating, and sharing Equipment Safety Standards** • Production process engineering • Equipment maintenance • Health and safety • Production line leaders, etc.
Details	• e-Learning: 24 hours • In-person: 2 days	• e-Learning: 6 hours • In-person: 1 day	• e-Learning: 6 hours • In-person: 1 day
	• Technical theory, relevant laws • Overview of functional safety and safety systems design • Risk assessment and reduction in machine design and production stages, notification of danger • Practice: Equipment design risk assessment	• Technical theory, relevant laws • Overview of functional safety and safety systems design • Practice: Equipment design risk assessment	• Explaining the standards • Practice: Conduct a safety review of actual equipment

Occupational Health

Regarding special tasks such as handling chemical substances, Panasonic conducts hazard reviews using Safety Data Sheets (SDS), provides appropriate protective equipment, and attempts to reduce the necessity of such work. In response to the mandatory risk assessment of chemical substances (from June 2016), we have reviewed the applicable substances and are conducting risk assessments. In addition to the substances stipulated by laws and regulations, we also perform environmental measurements and health checkups for substances we have identified by ourselves and continue to monitor them.

The Ministry of Health, Labour and Welfare has also revised parts of its regulations aimed at preventing on-the-job accidents involving chemical substances, including regulations on occupational safety and health. These revisions are premised on the national government expanding infrastructure for communicating information about dangers and hazards posed by harmful chemicals as well as standards for upper limits on exposure it has set, including harmful chemical substances that have not as yet become subject to regulations, and requires businesses to take appropriate measures to prevent exposure (self-driven management). The Panasonic Group established Chemical Substance Management Standards in April 2022, taking into account trends in amendments to relevant laws and regulations. We created the Chemical Substance Management Working Group to monitor progress, share information, and define common measures, rules, and educational initiatives, thereby working to establish a company-wide initiative to ensure "autonomous management" of chemical substances.

◇Chemical Substance Management Standards

The Group established the Standards in April 2022 with regard to measures that are required based on changes to the Occupational Health and Safety Act, Fire Service Law, Poisonous and Deleterious Substances Control Law and other relevant laws. The goal of these standards is to enable us to appropriately and effectively work toward eliminating and reducing sources of danger or hazards to prevent work-related illness caused by chemical substances or the like in the workplace, as well as implement health management.

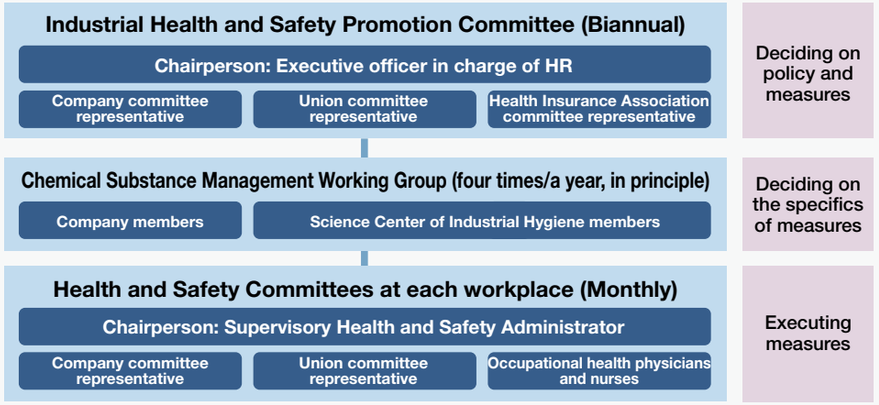
◇Promoting Organization

The Group CHRO is the executive responsible for promotion. Decisions regarding Group policies and measures are made by the Industrial Health and Safety Promotion Committee, with the Chemical Substance Management Working Group, which is set under the Committee with participating members from all the operating companies, determining the specifics of measures, which are implemented by a Health and Safety Committee at each workplace.

Employee Well-being

Sustainability Data Book 2024

Organizational Structure for the Promotion and Roles



Training (Japan)

Panasonic Group educates employees, including dispatched employees, managers, and occupational health and safety personnel based on the Occupational Health and Safety Education Guideline and the Mental Health Education Guideline that it has established. The Group Health and Safety Management Division sponsors and conducts management-level and Groupwide training. In addition, each operating company and business site utilizes facilities such as Anzen Taikan Dojo (safety training hall), to provide safety education to employees, dispatched employees, and contractors at the start of their work. We also provide and promote training for managers, specialized training tailored to each manufacturing process, and training to develop qualified personnel. We also provide necessary information and educational content for employees as well as contractors to raise their awareness.

(Examples of training held by our Group for providing needs for expertise or for those having certificates for specific work (also provided to contractors):
https://phio.panasonic.co.jp/kagaku/roudou-eisei-kyouiku/c02.htm)

Every September, we hold the Employee Personal Health, Occupational Health and Safety Symposium, attended by the Group's safety and health personnel. During this symposium, the Group CEO's insights on health and safety are shared with all business managers and relevant individuals. The symposium also aims to set a high standard for health and safety activities by sharing best practices for initiatives on occupational health and safety and employee personal health at each business site and obtaining knowledge from external experts.

Groupwide Core Training and Numbers of Trainees (Fiscal 2024)

Organizer	Target employees	Course name	Number of trainees
Health & Safety Management Office	Persons in charge of health and safety (within 3 years)	Occupational Health and Safety Manager Training (Beginner)	24
	Manager or above (at the time of new appointment, etc.)	Health and Safety Seminar for HR staff	10
HR Function Planning Office	2nd year of regular hiring/Job change/Career recruitment HR employee	HR Basic Course	46
Team &Talent Development Center	Spring new graduates	Induction training for spring new graduates	1,414
	Employees assigned to overseas manufacturing companies	Pre-departure training at an overseas manufacturing company	129
Manufacturing Training Institute	Factory managers, production managers, etc.	Health and safety seminar for top management and plant superintendent	38
	Hygiene manager/Operation chief with more than 1 year of practical experience	ISO45001 internal auditor training	14
	Manufacturing, production process, or quality employees	Equipment safety standard creation and operation workshop (C training)	28
Health & Safety Management Office in Panasonic Electric Works Business Consulting & Training Co., Ltd.	Employees in charge of production engineering, equipment safety or health & safety	Training for equipment safety engineers	34
	Employees (leaders) in charge of production engineering, equipment safety, health & safety or production lines	Training for equipment safety managers	424

Promoting Health Management

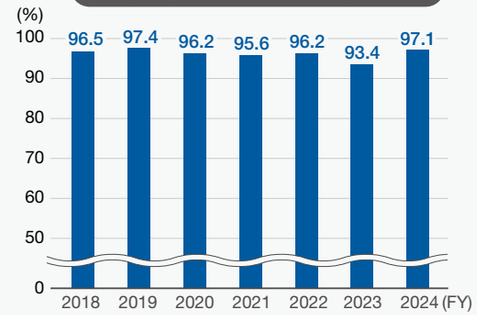
Employee Health (Japan)

We have sent out a message on health to the entire Group, clarifying our policy of strengthening health investments to realize employee well-being. In Japan, each operating company promotes various initiatives through Healthy Panasonic Actions, a unified effort from the Company, labor union, and health insurance organization. We also review the results of periodic health checkups, EOSs, and stress checks to confirm that our efforts have succeeded and further enhance initiatives.

◇Health Maintenance Betterment Standards

In the interest of appropriately and effectively undertaking measures to maintain both employees' physical and mental health, in these Standards we have laid out procedures for health checks and follow-up measures, procedures for guidance on interviews with individuals working long hours, procedures for tests and the like to measure the level of psychological burdens, procedures for stopping those who are ill from working, and stipulates that Health Maintenance Betterment Plans and mental

Employee health checkup rates



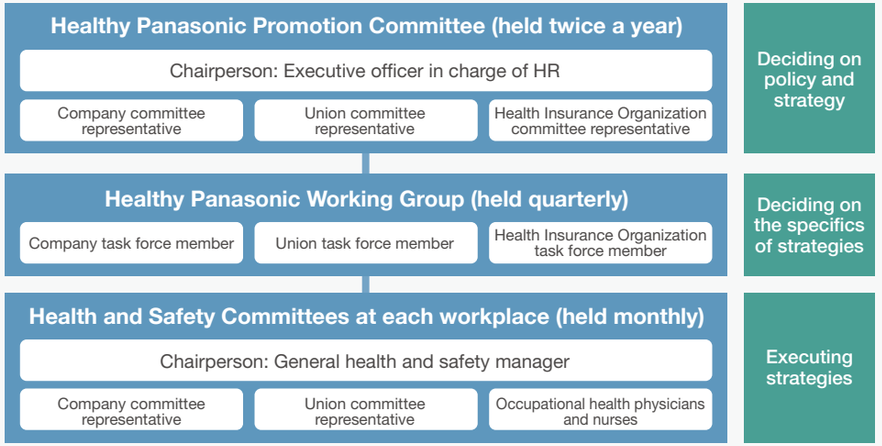
From 93,000 eligible employees at 267 locations

Employee Well-being

health promotion plans must be created. We are coordinating our Group's health maintenance betterment measures with the Panasonic Health Insurance Organization's healthcare business to create a synergy between all their initiatives. In addition, to promote specific activities, members are selected from the company, labor union, and health insurance organization and these initiatives are promoted as Healthy Panasonic Actions.

◇Promotional Framework (Japan)

The executive in charge of promoting Healthy Panasonic Actions is Group CHRO. We established the Healthy Panasonic Promotion Committee—comprising representatives from the Company, labor union, and health insurance organization —as the decision-making body for policies and measures of Healthy Panasonic Actions. It decides on measures proposed by its subsidiary organization, the Healthy Panasonic Working Group, and implements them through the Health and Safety Committee of each workplace.



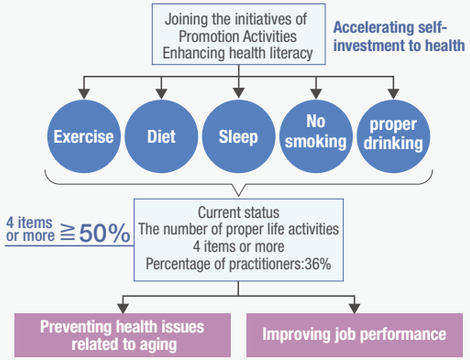
◇Health Issues and Initiatives (Japan)

As the number of senior employees at Panasonic Group grows, the number of individuals with obesity or other health problems is increasing. With more employees working from home in the wake of the COVID-19 pandemic, issues like a lack of exercise and communication are becoming more prevalent. We need to raise employees' health literacy and get more employees to adopt healthy practices.

There is a tendency for individuals with good lifestyle habits in all five areas (sleep, diet, exercise, moderation with alcohol, and avoiding tobacco) to be less likely to have health risks and have better job performance (based on self-evaluation). One of the goals of new Healthy Panasonic

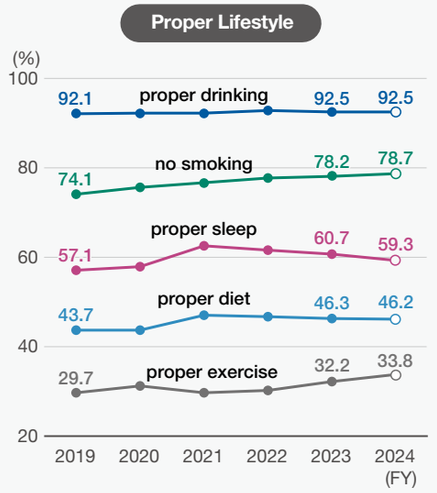
Actions starting in fiscal 2025 is to increase the proportion of individuals who have good habits in four or more of these categories to at least 50%. That proportion was 36.6% in fiscal 2024, which is a 5% increase in the past four years.

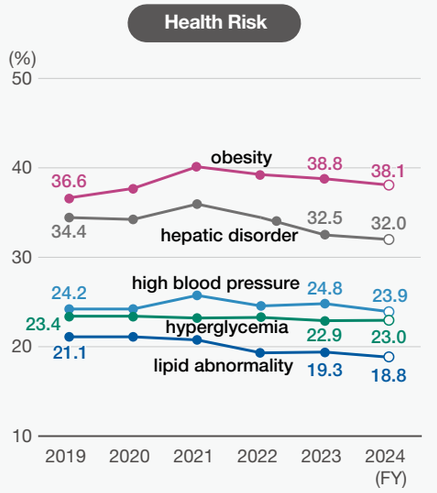
One example of an initiative meant to raise our employees' awareness about health is to have a Groupwide Health Promotion Day (October 2).



Every year, we set priority themes ("Physical activities everyday! (Practicing the activities as one set of rest, eat, and move)" for fiscal 2024) and make efforts at all workplaces to raise awareness of healthy behavior and practices.

Panasonic offers ICT-based health promotion solutions through web services and lifestyle habit apps. These solutions provide health information, health checkup records, health challenges, health care point programs (points accumulated according to respective activities which can be exchanged for products related to health promotion), and tools for measuring health age after periodic health checkups.





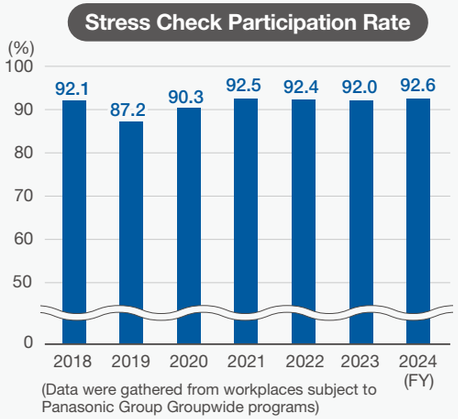
◇Environmental Improvements (in Japan)

We are promoting workplace improvements so employees can work healthily at all workplaces through health promotion, disease prevention, mental health care, and other employee health initiatives. Our measures to curb smoking include promoting indoor smoking bans (with bans implemented across 89.1% of the Group). Some of the operating companies started an initiative for no smoking during working hours.

In addition, we conduct an annual food conditions survey in 108 Group cafeterias nationwide and promote healthy eating environments in cooperation with approximately 40 contracted food service companies. Currently, 30 cafeterias (an increase of 6 from the previous year) have obtained outside certifications under the Healthy Eating and Dining certification system. Panasonic also implements safety considerations as required by actively offering health guidance and occupational physician counseling, mainly through the 160 health management offices across Japan. These efforts are for individuals subject to specific health guidance and at high risk of facing health problems. For telecommuters, we have developed a “Guide to Working from Home in a Healthy and Safe Manner,” which provides essential points to consider when working at home and simple exercises that can be done at home, thereby helping employees be proactive in maintaining health.

◇Stress Check (Japan)

All Panasonic group companies conduct stress checks in June of each year, in order to promote group analyses and workplace improvements on a company organizational unit level in addition to the conventional response for those under high stress. In conjunction with these stress checks, we also recommend that employees practice self-care in terms of sleep, diet, and exercise as a crucial part of maintaining their health. In addition to providing employees with an opportunity to identify their own stress levels, the stress check test results are given to responsible persons in each workplace, and these workplaces as a whole, to work as feedback in the form of a diagnostic analysis. This analysis is used to develop measures intended to prevent the occurrence of mental illness and to revitalize the workplace. Employees who work long hours or whose regular health screening results suggest a need for monitoring their safety receive a consultation from an occupational physician based on Panasonic Group’s own criteria. Measures are also taken to prevent damage to the employee’s health, including by addressing working conditions and environment. Furthermore, from the perspective of employee health and statutory compliance, we are striving to address excessive working hours and fundamentally review work processes in a way that goes beyond short-term efforts. This is part of our approach to continuously improve how employees engage in work and downtime.



(Data were gathered from workplaces subject to Panasonic Group Groupwide programs)

■Initiatives for Preventing Harassment and Ensuring Compliance

The Group aims to respect the individuality and abilities of each employee in all workplaces so that everyone can feel motivated and comfortable in their work. Therefore, to encourage Panasonic members to create a company free of harassment that everyone is proud of, we are strengthening our harassment prevention efforts in accordance with the Equal Employment Opportunity Act, the Child Care and Family Care Leave Act, the Power Harassment Prevention Act, and other relevant laws and regulations as follows.

- We have designated every December as “Zero Harassment Month” and have been raising awareness about harassment.
- We are revising our disciplinary rules (with stricter disciplinary measures for harassment) as a Groupwide effort to deter harassment.
- Since 2021, we have worked toward establishing a consultation service at each operating company, training the service’s managers and staff along with information sessions for the employees in charge of consultation.
- Specifically for harassment prevention, training was held in July 2023 for employees, including managers, in Group companies in Japan (113 companies in total including PHD, PEX, and other operating companies). About 89,000 employees underwent the course (Participation rate was approximately 94%). They learned how to avoid committing harassment and how to proceed if they receive reports of workplace harassment. This course is to be held continually.
- Along with the training above, a harassment recognition survey was conducted with its results disclosed on the intranet.

Work with a sense of fulfillment

～Encouraging Employees’ Self-motivated Endeavors and Supporting their Self-determined Career Formation～

As mentioned above, our Group has adopted a “Mindset Required for the Implementation of Management that Enables Each Employee to Reach Their Full Potential.” In this Mindset, “Enables Each Employee to Reach Their Full Potential” means aspiration toward higher values through open discussions with diverse opinions for high-quality decision-making.

Employee Well-being

Sustainability Data Book 2024

As the basis for human resource development, mindsets are described for “all personnel responsible for developing employees,” as well as for “all management staff responsible for developing the organization”, as follows.

Mindset Required for the Implementation of Management that Enables Each Employee to Reach Their Full Potential

Background
Panasonic Group’s purpose is to bring about an “ideal society with affluence both in matter and mind.” In order to continue to serve a diversifying society, it is essential for us to foster a corporate culture where each employee can unleash their unique potential

It is to build a culture of open-discussion where each employee feels safe to say what they have to say. This leads to high-quality decision-making through the integration of diverse opinions, resulting in the achievement of higher values.

In order to realize the above:
Each employee shall practice “employee entrepreneurship,” demonstrating their unique abilities and skills to the fullest.
All management staff responsible for developing the organization shall provide support by creating a work environment where each employee can practice the “employee entrepreneurship”, and put “participative management through collective wisdom” into practice.

Significance
This mindset is directed toward “all personnel responsible for developing employees” as well as “all management staff responsible for developing the organization,” aiming for the implementation of management that enables each employee to reach their full potential. The former refers to all personnel involved in initiatives to promote the growth of employees regardless of their job position. The mindset required for all employees are spelled out in the Basic Business Philosophy including the Company Creed and the Seven Principles.

Mindset required for all personnel responsible for developing employees

1. Respect the unique individuality of each employee: Increase psychological safety at work and build mutual support relationships

2. Carefully nurture each employee’s motivation: Stimulate employees’ motivation for contributing to society; trust and delegate

3. Encourage each employee to take on challenging tasks: Support employees with sincerity and great affection, encouraging them to learn from failures

Mindset required for all management staff responsible for developing the organization

1. Clarify by explaining the vision that supports the goals: Increase empathy through regular dialogue, and stimulate employees’ motivation for achieving the goals

2. Share paths for achieving results: Share daily goals and indicators toward the ideal state with each employee and raise awareness of participation

3. Eliminate barriers for employees to take on challenging tasks: Review meaningless activities and identify which ones should be “eliminated, reduced, or changed”

4. Fully invest in employees: Create a work environment where each employee can demonstrate their individuality and develop their abilities and skills

Senior management shall have the ultimate responsibility for practicing the management that enables employees to reach their full potential.

Development of Management Executives

For the sustained development of our Group, a diverse pool of managers that can drive business forward is absolutely essential. To that end, we are working to create a pipeline of successors over the medium to long term. As specific Group-level initiatives, for the 23 key positions such as Executive Officers of Panasonic Holdings Corporation and Presidents of operating companies, we are promoting the development of a diverse pool of management executives irrespective of nationality, work history, gender, age, or other attributes based on a policy of “earlier discovery” and “the right person for the right job.” Also, the Group Talent Management Committee has been established to discuss and promote the search, development, assignment, and monitoring of successors for 23 important posts from the optimal perspective of the entire Group. Currently the committee is working on the career development of about 100 successors who are selected from short-term, mid-term, or long-term perspectives. From fiscal 2025, these initiatives will be enhanced further to develop more successors from the aspect of quality, quantity, and diversity. To that end, we will conduct inclusive programs to develop executive successors by training executive candidates (mentioned later) and establishing a framework to develop executives on a global level in line with each region, as well as performing development training for selected younger-generation employees.

Moreover, each operating company has a similar Talent Management Committee to discuss and promote identifying, training, assigning, and monitoring successors to important posts such as business division heads from a multifaceted perspective, helping develop managers for optimal Groupwide management.

	FY 2023	FY 2024
Successor readiness rate	4.4 employees/post (115 employees/26 posts)	5.6 employees/post (129 employees/23 posts)

Succession readiness	FY 2023		FY 2024	
Appointment possible immediately	16.5%	(19 employees out of 115)	19.4%	(25 employees out of 129)
Appointment possible within 5 years	31.3%	(36 employees out of 115)	26.4%	(34 employees out of 129)
Appointment possible within 10 years	52.4%	(60 employees out of 115)	54.2%	(70 employees out of 129)

	FY 2023		FY 2024	
Leadership development participation rate	71.3%	(82 employees out of 115)	74.4%	(96 employees out of 129)

Training for Executive Candidates

We have made available the best internal and external training programs for executive candidates, and we continue to hold programs such as Launching Executive Leaders and Creating Executive Leaders, which launched in fiscal 2021. A total of 118 people (over 16 days) have participated in the former program and 161 people (over 11 days) in the latter. In addition, since fiscal 2022, we have been enhancing our new director training programs and group management workshops. Moreover, in fiscal 2023 we started management literacy training for younger-generation executive candidates. To enhance the development of the management team even further, the target for these programs has started in fiscal 2025 to include not only those in charge of business but also candidates for Executive Officers.

◇Launching Executive Leaders (LEL)

This training is intended for executive candidates who are expected to be assigned to roles such as Business Unit Director or affiliate company President within 1 to 2 years. This self-transformation program aims to help participants acquire the ability to communicate a vision based on the facts, consider the importance of maximizing the potential of each employee, and strongly lead an organization even in adverse situations. Participants will establish a firm view on management by immediately putting what they learn in this program into practice.

◇Creating Executive Leaders (CEL)

This training is intended for executive candidates who are expected to be assigned to the role of General Manager or Executive of overseas companies within 1 to 2 years. This is a personal growth program that aims to develop the perspective, vision, viewpoints, knowledge, management literacy, and motivation required for the management team of an Operating Company, and to foster the acquisition of the vision, insight, and skills necessary for business management, as well as the determination to become a member of the management team.

◇Management Literacy Training

This training is intended for executive candidates from younger generations who are expected to be assigned as managers or to overseas within 1 to 2 years. The targets of the training course are to learn and acquire the skills of MBA basics (elements related to people, things, and money), and the implementation of business administration (Supply Chain Management (SCM), design thinking, etc.). The course provides the trainees with an opportunity to think about and learn business administration as a whole.

PHD Compensation System for Directors (excluding Outside Directors) and Executive Officers

At PHD, the system consists of a fixed base salary, performance-linked compensation (with short-term and medium-term performance-linked portions) as an incentive reflecting short- and medium-term performance, and restricted stock compensation as a long-term incentive. The amount of performance-linked compensation reflects evaluations of financial items (consolidated performance: EBITDA, ROE, operating cash flow) and nonfinancial items (set separately for each individual) emphasized in the current medium-term plan. Additionally, the restricted stock compensation is in a form that allows for lifting transfer restrictions immediately after directors and executive officers resign or otherwise leave the Company and is designed to share value with shareholders more than ever through continued shareholding. The compensation system for the presidents of major operating companies is similar to that for PHD's directors (excluding outside directors), as they are responsible for enhancing the Group's corporate value.

To be certain that the compensation for Directors is according to the policy of determination, the Nomination and Compensation Advisory Committee confirms the amount of fixed base salary and performance-linked compensation for each Director, as well as the amount of restricted stock compensation to be granted, with reference to data such as those gained from external third parties. Then, the Committee reports the results of this validation to the Board of Directors Meeting. Finally, the Board of Directors Meeting leaves the determination entirely to the Representative Director, President and Chief Executive Officer who understands and supervises the administration in the entire company.

The Nomination and Compensation Advisory Committee also reviews and validates the compensation for Executive Officers and CEOs of operating companies.

Evaluation item	Short-term incentive		Mid-long term incentive	
	Evaluation indexes and items	Weight*1	Evaluation indexes and items	Weight*1
Financial (Consolidated business results)	- EBITDA*2 - ROE*3 - Operating cash flow	50%	- ROE (Note 3) - Operating cash flow	50%
Non-financial *4	- Elimination of serious accidents, ensuring compliance - Environmental contributions - Human resources strategy - Operation KPI related to strengthening competitiveness	50%	- Environmental contributions - Efforts to improve the Group management level	50%
	Total	100%	Total	100%

*1 The weight for the Representative Director, President and Chief Executive Officer is 60% financial, 40% non-financial for the short-term incentive, and is 80% financial, 20% non-financial for the mid-long term incentive.

*2 This is the total of operating profit, depreciation (tangible and right-of-use assets), and amortization (intangibles).

*3 ROE: Return on Equity attributable to Panasonic Holdings Corporation stockholders

*4 This is set according to important initiative items determined according to the roles and official duties. (The following are examples of specific indexes.)

- Elimination of serious accidents, ensuring compliance: Numbers of serious accidents occurring, numbers of major compliance problems occurring
- Environmental contributions: CO_2 reduction in the Panasonic value chain
- Human resources strategy: Results from employee attitude surveys, rate of female hires (promotion of Diversity, Equity & Inclusion)
- Operation KPI related to strengthening competitiveness: Strengthening of procurement and logistics functions, DX for operating processes, improvement in numbers of patents
- Efforts to improve the Group management level: Complete communication and implementation of basic management policies, implementation of design thinking management, improvement of brand recognition

Recruitment

In order to leverage our Group's branding image, we have been communicating how Groupwide workplaces are the Best Place to work. As one of the specific actions, we have sent out a new recruiting brand slogan for Japan, "Dare ka no shiawase no tame ni massugu hataraku (translation: We work with integrity to help all 'Live Your Best.')" Since the Panasonic Group has a wide range of business areas and occupations, and our corporate culture values "opportunities to take on diverse challenges" and "human resource development", we are developing recruitment activities to let everyone know that Panasonic Group is the Best Place to work in all possible aspects and increase the number of people who empathize with us.

WEB PHD webpages
https://news.panasonic.com/jp/press/jn240311-1

Global Development of Recruitment

In fiscal 2025, we started the global development of recruitment processes based on the PLP. The purpose is to acquire human resources who empathize with our Group's Basic Business Philosophy and can take actions based on the PLP. As specific initiatives, operating companies in each country/region are leveraging and developing the recruitment process for their respective labor market and management environment, according to the recruitment criteria and adoptable job interview method standard based on the PLP.

Panasonic Career Design Program (Japan)

This program is promoted for students in a college or a graduate school to enhance opportunities of growth and possibility while having contact with our corporate activities by considering the future at the optimal timing for each, irrespective of their age.

Panasonic Career Design Program

Type of Program	Purpose	Target	Content (examples)
Open Company	To know about Panasonic Group	Students in college/ graduate school	- Seminars - Videos and leaflets
Career Start	- To know oneself better - To think about career development	Students in college (freshmen or sophomores)	- Program in line with career education at universities - Program to learn about careers - Providing contents related to careers
Career Discovery	- To gain a deeper understanding about work through experience - To think about selecting a career path	Students in college (juniors or seniors)	- Workshop to experience job content - Program in collaboration with universities and industry
Internship	- To have a clear idea about the ability required for the work - To have a clear direction for career path	Students in college (juniors or seniors), and graduate school students	Opportunities to experience jobs by assignment to actual workplaces

Recruitment with an Ensured Initial Assignment (Japan)

For all functions in each operating company, the recruitment process is conducted to ensure an initial assignment (business sectors/functions). By applying this system, autonomous career development will be fostered with the business sector or work type that a newcomer wishes to apply for, and mismatching avoided. The details of jobs and requirements for the respective functions in each operating company are disclosed on the Panasonic Group Recruiting Site of PHD (approximately 150).

WEB PHD webpages (Recruitment Information, Japanese Only)
https://recruit.jpn.panasonic.com/newgrads/information/

AI Career Supporter (Japan)

While maintaining our activities by human employees to offer ongoing information on working such as fulfillment, wishes, or hopes, we have launched a trial initiative, AI Career Supporter, that works to provide students with information on our recruitment so that they can consult about career development regardless of time and place. The AI Career Supporter will offer a selection of initial careers by taking into consideration the major, inclination, and behavioral characteristics of each student. Our recruiting activities will develop in a hybrid way with an optimal balance between people and technology, making full use of generative AI.

Onboarding (Japan)

A pulse survey is conducted on newcomers to our Group as motivation tracking after onboarding. This survey started in 2020 and now approximately 5,000 employees (as of March 2024) are included as targets: three years after assignment for new graduates, and a year after

joining the Group for mid-career hires. Since fiscal 2024, not only the surveys but also the results have been summarized to utilize the data for clarification of issues in each operating company, as well as the entire Group. Our initiatives are ongoing for the further enhancement of Group employees' environment so they can take an active part in the company.

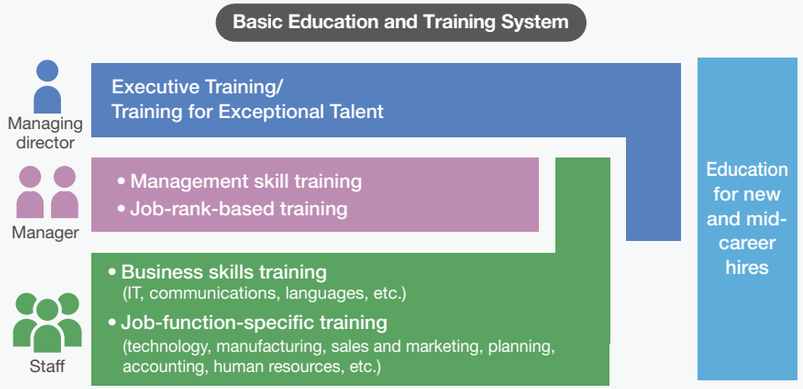
Alumni Community (Japan)

As a community for communication with the Panasonic alumni (retirees), we have started the Panasonic Alumni Community since April 2024. The purpose of the Community is networking and creation through communication with the alumni and the re-establishment of relationships between the company and each individual, which redefines the traditional idea that the relationship ends at retirement. Places for communications will be provided for over 300 further alumni who have already been registered (as of June 2024).

Developing Human Resources

Basic Human Resource Development System

The human resource development system of our Group consists of many programs according to rank and type of job. The driving force behind these programs is each division/workplace. At each workplace, we stimulate mindset growth in each employee through 1 on 1 meetings with their supervisor. The basis of human resource development is to provide small but important on-the-job training on a daily basis. By effectively combining this with group training, we can supplement and strengthen the knowledge, skills, and experience necessary for growth. Rather than one-sidedly providing the company's own training, the workplace supports each individual so that they have a clear vision of what they want to be/become, and proactively take opportunities to achieve these goals.



Global Human Resources Development

In each country and region, we plan and operate our unique selective executive development training programs in cooperation with Japan to bolster our business leadership development. For instance, in Europe, we operate the Next Generation Talent Program (NGTP), a 12-month human resources training program. It includes workshops on basic management policies and diversity, launching and promoting actual business projects, mentoring and coaching, and various other activities. Participants work with partners from different European affiliates to improve their overall business knowledge and skills. In India, the Middle Management Development Program (MMDP) is being conducted. In addition, a training program was established in fiscal 2024 in collaboration with the Indian Institutes of Management, and 27 participants took part in the program mainly from the Indian region but also including Turkey. In Japan, we hold the Senior Management Development Program (SMDP) for key senior managers (including directors, GMs, and managers) worldwide, with 27 participants from 11 countries attending the most recent program in March 2023. (For fiscal 2025, the Program is to be held in late July.)

Furthermore, we have a Groupwide Panasonic Global Mobility Policy that provides rules for inter-regional transfers and programs for inter-regional transfers and for overseas employees to work in Japan.

Hierarchical/Skill Training (Japan)

The Panasonic Group has established the Team & Talent Development Center (T2DC) and Monozukuri Training Center (facility for training on manufacturing) as organizations that specialize in organizational development and human resources-related development and training for employees of the Group. The provided training activities are as follows.

- Onboarding training to new graduates and mid-career hires so that new employees can quickly become active in the Group.
- Business skills training that teaches IT, communications, languages, and other skills required to facilitate employee tasks.
- Job-function-specific training so that employees can learn the specialized knowledge and skills needed to accomplish their tasks, whether they be technical, manufacturing, or sales and marketing.
- Elective management development training for employees who meet certain conditions.
- Management skill training meant to give managers greater management capabilities and the ability to practically implement Panasonic Group's Basic Business Philosophy, and so forth.

To accelerate self-directed learning, we provide other training modules on business skills and liberal arts in Japanese, English, and Chinese on our internal website, providing a learning platform that allows employees to easily learn every day, from anywhere in the world.

Employee Well-being

Sustainability Data Book 2024

Developing Middle Management

◇Training for Middle Management

The Number of Participants in Middle Management Training

4,347

We believe that managers (section managers) play a critical role and have a great deal of responsibility in driving the Panasonic Group toward realizing its business strategies. Managers today are expected to demonstrate transformational leadership by setting their organization's direction and fostering an organizational culture in which each individual is highly motivated in their active role. The Panasonic Group has provided a total of 4,347 employees with training for middle management.

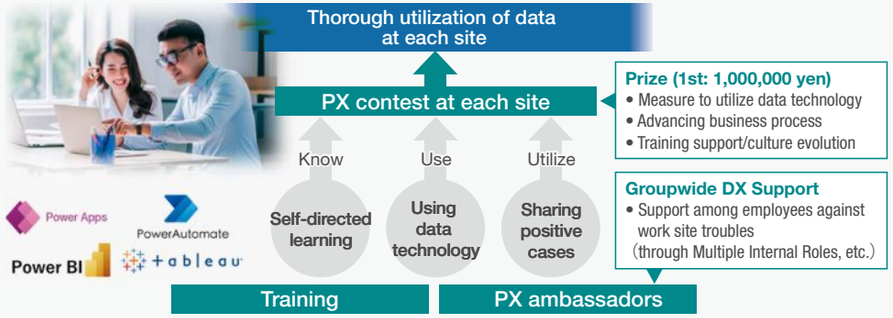
Additionally, we offer a rank-specific training program for newly appointed managers. This program consists of literacy components (including "Accounting and Finance" and "SCM Management") required for organizational management and a component for establishing one's own leadership style through deep reflection and dialogue with senior management through workplace practice. We improve the program every year in response to changes in the environment and the needs of the operating companies. We operate the program using a remote learning environment so participants can study even when working overseas, raising children, or caring for family members.

Developing Human Resources to Promote PX and GX (Japan)

PX stands for Panasonic Transformation, which is comprised of two aspects: customer service and business operations. This includes IT transformation, operating model transformation, and culture transformation. For promotion of PX, the PX-7 Principles were established with the commitment of all Group executives for all employees who promote PX in each workplace. Meanwhile, GX stands for Green Transformation. Our group has announced its long-term environmental vision, the PGI, to promote the development of human resources with expertise in carbon neutrality, the circular economy, and other areas to help achieve global environmental sustainability.

◇Developing Human Resources to Promote PX

PX Promotion: to have every employee at all Panasonic sites be able and make use of data technology.



Among the PX-7 Principles mentioned above is "Commit to developing and nurturing data and tech-savvy human resources across all levels to create value." To make this Principle work, we support each employee in the workplace with the knowledge and skills to enable creation of added value through utilizing data technology, as well as adopting and establishing experts who promote PX. For full use of data utilization at workplaces, three initiatives were started in fiscal 2024 with the rearrangement of the ongoing HR training/strengthening framework; "Training", "PX ambassadors", and "PX contest at each site" from the three perspectives of knowing, using, and utilizing.

Panasonic is working toward the further development of human resources for IT experts. In April 2022, the Information Systems Department defined human resource categories and outlined the specialized skills and knowledge required for each category. In April 2023, we established training systems for each human resource category to enable employees to acquire the knowledge necessary to enhance their skills in each category or advance their careers in other categories. This training system will help all employees improve their skills and contribute to realizing PX.

◇Developing Human Resources to Promote GX

Our group has announced its long-term environmental vision, Panasonic GREEN IMPACT, to promote the development of human resources with expertise in carbon neutrality, the circular economy, and other areas to help achieve global environmental sustainability.

■Organizational Development: Building an Organization and Culture Through Dialogue (Japan)

Panasonic Group defines organizational development as "activities that promote achievement and self-actualization by drawing out the inherent potential of people and organizations." The keys to fully drawing out potential are "self-directed individuals (employee entrepreneurship)" and "collaborative organizations (participative management through collective wisdom)." To realize this goal, we plan and propose customized training sessions and workshops tailored to the needs of business sites and workplaces and broadly deploy initiatives within the Group to promote understanding and embracing organizational development.

Training (Japan)

Learning hours of training per employee

35.6

PHD, PEX, and the seven operating companies

The total amount of time each employee spent training was 35.6 hours in fiscal 2024. This figure includes all the training provided by the companies: the aforementioned training, Open Training held by training organizations such as the Team & Talent Development Center, and T2DC (training programs by job function, skill, and job level so employees can

independently acquire and hone their desired skills or ability), as well as the initiatives by each operating company.

Evaluation and Rewards

Total Rewards Systems That Treat Both Our Organization and Our Ambitious Employees the Way They Deserve (Japan)

"Role/Grade System" has been implemented at Group companies in Japan. This system determines work/role grades for employees according to the size of the work or role they currently perform and constitutes the basis for employee benefits (The target of the system is employees with non-fixed-term employment). The aim of this system is to treat the wide variety of employees at Panasonic Group based on the scope of their work and responsibilities. This helps to enhance the transparency of our human resources system, and fosters understanding among employees. By setting clear goals for employees to strive for, we encourage them to be bold in achieving their goals. In addition, some operating companies are revising and restructuring their human resource systems according to the industries and markets they serve. Through these initiatives, we aim to build an organizational culture brimming with vitality that rewards both our people and organizations for taking on challenges.

Evaluation and Compensation (Japan)

The Panasonic Group has adopted a performance-linked compensation system that sets current fiscal-year bonuses based on the Company's previous fiscal-year performance. The compensation provided to higher levels of management reflects corporate performance to a higher extent. Moreover, individual bonuses are determined based on how individuals perform in their jobs the previous fiscal year. With corporate and individual performance impacting compensation to some degree, Panasonic inspires the desire to improve both aspects of performance.

Group CEO's Awards

We have established the Group CEO's awards in 2023. The purposes of the awards are to recognize results/merits gained through practicing of the Basic Business Philosophy, and to announce favorable examples across the operating companies so that the further understanding, acceptance and practicing of the Philosophy by each employee can be accelerated.

Award Categories	Objectives
Outstanding Business Achievement	To encourage contributions to corporate performance and group activities aimed at maximizing the corporate value of Group companies and the brand through the materialization of the Basic Business Philosophy of the Panasonic Group. ◆Outstanding Business Achievement Commendation to the business divisions that achieved an outstanding performance conducive to the Panasonic Group's management by running a business that serves as a model throughout the Panasonic Group in terms of Cash-Generating Capabilities, GREEN IMPACT, and PX activities.
Special Award	◆Special Award Commendation to groups or individuals who have practiced activities that contribute to the management of the entire Group with an unrelenting spirit of inquiry in new areas for the Panasonic Group.
Best Voluntary Contribution to Culture Revitalization	◆Best Voluntary Contribution to Culture Revitalization Commendation for group activities that contribute to the revitalization of the organizational culture through their activities
Contribution to Society	◆Contribution to Society Commendation for social contribution activities and corporate sports activities that lead to the improvement of the Panasonic Group's corporate image.
Panasonic Technology Awards	To encourage the improvement of creativity, expertise, and diligence of engineers serving as the source of corporate activities of manufacturing companies.
Product Commendation	Commendation to the achievement of business divisions that made notable contributions to the improvement of the the corporate value and creation of new businesses through the development and improvement of products, systems, and services. In addition, their efforts materialized the Basic Business Philosophy of the Panasonic Group, created a corporate climate where individuals can make cooperative efforts for the strong promotion of active product development, and achieve the creation of new customer value.
Manufacturing Commendation	To accelerate the establishment of Panasonic's ideal manufacturing operations, encourage the promotion of manufacturing innovation activities, and increase award winners' motivation.

Wealth Formation and Security (Japan)

◇Employee Stock Purchase Program (Panasonic Employee Shareholding Association)

The Group has established the Panasonic Group Employee Shareholding Association to promote employee shareholding through a monthly savings plan as an incentive. The objectives are to help employees build wealth and encourage them to commit to the Group's performance by acquiring Panasonic shares.

(Target: employees with non-fixed-term employment and contracted employees having regular employment relationships with 25 Panasonic Group companies including PHD, PEX, the seven operating companies, and some affiliate companies (However, for regular contracted employees it depends on each contract.))

◇Mutual Aid, Insurance, and Savings Programs

To ensure that employees can work with peace of mind, Panasonic Group offers mutual aid and insurance programs for housing, death, illness, injury, and nursing care and savings plans to

Employee Well-being

build future assets. (Target: About 107,000 employees with non-fixed-term employment in 110 Panasonic Group companies including PHD, PEX, the seven operating companies, and some affiliate companies.)

Transfer and Deployment - Career Development Support

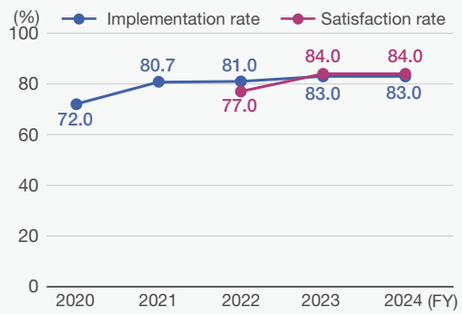
As the Panasonic Group sees the importance of providing each employee with opportunities to contribute to society, the following initiatives are being taken in Japan: A Better Dialogue, Internal Open Recruitment, Career and Life Design Seminars, career consultations, etc. In addition, global mobility is being promoted as an initiative at the global level.

A Better Dialogue (Between Employee and their Superior)

One initiative is A Better Dialogue, which supports every employee's personal growth and challenges by enhancing the quality and quantity of dialogue with their respective managers. It consists of 1 on 1 meetings, which bring out the aspirations of each and every employee, and three mechanisms: career and skill development, goal management, and reflection on one's actions with the PLP. The Group is committed to promoting these diverse opportunities for dialogue. In fiscal 2024, we achieved significant success, with implementation and satisfaction rates of respectively 83% and 84% in Japan. Moreover, to enable all employees to maximize their individuality and abilities and enhance job satisfaction, we are creating opportunities to enhance the value of their individual experiences, take on challenges, and actively participate in various aspects of the Group, including pre- and post-employment onboarding, career development, evaluations, promotions, transfers, and secondments.

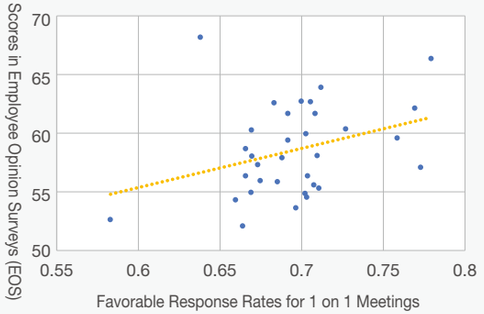
Implementation/Satisfaction Rates of 1 on 1 Meetings

PHD, PEX, and the seven operating companies



Correlation between the Scores in Employee Opinion Survey (EOS) and Favorable Response Rates for 1 on 1 Meetings (FY 2021)

PHD, PEX, and the seven operating companies



Analysis shows that the satisfaction rate of 1 on 1 meetings correlates with the score in the Employee Opinion Survey (EOS) which is included in the key Groupwide indicators. The analysis results for fiscal 2021 are indicated by the graph on the right. We will keep on promoting this initiative as we consider that the satisfaction rate on work fulfillment and environment can be improved by 1 on 1 meetings that bring out positive morale with dialogue involving each employee.

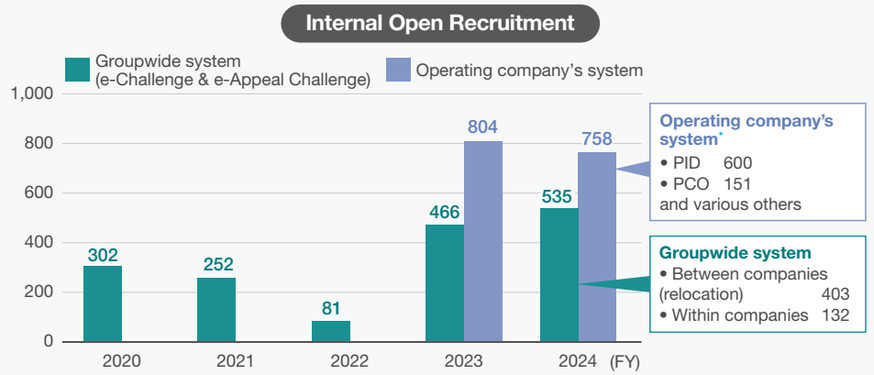
Internal Open Recruitment (Japan)

Internal Open Recruitment is one of the systems to support individuals' willingness to take on challenges and pursue self-directed career development. We have the following Groupwide systems, which make it possible for us to exchange human resources across companies even after the transition to the operating company system: "e-Challenge", "e-Appeal Challenge", and "Multiple Internal Roles."

- e-Challenge: for applications for open positions where assignment is possible if applicants successfully pass the selection process. Employees make their own judgment whether or not to apply for the position according to the requirements shown by an applicable business division.
- e-Appeal Challenge: for applications to a department that an employee hopes to work for. Employees can seize the opportunity to try new work if they pass the selection process by showcasing their strengths.
- Multiple Internal Roles: for an opportunity to work at another department by applying for an open position within the Group while working in the current department (Assignment is possible if applicants successfully pass the selection process). This system is intended to stimulate the personal growth of employees through trying out their abilities or potential.

In fiscal 2024, 1,692 employees applied for e-Challenge and e-Appeal Challenge, and 535 were assigned to a new position. Regarding Multiple Internal Roles, 46 employees worked at another department.

Moreover, other open recruitment systems specific to each operating company are becoming more and more active. The internal open recruitment/assignment system has been introduced to Panasonic Industry Co., Ltd., Panasonic Connect Co., Ltd., and Panasonic Housing Solutions Co., Ltd. When applicants match the requirements, they can apply for positions with responsibility such as general managers/managers, or other upper-ranked positions. In fiscal 2024, 758 employees took on challenges.



* PID, PCO, and PHS have introduced a transfer/assignment system for internal open recruitment. Employees who meet the conditions for the requirement can apply for managerial or higher positions (depending on the operating company).

Target employees: those in PHD, PEX, and the seven operating companies.

Career and Life Design Seminars (Japan)

To nurture individuals who continue to take on challenges and support self-directed and diverse career development both within and outside the Group, we have held Career and Life Design Seminars (CLD Seminars) for all employees of target age (33, 38, 43, 48, and 53 years old) since fiscal 2015. The number of participants was 6,292 in fiscal 2024. The program has three pillars: career design, healthy living, and financial planning. It promotes an understanding of the importance of self-directed career development, encourages behavioral changes toward realizing a career vision in five years, and offers support for preparing a fulfilling life plan.

Career Consultation (Japan)

This is designed to boost each employee's thinking and acting for their career development in a self-directed way with full awareness of career ownership. In fiscal 2024, checkup consultations were developed according to purposes specific to each generation. Specifically, seminars and consultations for middle to senior employees were intended for next-career creation, while consultations for younger-generation employees were conducted after training for those having three-year careers. Furthermore, seminars and career interviews have been conducted according to division-specific career autonomy measures. Consequently, we have supported a total of 5,277 employees to consider their visions and action plans on what they want to be.

Global Mobility

In 2020, the Panasonic Global Mobility Policy was established for the entire Group, which includes a program to enable a smoother transfer of employees on the global level, such as overseas regions to Japan or among a wide range of regions. In addition to executives in each region, we have established rules on transfer requirements and benefits to enable young and mid-career employees to transfer on the global level across the boundaries of regions and develop a wide range of career opportunities. As of April 2024, the number of employees who have made use of this system has reached more than 100.

Work together by giving full play to all individuality
～Promoting DEI (Diversity, Equity & Inclusion)～

We are currently promoting Diversity, Equity & Inclusion (DEI) from three perspectives based on the Panasonic Group DEI Policy which is the Groupwide policy established in 2021. The first is "top management commitment." This means management members themselves are committed to promoting DEI and do so by incorporating it into business strategies. We plan to accelerate the pace of our DEI initiatives to implement actions decided through dialog between management members and employees. The second perspective is "creating an inclusive work environment." This is about building a management and organizational environment where diverse employee personalities are valued and fully utilized. For example, we continue to roll out unconscious bias training sessions in each geographical region in which we have a business presence. The third one is "support for every individual." This is about providing support so that each employee can make full use of their diverse individuality to take on their respective challenges. We are engaged in supporting the activities of communities formed according to the various individualities of employees, establishing systems and mechanisms for these communities, and constantly re-examining their operation.

WEB DEI web page
https://holdings.panasonic/jp/corporate/sustainability/diversity-equity-inclusion.html

Top Management Commitment

The "top management commitment" means management members themselves are committed to promoting DEI and do so by incorporating it into business strategies.

Commitments from All Operating Company Presidents

All operating company Presidents are committed to promoting DEI as a business strategy to realize "help maximize the potential of each employee." As a part of this initiative, we established a new Group DEI Promotion Council in fiscal 2022. The Council allows management to share a common understanding of the DEI issues that must be addressed and engage in an ongoing dialogue on Groupwide initiatives. The Group CEO serves as chairperson, with all operating company Presidents and some employees as members. Its meetings determine and promote critical actions. Additionally, DEI reports are regularly presented as one of the HR strategies at PHD Board of Directors meetings.

Employee Well-being

Sustainability Data Book 2024

Endorsement to Social Movement

◇Endorsement of EqualityActJapan

In 2021, PHD expressed its support for EqualityActJapan, a petition-based movement for the enactment of an LGBT Equality Act in Japan. Based on our management philosophy, in the Panasonic Group Code of Ethics & Compliance we clearly state that we respect basic human rights, and do not permit discriminatory speech or conduct with regard to sexual orientation or gender identity, as defined by the applicable laws in the respective countries. At the same time, we are actively working to create a comfortable work environment by recognizing same-sex domestic partners as equivalent to legal spouses within our HR systems, and providing internal training to promote understanding of LGBTQ+ issues.

◇Endorsement of Tokyo Rainbow Pride

PHD supports Tokyo Rainbow Pride, a non-profit organization that aims to realize a society where LGBTQ+ persons can live positively without discrimination and prejudice. In addition to supporting activity plans through our pro bono program, since 2014, we have also sponsored the organization's annual event, continuing to participate in activities such as booth exhibits and parades. In fiscal 2025, for the purpose of social manifestation, we are supporting LGBTQ+ persons, our Group and Panasonic Connect Co., Ltd. joined this movement as a "RAINBOW SPONSOR", and about 450 employees took part in the event.

◇Endorsement of the Recommendations of the American Chamber of Commerce in Japan (ACCJ)

In 2020, PHD endorsed the American Chamber of Commerce in Japan's (ACCJ) recommendations to the Japanese government on legal equality in marriage. By recognizing the right of LGBT couples to marry, the ACCJ seeks to remove obstacles faced by companies doing business in Japan in recruiting and retaining talent and treating their diverse workforces fairly. Our endorsement of the proposal is in line with our stance since 2016 of recognizing same-sex domestic partners as equivalent to legal spouses within our HR systems in Japan.

◇Endorsement of 30% Club Japan

In 2021, PHD announced its support for 30% Club Japan, a global campaign to increase the percentage of females in key decision-making positions at companies, with the goal of increasing the percentage of female executives to 30% or more by 2030. To accelerate the participation of females in management, we are also working to further strengthen the management skills of our supervisors, in addition to holding study sessions for female employees and career development seminars for female leaders, and creating opportunities for them to experience the values and work perspectives of their role models.

◇work with Pride Association (wwP)

We express our support for "work with Pride", a voluntary organization that works to create comfortable workplaces regardless of sexual orientation, gender identity, and other factors. PHD has received the highest-ranked Gold Award for eight consecutive years from 2016 to 2023.

Awards

The Panasonic Group has been a pioneer in creating an environment in which diverse human resources can demonstrate their abilities. However, in an era of social change and increasingly diverse customer values, there is still much more to be done. We will accelerate our DEI initiatives as a group while learning from various precedents in society. The following are the awards we received so far.

WEB https://holdings.panasonic/jp/corporate/sustainability/diversity-equity-inclusion/award.html

Creating an Inclusive Work Environment (Japan)

Creating an inclusive work environment is about building an environment where every individual's diversity is valued and fully utilized.

Group DEI Forum

The Group DEI Forum is an event held with the aim of providing an opportunity for each and every one of us to increase our understanding of and identification with DEI, and to take action. We held this forum every year since fiscal 2022 under the slogan, "Dialogue. Discovery. Appreciating Differences," and with the aim of awareness that DEI is something we must all take seriously because it concerns us all.

WEB **DEI page, Report on the Group DEI Forum 2023**
https://holdings.panasonic/jp/corporate/sustainability/diversity-equity-inclusion/inclusive/dei-forum2023.html

Unconscious Bias Training

Unconscious bias refers to prejudices and stereotypes people have based on past experiences and perceptions that they are not consciously aware of having. We conduct training to learn about and become aware of the existence of these assumptions that everyone makes about others. Through changing one-sided views and perspectives and considering other possibilities, we review communication in the workplace to create a workplace culture where everyone can

Employee Well-being

Sustainability Data Book 2024

work comfortably and where every individual's diversity can be fully utilized. As of April 2024, approximately 110 employees have been trained as internal unconscious bias ambassadors, and training has been continually provided to approximately 60,000 employees in Japan from fiscal 2023 to 2024. The training is conducted for newly hired college graduates and mid-career hires. Furthermore, continuous education is provided to employees through the use of e-learning.

Initiatives for Accessibility Maps

Adopting the viewpoint of a person with lower limb disability, accessibility maps are now being created for each division in our Group. As the process includes onsite investigation involving persons with disability, as well as employees who work with them, the creation of the maps serves as an opportunity to understand diversity.

Support for Every Individual (Japan)

Support for every person means helping each and every individual, with their diverse individualities, to face their challenges. We will work to build a support system and improve Human Resources systems and mechanisms.

Promoting Diverse Work Styles

The Group aims to maximize results by accelerating innovation and strengthening competitiveness through improving productivity from an organizational perspective and realizing well-being from an individual one. From an organizational perspective, we improve productivity by optimizing the balance between office and remote work depending on business conditions and the fields in which employees work, rather than forcing just office or remote work. Meanwhile, expanding the options of time and place to work also leads to well-being from an individual perspective. Many employees within the Group are willing to continue to take on challenges despite their various circumstances. We will continue to expand the work time and place options to encourage these individuals to take on challenges and grow, allowing them to continue their careers with optimism.

WEB **Support for Every Individual: Diverse Work Styles and Work-Life Balance**
https://holdings.panasonic/jp/corporate/sustainability/diversity-equity-inclusion/support-worklifebalance.html

◇ Greater Options for Work Hours and Places

All Group companies are working to expand work options that support careers and encourage work-life balance. For example, we have introduced a system that allows employees to flexibly choose their working hours and days by eliminating the minimum daily working hours, enabling flexible work styles such as three- or four-day workweeks. By introducing such work styles and expanding the short-day scheduling system for career development, we encourage individuals to take on the challenge of self-directed career development, including moonlighting for other companies, volunteering, and self-learning. We are also working to expand options for working locations, such as by promoting full remote work, which allows employees to work from outside their commuting range. That allows employees to balance their careers with life events such as childcare, nursing care, or a partner's relocation.

The Group allows all employees to take annual paid leave in half-day or hourly increments, regardless of their work style or position. We have also made it possible for employees to take leave during regular working hours and to allocate their paid leave hourly. We are expanding these various systems, thereby supporting more diverse and flexible work styles.

Work Style Data

PHD, PEX and the seven operating companies

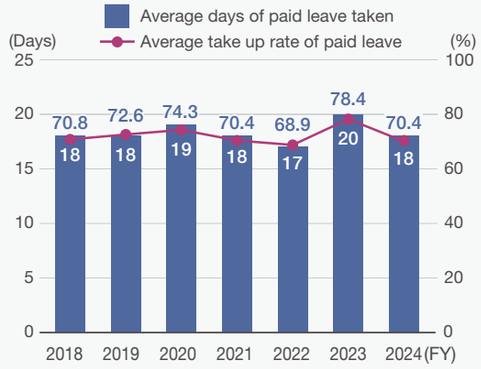
	As of April 2024	
	Number of users	Utilization rate
Shorter working hours	866	1.4%
Flexible work hours	51,146	80.9%
Remote work system	9,171	14.5%

	FY 2024
Selective four-day workweek system*	153 employees
Remote work outside commuting distance	259 employees
Side Job	258 employees

* The number of employees who used the selective four-day workweek system at least once during the fiscal year

Days and Take Up Rate of Paid Leave

(PHD, PEX, and the seven operating companies)

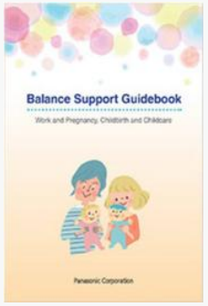


Employee Well-being

◇Support for Employees During Pregnancy and Childcare

Childcare systems Available for male employees / Available for female employees

Before pregnancy	Child planning leave	Family support leave
During pregnancy	Absence from work for medical checkups	Doctor-mandated maternity leave
	Extra break times and extended breaks for meals	Absence from work due to pregnancy
	Breaks during pregnancy	Work limitations during pregnancy
	Shorter working hours for expectant mothers	Conversion to light duty work
	Limitations on overtime, holidays, and late-night work	Limitations on hazardous and harmful work
	Limitations on the application of variable working hours	Work & life plan



We use the Guidebook for Supporting Work-Life Balance (Work and Pregnancy, Childbirth, and Childcare) to promote understanding of the company's systems. This guidebook also serves as a management guide for supervisors, promoting communication tailored to each employee's circumstances, from pregnancy through to the childcare period. Moreover, we are working to develop systems and foster a workplace culture at each Group company so that any employee who wishes to do so can balance childcare and career development. Specifically, as an easier system for employees to make use of, we have newly established a childcare leave system by day and made a system in which a certain period of childcare leave is paid (the maximum period of childcare leave is two years). Furthermore, apart from the simple idea of a leave system, we have been promoting the establishment of a better system with flexible work styles and expanded options for work time/place according to employees' needs to handle childcare along with their work.

Childcare Leave Utilization

		FY2023	FY2024
Male employees		64.8 %	76.0 %
	Average days of leave	21.5	36.2
Female employees		100.0 %	103.7 %
	Average days of leave	376.4	305.8

The total number of employees who took childcare leave, etc. as well as the number of employees who took time off for the purpose of taking care of preschool children in fiscal 2024 divided by the number of employees who/whose spouse gave birth in fiscal 2024 (The rate might be over 100% when employees with new-born children in fiscal 2023 start the leave in fiscal 2024.)

◇Support for Employees Caring for a Family Member

We use the Guidebook for Supporting Work-Life Balance (Work and Caregiving) to promote understanding of the company's systems. This guidebook also serves as a management guide for supervisors, promoting communication tailored to each employee's circumstances, from the stage before they start providing caregiving to after. Since fiscal 2017, we have been holding seminars at each of our business locations and offices to raise awareness of the need for basic knowledge and preparation for balancing work and nursing care, as well as to promote understanding and foster a workplace culture among those in positions of responsibility through the seminars. We have also been holding online seminars for employees and managers since fiscal 2022. We also have a website for Helping Strike a Balance between Work and Caregiving, which provides a summary of internal and external support systems and basic information available to employees at each stage of nursing care, from the stage before they start providing caregiving to after. In addition, we have established a nursing care consultation service in partnership with a company specializing in nursing care, and have a system in place where employees can consult with them at any time about their nursing care concerns.

◇Examples of Systems Supporting Work-Life Balance

As part of Panasonic Group's efforts to create an environment that enables everyone to play an active role, the company is implementing initiatives to support a good work-life balance for employees. On their own the efforts and adaptability by employees are not enough for childcare and nursing care to coexist with working. Therefore, expanded options for work time/place are needed by employees, as well as the understanding and support of their supervisors and workplaces. The Group also creates guidebooks with hints for work-life balance, including explanations of the systems needed for maintaining personal and business responsibilities and information on how supervisors and subordinates can work together. This is another way in which Panasonic helps its employees continue their careers without worry, regardless of the situations they face with childcare or nursing care.

WEB **Diverse Work Styles and Work-Life Balance - Diversity, Equity & Inclusion**
https://holdings.panasonic/jp/corporate/sustainability/diversity-equity-inclusion/support-worklifebalance.html

Sustainability Data Book 2024

Employee Well-being

Promoting Gender Equality

There are no gender-based inequalities in the Panasonic Group's compensation system. However, particularly in Japan, we are aware that there is a need to promote a greater number of women to senior management and decision-making positions, and the Panasonic Group is striving to ensure gender diversity. Therefore, in addition to creating an inclusive work environment, we are working on revising our evaluation and promotion processes from the perspective of equity. We are committed to undertaking activities such as holding study groups for female employees and career stretch seminars for women leaders and providing opportunities to discover female role models' values and work ethics.

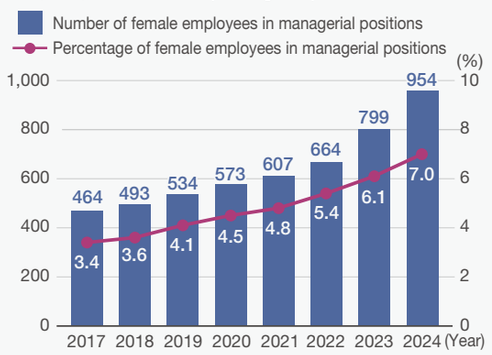
Management team diversity

Rate of female employees and non-Japanese citizens among PHD Directors (including those from outside the company) **21%**

At the end of fiscal 2022, we made a Groupwide guideline for promotion to managerial positions that requires consideration and design of equality of opportunity, as well as a reduction of load in the selection process. Furthermore, as a flexible initiative for diverse work styles, the period of evaluation is according to the actual length of time for each employee, not limited to the uniform idea of evaluation for a one-year period.

Female Employees in Managerial Positions

PHD, PEX, and the seven operating companies



Gender pay gap (Women : Men)

	FY 2023	FY 2024
Managerial positions	93 : 100	96 : 100
All employees	73 : 100	75 : 100

PHD, PEX, and the seven operating companies

◇Study Session for Female Employees: Career Stretch Seminar

In Japan, we offer training for female employees to improve their leadership and practical management skills with a view to becoming active in management positions. Many female employees participate in the training to improve their own skills, such as by experiencing the values and work perspectives of internal and external instructors, learning deeply about the company's strategic direction, and considering new challenges for themselves. To help demonstrate their active participation in creating better workplaces for female employees, the superiors of female workers also take part in the session.

Creating a Workplace Where LGBTQ+ Individuals Can Take an Active Part

◇Code of Ethics & Compliance

The Panasonic Group Code of Ethics & Compliance, in accordance with the laws and regulations of all countries in which we operate, clearly forbids all discrimination or conduct that may result in discrimination based on characteristics like sexual orientation, gender identity, or gender expression.

◇Applying LGBTQ+ Allyship to HR Systems

Since April 2016, Panasonic Group has treated same-sex domestic partners as equivalent to legal spouses within its HR systems—including bereavement leave, childcare and nursing care support, and temporary solo relocation allowances—except in areas where such recognition cannot be applied due to legal restrictions.

◇Establishing Consultation Services

We have set up an internal contact point where employees can receive consultation services by e-mail or phone regarding any matter, including sexual and power harassment. (Anonymous consultation is available.)

◇Groupwide Training to Promote Understanding

To promote understanding about LGBTQ+ individuals and create more LGBTQ+-friendly workplaces, Panasonic has been conducting training geared toward HR functions, managerial positions, and employees since February 2016. The training for HR functions offers not only basic knowledge about LGBTQ+ individuals but also methods for dealing with discriminatory speech or conduct and responding to the needs of those involved.

◇Sharing Information across the Group

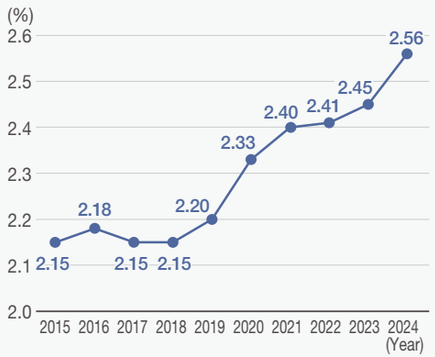
Information on advancing understanding of LGBTQ+ individuals and invitations to participate in events that support LGBTQ+ employees are also sent out via Panasonic's intranet.

Creating a Workplace Where People with Disabilities Can Take an Active Part

Individual workplaces are working on initiatives including the following in an effort to create workplaces where anyone can work in a way that works for them regardless of whether they have a disability or not. As of June 2024, the total proportion of Group employees in Japan who have disabilities was 2.56%, and we will continue in our efforts to promote independence and participation in the company on the part of people with disabilities.

- Whenever employees with hearing-related disabilities take part in workshops or classes, we make sure that they are able to access the same information through sign language interpretation and voice recognition software. (For example, we introduced an application for communication support and conversation visualization Groupwide in 2020. We prepared manuals and introductory training courses, and more than 100 workplaces have begun using the system.
- We are also moving forward with improvements to workplace environments including flat floors without steps, using brighter lighting, and introducing a free desk system in which workstations are not strictly assigned.
- The Group also creates educational content in order to help provide a better understanding of life with a disability and offers opportunities for learning to all employees.
- We also have active communities of employees that have risen up to hold various information exchanges and discussions on themes surrounding disabilities.
- The Group established the Disability Work Support Hotline that makes it possible for those with disabilities or anyone else, including their supervisors, colleagues, HR, and the people responsible for DEI promotion to easily ask questions or seek advice. This makes it possible for the supervisors and coworkers of those with disabilities to find out how to accommodate individual disabilities. We promote workplaces that make it possible for anyone, including people with disabilities to work together without worry and be able to take on challenges.
- Through cooperation with regional and local governments, the Group has seven special subsidiaries and is actively working to hire individuals with severe disabilities. These special subsidiaries not only provide work environments that distribute components in a way that accommodates the body of a wheelchair user and adjusting workbenches, while also actively taking on interns and company tours.

Percentage of People with Disabilities Employed



◇Special Subsidiaries

We employ people with disabilities through special Group subsidiaries. Moreover, to promote understanding of people with disabilities and their employment, we offer work-study programs for junior and senior high school students, accept technical interns with disabilities, and conduct workplace tours

Special Subsidiaries (as of June 1st, 2024)

Company Name	Year of Establishment	Number of Employees	(Number of Persons with Disabilities)	Description of Business
Panasonic Kibi, Co., Ltd.	1980	75	36	Manufacture/Assembly of AV units and parts, packaging of accessories, RoHS inspections, and work related to electronic files.
Panasonic Katano Co., Ltd.	1981	39	32	Assembly of avionics products, and assembly of PCs (Let's note) or projectors
Panasonic Associates Shiga Co., Ltd.	1994	66	36	Assembly of electronic circuits (for massage chairs, shavers, etc.)
Panasonic Associates Tottori Co., Ltd.	1992	59	26	Manufacture of LED products and light sensors
Harima Sanyo Industry Co., Ltd.	1982	38	20	Assembly of vacuum cleaner parts and maintenance of the internal environment
Panasonic Heart Farm Associates Co., Ltd.	1998	74	43	Growing and selling of orchids, sale and rental of decorative plants, distribution of internal mail, cleaning and beautification of company premises
Panasonic Ecology Systems Kyoei Co., Ltd.	1980	44	31	Assembly of ventilating fan parts and printing of user manuals

Creating an Environment Where Post-retirement Age Workers Can Take an Active Part

To create "The Best Place to Work where diverse talents work at their best," we also have initiatives for senior workers to take an active part in each of our Group companies.

◇Promoting Self-Directed Career Development

We are developing and promoting training seminars Groupwide on career and life design for various stages of people's lives to help individual employees direct their own career development as early as possible ("Career and Life Design Seminars" as mentioned above).

In addition, for a more appropriate design of employees' career development, there has been a renewal of the retirement benefits system (in July 2013) to shift from the traditional defined benefit pension plans to defined contribution pension plans which have more portability. With the aid of the defined contribution pension plans, employees can build their assets through enhanced education on investment.

◇Securing Employment Opportunities for Older Employees

Panasonic's Next Stage Partner Program, as a reemployment system, allows employees who wish to continue working after mandatory retirement at age 60 to do so until age 65. We have been striving to improve the working conditions under this system to encourage employees to

leverage the expertise, experience, and skills they have cultivated over the years. The social significance of responding to the growing number of older workers who wish to work and the need to aid employees financially until they begin receiving public pension benefits also drive our efforts with this program. In April 2021, we introduced a framework allowing employees to work beyond age 65. Some of our Group companies are going to raise the retirement age up to 65, starting April 2025, to accelerate building a better environment for active participation by employees regardless of their age.

◇ **Post-Resignation/Retirement Support**

We are also offering economic support for employees who wish to leave the Group before retirement and seek new opportunities elsewhere, as well as support for those who wish to work elsewhere after reaching retirement age.

Employee Voluntary Community Efforts (ERG*)

In our Group, employees create communities according to their common interests or a sense of issues, crossing the boundaries of the operating companies to which they belong or the company rank or position.

They are developing a wide variety of activities as they wish to improve the work environment, organization, and management. Employees gather according to a shared interest in childcare, nursing care, gender, LGBTQ+, mid-career hires, business model construction, technology development, and a variety of other fields. These communities serve each employee as an opportunity for making proposals to their respective company and participation in management, settling issues for themselves and having places to belong. Meanwhile, the communities help the company to settle management issues, ignite innovation, and improve the work environment, as well as to reduce turnover rate and boost morale. We highly appreciate these voluntary communities of our fellow employees.

* Employee Resource Group (ERG) consists of groups and organizations of employees sharing the same values or ideas that are active voluntarily beyond the operating companies and divisions.

WEB **DEI page: Various Community Activities**
https://holdings.panasonic/jp/corporate/sustainability/diversity-equity-inclusion/inclusive/community.html

Global Initiatives

The Panasonic Group is globally engaged in a wide variety of activities to promote DEI according to regional characteristics so that diverse human resources can maximize their individual strengths.

WEB **DEI pages: Global Initiatives**
https://holdings.panasonic/jp/corporate/sustainability/diversity-equity-inclusion/global-initiatives.html

HR Strategies in Investment Areas

In-vehicle Battery (Panasonic Energy Co., Ltd.)

Panasonic Energy Co., Ltd. aims for its mission “to create a society where the pursuit of happiness and a sustainable environment coexist in perfect harmony” and its vision “to be the energy that changes the future”. Panasonic Energy regards human resources as essential capital for its business development under the principle of promoting ESG management and is developing human resource strategies and human capital management to strengthen its competitiveness and improve the well-being of its employees. Especially relevant in the automotive business, which is one of the main pillars in our energy business, Panasonic Energy promotes the acquisition of human resources to establish production operations that have high efficiency and cost competitiveness. In addition to conventional career recruitment through agents, the newly established Kansas office is working to advance its global human resource development for production launching by establishing a strong pipeline of relationships with local educational institutions and building a training program in collaboration with the Nevada office and locations in Japan (including Suminoe and Wakayama). In Japan, we continue to improve our ability to acquire human resources, including better recruitment branding, and acquire approximately 500 new employees yearly, along with a more enhanced onboarding program as we aim to turn human resources into a company force at an earlier stage. Furthermore, toward the improvement of business competitiveness and human resource productivity, we will promote reform for job-based human resource management and the introduction of an evaluation/compensation system that encourages employees to take on new challenges, in order to support the autonomous challenges of diverse employees and encourage them to maximize their abilities. We will also promote the introduction of systems that enable self-directed career development and more flexible work styles.

Heating and Ventilation Air Conditioning (Heating and Ventilation A/C Company, Panasonic Corporation)

Heating and Ventilation A/C (HVAC) Company, a Panasonic Corporation, is working on organizational and human resource development to realize its vision of becoming “a global, top-class professional company that creates a healthy, comfortable life and society through air and water technologies.”

Specifically, in Europe, where it expects demand to grow in the mid to long term, HVAC Company has established a system of local production for local consumption in which production, manufacturing, and sales are completed within the region. Alongside this initiative, it is establishing the plant production system, and securing the human resources required in Czechia. Additionally, the Company merged the air quality and air conditioning businesses,

which had been operated and technically refined in separate organizations within the Group for many years. Going forward, the Company intends to create new added value using air and water by active assignment of human resources and merging of corporate culture across companies.

Furthermore, to improve its solutions to customers in the B2B business, the Company is working to secure and train engineering solution personnel, including engineering and software engineers with the necessary qualifications.

Supply Chain Management Software (Panasonic Connect Co., Ltd.)

Blue Yonder Inc. is enhancing the acquisition of human resources in the sales field for the extension of the top line in the profit and loss statement as they seek to be a leading company in the supply chain software business. For further sophistication of SCM solutions with cutting-edge technologies such as generative AI, and the upgrading of cloud services, intensive training courses are conducted at the India office for accelerated development of tech-savvy personnel.

Also in Japan, strategic investments are being made in the development and acquisition of globally-capable solution personnel in order to achieve growth in our supply chain business. Specifically, we have conducted a shift in resources involving a cumulative total of approximately 100 employees from each business unit.

Furthermore, we believe that our corporate purpose, “Change Work, Advance Society, Connect to Tomorrow.” can be achieved through sustainable growth of our corporate value with all employees thriving.

As we have defined how all employees can thrive in their work as “CONNECTers’ Success (employees’ success)”, we have been investing an annual total of 5.5 billion yen, including pay hikes, for human resources, as well as the CONNECTers’ Academy established in April 2023 that focuses on our corporate culture of self-directed learning and the acquisition of skills needed for our devoted business fields.

Contacts for Whistleblowing and Seeking Consultation

Mental and Physical Stress Prevention and Response for Employees (Japan)

Panasonic Group has established the following support lines to help employees prevent or deal with mental or physical stress.

◇Health Management Office

The Panasonic Group staffs these offices with full-time occupational physicians and occupational health staff to provide health support that performs functions such as preventing lifestyle-related diseases and helping individuals stop smoking, as well as consulting on mental and physical health.

◇Employee Assistance Program (EAP) Counseling Office

For this program, we have engaged an outside organization that listens to the personal concerns of employees who can rest assured that what they have discussed will not be disclosed to the Group or their health insurance organization. In the program, specialists such as clinical psychologists and psychiatric social workers take care of our employees, as well as supporting them by the “Re-work program” through which employees are able to make reappointments after an absence from work.

Whistleblowing Discrimination and Harassment

The Group has set up a hotline where employees can anonymously report discrimination or harassment if they see or hear about it.

◇Global Hotline

For more details, please see “Business Ethics” chapter on (Page 146).

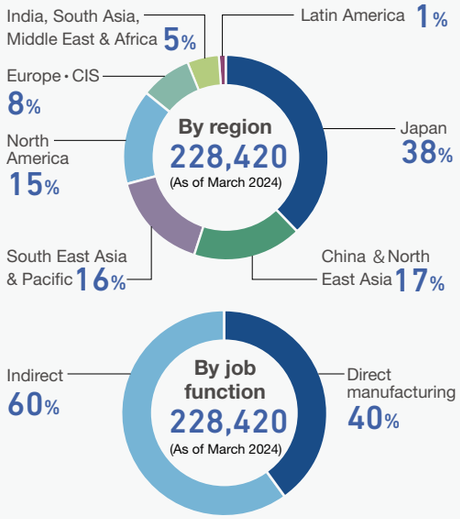
◇Equal Partnership Consultation Office

We have established an Equal Partnership Consultation Office with dedicated contacts in both the PHD and employees’ labor union. This whistleblowing framework allows us to address any concerns from employees, including dispatched employees, who report cases of harassment, including sexual harassment (includes harassment related to LGBTQ+), harassment based on power differentials, or harassment related to pregnancy, childbirth, or childcare leaves. During consultations, we safeguard employee privacy and carefully handle their concerns while confirming their needs. We also ensure that the employee and any other parties involved in fact-checking the case are protected from retaliation.

Human Resources Data

Number of employees

On a global consolidation basis



As of April 1, 2024
PHD, PEX and the seven operating companies

	Number of employees	Percentage
Male	52,091	79%
Female	13,717	21%
Total	65,808	100%

New graduate hires	49,652	75%
Mid-career hires	16,156	25%
Total	65,808	100%

Non-fixed-term employment	59,905	91%
Fixed-term employment	5,903	9%
Total	65,808	100%

As of April 1, 2024
PHD, PEX and the seven operating companies

	Number of employees	Percentage
Under 29 years old	9,063	14%
Between ages 30 and 39	10,248	16%
Between ages 40 and 49	13,886	21%
Between ages 50 and 59	26,988	41%
Over 60	5,623	9%
Total	65,808	100%

Recruitment figures

FY 2024
Number of people
PHD, PEX and the seven operating companies

	New graduate hires	Mid-career hires	Total
Male	985	1,770	2,755
Female	370	412	782
Total	1,355	2,182	3,537(*)

* 110 non-Japanese citizens and 67 people with disabilities included

Average years of continuous service

As of April 1, 2024
Years for employees with non-fixed-term employment in PHD, PEX, and the seven operating companies

Men	Women	Average
20.7	19.4	20.4

Turnover rate

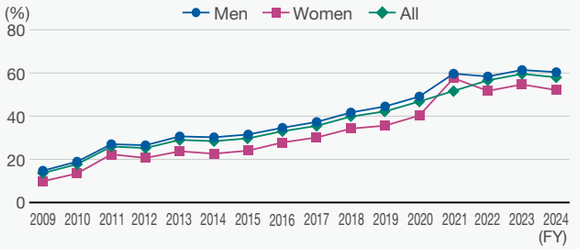
The number of those leaving the Group per year divided by the annual average number of employees
PHD, PEX and the seven operating companies (Non-fixed-term employment)

	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
For all resignation reasons	4.2%	4.6%	4.7%	4.5%	8.5%	3.6%	3.4%
For resignation reasons other than mandatory retirement	2.0%	2.1%	2.2%	1.8%	5.3%	2.2%	1.5%

Health Key Performance Indicators (in Japan)

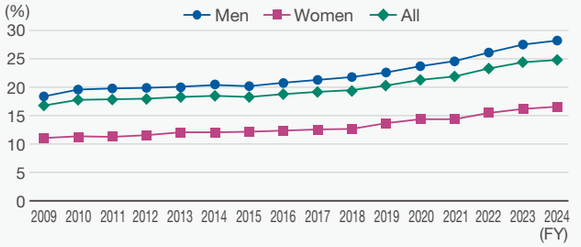
(1) Rate of awareness of steps walked

(% of those who know their approx. number of steps walked per week)

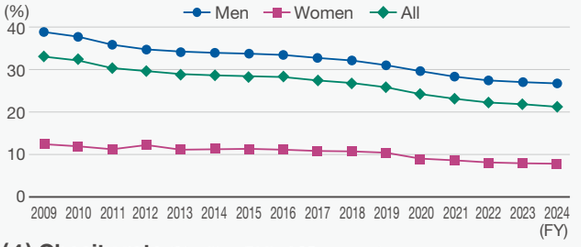


(2) Exercise rate

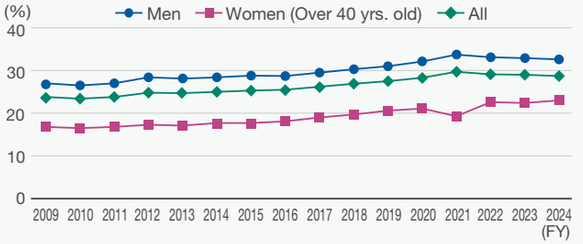
(% of people who exercise at least 30 minutes twice a week for a year)



(3) Smoking rate (% of people who smoke cigarettes)



(4) Obesity rate (% with a BMI of 25 or more)



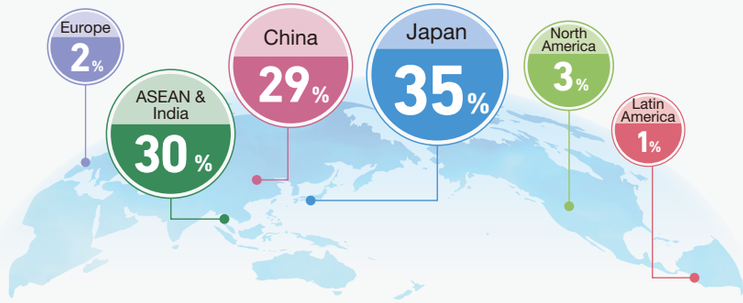
Sustainability Data Book 2024

Responsible Supply Chain

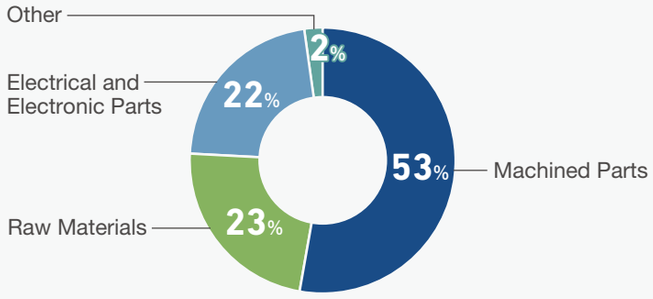
Sustainability Data Book 2024

Panasonic Group does business with approximately 13,000 suppliers worldwide. Panasonic Group strives to do business with suppliers that not only provide superior technology and quality but also fulfill their social responsibilities including human rights and environmental considerations, healthy workplace environment, and fair transactions. The parts and materials we purchase range from raw materials to electrical/electronic components and processed parts. Our suppliers are located in various regions and countries, meaning that some parts and materials come from regions and countries with many migrant workers. By region, the percentage of suppliers providing parts and materials used directly in manufacturing was 35% from Japan, 29% from China, 30% from ASEAN/India, 2% from Europe, 3% from North America, and 1% from Latin America. By industry, 53% were in machined parts, 23% in raw materials, 22% in electrical and electronic parts, and 2% in others (including molds).

Breakdown of Transactions by Region (%)



Breakdown of Transactions by Product (%)



Responsible Supply Chain

Policy

Procurement Policy

Panasonic Group has summarized its core thinking on procurement in the following 3-item set of Procurement Policy. The fundamental basis of this policy is the concept that, “based on relationships of mutual trust, and through diligent study and cooperation, our suppliers are invaluable partners in creating the value our customers demand”.

- **Implementation of Global Procurement Activities**
  The Company globally establishes partnerships with suppliers to respond to production activities on a global scale, and works to create the functions and values our customers demand based on relationships of mutual trust and through diligent studies and cooperation.
- **Implementation of CSR Procurement**
  Complying with laws and regulations, social norms, and corporate ethics, the Company promotes procurement activities, together with suppliers, that fulfill their social responsibilities, such as human rights, labour, safety and health, global environmental conservation, and information security.
- **Procurement Activities Working Closely with Suppliers**
  In order to achieve product values expected by customers, the Company serves as the contact point of suppliers with respect to information, such as the market trends of materials and goods, new technologies, new materials, and new processes, and works to ensure and maintain the quality of purchased goods, realize competitive prices, and respond to market changes.

In April 2022, we established the “Rules on Supply Chain Compliance” to strengthen our efforts to promote CSR in the supply chain, with our basic policy on supply chain compliance and corporate rules for its implementation. We have also issued the Panasonic Supply Chain CSR Promotion Guidelines (“CSR Guidelines”) for our suppliers to promote collaboration in responsible procurement efforts.

Clean Procurement

Because Panasonic Group believes that “a company is a public entity of society”, we engage in fair and equitable transactions with our global suppliers. With a need for a more stringent sense of moderation and ethics and to maintain healthy relationships with suppliers, in 2004, we released our Clean Procurement Declaration and have followed this declaration in our procurement activities since.

In Japan, we promote understanding and awareness of “clean procurement” among our procurement staff by providing annual e-Learning and training materials.

Prohibition of receiving money and valuables from suppliers and prohibition of accepting any form of hospitality, entertainment or meals

The Group established “Rules on Gift and Hospitality for Anti-Bribery / Anti-Corruption” in its internal regulations, applied at the global level. These strict rules apply to the acceptance of gifts, meals, entertainment and travel invitations from our business partners, including suppliers. They stipulate general rules regarding the rationality and balance in light of the purpose, value and frequency of gifts, meals, entertainment and travel invitations, and local customs, and the absence of improper influence on business judgement. More detailed standards and stricter rules are also set for each region.

WEB **Clean Procurement Declaration**
https://holdings.panasonic/global/corporate/about/procurement/declaration.html

Responsible Executive and Framework

The Panasonic Holdings Corporation (“PHD”) representative director and executive vice president serves as the officer in charge of procurement (as of August 2024). Panasonic Group established a Groupwide framework to foster cooperation in promoting responsible procurement among all Group operating companies and regional procurement divisions.

Each of our operating companies, their business divisions, or other relevant Group companies are responsible for applying the PDCA cycle to their practice of responsible procurement, following the Group’s internal rules, standards, and manuals. The Global Procurement Division of Panasonic Operational Excellence Co., Ltd. (PEX) fills the role of providing Groupwide measures and support to all operating companies. The heads of procurement at the operating companies and business divisions discuss any related issues at regular Groupwide meetings and take appropriate solutions.

Supply Chain Due Diligence

Enforcement of the Panasonic Supply Chain CSR Promotion Guidelines

We, the Panasonic Group, adhere to international norms and principles, such as the United Nations “Guiding Principles on Business and Human Rights”, and require suppliers to affirm them. To show our approach to CSR procurement and clearly convey the requirements to suppliers, we have established the CSR Guidelines, and we share them at the start of transactions. The contract obligates suppliers to comply with the guidelines. The CSR Guidelines stipulate the following provisions, while taking into account laws, regulations, and principles of international norms:

1. Labor rights: Prohibition of forced labor or child labor, appropriate working hours, decent wages, humane treatment, elimination of discrimination, freedom of association
2. Occupational health and safety: Training to ensure workplace safety and emergency preparedness, safety measures for machinery and equipment, and occupational health and safety rules for facilities
3. Environment: Compliance with the “Panasonic Group’s Green Procurement Standards”
4. Ethics: Prohibition of corruption and bribery, and promotion of fair business and responsible mineral procurement
5. Information security: Prevention of information leaks and

Sustainability Data Book 2024

Responsible Supply Chain

protection against computer and network threats
6.Product quality and safety: Creation of a product quality management system, provision of accurate product and service data, and maintenance of product safety
7.Contributions to society: Contributions to society and local communities
8.Management systems

The CSR Guidelines are prepared in Japanese, English, and Chinese and we both keep them on our website and endeavor to distribute to our suppliers and notify them of any revisions. We also ensure that we share these guidelines with our suppliers at workshops as necessary. We ask our suppliers to communicate the requirements of the guidelines to their suppliers and subsequent suppliers, and to check their compliance status. For further details, please visit the following website.

WEB **For Suppliers**
https://holdings.panasonic/global/corporate/about/procurement/for-suppliers.html

Obtaining commitment from the suppliers

We, the Panasonic Group, require that suppliers affirm the Panasonic Group's Code of Ethics & Compliance and the Panasonic Group's Human Rights and Labor Policy, and at the start of transactions for materials and components for the manufacturing of Panasonic products, we make it mandatory to conclude a Master Global Purchasing Agreement that stipulates compliance with the CSR Guidelines. In addition, we stipulate in the CSR Guidelines a respect for human rights as expressed in United Nations norms and principles, an evaluation of the status of suppliers' human rights initiatives and the implementation of prevention / mitigation / corrective measures, a request for compliance with tier 2 suppliers, and a request for cooperation with the Panasonic Group's human rights due diligence. The template of our Master Global Purchasing Agreement obliges suppliers to comply with the CSR Guidelines. In addition, to obtain commitments from all our suppliers, we have been asking our suppliers to submit written consent to comply with the CSR Guidelines since revising them in December 2022.

Conducting CSR Self-Assessments and Audit

To promote human rights due diligence and other aspects of CSR throughout the supply chain, the Group requires its suppliers to conduct CSR Self-Assessments.

The CSR Self-Assessments are structured based on the CSR Guidelines, and we require that all new suppliers conduct the assessments before we start transactions with them. We also require our existing suppliers to conduct them regularly.

We collect these assessment results using a web-based questionnaire, reducing the burden on suppliers and our Group and improving collection efficiency and accuracy. As of March 31, 2024, we had collected the questionnaires from more than 12,300 suppliers (95%). After identifying issues, particularly those identified as priority management items in the CSR Self-Assessments, such as labor conditions for migrant workers, we will visit suppliers, check on-site conditions, hold interviews, and investigate issues if necessary and work to correct them. We will continue to collect these assessments from our suppliers on a regular basis.

Since April 2022, the Group has begun work on initiatives to build a structure for human rights due diligence. While incorporating guidance from outside experts, the Group has compiled a table to assess human rights risks at our suppliers by using risk indicators and indices provided by international organizations in order to identify suppliers for which action should be taken on a priority basis.

Since April 2023, all operating companies narrowed down the audit targets from among these identified suppliers based on the aforementioned risk approach and conducted supplier audits for a total of 141 suppliers (16 of which were audited by third-party organizations) using the supplier audit plans they formulated.

The items identified through audits are shown in the table below. We have asked suppliers to improve these items, and we are monitoring their progress.

Category	Examples of findings in supplier audits
Labour	Records of working hours, break times, and overtime hours have not been properly managed
Human rights	Breakrooms that ensure privacy for women are not provided.
Health and safety	Emergency evacuation routes are unclear.
Environment	Environment impact assessments are not properly conducted.
Ethics	Anti-bribery and other related training for all employees is not provided.
IT	Insufficient security management and employee training

Initiatives for a Harmonious Relationship with the Environment

We strive to reduce the negative impact on the environment through cooperation with our suppliers and logistics partners. Please see the Environment section.

WEB **Environment: Collaboration across the Supply Chain**
holdings.panasonic/global/corporate/sustainability/pdf/sdb2024e-eco.pdf

Responsible Minerals Procurement

Our Basic Stance

Panasonic Group recognizes that the procurement of certain minerals (notably tin, tantalum, tungsten, gold, cobalt, and mica) carries a risk of funding organizations in conflict-affected areas and risks related to human rights abuses, child labour at mining sites, harsh working conditions, environmental destruction, and corruption in high-risk areas. This is a matter of grave social concern, and to fulfill our

Responsible Supply Chain

corporate social responsibility, Panasonic Group is engaged in the responsible procurement of minerals in its global supply chain.

Of course, there are companies and individuals in those same areas who conduct their business legally at the same time. Therefore, while we remain mindful of our obligation to avoid using minerals associated with illegal or unethical practices, we strive to ensure that this does not hinder the business activities and livelihoods of legitimate companies and individuals. To this end, it is necessary for us to work in partnership with a wide range of stakeholders including national governments, companies, and NPOs that are working toward creating sound minerals supply chains in the target areas.

We will keep conducting its activities based on the "Due Diligence Guidance" of the OECD (Organization for Economic Co-operation and Development) and build management processes in line with global standards.

The promotion of responsible minerals procurement requires conducting due diligence throughout the entire supply chain, from upstream mining companies to smelters, refineries, and downstream enterprises. We require that all related suppliers provide information on smelters/refineries throughout the supply chain, and we aim to procure from suppliers who don't present any issues. We also participate in the Responsible Minerals Initiative (RMI) to promote industrywide efforts.

Responsible Minerals Procurement System

With the PHD Executive Officer in charge of procurement assuming ultimate responsibility, we are working to build a Groupwide management system for responsible minerals procurement in collaboration with each operating company.

Due Diligence Efforts

Responsible mineral survey requires cooperation from all our suppliers going back to the refineries and smelters. Panasonic Group uses industry-standard survey forms issued by RMI to conduct surveys, including the tin-tantalum-tungsten-gold (3TG) survey form (CMRT) and the cobalt-mica survey form (EMRT).

Responsible Minerals Surveys

The Panasonic Group conducts surveys regarding responsible minerals on the suppliers of each operating company and business site. In fiscal 2024, we collected responses from 2,850 of 3,041 suppliers that we asked to conduct CMRT surveys and 3,474 of 3,711 suppliers that we asked to conduct EMRT surveys (as of March 31, 2024). Based on the data collected from the survey forms, we conducted a risk analysis and assessment and requested further investigations from suppliers, according to the risks that we identified.

In fiscal 2024, roughly 60% of the designated refiners and smelters had Conformant/Active Smelter status (refiners and smelters that have either passed RMI audit or is currently undergoing one). We are also working on industry efforts that will push the remaining 40% of those refiners and smelters toward participation in the Responsible Minerals Assurance Process (RMAP). In the rare event that we find minerals that are complicit in conflicts or human rights violations in our supply chain, we also ask suppliers to take steps toward no longer using them, including changing their source.

Industry Collaboration Initiatives

Panasonic Group is participating in JEITA's Responsible Minerals Procurement Working Group to raise supply chain awareness and improve the efficiency of surveys through industry collaboration. More specifically, we have been working with industry groups both inside and outside Japan and holding seminars and surveys briefing sessions to promote best practices regarding responsible minerals. We have also worked on smelters/refiners information scrutiny. We have been working in JEITA's Working Group and continue to encourage smelters to participate in the Responsible Mineral Assurance Process (RMAP) with other member companies. Furthermore, we joined the Responsible Minerals Initiative (RMI) in July 2017, with the aim of learning about the latest industry trends and promoting best practices for procurement activities. Panasonic Group will continue to conduct responsible minerals surveys while monitoring industry trends.

Internal Training and External Awareness-Raising

Our procurement departments at Panasonic Group conduct CSR procurement training for our procurement staff members, who will be able to fulfill our social responsibilities in procurement activities, by teaching them about the company's approach to CSR, and they create opportunities to gain knowledge about procurement compliance. We have also conducted training for procurement employees overseas (in parts of Europe, the US, China, and other Asian countries). Through this training, we aim to consolidate their knowledge while confirming their understanding of the importance of essential topics and compliance in CSR procurement—including compliance with environmental, anti-corruption, and anti-bribery regulations, as well as human rights, labour, health and safety, and clean procurement in the supply chain. In addition to all this, we also build in basics on CSR procurement in our training curricula for new employees in procurement departments and those transferring from other divisions.

Last fiscal year, we also held training sessions to develop supplier auditors twice in Japan, seven times in Asian countries, and twice in China. Through 11 sessions, we trained 152 people to become supplier auditors. Our web portal for procurement employees contains the information necessary for responsible procurement— including the procedures employees should follow for CSR procurement, the CSR Self-Assessments we ask suppliers to conduct, and guidelines for conducting audits—so that employees always have the latest information when performing their duties.

Responsible Supply Chain

In fiscal 2023, we looked to raise awareness in the supply chain by holding workshops and meetings with about 100 suppliers, mainly in Malaysia. We also conducted CSR audits at around 50 suppliers in Asia. In fiscal 2024, we held human rights due diligence training in Malaysia six times in cooperation with the United Nations Development Programme (UNDP), and 207 of the approximately 500 suppliers in Malaysia with significant transaction amounts (228 attendants) attended the training. We plan to further expand the scope of our supplier education by prioritizing those regions and suppliers with high risk and looking to more regions.

Systems for Whistleblowing and Seeking Consultation

The Panasonic Group has established its “Global Hotline EARS” that anyone, including Panasonic Group employees and suppliers, can use to anonymously report any violation or suspected violation of laws and regulations, agreements with our suppliers, the Panasonic Group Code of Ethics & Compliance, or other material codes in the Group’s supply chain. Whenever there is a report, the Group follows all internal rules and guidelines as well as the laws of the relevant countries with regard to the protection of the individual making the report, and from there it undertakes appropriate investigations and countermeasures. In addition to our Global Hotline, we offer access to JaCER, an industrywide grievance platform established by the CSR Committee of the Japan Electronics and Information Technology Industries Association (JEITA). JaCER is a contact point for suppliers and their employees to report any adverse human rights impacts in the Group’s supply chain. By accepting grievances through a third-party contact, we aim to make grievance handling fairer and more transparent, promote dialogue and redress more than ever before, and work to resolve essential human rights issues. In all reporting systems, we ensure whistleblower anonymity and report confidentiality and publicize the contact information for reporting systems on our supplier web portal and our website, “For Suppliers.”

We conducted audits through a third-party organization on human rights issues at suppliers that we received through the hotline, and we have witnessed suppliers take corrective actions.

WEB **For Suppliers**
https://holdings.panasonic/global/corporate/about/procurement/for-suppliers.html

WEB **Global Hotline**
https://secure.ethicspoint.eu/domain/media/en/gui/104773/index.html

WEB **Grievance mechanism of Japan Center for Engagement and Remedy on Business and Human Rights (JaCER)**
https://jacer-bhr.org/en/index.html

Sustainability Data Book 2024

Raising Product Quality Levels and Ensuring Product Safety

Based on the idea promoted by our founder that Panasonic should strive “to contribute to society through its products and services while always placing the customer first,” the Panasonic Group approaches “quality” as something that means more than the quality of the work we do or the products we make. To us, it also means conducting business in a fair and honest manner at all times, so that we can continue to offer products and services that are better than anyone else’s while upholding our commitment to our customers and society, taking action to ensure the safety and quality of our products and services.

Policy

Panasonic states in its Groupwide Quality Policy that the company will “truly serve customers by way of providing products and services that continuously meet and satisfy the needs of customers and society.” Each operating company has established and operates their own quality management system with responsibility for the quality of their products. In particular, our approach to quality defects focuses on compliance with laws, regulations, and corporate ethics, as stated in the Panasonic Group Code of Ethics & Compliance. This code specifies our adherence to laws, regulations, and social norms, including industry standards and promises to customers. It also states in Chapter 4: Our Business Relationships that we should honor our commitments to our customers and to society as they relate to our products and services, and that we must act in the interest of ensuring the safety and quality of our products and services.

In addition, the Group has established a Basic Policy regarding the Voluntary Action Plan for Product Safety. As per this policy, Panasonic actively strives to ensure the safety of its products, while keeping to its principles of “the customer comes first” and of maintaining a “Fairness and Honesty” attitude.

WEB **Panasonic Group Code of Ethics & Compliance**
https://holdings.panasonic/global/corporate/about/code-of-conduct

WEB **Basic Policy Regarding the Autonomous Code of Conduct for Product Safety (Japanese only)**
https://holdings.panasonic/jp/corporate/about/code-of-conduct/quality-policy.html

Per our Basic Management Policy, Panasonic Group considers always ensuring the safety of the products we manufacture and sell and delivering safety and security to our customers as essential

Raising Product Quality Levels and Ensuring Product Safety

management issues and social responsibility objectives.

Based on the profound lessons learned from the accidents involving FF-type kerosene heaters, specifically, we apply our unique product safety standards to each product lifecycle phase (from planning and design to service and disposal) for every product to ensure its safety at all times. We also use our Group intranet to share information related to the product safety of all Panasonic products in a timely manner to all employees, including persons in charge of quality and design at each operating company and business site. We also strive to fulfill our imperative of having zero product safety incidents.

WEB Important news about products (for Japan)
https://holdings.panasonic/jp/corporate/about/products-information.html

Quality Management System

To establish self-sufficient quality assurance processes in each operating company and business site, Panasonic Group published its Product Quality Management System (P-QMS) Guidelines in 2004. These Guidelines supplement the requirements of the ISO 9001 standard with the Group's own quality assurance methods and expertise to create a quality management system and have been updated to comply with ISO 9001-2015. Operating companies and business sites work to implement quality management systems uniquely tailored to their business characteristics with reference to these Guidelines. At various levels, they conduct regular quality assessments and quality audit to review the progress of quality management while also formulating corrective action plans for any discovered deficiencies, all in an effort to continuously improve quality.

To properly address our continually diversifying business areas, each operating company operates according to the P-QMS Guidelines and industry standards appropriate to its field, from household appliances, in-vehicle accessories, residential, devices, B to B solutions, pharmaceuticals, services, and more.

In addition to quality audits at operating companies/business sites, the PEX Audit Department and the Quality Department jointly conduct quality function audits against operating companies (including against specific products) for the purpose of strengthening periodic second-party audit perspectives on products. We evaluate various processes in the development and manufacture of products, and work to understand the effectiveness of our operating companies/business sites' quality management systems. Additionally, we obtained and maintain quality certifications (ISO 9001/IATF16949) at our operating companies and production sites. Regularly incorporating audits by third-party organizations enhances checks on each process—including development, manufacturing, and inspections—and improves our reliability to our customers.

Meanwhile, due to instances of irregularities for electronic materials products manufactured and sold by Panasonic Industry Co., Ltd., the international standards for quality management systems "ISO 9001" and "IATF 16949" of the affected business sites have been revoked in March 2024 and May 2024 respectively. We will continue to work on improvements with the aim of obtaining recertification for both standards. Please refer to the "Business Ethics" chapter for information on how the irregularities have been handled.

WEB An example site with ISO certifications by business unit
Public website for official certifications of production sites of Panasonic Industry Corporation products.
https://industrial.panasonic.com/ww/downloads/certifications

Training

The Panasonic Group conducts training every year for all quality managers at each operating company and business site, with the aim of training key quality personnel to promote quality management innovation. In particular, the Group regularly holds a Business Division Director Quality and Environment Workshop for business managers responsible for the quality management systems in their respective divisions, as well other activities geared toward learning about results-driven, quality-based management, including guest lectures and training through case studies. In addition to training for specific employee ranks, we are promoting awareness of group-wide quality improvement through ongoing quality training for quality function employees during the first three years after joining the company, as well as customized training specific to products and businesses.

In addition, e-Learning programs such as "Fundamentals of Product Safety" are being put in place to spread a corporate culture that places the highest priority on product safety to all employees. In addition, each operating company conducts its own Quality Control (QC) Activities through which individuals can come together to learn problem solving methods to be used in the field as part of our efforts toward bolstering quality on the production floor. Product Safety Forum, an event that provides a venue for thinking about product safety using examples from the Group and elsewhere, took place twice in fiscal 2024, for a total of 83 times.


Product Safety Learning Square

The Group has also established a Product Safety Learning Square at the Team & Talent Development Center in Hirakata, Osaka, with the aim of conveying lessons based on actual business sites and actual products, and of providing instruction to enhance product safety-related skills. The Product Safety Learning Square offers an opportunity to see actual products that were recalled in the past—such as those recalled after the FF-type kerosene heater accidents—as well as other information on the causes of their problems, the steps taken during the recall, and the measures taken to prevent the critical unsafe phenomena (including tracking or strength degradation). Furthermore, we also launched the Virtual Product Safety Lab in fiscal 2022, making exhibits available online for free viewing. The Product Safety Lab recreates an actual space that was filmed in 360 degrees to allow viewers to move around that space freely, and even read information panels or

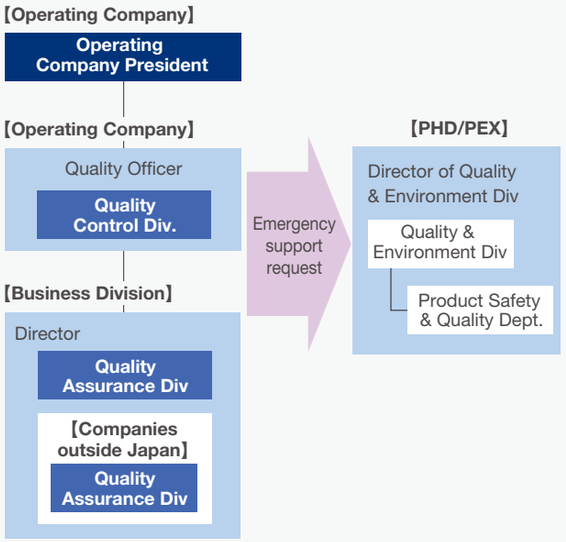
Raising Product Quality Levels and Ensuring Product Safety

watch views by simply clicking on an icon. We also conduct educational activities for employees in distant locations and outside Japan by expanding our reach.

Responsible Executive and Framework

As of August 2024, the executive in charge of quality is the Group Chief Technology Officer (Group CTO). Each operating company has appointed a quality manager and established systems for undertaking its business with independent responsibility and self-sufficiency. In addition, Panasonic Holdings Corporation (“PHD”) and Panasonic Operational Excellence Co., Ltd. (“PEX”) provide support in response to the requests from the operating companies as countermeasures against critical risks for the Group, while expanding quality-related assets horizontally over the Group.

Quality Management Structure (as of August 2024)



Committees and Organizations

Activities of Quality Managers Meetings

Panasonic Group investigates and summarizes Groupwide quality improvement efforts and the state of product quality within the Group at its Chief Quality Officer (CQO) Meetings. Group CQO, CQOs from each operating company, and persons involved in relevant job functions such as quality and product regulations attend these meetings. Attendees discuss how we should handle quality over the medium and long terms, and they decide on initiatives meant to further strengthen the foundation of quality for the whole Group. Panasonic Group also holds the Quality Committees—attended by the quality managers of each operating company—as a place for more practical discussions on quality policies and measures.

Global Safety Standard Certifications Obtained

ISO13849 (ISO13849-1)

International standards issued by the International Organization for Standardization (ISO) for Safety of machinery - Safety-related parts of control systems.

Panasonic Advanced Technology Development Co., Ltd. received recognition in March 2024 that its “wireless emergency stop device (receiver)” is compliant with international standard ISO 13849-1 Safety of machinery - Safety-related parts of control systems.

WEB **Wireless emergency stop device (@seguro wes)**
https://adtsd.jpn.panasonic.com/solution/wes.html

ISO13482

The international standard relating to the safety of personal care robots issued by the International Organization for Standardization (ISO). Three types of robots are covered: physical assistant robots, mobile servant robots, and person carrier robots. Panasonic AGE-FREE Co., Ltd. has received this ISO certification for two of our products.

- 2014: Personal care robot Resyone (robotic device for nursing care combining the functionality of a bed and a wheelchair, the first device in the world to receive this ISO certification)
- 2017: Personal care robot Resyone PLUS (Japanese only)

WEB https://sumai.panasonic.jp/agefree/products/resyoneplus/

ISO 26262

An international standard for road vehicle functional safety that was published in 2011. The standard sets out four Automotive Safety Integrity Levels (ASILs): ASIL A through ASIL D.

Panasonic Automotive Systems Co., Ltd. acquired certification in the ISO 26262 road vehicle functional safety standard from the German third-party organization TÜV SUD. The body recognized that Panasonic is able to comply with the highest level of safety in the standard (ASIL-D) during the process of developing onboard devices and device software.

WEB **Press Release (Acquisition of ISO 26262 Road Vehicles - Functional Safety Software Development Process Certification) (Japanese only)**
https://news.panasonic.com/jp/press/jn120329-8

Internal Company Rules Concerning Product Labeling

Based on the Manufacturing Industrial Standards for Panasonic Group, each operating company determines its own approach and guidelines to be followed with regard to the way their products are handled as well as installation and services as appropriate for each product. Specifically, warning label related to the safe use of products and information label on legally designated recycling or disposal methods (according to the laws including Recycling Acts) and other information that helps customer safely use our products and services are specified in the design methods of warning labels and instructions for use, care and installation of products in consideration of preventing customers from misusing. There have been no instances of product labeling violations subject to fines or penalties in the Group (as of August 2024).

Product Security

As consumers conveniently use various products equipped with software and connected with network, we must ensure product security to prevent harm from attacks initiated by malicious third parties who aim to leak or alter data or cause device malfunction. Panasonic establishes internal structure and rules, including a specialized department for Groupwide product security and guidelines for promoting security-conscious development. We ensure the security of our products by regularly reviewing these structure and rules in conjunction with our information security and production system security initiatives, so our customers have peace of mind when using our products.

Ongoing Information Collection

Product security issues and how to address them change on a daily basis. At Panasonic Group, we collect the most up to date information on product security by joining various security focused organizations, e.g., FIRST*, a forum to share information on security incidents, and attending various global conferences. This information is shared with any relevant divisions and used internally through initiatives to improve product security measures throughout the Group.

* FIRST: Forum of Incident Response and Security Teams

Promoting Product Security from Development

During the development phase of a product, we consider what assets and functions need to be protected, as well as any potential attacks against them. Products are developed while minimizing these risks. In addition, security experts perform tests incorporating up-to-date attack methods on the product prior to shipment, to ensure that Panasonic products do not contain any “security vulnerabilities” from both a hardware and software standpoint.

Post-shipment Response

As part of the Group’s post-shipment monitoring of our products, we have a contact point to receive reports on vulnerabilities discovered in Panasonic products after shipment.

When we receive information on vulnerabilities, we immediately verify whether they will impact Panasonic products. If we find that our products have security issues because of those vulnerabilities, we ensure product security through updates or similar means and take additional actions including establishing a check system to prevent the issue from recurring. We have systems in place that allow the Product Security Center to monitor progress and provide support until the response of the relevant business divisions are complete.

We also have systems in place that make it possible for Panasonic to take a more active role in obtaining information on vulnerabilities and acting on it (rather than waiting for vulnerabilities to be reported) by continually monitoring the latest threats that might affect our products post sale.

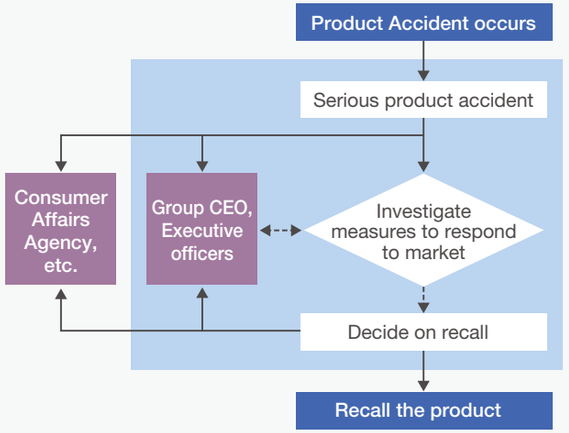
WEB **Panasonic Product Security Incident Response Team**
https://holdings.panasonic/global/corporate/product-security/psirt.html

Major Accidents and Responses

Responding to Product-Related Incidents

In the event that a product-related accident occurs, Panasonic immediately confirms the facts related to the incident, and analyzes and verifies its causes. If the incident is deemed to be serious, operating companies and business sites as well as PHD/PEX work together to take appropriate measures to ensure customers’ safety. Specifically, Panasonic Group’s first response is to notify relevant government bodies such as the Consumer Affairs Agency, as well as the operating company President, Group CEO and senior management, who then consider the response policies. In addition, based on incidents that have occurred in the past, operating companies prepare manuals detailing responses to product failures, safety test documentation, etc. We are putting these into practice in new product development, specification changes, etc. to prevent incidents’ recurrence.

Product Accident Response Flowchart



Serious Product-Related Accident Information

In Japan, Panasonic Group publicly reports serious product accidents*1, including accidents suspected of being caused by products*2, and accidents for which it has been determined that it is unclear whether a product was the cause*3, based on the Consumer Product Safety Act and the Group’s basic policies per its Autonomous Code of Conduct for Product Safety.

*1 “Serious product accidents” refers to the following accidents specified in the Consumer Product Safety Act:
- Accidents resulting in death;
- Accidents resulting in serious injury or illness (injury or illness requiring at least 30 days of treatment), or accidents resulting in physical impediment;
- Carbon monoxide poisoning;
- Fires (confirmed as such by firefighting authorities).

*2 Any of the following:
- Accidents relating to gas devices or kerosene devices (including accidents in which it has yet to be determined whether the product was the cause);
- Accidents relating to products other than gas or kerosene devices for which it is suspected that the product was the cause.
- Panasonic promptly releases information on these types of accidents.

*3 Among serious product accidents, accidents for which Product Safety Group of the Consumer Economic Affairs Council of the Ministry of Economy, Trade and Industry, Japan, has determined that it remains unclear whether a product was the cause.

WEB List of Information Concerning Serious Product-Related Accidents (Japanese only)
https://holdings.panasonic/jp/corporate/about/products-information/psc.html

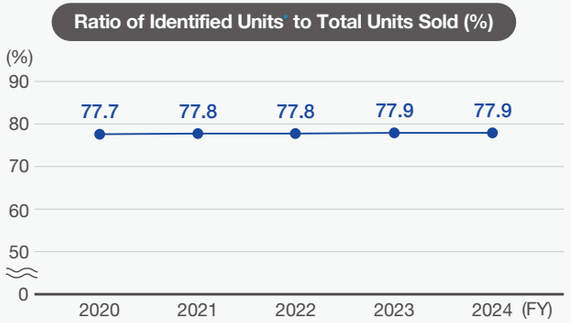
Outside of Japan, Panasonic also identifies and discloses information on product-related accidents based on the laws and guidelines of each country.

Progress in Response to Incidents Related to FF-Type Kerosene Heaters

Nineteen years have passed since Panasonic received an emergency order in 2005 due to an accident involving an FF-type kerosene heater and initiated a Groupwide market response. We continue to work, led by the Corporate FF Customer Support & Management Division staff, to prevent any new incidents.

In fiscal 2024, we conducted a campaign to find yet unidentified target products. As part of these efforts, we visited the homes— mainly in Hokkaido, Tohoku, and Nagano—of our customers who had once owned the recalled products or live in the trade area of the retail stores that went out of business, investigated the nearby supply/exhaust pipes, and conducted surveys of retail customers. We are also continuing all our notification campaigns to promote product recalls among customers who had their units inspected or repaired and to confirm product conditions before the winter arrives. In fiscal 2024, we added 77 units to our list of products discovered or confirmed to have been discarded. In total, 118,586 units have been recorded, bringing the percentage of units identified to 77.9% of units sold as of March 31, 2024. We were still finding products that our customers had continued using, without realizing the heaters' potential harm, meaning that a high degree of risk remains. We will continue our search.

In addition to these market-facing efforts, we are undertaking various internal initiatives. We communicate the progress of these activities through the company intranet. We also pass down the lessons learned from customer safety incidents through lectures given in various training programs and educational materials posted at the Product Safety Learning Square (in Hirakata), the Product Safety Museum (in Kusatsu), and the Learning Center (in Nara), where we educate our employees. We strive to foster a Panasonic Group culture that places product safety first.



* Identified units: This figure includes the number of units recalled, the number of units in use after examination and repair, and the number of units we have confirmed that customers have discarded.

List of Awards

Product Safety Awards

The awards program was launched by the Ministry of Economy, Trade and Industry in 2007 with the aim of encouraging private enterprises to be more active about improving product safety, as well as to firmly establish the value of product safety in society as a whole.

FY2023
METI Minister's Award, Large Manufacturer and Importer Category: Laundry and Cleaner Division, Living Appliance and Solutions Company, Panasonic Corporation

WEB https://www.meti.go.jp/product_safety/ps-award/3-consumer/r4_award.html#anc-2-1 (Japanese only)

IAUD International Design Award

The awards program was created by the International Association for Universal Design and is meant to recognize groups and individuals who have conducted or proposed particularly noteworthy activities aimed at realizing a UD society in which everyone can live comfortably.

Various products and initiatives of former Panasonic Corporation had received the IAUD Gold Award for seven consecutive years until 2018, in addition to other recent recognition below:

- FY2022 Panasonic IC card reader with facial recognition, Gold Award, Healthcare and Welfare Design
  Emergency broadcasting equipment, Silver Award, Security and Public Safety
- FY2021 Panasonic LED Torch Light, Silver Award, Innovation for Everyday Use and Emergency Situations
  First Shaving Series, Bronze Award, Product Design

WEB Panasonic Group Universal Design
https://holdings.panasonic/global/corporate/universal-design.html

AI Ethics

It has often been pointed out that while new technologies can offer solutions for different kinds of issues and enrich people's lives, the risks those same technologies bring have the potential to lead to human rights issues like violations of privacy, more intense illicit surveillance, and discrimination by algorithms that have been trained on biased data. The Panasonic Group considers our approach to AI ethics as "a promise to the rest of the world to apply AI in ways that are human-centered and that respect human rights," and we work to apply that approach to AI ethics to the ways in which we develop and operate our AI products and services, as well as our AI utilization.

Policy

The Panasonic Group's policy with regard to AI is to work to protect the safety and interests of all stakeholders, including any customers involved, and minimize the impact of risks throughout the AI utilization life cycle from the planning of AI products and services up to their sale and use. By fostering trust in our AI technologies and products in this way over the long term, we will encourage further AI utilization, through which we can make a greater contribution to society.

In order to do this, we have defined our AI Ethics Principles (which apply to the entire Group), and we conduct AI ethics activities to mitigate and avoid risks that can come with improvements to those technologies and processes by evaluating and managing risks related to AI ethics so that our AI utilization life cycle will function appropriately with reference to our AI Ethics Principles as well as relevant laws, regulations, and ethical guidelines for each country. In 2022, we established and published our AI Ethics Principles.

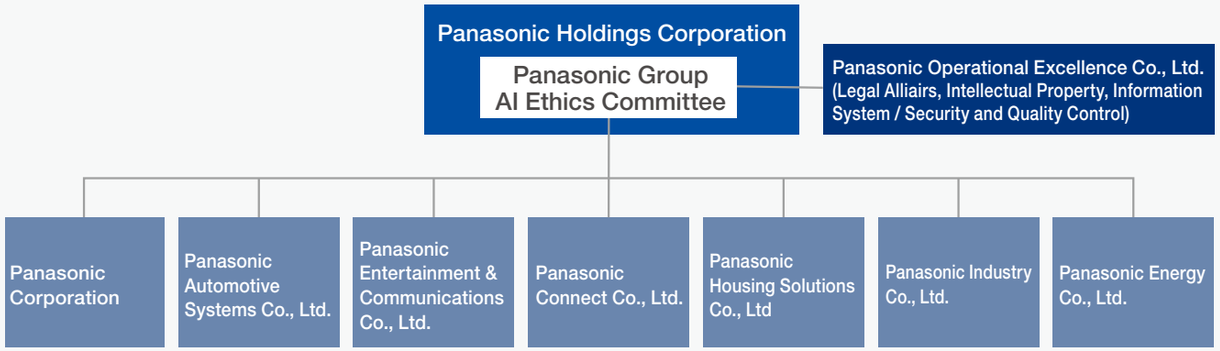
WEB **Panasonic Group Responsible AI**
https://tech-ai.panasonic.com/en/responsible-ai/

Sustainability Data Book 2024

AI Ethics

Promoting Organization

AI ethics activities for the Panasonic Group are driven by the Group's CTO, our head of AI operations (as of August 2024).



The AI Ethics Committee has been established within the Panasonic Holdings Corporation by the Group CTO, comprising staff members in charge of AI ethics and members from other related departments like legal and information security. The Committee provides the Group with systems and measures to be implemented in relation to AI ethics activities and provides operating companies with support for their AI ethics activities as well as understanding, reviewing, and formulating countermeasures against risks. Each operating company also has persons in charge of AI ethics, and these individuals cooperate with the AI Ethics Committee to carry out activities that fit the business and technologies of each company.

For extremely risky AI projects or those with manifest risks, the AI Ethics Committee will propose countermeasures, report the countermeasures to the AI Ethics Committee Chair and relevant Group companies, and then work with these companies to implement the countermeasures.

Education

To enable our group employees to work in line with the principles of AI ethics activities, the AI Ethics Committee provides learning materials on the basics and promotion of AI ethics.

Since 2022, the AI Ethics Committee has been providing e-Learning courses on AI ethics for all employees in our domestic group companies every year. We also post e-Learning materials to our Intranet site so that all employees, including those in overseas companies and temporary staff, can strengthen their understanding whenever necessary.

Risk Assessment

In 2022, Panasonic introduced a monitoring system to identify the AI ethical risks of Group products. The AI Ethics Committee collects risk assessment results of operating companies through the Group employee survey results and the groupwide risk check system and analyzes them to understand any risks within the Group.

For matters that have been determined to pose a high level of risk, the Committee sets up review teams to conduct risk reviews or otherwise addresses them across organizational divisions.

External Cooperation

The AI Ethics Committee also conducts other research and outreach related to AI ethics in a variety of ways, including participation in committee activities at external institutions researching AI ethics, as well as in the community, academic, and public sectors. Panasonic was able to participate in drafting the Governance Guidelines for the Implementation of AI Principles laid out by Japan's Ministry of Economy, Trade and Industry at the Expert Group on How AI Principles Should be Implemented. We are further strengthening our links with external parties through our membership in the AI Alliance, a global alliance on AI.

Customer Relations

Since its foundation, Panasonic has aimed to contribute to society through its products and services, while always putting the customer first. The Group seeks to improve customer service (CS), and it offers products, solutions, and services that enrich the lives of people around the world. When providing CS, the Group strives for sincerity, accuracy, and speed, and it acts with humility and appreciation. This finds its basis in the CS principle of “true service” that the Group’s founder described. Our fundamental stance is thus to provide customers with trust, peace of mind, and satisfaction.

Service Philosophy (True Service)
The customer’s satisfaction is our satisfaction.

True service resides in mutual satisfaction.

Service is an integral part of any business. A business that does not provide service is no business at all. Service, therefore, is the duty and obligation of any business person. But there’s nothing more aggravating than service provided only out of a sense of duty. Customers can sense it.

Service means satisfying customers, and when we satisfy our customers, we in turn find satisfaction in a job well done. Satisfied customers and satisfied employees: This is what constitutes true service.

Konosuke Matsushita
August 1967 issue of PHP Magazine

Policy

We have established a set of Operational Rules for Response to Customers (compliant with ISO 10002 and JIS Q 10002) to provide guidelines to group companies in Japan for responding to inquiries and complaints from customers.

We have also stipulated the following provisions as part of our Operational Rules for Response to Customers:

- We strive to deliver the utmost satisfaction to all customers;
- We approach our customers and utilize their opinions in our management decisions.

Customer Relations

Following the above rules and policies, Each site in Japan has implemented a Management System for Response to Customers as a mechanism for utilizing information received from customers in its management approach. These sites conduct periodic self-audits and make other efforts to improve the quality of customer relations. Outside of Japan also, we have implemented ISO-compliant management systems based on the Operational Rules for Response to Customers and tailored to the legal system in each country or region.

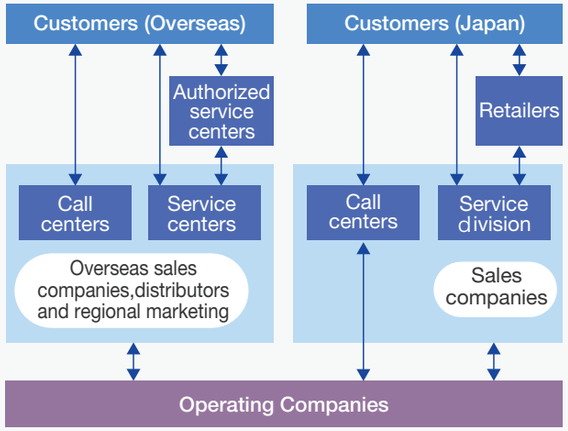
Responsible Executive and Framework

The Group Chief Technology Officer (Group CTO) is the Executive Officer responsible for the CS of the Group (as of August 2024). The CS departments at each of the 8 operating companies cooperate to implement the Group's customer satisfaction initiatives. Overseas, the CS departments of Panasonic Group's sales companies around the world collect local information concerning services and quality, as well as customer requests and so forth. This information is used to ensure the quality and safety of products and to help develop products that match the needs of customers in each department.

CS staff in Japan and abroad share the knowledge and experience that they have accumulated to endeavor to provide better customer service around the world.

Customer Relations Structure (as of August 2024)

*Example based on home appliance products

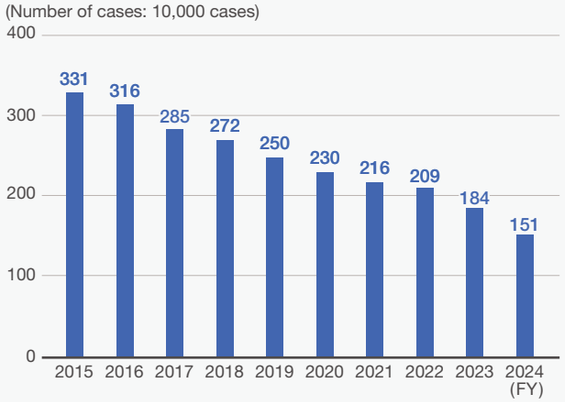


Customer Inquiry Response System

In Japan, we deal with inquiries from customers before they purchase products as well as with their concerns about how to use them after purchase through the Customer Care Center. The Customer Care Center is open from 9:00 am to 6:00 pm, Monday through Saturday, excluding Sundays, national holidays, and the first three days of the new year. There are separate phone numbers for each product. Customers rarely spend a long time on hold; the Customer Care Center is organized to provide accurate and rapid service. We accept inquiries for residential equipment and building materials products 365 days a year.

When customers make inquiries on the Panasonic website by typing in a question, the site displays multiple relevant FAQs. Thus, the company strives to provide quick responses to questions. Regarding the content of its FAQ pages, the company analyzes the search keywords that bring customers to FAQs, as well as the number of times that the questions are viewed, to increase the precision of the FAQs, so that the information that customers require is accurate and displayed quickly. In recent years, the company has also been undertaking initiatives to use Facebook and other social media outlets to post various types of useful information in a timely manner, such as when the seasons change, and to entice customers to visit relevant FAQ pages using LINE's autoreply service. Because these FAQs are organized so that customer's problems can be solved without the customer needing to contact the Customer Care Center, the number of inquiries at the center is trending downward. Panasonic group sales companies and sales agencies operate call centers in each country/region outside of Japan as well, handling all types of inquiries as well as intake for repairs. The website for each country also includes FAQs, and we are working on building ways to allow customers to resolve their own issues as they are able to in Japan.

Number of Inquiries at the Customer Care Center (for Individual Customers) Over Time *In Japan



Repair Service Organization

The CS Company (repairs and spare parts department) of Panasonic Marketing Japan Co., Ltd. is in charge of repair services for consumer electronics products in Japan. Panasonic Techno Service Co. is in charge of housing facility products. These service companies constitute a network across Japan and employ full-time customer engineers who have close ties to their local regions as well as advanced technical skills and experience. The network provides swift and reliable on-site repair services in response to customer requests. The repair services system is organized such that repair requests are received 24 hours per day, 365 days per year; Panasonic Group makes particular efforts to provide repair services as quickly as possible for products that are everyday necessities.

- Number of Service Locations of the CS Company, Panasonic Marketing Japan Co., Ltd. and affiliates: 97 locations throughout Japan (as of April 2024)

- Number of Service Locations of Panasonic Techno Service Co., Ltd.: 41 locations (as of April 2024)

Initiatives for Improving Repair Service Contact Point

For household appliance repairs in Japan, we have made arrangements for receiving requests via websites and for courier services to pick up customers' products before repair and to deliver the repaired products when they are ready with the goal of making it more convenient for customers requesting repairs.

Customers can get a diagnosis from our website before requesting for repairs, allowing them to confidently use our online repair service. To receive a diagnosis, customers enter their product numbers and select the appropriate symptoms, and the system provides useful troubleshooting approaches to solving their problems. If the system deems repairs to be necessary or is unable to resolve their problems, customers can review the estimated costs for repairs and apply for them.

Global Repair Service Centers

For customers outside Japan, Panasonic sales companies, call centers and service centers operated by distributors, and call centers and certified service providers commissioned by sales companies or distributors offer repair services meeting local needs and business practices. We have been strengthening our initiatives in each country toward improving experiential value through the repair services and responses to inquiries we offer our customers. We have also been working to bolster our response in terms of how we communicate with our customer base as it continues to become more diverse, including initiatives involving new methods for communicating with customers on social media. We are striving to improve and provide better service by using questionnaires to get customers' opinions about our response. As measures to contribute to environmental protection in the after-sales field in response to recently heightened environmental awareness, we are focusing on reducing waste through recycling together with cutting down on on-site repairs by providing a more comprehensive FAQ and remote diagnosis.

Number of Repair Service Centers (FY2025)

Region	Number of Repair Service Centers
Japan*	138
North America	369
Latin America	657
Europe & CIS	989
Southeast Asia & Pacific	1,588
India, South Asia, Middle East & Africa	558
China & Northeast Asia	3,472

*Japan: CS Company, Panasonic Marketing Japan Co., Ltd. and affiliates, Panasonic Techno Service Co.

CS System for Enterprise Business

Electrical & Housing Equipment and Appliances

Through its corporate customer support window for lighting fixtures, information systems, electrical facility materials, housing facilities and materials and energy-related products such as solar power generators, power storage facilities etc.— Panasonic Group has created a rapid system that can respond to its corporate customers (partners) with problems regarding construction, installation, and configuration 365 days a year.

Commercial Equipment

In the area of commercial equipment—which includes video, security, information communications, automotive, and commercial air conditioning equipment—Panasonic Group's sales companies in each field provide unified support at every stage, from proposals for devices and systems to their design, construction, customer inquiries, and repair services. By providing total solutions that meet its customers' needs, the Group strives to improve its CS.

Commercial Solutions

The Panasonic Group sales division in charge of commercial solutions, our sales companies and sales partners of our products understand the diverse needs of individual customers and provide total solutions that optimize operations and improve productivity at our customers' sites, including everything from system implementation to sales, construction, maintenance, repairs, operations services, and cloud services. These solutions support customers in the implementation of their product strategies and the improvement of their operations. Through its CS-related activities, the Company uses its points of contact with its customers—including support desks, repair services, and maintenance—to build trusting relationships. Panasonic Group has created a responsive system that provides quick, continuous support to its customers when they experience difficulties.

Automotive Equipment

Concerning automotive equipment, the Panasonic group sales company cooperates with dealerships to provide after-service for Panasonic-produced car navigation and other equipment in an effort to improve CS. We are also building organizations and systems that allow early detection and early resolution of nonconforming products to provide rapid and thorough services to meet the needs of car manufacturers in the provision of genuine on board equipment.

Initiatives Related to Improving Customer Satisfaction

Promoting the Acquisition of Consumer Affairs Advisor Credentials

Panasonic Group actively promotes the acquisition by its employees in Japan of the "Consumer Affairs Advisor"* credentials with the aim of fostering a customer-oriented corporate culture. Credential holders play an active role as leaders to realize a consumer-oriented management. As of April 1, 2024, 300 employees affiliated with the Panasonic Group had acquired this certification.

*Consumer Affairs Advisor System

The Consumer Affairs Advisor System consists of a qualification based on certification under the authority of the Prime Minister and the Minister of Economy, Trade and Industry. (Examination and certification organization: the Japan Industrial Association, General Incorporated Foundation.) As a bridge between consumers, companies, and the government, the System aims to effectively reflect the ideas and recommendations of consumers to corporate management and government administration. The goals is to foster individuals who can contribute to society in a wide range of fields, including by being able to provide quick and appropriate advice in response to consumer complaints. (From the Japan Industrial Association website)

Customer Month Initiatives

We believe that a customer-oriented corporate culture will become even more important in serving our customers in the future, so in Japan we have designated May as “Customer Month” to make it easier for all Group employees to get involved. In accordance with the Japanese government’s designation of May as “Consumer Month”* Panasonic Group actively implements the following unique measures every year in May in order to cultivate such culture in all its employees.

1. The Group CEO sends out a message regarding the “Introduction to the Customer Month”, informing all employees of the significance of this special month.
2. The Group within Japan create a unique Customer Month poster (in a digital format) to spread the word about Customer Month by distributing it to all operating companies and including it in on digital signage and the like.
3. We strive to promote a consumer-oriented management by holding a “Customer Month Commemorative Symposium,” which involves the participation of those employees responsible for consumer-related activities, as well as all other employees. In fiscal 2025, We invited a lecturer to give a talk titled “TORIDOLL’s customer-oriented business thinking – KANDO (passion) value strategy –”, to explain the importance of “thinking independently and acting speedily, like having a KANDO for food”, that can’t just be learnt from a manual, and the idea that KANDO comes from a diverse workforce enjoying their work.

* Consumer Month
Japan’s Consumer Protection Fundamental Act (predecessor to the Consumer Basic Act) was enacted in May 1968. On the 20th anniversary of the creation of this law in 1988, May was designated Consumer Month. Every year during this month, consumers, businesses, and government agencies come together to participate in focused work on education and awareness raising concerning consumer issues.

Fiscal 2024 Customer Month poster

Reflecting Voices of Customers in the Products and Services (VOC Activities)

To improve our business activities, Panasonic utilizes analysis of customers opinions (Voice of Customer, VOC) by text mining tools (Mieruka Engine) to promptly understand overall trends and acquire useful information.

The voices of the company’s customers are heard via the opinions received through the Customer Care Center and Panasonic Group’s sales persons and partners, showrooms, and service companies. We use the results of these analyses for product development, functionality, quality, updates to instruction manuals and catalogs, and improvement of sales activities through a collaboration between product planning, design, technology, and quality control departments on one hand, and their marketing and sales departments on the other. Panasonic Group considers those VOC activities to be practical implementations of its Basic Business Philosophy, which aims to improve customer satisfaction. The company encourages all employees to engage with the voices of the company’s customers throughout various aspects of their work.

STEP1 Respond to customer inquiries and issues	STEP2 Analyze the customer’s opinion
Our Customer Care Center responds to the inquiries and issues brought up in telephone calls and letters received from customers on a daily basis. Marketing divisions also receive opinions from customers through sales people and partners.	Customer opinions are recorded, entered into a database, and analyzed every day.
STEP3 **Identify areas in need of improvement based on customer opinions**	**STEP4** **Learning from our customers’ opinions to improve products, user manuals, etc.**
Customer opinions are analyzed to identify the root of the problem, such as how easy it is to use a product or understand a user manual, and raised as possible areas in need of improvement.	Meetings are held in divisions in charge of product development and user manuals to discuss issues that have been raised and look for ways to improve products and services.

Outside of Japan, Panasonic Group strives to improve its customer relations by using Net Promoter Score (NPS) surveys and post-repair questionnaires to evaluate the performance of authorized service providers and service engineers, who are one of the points of contact with our customers.

Customer Relations

Response to the Act for Eliminating Discrimination against Persons with Disabilities

The amendment to the Act for Eliminating Discrimination against Persons with Disabilities (obliging companies to provide reasonable arrangements for disabled persons) came into effect on April 1, 2024.

When Panasonic receives requests from disabled persons, we will sincerely consider how to respond on a case-by-case basis and take action in accordance with this Act.

Educating Consumers to Use Products Safely

As part of our ESG efforts toward addressing the pressing social issues of countering global warming and promoting carbon-free solutions, we have partnered with local governments, corporations, and companies to provide courses for local communities in Japan, mainly on environmental education.

Our goal is to help participants understand what they can do as members of their communities and raise awareness that drives action on themes that are highly socially relevant and interesting to consumers, such as the environment and energy issues. Recently, we have noticed a marked uptick in the frequency of parent-child study sessions, in which lecturers incorporate complex topics into everyday life situations, and participants learn about energy conservation, using energy from natural sources, and other familiar issues in a fun and easy-to-understand manner. We also actively participate in government-hosted environmental events as part of our broader engagement in promoting education and raising awareness.

WEB Useful Information on Household Appliances (Japanese only)
https://panasonic.jp/support/useful.html

The Group's domestic Japanese-language site provides information to customers, including basic knowledge about electricity, laws and regulations concerning home appliances and their disposal (recycling), along with precautions related to protecting home appliances from disasters including warnings on what to do during natural disasters.

WEB Using home appliance products safely (Japanese only)
https://jpn.faq.panasonic.com/app/answers/detail/a_id/62005

The Panasonic Group provides information to give our customers a better understanding of safety, from how to correctly use their household appliances for safety and product longevity, illustrated using practical and realistic examples.

Sustainability Data Book 2024

Responsible Publicity and Advertising

Sustainability Data Book 2024

Corporate publicity and advertising make brands, products, and services more widely known within society. However, they can also adversely impact general consumers due to expressions and images that lack diversity and consideration for impressionable children. Furthermore, with the development of social media, such effects are likely to spread globally, not only in the country or region where the advertising or promotional campaign activities are carried out. Therefore, companies must maintain high normative awareness and ethics in their communications.

Policy

Providing accurate and honest information and communications to customers and society at large is the starting point for gaining trust from the same and is essential in both protecting and growing the brand's value. Based on this recognition, the Panasonic Group Code of Ethics & Compliance stipulates the following policies regarding our communications with society.

- We provide fair and accurate information regarding our products, services and technologies through our corporate communications, public announcement and advertising, with the aim of better informing our customers and other stakeholders and enhancing our brand. We communicate openly about our Basic Business Philosophy. We continually listen to and learn from customers and society as a whole. We reflect the feedback we receive in our business activities.
- We base our corporate communications on accurate facts. Our corporate communications respect diversity, do not discriminate against any social group, defame or undermine the personal dignity of any person.

We have also created various sets of rules and guidelines, such as the Panasonic Group Basic Rules for Brand Matters, Operational Rules for Digital Media, Panasonic Group Social Media Guidelines, Basic Rules for Intellectual Property Matters, and Operational Rules on Information Security. Our policies and guidelines require the Group to respect the intellectual property, identities and privacy of third parties in the execution of our corporate communications activities.

Responsible Publicity and Advertising

Principles concerning Advertising Activities

We continue to follow Our founder, Konosuke Matsushita's idea that "if manufacturers can make good products, they have an obligation to communicate that quickly, widely, and correctly to their customers, and that is what advertising does." In addition, today we see an important social responsibility in communicating widely, not just about our products but also about the full range of our activities as a corporation. Our efforts to achieve this are informed by the same kind of thinking. The following basic guidelines are based on the philosophy of our founder and reflect our attitude and approach to the day-to-day production of advertising (creating TV commercials, newspaper ads, digital ads and so on).

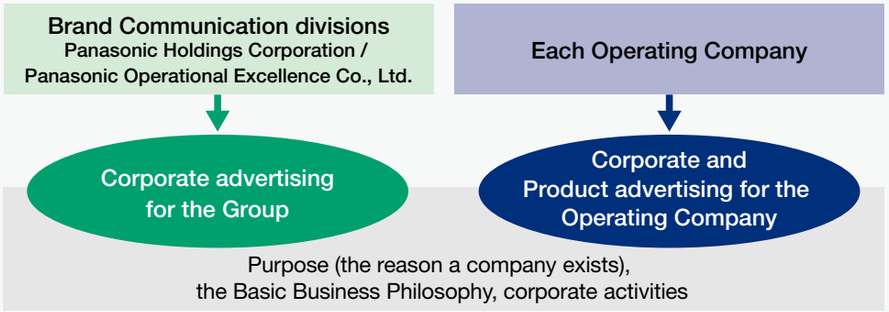
- In the context of our business activities, publicity and advertising fulfill an important social mission.
- It is an activity that conveys the "heart" of our company.
- Facts must be told truthfully, in ways that are easy for our customers to understand.
- We do not cause discomfort or annoyance.
- Always use a creative and innovative approach.
- Approach our work with a high level of insight, competence and passion.

Additionally, the media used in all our publicity and advertising campaigns are selected based on their general acceptance in their respective regions, their promotion of brand familiarity, and their cost-effectiveness.

Responsible Executive and Framework

Publicity and advertising comes under brand strategy and communication strategy, which is directly managed by the Group CEO (as of August 2024).

Brand communication divisions of Panasonic Holdings Corporation and Panasonic Operational Excellence Co., Ltd. are responsible for corporate advertising for the whole Panasonic Group. Similarly, advertising personnel at each operating company are responsible for their organization's corporate and product advertising. Such personnel all work in cooperation with one another.



Promoting Fair and Honest Publicity and Advertising

We have set up mechanisms that allow us to check all the publicity and advertising we produce against the relevant laws and industry regulations in each global region, to avoid misunderstandings or misconceptions on the part of customers. For example, in Japan, we train and deploy personnel specialized in publicity production, accumulate experience and expertise in expression and risk avoidance, screen risks with production partners, review expressions with media and advertising agencies, and conduct preliminary studies. We comply with the Act against Unjustifiable Premiums and Misleading Representations and other legal regulations concerning advertising, as well as various self-imposed media guidelines companies use to evaluate their advertisements, including the Japan Advertisers Association's ethics code, and we seek review from the Legal Department as necessary. We also avoid using expressions or performances that undermine childhood education, or that may hinder children's sound learning and growth. When employing child actors in advertisements, we comply with all the relevant laws and regulations.

To ensure we can maintain this compliance, we will continue to conduct OJT on a day-to-day basis and to hold special training sessions for major revisions to relevant laws to ensure that the persons responsible are fully informed. We will also continue to participate in training and seminars conducted by outside organizations and seek consultations with outside experts when necessary.

In Japan, we have introduced constant monitoring to be able to quickly detect and respond to prevent recent problems of fraudulent advertising, etc. on the Internet and SNS. With this we are striving to quickly find any fraudulent advertising that misrepresents our company together with the sites hosting it, dispel incorrect information and related comments, and proactively prevent the spread of such criminality. In addition, we are taking appropriate measures in cooperation with internal stakeholders such as our legal, information system, and branding departments, while liaising with industry groups and the authorities.

In fiscal 2024, we received reports of the below violations at a Group company in China (a consumer electronics division) and paid an administrative fine of approximately RMB 32,000 to the authorities. We will strive to avoid a recurrence in future by strengthening education at the relevant departments and agent companies to ensure legal compliance, and by having third party organizations carry out constant monitoring of operational platforms.

(1) March 2023: The campaign period for an E-commerce promotion of lighting equipment was not shown and was only discovered when reported by a customer
(2) July 2023: Legal violation due to the promotion of comparisons with other companies in live commerce for shavers on a local SNS
(3) August 2023: Error in price shown in advertisement for microwave ovens on local social media

Intellectual Property

Sustainability Data Book 2024

Panasonic group strives to appropriately acquire, protect, and utilize technologies, know-how, designs, brands, and other achievements obtained through R&D and other business activities as intellectual property.

By implementing our group's intellectual property in various ways, such as commercialization in our group and co-creation with other companies as well as striving to respect the intellectual property of third parties in our group's business activities, Panasonic Group aims to achieve business growth in our group and achieve solutions to social issues.

Policy

Based on the spirit of "IP (intellectual property) before business" since its founding, Panasonic Group has been promoting intellectual property activities, aimed at ensuring the advantage and safety of its business now and in the future and helping address social issues, by proposing IP-based strategies for its business; acquiring, protecting, and utilizing global intellectual property; and preventing and resolving disputes related to intellectual property.

To consistently achieve these goals, the Group has established its "Basic Rules for Intellectual Property Matters" that apply to the entire Group. We are working to appropriately pursue our intellectual property activities and establish a foundation for our initiatives. In addition, we respect the intellectual property of our suppliers, business partners, and other third parties and do our best not to infringe on them. That is also a stipulation in the "Panasonic Group Compliance Code of Conduct," and we provide regular education to ensure that all employees comply with it.

Responsible Executive and Framework

The Group Chief Technology Officer is the executive officer responsible for intellectual property for the Group (as of August 2024).

The Intellectual Property Department at the Group's holding company, Panasonic Holdings Corporation ("PHD"), is in charge of establishing and promoting the Group's intellectual property strategies. We have also established an intellectual property division at each operating company, and each intellectual property division establishes and promotes intellectual property strategy of each operating company. PHD's Intellectual Property Department and the intellectual property divisions of each operating company work together to promote intellectual property strategies, thereby creating group synergy.

Intellectual Property

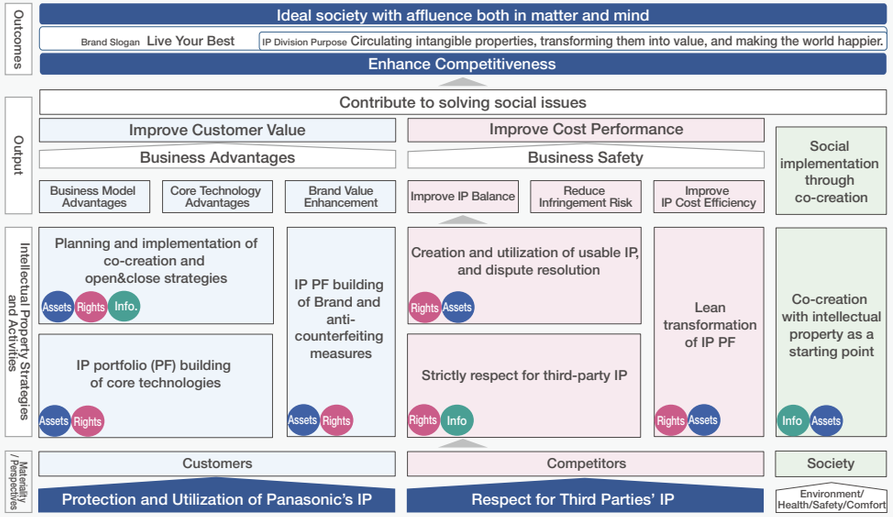
In addition, the Intellectual Property Department at Panasonic Operational Excellence Corporation ("PEX") which has highly specialized personnel, and Panasonic IP Management Corporation ("PIPM"), a subsidiary of PEX, are advancing a wide range of intellectual property operations on a global basis.

PIPM was established as a wholly owned subsidiary to integrate and commercialize the Group's intellectual property operations, and is advancing intellectual property operations by utilizing the "Trusts among Persons Belonging to Same Group of Companies" as stipulated in Article 51 of the Trust Business Act.

Major Initiatives

Intellectual Property Strategy Framework

The Group has formulated an Intellectual Property Strategy Framework through discussions at Board of Directors meetings (see figure below). This framework shows that our intellectual property (IP) strategies and activities, conducted from the perspectives of "customers," "competitors," and "society" based on our materiality, will contribute to "business advantages" and "business safety" as well as "social implementation through Co-creation with intellectual property as a starting point", and that these will contribute to solving social issues and ultimately lead to the vision we are aiming for. These strategies and activities are embodied in the framework based on each aspect of intellectual property: "rights," "assets," and "information." For example, from a "customer" perspective, strategies and activities such as planning and implementation of

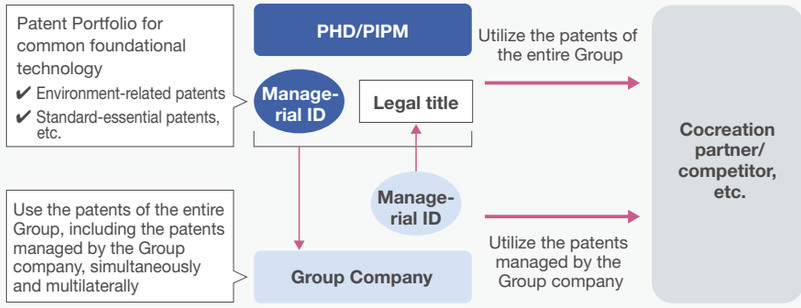


"co-creation and open & closed strategies" and "IP portfolio (PF) building of core technologies", will lead to output in the form of "improvements in customer value." From the "competitors" perspective, strategies and activities such as "dispute resolution", "strict respect for third-party IP", and "lean transformation of our IP portfolio (e.g., abandoning unnecessary IP)" will lead to output in the form of "improvements in cost performance." From the "social" perspective, strategies and activities such as "Co-creation with intellectual property as a starting point" will lead to outputs such as "social implementation through co-creation" (e.g., commercialization of environmental technologies through co-creation with other companies). These outputs will lead to our goal of "enhance competitiveness" and realizing "an ideal society with affluence both in matter and mind." PHD uses KPIs shared across the Group to monitor each strategy and activity indicated in the framework, and provides support for priority themes.

Mechanisms for consolidating patents and other assets to create group synergies

The Group has set up a mechanism to consolidate patents and other forms of industrial property to PHD so that they can be utilized as assets of the entire Group simultaneously and multilaterally. PHD and its subsidiary, PIPM utilize (e.g. license) the patents, etc. of the entire Group. These include patents related to common foundational technology and patents with legal title consolidated from our Group companies. The Group companies in Japan that are subject to this mechanism manage the patents, etc. they have created or obtained (i.e., they retain the "Managerial ID" (Managerial code) as the identification of responsibility for managing such patents, etc.), and such Group companies bear the costs and receive the revenues from them, even after their legal title has been consolidated to PHD. The Group company can then use the patents, etc. of the entire Group, and externally utilize those for which it holds the Managerial ID. The Group promotes both internal and external co-creation, etc., using this mechanism (see figure below).

Mechanism of patent consolidation to create Group synergies



Intellectual Property

Acquiring Intellectual Property Rights and Reward System

Panasonic Group has been building up a global portfolio of intellectual property in line with our IP strategy, which in turn is based on our business strategies and research and development strategies. The following table shows the fiscal 2024's R&D expenses; the number of new applications for patents, utility models, or design rights made by Panasonic Group in fiscal 2024; and the number of patents, utility models, designs, and trademarks held by the Group as of March 2024.

R&D expenses in fiscal 2024	491,200 million JPY (the ratio of R&D expenses to sales: 5.8%)
Number of applications in fiscal 2024	Number of applications for patents, utility models, and designs: Total roughly 16,000 (including roughly 9,200 outside Japan)
Number of rights held as of March 2024	Number of patents, utility models, and designs held: Total roughly: 98,000 (including roughly 55,000 outside Japan)
	Number of trademarks held: Total roughly 16,000 (including roughly 11,000 outside Japan)

If the Group's intellectual property is not properly protected and utilized, counterfeit or infringing products involving that intellectual property may emerge, causing quality problems, generating inflows of funds to criminal organizations, and other problems that may inhibit sustainable innovation. Going forward, the Group will continue to acquire the results of research and development and business activities in the form of intellectual property, and will strive to further protect and utilize intellectual property.

The Panasonic Group also has a reward system for inventors designed to increase their motivation and help invigorate their inventions and creative endeavors, and we operate this system in a just and fair manner based on the laws and regulations of each country. For example, in Japan, the standard for reward is decided through agreements with employees and shared with them, and we also have a system in place to solicit feedback from inventors about the reward system.

Respect for Intellectual Property of Third Parties

If we infringe on the intellectual property of a third party, there is a risk of causing losses to that third party and inconvenience to our direct and indirect customers due to changes in specifications or interruptions in the supply of our products or services.
The Group conducts its business activities while striving to respect third parties' intellectual property. Our Groupwide internal rules stipulate how to respond when a third party contacts us with a suspicion of intellectual property rights infringement and how to estimate losses in the event of such infringement. The internal rules of each operating company also stipulate how to conduct investigations, report discovered risks, and follow other processes to prevent infringement of third-party intellectual property rights.

Contributions to Building Co-creation Relationships

The Group aims to contribute to solving social issues in its business activities. In addition to facing social issues head-on, contributing to their resolution, and growing our business as a result, we are also promoting a new intellectual property strategy by building a system that connects and cooperates between a wide range of people, goods, and things, and building co-creation relationships based on intangible assets to solve social issues that are difficult for individual companies to address.

Specifically, in September 2023, we opened "Technology Index" for external use. The Technology Index is a system that enables users to easily find and connect with the technology they need by indexing the Group's intellectual property information in easy-to-understand, sensible language that describes the technology's usage scenarios and purposes. Taking the Technology Index as a starting point, we will contribute to accelerating the resolution of social issues, including the resolution of global environmental problems, by circulating intangible assets throughout society.

In addition, by strategically establishing co-creation relationships with other companies, regarding patents and know-how related to environmental technologies, we aim to advance their social implementation and contribute to solving social issues. For example, by allowing our patents to be used by our co-creation partners in the field of vehicle batteries, we are helping to reduce CO_2 emissions by replacing gasoline-powered vehicles with electric and hybrid vehicles. We also believe that if we can create mechanisms for society to evaluate such efforts, it will promote the sharing of the intangible assets necessary to solve social issues. As a first step toward this, we are taking on the challenge of visualizations of the effects of CO_2 reductions, on a trial basis. For example, we estimate that in 2022, the effects of CO_2 reductions of electric vehicles equipped with lithium-ion batteries using our patent is 7.75 million tons (*1) of CO_2 emissions.

Addressing social issues such as climate change is not a task that can be handled by the Group alone. The Panasonic Intellectual Property Department believes in a future in which trends of the "circulating intangible properties" will serve as a starting point for a range of stakeholders to move forward, come together, generate social innovation, and make the world a happier place, and will continue to evolve and strengthen its efforts going forward.

Moreover, we believe that addressing social issues requires cooperation from diverse yet connected people, goods, and services, so we are working on open innovation rooted in intangible assets.

*1: The flow method (emissions for the entire lifetime of the vehicle are accounted for in the year of sale) is used to calculate the difference in CO_2 emissions during running (using) between a gasoline-powered vehicle and an electric vehicle equipped with batteries using our patents.

Sustainability Data Book 2024

Intellectual Property

Participation in International Initiatives

WIPO GREEN, established by the World Intellectual Property Organization (WIPO) supports global-scale approaches against climate change through connecting key stakeholders when it comes to environmentally-conscious innovations using its database and networks. The Panasonic Group agrees with this mission and has registered environmentally-conscious underwater plasma technologies, artificial photosynthesis technologies, and gas sensor technologies.

In August 2022, we became the first Japanese company to join the Low Carbon Patent Pledge (LCPP), whereby patents related to artificial photosynthesis technology are available for free to any individual or organization under the prescribed conditions stipulated by the LCPP.

WEB **The Low Carbon Patent Pledge**
https://lowcarbonpatentpledge.org/the-pledge/

Anti-counterfeit activities

Counterfeit products that use important corporate assets such as brands and other intellectual property without permission, and piggyback on the brand value built up by the rights holders not only cause quality problems (accidents and injuries) for customers, but also give rise to the following problems for society as a whole and can be an obstacle to the creation of a healthy society.

- Economic losses: decreasing tax revenues, less business incentives to develop new products and innovation.
- Security issues: potential sources of funds for criminal/ terrorist organizations, increasing threats to national security.
- Environmental problems: disposal of seized counterfeit goods

Thus, aiming to eliminate counterfeit goods should be considered a Corporate Social Responsibility. Our anti-counterfeit policies aim to solve the social issues caused by counterfeit products and protect our customers and intellectual property, including brands. In 2019, measures against counterfeit products were added to the Japanese government's SDGs Action Plan, thanks in part to advocacy from the Panasonic Group. At present, we are working in partnership with the Japanese government, other companies, and the governments of other countries at the International Intellectual Property Protection Forum (IIPPF), an industry organization that aims to resolve the counterfeit issue, to take action based on the idea that eliminating counterfeit products will contribute to achieving SDGs. Recent trends show a rapid increase in the number of counterfeit goods sold online, in addition to those sold in actual markets. Online sales make selling counterfeit products easier globally than conventional retail methods— transactions are made easily and carried out before the buyer ever sees the actual product, meaning that there is an increasing risk that consumers could purchase them by mistake. Panasonic Group believes that it is more critical than ever that rights holders work together with consumers to eliminate counterfeit goods and work aiming to create a better world. In response to the recent increase in the number of social media users, we are also implementing new initiatives to share information using social networks.

Example) WEB https://twitter.com/PanasonicBrand/status/1759463303867466126

In-House Education and External Consumer Awareness-Raising

Panasonic Group conducts various training and education programs for employees to ensure they thoroughly implement Panasonic's policy on intellectual property. Alongside the above-mentioned employee education on respecting third-party intellectual property, we provide e-Learning on copyright for employees in Japan and overseas in multiple languages, taking into account importance of software in business and the rapid spread of generative AI in recent years. In addition, each operating company also provides training and education on intellectual property to meet their specific business needs. For employees engaged in intellectual property operations, we provide a wide range of training and education with a view to achieving business success, including training on project management and training to improve IP-related expertise.

We also help raise awareness of intellectual property issues outside the Company. One such example is the dispatch of lecturers to HR development training for overseas governmental authorities such as patent office staff upon request by the Japan Patent Office. We also give our unique lectures on intellectual property at Japanese junior high and high schools. In addition, to address the issues caused by counterfeit products, we create consumer awareness videos and introduce them on our website.

WEB **Panasonic's efforts to raise awareness about eliminating counterfeit goods**
https://holdings.panasonic/global/corporate/sustainability/sustainability-files/case13.html

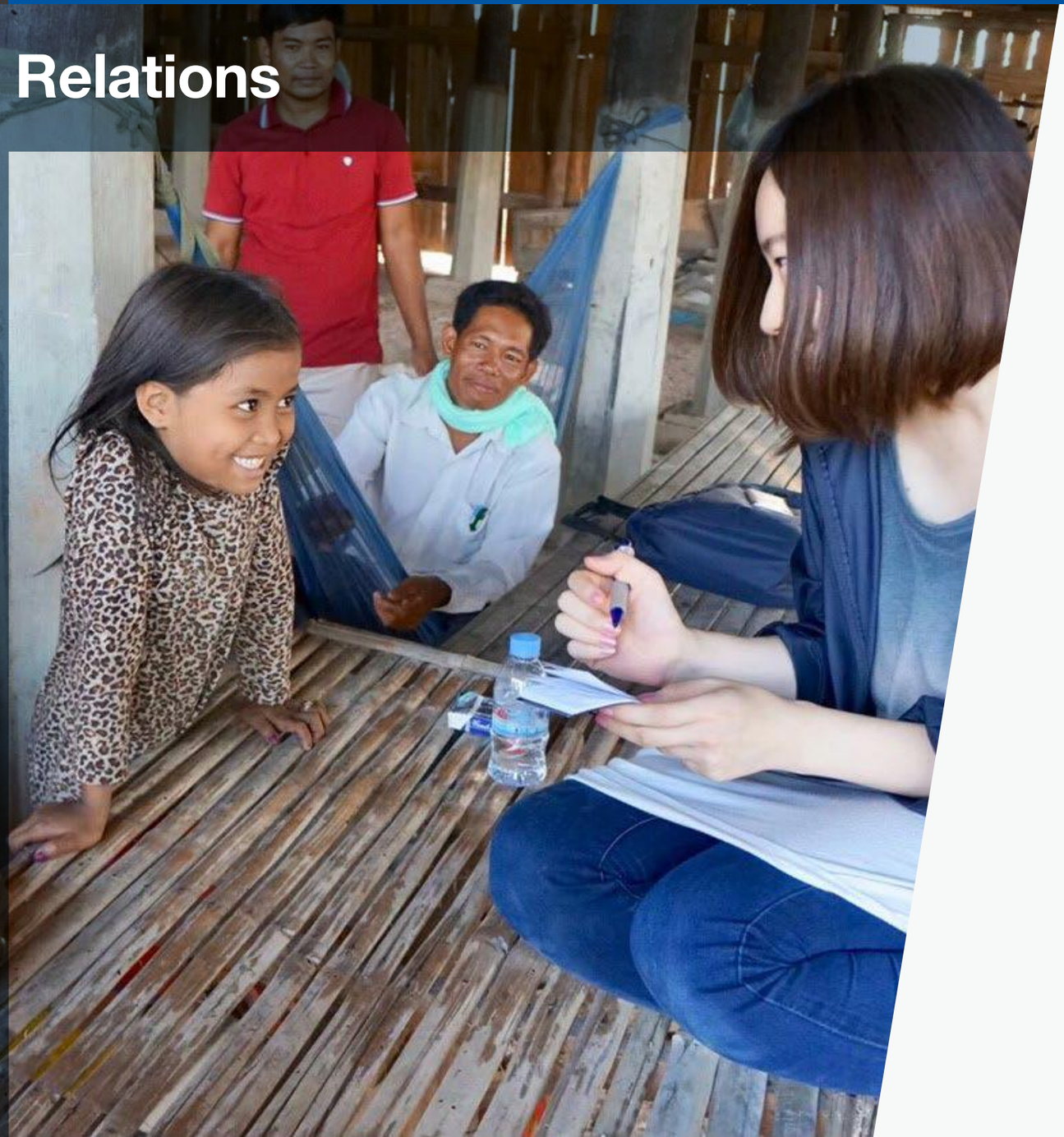
Consultation & Whistleblowing

All Group employees, business partners, and their employees can seek consultation and report any intellectual property-related risks or problems they see or hear about through the global hotline Panasonic has set up. For more details, see the "Whistleblowing System" in the "Business Ethics" chapter (page 146).

Evaluations

Panasonic Group has been recognized as a Clarivate Top 100 Global Innovator 2024 chosen by London-based Clarivate. The award that Panasonic Group received is given to companies that are leaders in global business because they are successful in protecting and commercializing their unique inventions and ideas through intellectual property rights. Of the 100 companies honored on the 2024 list, 38 were from Japan. Panasonic Group has been on this list since its inception, 2024 being our 13th consecutive year. The Panasonic brands were also honored in Clarivate's Top 100 Best Protected Global Brands (in 2021), a testament to the fact that the Group properly protects its brand. Furthermore, the Panasonic GREEN IMPACT brands were also honored in Clarivate's Top 100 New Brands in 2023 as new brands that have surged into the public sphere since 2021 and demonstrated an exceptional ability to bring value, impact, and protection on a global scale.

Community Relations



Basic Policy

Based on the recognition that Panasonic Group is a public entity of society and that society at large has entrusted us with all the resources we need to do business, we maintain dialogues with local communities as we undertake our business.

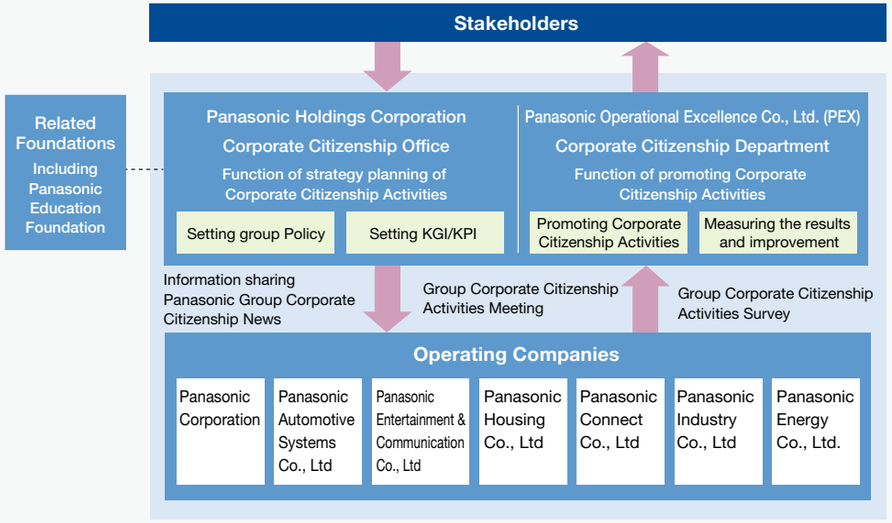
The Group contributes positively to local communities and seeks to minimize any potentially negative impacts of entering or leaving a market through dialogues with local governments and residents and impact assessments on the environment and other areas.

In particular, we are an active member of local communities that promotes Corporate Citizenship Activities and strives to develop the Company and the communities.

Management System of Corporate Citizenship Activities

We are engaged in a variety of Corporate Citizenship Activities based on the actual conditions in each operating company and each region, in line with the Group Policy outlined in the next paragraph. We define key performance indicators (KPIs) for major activities and use these to evaluate results and make improvements. We continue to think about ways we can better promote the activities we undertake by holding regular Group Corporate Citizenship Activities Meetings where we share information and exchange opinions toward that goal. In addition, through Corporate Citizenship News, those activities are shared with the relevant directors and executives—from the Panasonic Group CEO on down—as well as with the staffs in charge of Corporate Citizenship Activities all over the world. Panasonic Group also conducts annual surveys of its Corporate Citizenship Activities and publicly releases the findings on our Sustainability website.

Community Relations



Policy

Panasonic Group establishes policies and themes of focus for its Corporate Citizenship Activities in three-year midterm plans. Panasonic determines its areas of focus by comprehensively taking into account company business policies, conditions in society, societal demands, expert opinions, and other considerations.

Midterm Policy of Corporate Citizenship Activities (FY2023-2025)

The Panasonic Group aims to create an ideal society offering material and spiritual affluence, and works to create new value by tackling social issues head-on in both our business activities and our activities as a corporate citizen.

In our midterm policies, we thought about what our ideal world would look like in the year 2030 and decided it would be a “sustainable and inclusive society where everyone can live a vibrant life more freely.” As a corporate group that does business globally, we have selected “Ending Poverty,” “Environmental Activities,” and “Human Development (Learning Support)” as issues we should be prioritizing based on global social issues and the Group’s Basic Business Philosophy.

Of all the issues the world has been facing recently, poverty of various types—not only in both newly developed and developing countries but also in developed has become particularly serious. The first of the UN’s Sustainable Development Goals (SDGs) states “end poverty.” Panasonic Group’s founder, Konosuke Matsushita, saw poverty as an evil and he made its eradication the mission of his company. Living standards have been raised for many and some poverty has been alleviated. However, many countries and regions have still been excluded from prosperity, and disparities in wealth are growing larger even within developed countries. Considering this background, we set “Ending Poverty” as a priority theme in our effort to realize an inclusive society as we marked the 100th anniversary of our founding (in 2018).

We have selected “Environmental Activities” as a key theme for our Corporate Citizenship Activities in line with our Basic Business Philosophy, which states, “global environmental issues should be given the highest priority [for the Group overall].” In order to further accelerate the Group’s long-term environmental vision Panasonic GREEN IMPACT (PGI), we will focus on “biodiversity conservation” in our Corporate Citizenship Activities this year to change individuals’ behavior and raise environmental awareness.

Furthermore, our foundation for addressing issues emphasizes developing human resources who will work toward solving poverty and environmental problems. In our “Learning Support ” that encourages the next generation to want to learn, we provide places for learning and practice, valuing the perspective of diversity, equity, and inclusion (DEI), where all individuals accept and leverage their individuality.

We would like to contribute to solving social issues and realizing a sustainable and inclusive society through Corporate Citizenship Activities, including those helping to end poverty, protect the environment, and boost human development (learning support). We encourage our employees to actively participate as we leverage our products, technologies, know-how, and resources cultivated through manufacturing to work with all stakeholders.

WEB Corporate Citizenship Activities
https://holdings.panasonic/global/corporate/sustainability/citizenship.html

Community Relations

Responsible Executive and Framework

Corporate Citizenship Activities is directly managed by the Group CEO (as of August 2024). The Corporate Citizenship Office at Panasonic Holdings Corporation ("PHD") is responsible for the function of strategic planning for the entire Panasonic Group and performs those duties in cooperation with the Corporate Citizenship Department at Panasonic Operational Excellence Co., Ltd. ("PEX") and the Group's operating companies. We have people in charge of Corporate Citizenship Activities at each operating company, and those individuals execute their activities based on the actual conditions in each company and their regions.

Employee Participation and Supporting Systems

Enhancing employee interest in social issues and their desire to solve them is extremely important both in terms of promoting Corporate Citizenship Activities and carrying out our core business.

The Group encourages employees to participate by providing information on volunteer activities and lectures and offering menus relevant to social issues at corporate cafeterias. Some of the most characteristic examples of these are shown below.

Activities supporting employees' social involvement

Provision of Sustainable Seafood* at Corporate Cafeteria (Japan)

Panasonic was the first company in Japan to permanently introduce sustainable seafood* in its company cafeterias. The initiative, which started in March 2018 at two locations, is now in place at 57 locations in Japan (as of March 31, 2024). We aim to use the food served in cafeterias to raise awareness of the world's fishery resources in crisis, encourage changes in consumption behavior, and expand our impact on our surroundings.

* Seafood certified for sustainable production (fishing and aquaculture) as well as management and traceability in processing, distribution, and marketing.

WEB Spreading sustainable seafood from the employee cafeteria
https://holdings.panasonic/global/corporate/sustainability/citizenship/sustainable_seafood.html

Fukushima Reconstruction Support Action (Japan)

We have taken the initiative to provide employees with opportunities to learn the truth about the situation in Fukushima and support the area in its recovery from the earthquake and tsunami and the effects of the lingering harmful rumors. The initiative involves providing menus featuring agricultural, livestock, and marine products from Fukushima Prefecture in corporate cafeterias and holding our Fukushima Marché [Market] to sell products from the prefecture. We first offered the menu at two corporate cafeterias in January 2022 and have since expanded to 24 locations across Japan (as of March 31, 2024). The Fukushima Marché started in September 2022 and now operates at 11 locations in Japan (as of March 31, 2024). We continually carry out activities to raise awareness among employees about Fukushima Prefecture's efforts to ensure food safety and security through lectures from prefectural officials.

WEB Fukushima Reconstruction Support Action
https://holdings.panasonic/global/corporate/sustainability/citizenship/other.html#fukushima

LIGHT UP THE FUTURE "AKARI Action Project"

This donation drive delivers solar lanterns to areas without electricity, using funds collected through cafeteria points from the Employee Benefits Service and donations of used books, DVDs, and other secondhand items. Since we began this drive in 2009, we have delivered more than 120,000 solar lanterns to 34 countries. In fiscal 2024, a total of 545 employees donated cafeteria points, and we collected 32,412 secondhand items, including from the general public.

WEB LIGHT UP THE FUTURE "AKARI Action Project"
https://holdings.panasonic/global/corporate/sustainability/citizenship/solution/akari.html

Pro Bono Program (Japan)

We have programs in which employees use the skills and experiences that they have gained through their jobs to support NPOs/NGOs' enhancement of business extension, who are addressing social issues. Since 2011, a total of 392 Panasonic Group employees have participated in the Pro Bono Program in Japan, providing support for 66 organizations by formulating medium-term plans, drafting marketing materials, and rebuilding websites.

WEB Panasonic NPO/NGO Support Pro Bono Program
https://holdings.panasonic/global/corporate/sustainability/citizenship/pnsf/probono.html

Panasonic ECO RELAY for Sustainable Earth

In 1998, we began promoting Love the Earth Citizen's Campaign in Japan, aiming to foster greater environmental awareness and even lifestyle changes by encouraging employees and their families to actively engage in environmental activities at home and in their local communities. Since then, we have expanded our efforts globally and changed the program's name to "Panasonic ECO RELAY for Sustainable Earth." As a global citizen, we aim to help create a sustainable global environment and society through our engagement in biodiversity conservation and other environmental activities. In fiscal 2024, 8,395 people worldwide have joined the environmental activities in their communities through cleanup and tree-planting campaigns.

WEB Panasonic ECO RELAY for Sustainable Earth
https://holdings.panasonic/global/corporate/sustainability/citizenship/environment/per.html

Introducing regional volunteer activities and providing opportunities

Workplaces within the Group around the world take an active role in developing and rolling out a variety of volunteer activities that are tailored to the specific features of the regions

Community Relations

and operating companies they are part of. In North America, for example, the Group has an Employee Volunteer Program and annual Month of Service initiative through which we encourage employees to volunteer. In Europe, some Group companies support volunteer work at the Paris 2024 Olympics and Paralympics. In China, several times each year we have China Region Group Volunteer Activities in which employees at various workplaces across China undertake volunteer activities related to the same theme at the same time. In Japan, we provide a website where employees can find regularly updated information on volunteer opportunities by NPOs and encourage them to take part in volunteer projects outside the Group as well.

Providing learning opportunities (Japan)

In order to raise interest in and motivation to solve social issues, we hold an after-work lecture called the “Social Good Meetup (SGM)”, where various experts on social issues give presentations, and a “Disaster Volunteer Training Course” where employees can gain knowledge and skills that will enable them to serve as a volunteer when common disasters occur. In fiscal 2024, a total of 2,178 employees took this course. We also conduct e-Learning for employees once a year to provide opportunities to learn about social issues.

WEB **Lectures for employees regarding social issues, Social Good Meetup (SGM) (Japanese only)**
https://holdings.panasonic/jp/corporate/sustainability/citizenship/sgm.html

WEB **Disaster Volunteer Training Course (Japanese only)**
https://holdings.panasonic/jp/corporate/sustainability/citizenship/disaster.html#volunteer

Human Resources System for Supporting the Promotion of Employee Participation

Examples of major Group Companies in Japan

- **Flexible work styles for participating in volunteering**
  We have expanded the options of our diverse work styles to encourage employees to take on the challenge of volunteering. Specifically, we offer a scheduling system with reduced hours/reduced workdays that enables employees to balance volunteering and work and a leave-of-absence system that allows for long-term volunteering for up to one year (the required period for those joining the Japan Overseas Cooperation Volunteers). Additionally, we encourage employees to volunteer using various types of leave, such as the ten days of “Challenge Leave” granted to employees who reach a milestone age. We also have a policy of allowing employees to take five consecutive days out of their 25 days of annual paid leave for volunteering.
- **In-house community activities and awards**
  Panasonic Group encourages employees who share common interests and sensitivity to issues, regardless of their company affiliation or position, to voluntarily form communities and engage in various projects through Employee Resource Groups (ERGs). In fiscal 2025, a new “Best Voluntary Contribution to Culture Revitalization” award joined the Group CEO Award to support and raise awareness of these employees’ various community activities. The fiscal 2025 award was presented to efforts toward “creating a workplace comfortable for people who can and cannot hear” and “creating accessibility maps of business site premises” for their contributions to stimulating the organizational culture to enable every diverse individual to demonstrate their individuality.

Examples from North America

Several business units in Panasonic North America provide paid time off that allow employees to spend up to five full working days on volunteer activities to give back and contribute to their local communities. We also encourage and facilitate participation in volunteer activities on the part of our employees, including by coordinating volunteer activities at individual business sites.

Examples from Europe

To further encourage social involvement, some Group companies in Europe will allow employees to take up to 16 hours a year of paid leave for volunteer work during working hours, effective May 1, 2022.

Performance Evaluation of Corporate Citizenship Activities

We measure the effectiveness of its main activities according to the specifics of each initiative.

LIGHT UP THE FUTURE

The LIGHT UP THE FUTURE project brings light to areas without electricity in collaboration with various partners, including NGOs/NPOs and international organizations. It aims to create opportunities for education, health, and increased income through local support programs, in addition to the solar lantern donations. We conduct surveys to verify the impact of these solar lantern donations and support programs. According to a 2023 survey conducted in Kenya by our donor partner, the United Nations Population Fund (UNFPA), approximately 80% of school-going children reported that using solar lanterns increased their learning time at home (33% reported a one-hour increase, 42%, two hours, and 8%, three hours or more). Moreover, women engaged in bead-making showed an average 1.5-fold increase in income. Another 2023 survey conducted in Cambodia by the JELA Foundation showed that using solar lanterns saved approximately USD 26 per year in energy expenditures and reduced respiratory diseases and other health problems by 80%.

WEB **Report on UNFPA’s Survey in Kenya**
https://holdings.panasonic/content/dam/panasonic/phd-global/en/corporate/sustainability/citizenship/solution/lutf_project/report029/Progress_Report_202310_en.pdf

WEB **Report on JELA’s Survey in Cambodia**
https://holdings.panasonic/content/dam/panasonic/phd-global/en/corporate/sustainability/citizenship/solution/lutf_project/report027/Panasonic_Solar-Impact_Report_2023.pdf

Panasonic NPO/NGO Support Fund for SDGs (formerly Panasonic NPO Support Fund)

Regarding the Panasonic NPO/NGO Support Fund for SDGs, which supports the enhancement of the organizational infrastructure of NPOs/NGOs, we conduct a follow-up survey of the grant recipients 18 months after the completion of the subsidy project. And a third party also quantitatively and qualitatively evaluates the effectiveness of the enhancement of the organizational infrastructure. In fiscal 2022, in addition to the follow-up survey, and as a milestone of the 20th anniversary of the establishment of the Support Fund, 63 organizations participating in the Children and Environment category and 23 organizations participating in the Africa category that we subsidized from 2011 to 2018 were evaluated for the 20th anniversary of the subsidy.

The results of the survey for organizations related to children and the environment showed an average rate of expansion of 19.1% in financial terms compared to before the support, as well as an average 27.8% increase in the number of staff. The results also indicated that 87.2% of all organizations saw the number of individuals receiving benefits rise, with an average of a 3.07-fold increase and the organization with the largest increase in beneficiaries rising to 14.9 times the number prior to support, demonstrating that our efforts toward organizational infrastructure enhancement through this support program have been effective in producing major social results.

In the Africa category, the results of the survey showed that 64% of all organizations responded that they had continued to see the effects of the PR tools created through the support for at least two years afterwards, and 29% had seen continued effects for it at least five years. In a qualitative survey, we also found cases in which the support led to improvements in training for the volunteers who would be in charge of getting the message out and a greater capacity to procure funding, among other benefits.

WEB Panasonic NPO/NGO Support Fund for SDGs
https://holdings.panasonic/global/corporate/sustainability/citizenship/pnsf/npo_summary.html

Kid Witness News (KWN)

Kid Witness News—an educational support program for elementary, middle, and high school children—aims to enhance creativity, communication skills, and teamwork through video production. We conducted surveys and interviews from 2017 through 2022 to verify this program's impact on participating children. We arranged the children's qualities and abilities into nine competencies, and our findings indicated that participating children exhibited growth in seven of these competencies, exceeding that of children who did not participate. We saw notable growth in the three competencies of forming relationships, communication, and planning for the future. Furthermore, the results of the survey targeting special-needs schools and by type of participating school (elementary, middle, or high school) confirmed the growth of children through this program, regardless of their disabilities or developmental stage.

WEB Verifying positive impact of participation in video production in KWN program (Japanese only)
https://holdings.panasonic/jp/corporate/sustainability/citizenship/kwn/overview/teachersguide_eval.html

My Future Discovery Program

In the My Future Discovery Program, a career education program for junior high school students, we conduct an annual survey of teachers and students to make improvements by seeing its usefulness and how it influences change in students.

In the fiscal 2024 survey, 97% of students reported that they could understand the lessons, and 93% reported that the worksheets and materials were easy to use. There was also a 14% growth in students who said that their schoolwork and activities would be "useful" when they enter the workforce compared to how they felt before taking the classes, indicating that the program benefits children.

WEB Survey Report: Key Findings from the Program School Survey in Fiscal 2024 (Japanese only)
https://holdings.panasonic/jp/corporate/sustainability/citizenship/career/powerup/240321.html

External Recognition and Awards Won

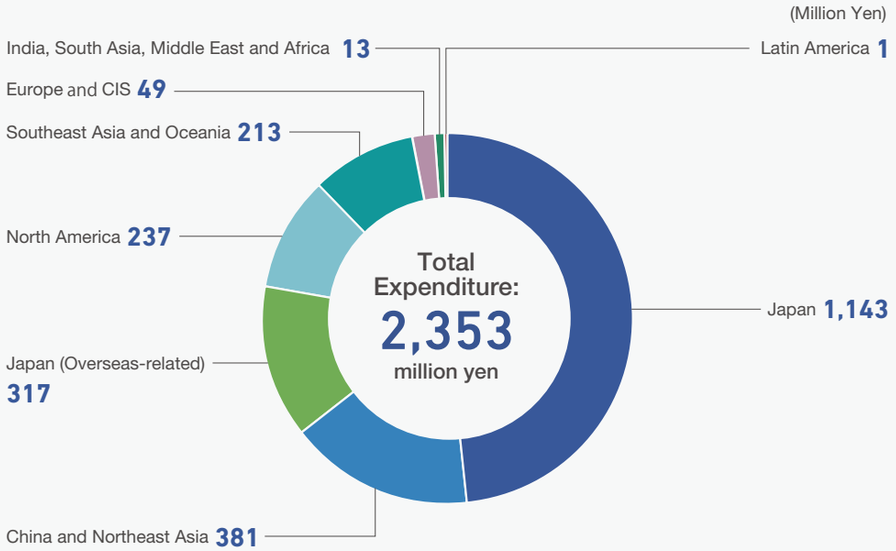
Panasonic received the following major awards and external evaluations in fiscal 2024:

- **Panasonic Corporation**
  Awarded the 2023 Award for Excellence for Companies Promoting Experience-based Learning Activities for Youth sponsored by MEXT
- **Panasonic Corporation**
  Awarded the Executive Committee's Special Award for Care for the Earth and Humanity at the 11th Good Life Award sponsored by the Ministry of the Environment
- **Youth Education Support Project, Panasonic Corporation of China**
  Awarded the Youth Impact Special Award at the CSR China Top 100 sponsored by the CSR China Education Award in China
- **Table for Two's Meal Sharing Program in developing countries**
  Certified as a Platinum Partner (for the eleventh consecutive year)
- **Panasonic Education Foundation**
  Received a Certificate of Appreciation from MEXT for many years of service in the field of education
- **Panasonic Life Solutions India Pvt. Ltd.**
  Awarded the AIBCF Award in the educational category sponsored by the All India Business & Community Foundation

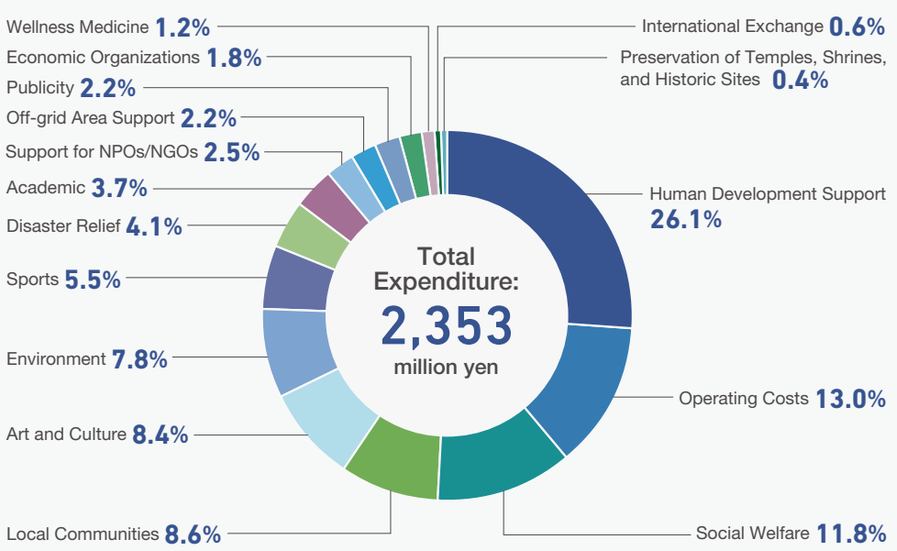
Community Relations

Spending on Corporate Citizenship Activities in fiscal 2024 (April 1 2023 - Mar. 31 2024)

by Region



Composition Ratio by Field



Sustainability Data Book 2024

Risk management

Panasonic's founder, Konosuke Matsushita, coined numerous aphorisms which are still used at the company: "Hardship now, pleasure later," "There are signs before all things," and "Small things can create big problems; one must be alert to signs of change and act accordingly," among many others. Inheriting these ideas as the cornerstone of our thinking, we, as Panasonic Group, conduct Groupwide risk management activities.

Moreover, based on the principle of "Thinking from a Global perspective, work for the whole world," we began our export business, technical assistance to overseas countries, and construction of overseas factories in 1961. At the same time, while confronting the risks that sometimes arose, we have promoted risk and crisis management initiatives early, including overseas safety policies and emergency response plans.

Policy

The Group considers it a vital management issue to accurately identify risks that could affect its business activities and take appropriate countermeasures to ensure the achievement of its business objectives and sustainable and stable development. Thus we have formulated the Panasonic Group Basic Rules for Risk Management (the "Basic Rules"), and we promote Group risk management based on these. The Basic Rules list the three objectives of risk management:

- Ensure the safety and security of our stakeholders and compliance in our business activities
- Strengthen our business competitiveness through risk management that treats appropriately both opportunities and threats to the achievement of our business objectives
- Continuously offer products and services by maintaining operating resources and ensuring work effectiveness while fulfilling our social responsibility

In addition to providing guidelines for directors and employees to achieve these objectives, the Basic Rules also clearly define a framework for risk management, as well as the roles and responsibilities of the holdings company, Panasonic Holdings Corporation ("PHD"), and the operating companies.

Risk Management

Risk Management System

The Group considers risk management and formulating and executing strategies as the wheels of business management. As these inseparable wheels function to ensure business objective achievement and corporate value enhancement, risk management plays an important role in our group management.

In order to establish an effective risk management system, the Group promotes a process of linking the construction of appropriate frameworks with the PDCA cycle of management and business strategies under the Basic Rules, which reflect the standards of ISO 31000, an international standard for risk management systems, and COSO-ERM (2017), an international risk management framework. Through regular reports to the Board of Directors, we provide risk information to contribute to business and strategy discussions and receive supervision on establishing and operating our risk management systems.

By operating and continually improving its risk management systems, the Group will contribute to the progress and development of society and the well-being of people worldwide through our business. We will also appropriately disclose risk information to society and enhance the transparency of our business management to reassure our customers, business partners, neighbors, shareholders, employees, and other stakeholders.

Responsible Executive and Framework

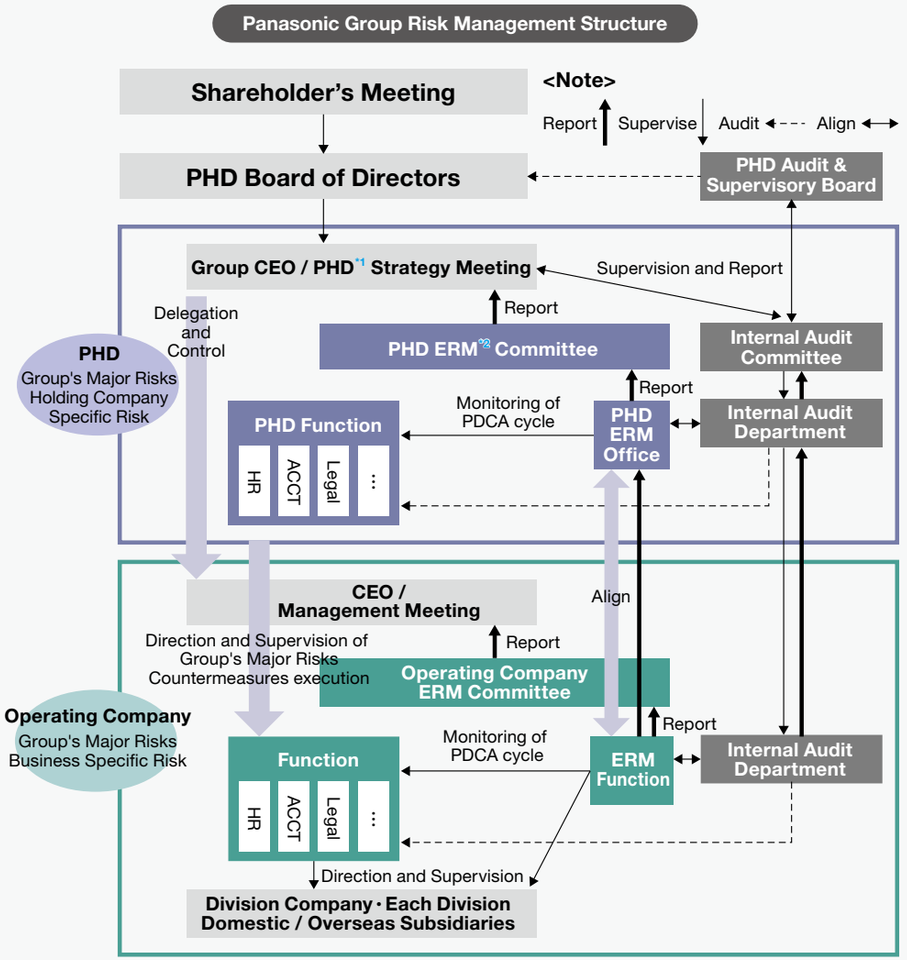
The Group Chief Risk Management Officer (“Group CRO”), an Executive Vice President, supervises the promotion of risk management within the Group (as of August 2024). Moreover, the PHD Enterprise Risk Management Office (“PHD ERM Office”), a dedicated risk management department, handles the Group’s risk management promotion.

As an internal system for promoting risk management, the Group has established the PHD Enterprise Risk Management Committee (“PHD ERM Committee”)—normally held three times a year and chaired by the Group CRO and comprising individuals representing PHD Legal, HR, Accounting, and other functions—with the PHD ERM Office handling the committee’s executive office functions. The PHD ERM Committee is responsible for promoting ERM throughout the Group, supervising risk management implemented by functional departments throughout the Group, identifying risks that may affect the entire Group, confirming countermeasures and state of control, and instructing appropriate functional departments to review and thoroughly enforce responses when necessary.

In keeping with the Group’s principle of autonomous responsible management at each operating company, we have also established operating company ERM Committees at each operating company, through which each operating company works with PHD to manage risks that are important to the Group’s management and require a certain level of management across the Group while simultaneously managing risks that arise due to the business or work of that operating company. Risk Information from risk management activities conducted under these frameworks are also used for internal audits. Based on the results of risk assessments, the Internal Audit Department determines themes to be examined and conducts audits of functional departments with a risk-based approach.

The PHD ERM Committee regularly reports to the PHD Strategy Meeting and the Board of Directors on major risks and the progress of countermeasures in the PDCA cycle of risk management. Based on these reports, the Board of Directors and Audit & Supervisory Board Members supervise and verify the status of risk monitoring and the effectiveness of the risk management process. Operating company ERM committees also report regularly to their management meetings and the Board of Directors on similar matters.

Risk Management



*1 PHD: Panasonic Holdings *2 ERM: Enterprise Risk Management

Basic Framework

The Group promotes risk management based on an identical process at PHD and the operating companies.

The Group defines "Operational Risks" as any uncertain event that constitutes a "loss" or "threat" to the execution of its business plan for the achievement of short-term business objectives or in the day-to-day conduct of its business. The Group updates its "risk inventory" annually by comprehensively identifying possible operational risks based on external and internal changes. We conduct risk assessments according to financial and non-financial evaluation criteria for all risks in the inventory.

The PHD ERM Committee considers the Group's management, business strategy, and social responsibility when deliberating on these assessments to determine risks that are important to the management of the Group and require a certain level of management across the Group (the "Group's Major Risks").

Each operating company conducts risk assessments and determines its major business risks ("Operating Company Major Risks") using a risk inventory that adds risks particular to the operating companies' respective fields of business to the risks common across the Group.

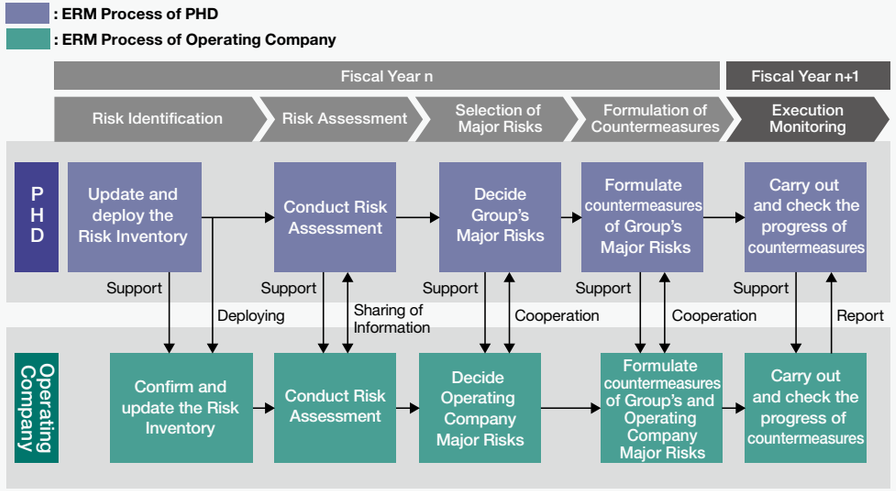
Once the Group's Major Risks and the Operating Company Major Risks are determined, PHD and each operating company work toward continuous improvement to formulate and implement countermeasures and monitor their progress. Especially for the Group's Major Risks, in addition to implementing the Group's common countermeasures, the functional departments in charge of each risk at operating companies formulate and implement their own necessary countermeasures according to their business areas in cooperation with PHD's functional departments. PHD's functional departments monitor the progress of Group-wide and proprietary countermeasures at each operating company to ensure that risks are being properly managed by ensuring that the entire Group is taking appropriate measures, and when necessary, encourage the review and thorough enforcement of appropriate countermeasures.

In our risk assessments, we have traditionally evaluated materiality based on financial impact and frequency of occurrence. However, we have added employee safety as an impact factor in our risk assessment with recent outbreaks of infectious diseases, increasingly intense natural disasters, and heightened geopolitical tensions. Considering the importance of corporate social responsibility (CSR), the SDGs, ESG, and other social imperatives, we also incorporate items related to the risk of not meeting these expectations (including human rights, labor compliance, and environmental issues) and evaluation factors related to the Group's social impact (including our reputation) into our risk assessment framework. We are aiming to strengthen our initiatives to comply with laws and regulations, a prerequisite for business activities through our risk

Risk Management

management activities. At the same time, we will continue to aim for a high level of integrated risk management for the entire Group, treating it as an opportunity to contribute to society and our customers.

Basic Framework of Risk Management



FY2025 Group Major Risks/ PHD Major Strategic Risk

■ Group Major Risks (Operational Risk)

- Natural disasters[*1]
- Terrorism, war, riots, and political unrest
- Human rights and labour compliance
- Antimonopoly Act violations/Violation of anti-bribery and corruption laws
- Quality compliance
- Supply chain management (environmental protections, human right and labour compliance)
- Infectious disease outbreaks/pandemics
- Occupational accidents
- Trade regulations/Economic sanctions
- Cyberattacks

■ PHD Major Strategic Risks (Strategic Risk)

- Climate change response and environmental regulations/Development of a circular economy
- Geopolitical risks and economic security issues
- Attracting, acquiring, and retaining human resources
- Risks relating to the use of AI (artificial intelligence)

*1 Refer to the major efforts in Policies on BCM and BCP

■ Group Major Risks in Fiscal 2025

Among the uncertain events that could result in losses or threats to the execution of the Group's business plan for the achievement of its short-term business objectives or the day-to-day conduct of its business, the following are identified as key risks to the Group's business in fiscal 2025.

Infectious disease outbreaks/pandemics

In order to prepare in general for the spread of infectious diseases in peacetime, we are working to maintain the health and safety of all employees as well as our business continuity system by establishing a BCP for infectious disease outbreaks at each operating company and moving ahead with appropriate stockpiling of masks, rubbing alcohol, thermometers and other items. In addition, contingent on the spread of an infectious disease and the magnitude of its impact on our Group's employees and businesses, we may shift to an emergency system based on the Corporate Emergency Management Rules and proceed with a response that prioritizes employee lives and health.

Terrorism, war, riots, and political unrest

Our Group conducts business activities on a global scale, and conflicts between countries and regions related to recent geopolitical uncertainties, political and social upheaval, and emergencies such as terrorism and wars may have a significant impact on our business.

In preparation for political instability, military tension, or acts of terrorism or war in the countries or regions where our Group has business sites, we are moving forward with initiatives for peacetime safety measures for each function, and the development of a general BCP in order to strengthen our emergency response placing the highest priority on employee safety. Furthermore, we strive to ensure the safety of our employees by providing training for employees prior to assignments and travel outside Japan, alerting them to countries and regions with particularly high risk, and implementing countermeasures at the individual level.

Occupational accidents

The Panasonic Group Occupational Health and Safety Policy, issued by the Group CEO and based on various laws and regulations as well as our Basic Business Philosophy, stipulates that employee health and safety must be ensured. In order to put our philosophy into practice, we have established the Safety and Health Management Rules and aim to contribute to business development by developing health and safety activities to maintain and promote employee health and prevent occupational accidents.

The group-wide Central Health and Safety Committee, chaired by the head of the Group's Health and Safety Management Division, serves as a body that deliberates and advises on important policy and measures related to the Group's health and safety management. Health

Risk Management

and safety bodies have also been established at each operating company and business site to promote health and safety management throughout the Group.

To promote a safe and secure workplace, the Group periodically carries out risk assessments based on its occupational health and safety management system to identify risks of workplace accidents and illnesses, and implements risk reduction measures with a risk based approach. In addition, by analyzing past serious occupational accidents and identifying typical patterns leading to accidents, we share key points for review presented in risk assessments, and effectively and steadily moving ahead with measures to prevent similar accidents from occurring again.

For more details, see the “Work in safe, secure and healthy state” section (page 86).

Human rights and labour compliance

In the Panasonic Group Human Rights and Labour Policy, premised on compliance with all laws applicable to our business activities and transactions, we clearly state our commitment to respect the internationally recognized human rights set out in the International Bill of Human Rights and the International Labour Organization (ILO) Declaration on Fundamental Principles and Rights at Work, to work to achieve a rewarding work environment, and to engage with various stakeholders on these issues.

In line with this policy, we have also established the Rules on Human Rights and Labor Compliance and are moving forward with specific efforts to identify, reduce, and prevent, negative impact on human rights relating to the business areas and value chains of our operating companies in accordance with the United Nations Guiding Principles on Business and Human Rights. We gather information concerning changes to key human rights and labor-related legal requirements and share this with all our business locations to strengthen compliance. For more details, see the “Respect for Human Rights” chapter (page 76).

Trade regulation/Economic sanctions

Laws and regulations in various countries are changing continuously; the Group closely monitors these trends, collects information on a daily basis through global cooperation, and utilizes IT to quickly identify new trade restrictions and sanctions that may affect our business, and responds by updating our global policies and guidance as necessary. We also thoroughly assess how new regulations may apply to cargo and technologies. Moreover, we are raising awareness among employees in Japan and overseas to further improve governance and compliance, with efforts including sharing information internally and disseminating countermeasures to avoid transaction risks. For more details, see the “Trade Compliance” section (page 151).

Antimonopoly Act violations/Violation of anti-bribery and corruption laws

The Panasonic Group Code of Ethics & Compliance defines the commitments that each and every one of our and our Group companies’ employees must fulfill, and which are shared and thoroughly understood by all employees, such that as a public entity, we will not only avoid violation of laws and regulations and social morals, but also perform our duties to high ethical standards and with appropriate knowledge without being bound by self-interest.

In response to serious risks such as the violation of antitrust and competition laws and bribery and corruption in particular, we are working to prevent and promptly detect misconduct through training programs meant to ensure thorough compliance based on global regulations and compliance audits on bribery and corruption based on a risk-based approach. In addition to basic compliance training for all employees, we conduct initiatives throughout the year aimed at establishing awareness of ethics and legal compliance globally, and improving our ability to respond to risks, such as risk-based compliance training based on business and regional characteristics as needed.

Additionally, we have established a global hotline to receive reports from domestic and overseas bases and business partners, which will act as a centralized internal point of contact for whistleblowers for the prevention and early resolution of misconduct. We are working to detect and correct problems early through appropriate internal investigations. For more details, see the “Business Ethics” chapter (page 146).

Quality Compliance

In accordance with the “Basic Business Philosophy”, the Group considers ensuring the constant safety of the products it manufactures and sells and the delivery of those products to customers with safety and peace of mind to be an important management issue and matter of social responsibility. The “Group’s Quality Policy” is “to serve our customers by providing products and services that consistently meet and satisfy the needs of our customers and society.”

On the other hand, we discovered that our subsidiary, Panasonic Industry Co., Ltd. has identified instances of irregularities in the process of the US-based third-party certification by UL Solutions, for its electronic materials products. Refer to “Business Ethics” (page 146) for details of our response.

Cyberattacks

We are working to ensure the soundness of the IT environment and improve its cyber resilience (response and recovery during incidents) to achieve a higher level of information security. Specifically, we are implementing measures to further expand anomaly monitoring on networks, servers, and PCs, including infrastructure at Japanese and overseas subsidiaries; integrate security monitoring with that of internal factory; and strengthen global and centralized security monitoring systems.

In addition to technical measures, we are strengthening and promoting human resource

Risk Management

measures, such as the establishment of an information security training platform, periodic training for global employees, and periodic security checks of contractors involved in system operations, etc. We are striving to comply with laws and regulations concerning personal data protection and cybersecurity in various countries by investigating trends with outside experts, reflecting them in our internal rules and regulations, and operating systems to share them internally.

To promote a centralized and comprehensive response to complex cybersecurity risks in the entire supply chain, we have integrated IT, product, and plant security functions and established a Cyber Security Office within PHD and a Chief Cybersecurity Supervisor in each operating company to collaborate in the strategic implementation of cyber hygiene (prevention under normal conditions) and cyber resilience.

For more details, see the “Cyber Security and Data Protection” chapter (page 152).

Supply chain management

The Group makes purchases from roughly 13,000 suppliers globally. Demand for corporate social responsibility in the supply chain has been growing stronger day by day in recent years, and this is reflected in legislative trends, such as the enactment and enforcement of new regulations in various countries and regions, mainly in the areas of human rights and the environment. The Group has established the Rules on Supply Chain Compliance, which set forth basic policy on supply chain compliance and internal rules for its implementation, and is conducting periodic management reviews on the state of implementation.

We have established the Panasonic Supply Chain CSR Promotion Guidelines based on laws, regulations, and international norms and standards concerning CSR requirements (human rights and labour, health and safety, global environmental conservation, information security, corporate ethics, etc.). We expect our suppliers to comply with these guidelines and require our suppliers to contractually undertake to comply with these guidelines. We require our suppliers to communicate the requirements of the guidelines to their secondary suppliers and confirm their compliance with the guidelines, thereby ensuring CSR throughout the supply chain. Furthermore, as part of our supply chain due diligence, we encourage suppliers to periodically conduct checklist-based CSR self-assessments to voluntarily scrutinize the state of compliance with the requirements of the guidelines and to take corrective actions based on the results. From fiscal 2023, each operating company has defined a supplier audit implementation plan using a risk-based approach, and we have begun auditing suppliers both in-house and using third-party organizations. Through these efforts, we are working to ensure CSR throughout the entire supply chain. For more details, see the “Responsible Supply Chain” chapter (page 109).

PHD Major Strategic Risks in Fiscal 2025

In addition to operational risk management, the Group defines “strategic risk” as uncertainties that may present opportunities or threats to be considered when formulating business strategies and making decisions to achieve medium- to long-term business goals, and implements risk management to promote appropriate risk-taking according to risk tolerance.

With regard to strategic risk, we specify functional departments responsible for risks that may affect business strategies by subdividing risk scenarios into units of events that may constitute opportunities, threats, or both. For such events, we evaluate the uncertainty and impact of the event, and formulate and implement countermeasures to deal with events as necessary. For other events we define leading indicators and conduct periodic monitoring to detect signs of risks materializing, and take timely responses to changes in the external environment.

Among the various strategic risks, we select major risks to the Group management (“PHD Major Strategic Risks”) from the viewpoint of necessity for cross-PHD/operating companies efforts to realize our vision and mission, and we work to subdivide these risks into units of events that may be “opportunities” or “threats”. We then share these details with the relevant functional departments, which monitor them in their respective areas of expertise and promote initiatives designed based on this monitoring.

Similarly, each operating company defines and manages its “Operating Company Major Strategic Risks” from among the strategic risks related to their respective business strategies.

Thus, by promoting risk management that is appropriate to the target time horizon and the type of impact, the Group aims to contribute to the integrated management of business and risk and strengthen the competitiveness of its businesses.

Climate change & Environmental regulations/Development of a circular economy

We believe that solving global environmental problems, including climate change, should be a top priority in relation to the Group’s mission of “realizing an ideal society with affluence both in matter and mind.” As environmental regulations and policies are introduced and expanded in the international community, and companies are required to further accelerate their efforts, we are moving ahead with our business activities with an eye to taking advantage of opportunities such as demand for environmentally oriented products and services and related new technology and business development. Through these efforts, we aim to reduce threats and losses, such as increased procurement and manufacturing costs associated with the introduction of carbon pricing, such as carbon taxes and emissions trading, and the switch to materials with lower environmental impact, as well as lost business opportunities due to delays in addressing environmental issues.

Recognizing that resource efficiency contributes to decarbonization in global environmental issues and that it is necessary to reduce consumption of the earth’s limited natural resources, and in order to contribute to the realization of a sustainable society, in December 2023 the

Risk Management

Group formulated its Circular Economy Group Policy as a shared guideline to promote and enact a circular economy in the Group's business activities. We will strengthen our efforts to expand our business by responding appropriately to both opportunities to increase corporate value through the active use of renewable energy and expanding demand for low-carbon products using recyclable resources, and to threats such as increased production costs and frequent and normalized production delays due to rising prices and insufficient supply of recyclable resources (recycled materials and reusable raw materials). For more details, please see the "Environment" chapter (page 9)

Geopolitical risks and economic security issues

Through our continuous monitoring of international affairs and trends in national and regional policies, laws, and regulations, we are making an effort to grasp their impact on employee safety in the Group and the Group's business and respond to them promptly. In particular, to prepare for emergencies or heightened tensions in the countries and regions where the Group has business sites, we are promoting initiatives to strengthen resilience through safety measures and business continuity management during peacetime.

We also identify risk scenarios, such as political and social upheaval that may accompany events such as conflicts between countries and regions or changes in government, and analyze their possible impact on the Group's businesses to optimize our business strategy through the inspection and restructuring of our production system and partnerships with other companies, with a view to duplicating supply chains and achieving local production for local consumption over the medium to long term.

We will also continue to closely monitor the rapid changes in the business environment caused by market decoupling, strengthening of economic and security policies of countries and regions, and polarizing public opinion, including the threats to our business and opportunities to leverage tax measures based on economic security policies.

Attracting, acquiring, and retaining human resources

As a common Group human resource strategy, we are committed to realizing "Employee Well-Being" so that each and every employee is in good health, both mentally and physically, and feels happy and fulfilled in their work through opportunities to take on new challenges. Thus, we create safe, secure, and healthy workplaces; encourage employees' self-motivated endeavors and support their self-determined career formation; and promote diversity, equity, and inclusion (DEI). In addition, since the transition to the operating company system, each operating company has introduced its own human resource strategy and personnel system order to recruit and train highly specialized personnel. Some of our operating companies have introduced systems that allow employees to choose their careers autonomously, for example, by switching from conventional membership-based management to job-based management focusing on job descriptions and open recruitment and assignment, and by introducing an open recruitment system for transfers and promotions at the section manager level and above. Meanwhile, competition to secure competent human resources is intensifying, and we will continue to closely monitor trends in policies and legislation related to human resources, diversity, and promoting women in the workforce in all countries and our competitors. For more details, see the "Employee Well-Being" chapter (page 83).

Risks relating to the use of AI (artificial intelligence)

While assessing the opportunities and threats associated with the rapid advancement and uptake of AI technologies, such as generative AI, the Group is also gradually expanding its use of AI to improve operational productivity, generate new business ideas, and enhance business competitiveness.

In order to take timely and appropriate measures concerning the use of AI, the Group has established an AI Ethics Committee with the participation of personnel in charge of AI ethics from all operating companies, as well as from the legal, intellectual property, information, and quality sections. In 2022, we established the "AI Ethical Principles" in order to practice responsible use of AI, operate an AI ethical risk check system at AI development sites, and promote AI Ethical Training for all Group employees and AI technology human resource development.

While strengthening the Group-wide AI governance structure, we will accelerate the effective use and development of AI by addressing issues arising from the characteristics of AI, such as issues involving privacy, security, fairness, and copyright infringement, and by complying with the laws and regulations in each country. For more details, please see the "AI Ethics" chapter (page 119).

Education and Enlightenment for Our Employees

The Group has also established the Panasonic Group Operational Rules for Risk Management ("Operational Rules"), which are subordinate to the Basic Rules and define the standard procedures for the Group with regard to promoting risk management. The Group aims to achieve centralized risk management and its advancement by defining specific procedures for identifying and assessing risks, selecting Major Risks, and formulating and implementing countermeasures. Additionally, we annually update and deploy the Group's risk management guideline based on Operational Rules to managers and other personnel in charge of risk management at each operating company. The Guideline aims to share the priority issues, initiatives, and points for process improvement to be promoted during the fiscal year. We hold several briefings each year for personnel in charge of risk management at each operating company to share their perspectives and information, aiming to improve their skills and promote effective risk management processes.

Risk Management

In addition to these initiatives, for the purpose of improving the capability of each employee in the Japan region to respond to risk and to foster a risk culture oriented toward appropriate and sound risk-taking and risk control, we provide training on basic risk management concepts and how to respond to crisis situations at the time of joining the company and prior to overseas assignments.

Reporting/whistleblowing mechanism (external and internal)

The Group maintains a global hotline for domestic and international sites and business partners to report issues related to compliance violations, any type of harassment, procurement, and the like as a means for employees to report hidden risks. For more details, please see the “Business Ethics” chapter (page 146).

Policies on BCM and BCP

In light of the need for business continuity as part of our corporate social responsibility, since 2005 we have been promoting and improving BCM (Business Continuity Management) activities to ensure that our business activities will not be interrupted in the event of natural disasters (including those caused by climate change) such as earthquakes, tsunami, floods, fires, explosions, terrorism, war, epidemics and spread of infectious diseases, and cyber-attacks, and to resume necessary functions as quickly as possible in the event it becomes necessary to suspend business activities.

In particular, if a disaster, accident, or other unforeseen event occurs in the Group’s supply chain, including at parts suppliers and product delivery destinations, it will affect not only supply shortages and interruptions of parts from suppliers but also the BtoB field. Supply chain BCM is therefore an important issue, and we are strengthening our efforts in this area.

Major Efforts

The Group has established the Group Emergency Management Rules, which stipulate the basic policy for responding to emergencies that could have a significant impact on the Group as a whole, including the escalation and decision-making process, the system and roles to be played in responding to such emergencies, as well as initial responses. In addition to establishing the Panasonic Group Guidelines for Business Continuity Management (the “BCM Guidelines”) based on the business continuity policy, incident response and disaster prevention and mitigation, which prioritize business recovery and recovery processes, as well as business continuity planning (BCP) at the business site level, we are working to strengthen BCP and improve the resilience of the Group as a whole by establishing BCPs specific to the supply chain, logistics networks, IT security and other requirements of each function under our jurisdiction, such as procurement, logistics, and IT, as well as reviewing BCPs as necessary based on the BCM Guidelines. In fiscal 2023, we revised the BCM Guidelines to incorporate the Japanese Cabinet Office’s latest damage projections for a Nankai Trough earthquake and an earthquake with an epicenter in the Tokyo metropolitan area. We included disaster prevention and mitigation measures in response to these projections and clarified the connections between the BCPs for each function to improve their effectiveness.

In particular, we have conducted a hazard survey about various risks posed by natural disasters such as earthquakes, floods, and tsunamis. We have also shared these findings with each of the operating companies and have put priority measures in place, both within our own Group and in our supply chain. The Group is also analyzing the impact of a Nankai Trough earthquake and an earthquake with an epicenter in the Tokyo metropolitan area, treating them as stress events expected to significantly impact the Group’s business. Based on the results of these analyses, we enhance the required countermeasures, raise appropriate risk awareness within the Group, and improve risk communication.

We have also created a Groupwide Fire and Disaster Prevention Committee to help both strengthen our readiness before contingencies arise and transition rapidly to emergency response systems when an incident does occur. The Fire and Disaster Prevention Committee is working to strengthen countermeasures for various types of disaster, such as earthquakes and floods. In particular, given the strain that has been placed on the power supply by disasters in the past, we have incorporated emergency power supply equipment into BCPs to ensure business continuity. In fiscal 2024, we began operating a “Disaster Portal” to enable timely reporting and centralization of information concerning the state of damage at each business site throughout the Group. We are working to notify all operating companies and further improve the functionality of the system in preparation for its full-scale use, so that decisions on the transition to an emergency system and initial response can be made more quickly by visualizing response and support requests from each business site and their impact on the entire group.

Furthermore, we conduct annual emergency drills, and conducted a group disaster drill based on the assumption that the Nankai Trough earthquake would cause extensive damage centering on the Kansai region. While operating companies set up emergency headquarters in locations other than the disaster-stricken areas, the Group Emergency Headquarters will set up a headquarters in Tokyo to organize information on the disaster and confirm initial responses, such as requests for cooperation and support. Coordinating with local municipalities, operating companies and business divisions conduct annual disaster preparedness and emergency evacuation training drills at each business site as needed.

We also actively work to prevent incidents and prepare for emergencies when it comes to fires as well, based on the Global Fire/Disaster Prevention Rules, which govern fire risk assessments, fire prevention and fire extinguishing equipment, fire brigades and firefighting, recurrence prevention, autonomous inspections, fire prevention drills, awareness raising, auditing, and more.

Business Ethics

Sustainability Data Book 2024

As our business expands globally, directors and employees must always have accurate knowledge and high ethical standards to prevent intentional misconduct and crimes, as well as the various scandals that could arise due to insufficient knowledge or awareness on the part of those involved. Simultaneously, companies must clarify policies, establish regulations and systems, and conduct business activities under a sound corporate culture that remains cognizant of the risks found in the external environment, their businesses' nature, and local characteristics.

We must operate the Company properly and fulfill our responsibilities to our stakeholders, as we conduct business as a "public entity of society" with the management resources it has entrusted to us. We believe it essential that we do not violate laws and regulations or social norms. Moreover, we place great importance on always thinking about what is right for society and acting with integrity and fair play without indulging our self-interests. We believe that the unrelenting pursuit of such conduct will contribute to the authentic development of society, the industry, and our customers.

Conversely, if a compliance violation occurs during the Panasonic Group's conducting a wide range of businesses globally, the individual violator may be subject to criminal and disciplinary actions. The Group may also be subject to fines and administrative penalties, with the risk of receiving criminal and other sanctions. Furthermore, besides the economic losses, such violations may lead to reputational problems and harm the trust society and our stakeholders have in us.

With a full understanding of these positive and negative effects, we have established the Panasonic Group Code of Ethics & Compliance to embody our Basic Business Philosophy and practice compliance in our business activities. Moreover, we have established various internal rules and regulations to ensure compliance, including respecting fair and free competition and not engaging in bribery or corrupt practices with public officials or business partners. Moreover, we are implementing multiple initiatives to ensure that every single director and employee performs their duties with high ethical standards and appropriate knowledge.

Business Ethics

Policy

We have established the Panasonic Group Code of Ethics & Compliance (the "Code of Ethics & Compliance") to outline the commitments all Group companies and employees must fulfill while carrying out their business activities and embodying the Panasonic Group Basic Management Philosophy. It has been translated into 22 languages to ensure that it is understood by employees everywhere.

The Code of Ethics & Compliance explains the positive impact of implementing each of these commitments on society and our stakeholders in conjunction with the thinking behind our Basic Management Philosophy. It also clearly indicates what negative consequences may result for the Group and individuals for violating these commitments.

The Board of Directors of Panasonic Holdings Corporation ("PHD") revises the established Code of Ethics & Compliance and informs all Panasonic Group companies of its updates. The Code then takes effect by resolution of each company's Board of Directors or other appropriate internal procedures.

Panasonic Group Code of Ethics & Compliance
https://holdings.panasonic/global/corporate/about/code-of-conduct.html

Responsible Executive and Framework

Panasonic Group's General Counsel (GC), an Executive Officer, is responsible for group compliance (including anti-bribery and anti-corruption efforts) (as of August 2024). The Basic Rules for Group Compliance clarifies roles and responsibilities related to compliance in Panasonic Group, while the Basic Rules for Group Legal Affairs define the legal structure and functions.

Under the Group management system based on an operating company system, PHD is responsible for establishing a Groupwide compliance system, with the Group GC and PHD Legal Department playing critical roles under the Group CEO's supervision. Each operating company is responsible for establishing and implementing a compliance system for its business area based on the principles of Autonomous Responsibility Management, with the operating company CEO, Chief Legal Officer (CLO), and legal department mirroring their PHD counterparts' roles. Furthermore, for overseas Group companies, Panasonic Operational Excellence Co., Ltd. (PEX) assigns the CLOs and legal departments for each overseas office (formerly, regional headquarters). These officers and departments are responsible for ensuring compliance in their respective regions. Each CLO plays their role in the business and region under the Group GC, working as one legal team to ensure compliance.

Additionally, we have established a system whereby the Group GC and the CLOs of each company regularly report on initiatives for compliance at the Board of Directors meetings of PHD and each operating company and receive appropriate supervision from these Boards.

We also include compliance-related metrics in the compensation calculations for PHD's Executive Officers and operating company CEOs.

Internal Communication and Training

Internal Communication

Panasonic Group fosters a compliance-first culture by regularly disseminating compliance-related messages from the Group CEO, each operating company's CEO, and all business site general managers.

Moreover, the CLOs and legal departments assigned to operating companies or to overseas companies by PEX, officers responsible for observance of the Code of Ethics & Compliance, export control officers, and the heads of functional departments implement specific compliance initiatives at each business site.

The Group's legal departments, which play a leading role in these efforts, have their legal staff from around the world attend the Global Legal & Compliance Meeting, and the CLOs from operating companies, PEX overseas offices, and the PHD Legal Division attend the Direct Report Meeting chaired by the Group GC. Through these and other meetings, the Group's legal departments learn about annual updates to the Group's compliance policies and work toward achieving compliance in various areas.

Furthermore, whenever a legal revision, government ordinance, or government directive is relevant to the Group's business, we notify and communicate it to the business site general managers, operating company CLOs, and relevant organizations. The Group also publishes a quarterly newsletter on compliance for managers ranked at or above the level of business division head.

Training

In response to changes in the business environment and the Group's business, we are bolstering our efforts to accurately identify changes in risk and signs of legal violations and misconduct in specific business fields, divisions, countries, and regions. Throughout the year, we will implement initiatives to establish a global awareness of ethical and legal compliance and improve our ability to respond to risk.

Panasonic provides training and awareness building for new hires and newly promoted employees, through a variety of educational materials, including e-Learning, on the Code of Ethics & Compliance that all employees are required to follow, as well as on other compliance-related materials throughout the year. In fiscal 2024, we provided training to all Group employees* so they could understand the Code of Ethics & Compliance (*) accurately. We also included questions about compliance awareness and culture in the Awareness Survey distributed to all employees worldwide. In fiscal 2024, we received approximately 150,000 survey responses.

Business Ethics

(*) Compliance education provided to all Group employees

FY2021: "Conflict of Interests," "Accounting Wrongdoing" – approximately 140,000 in attendance
FY2022: "Economic Sanctions Law," "Data Privacy" – approximately 130,000 in attendance
FY2023: "Code of Ethics & Compliance" – approximately 150,000 in attendance
FY2024: "Code of Ethics & Compliance" – approximately 150,000 in attendance

In fiscal 2024, we also launched a field-specific compliance e-learning program on acts of bribery & corruption and violations of competition laws which would significantly impact the Group should they occur. We are creating an environment in which directors and employees engaged in high-risk duties can regularly participate in the program while managing the participation of those eligible to enroll.

Additionally, each operating company and PEX overseas office conducts compliance-related training for those who need it, according to the risks relevant to their businesses and regional characteristics.

Whistleblowing System

Panasonic Group has established a Global Hotline—a Groupwide integrated reporting mechanism that accepts reports which can be made anonymously from domestic and overseas sites and business partners or other external stakeholders, available in 32 languages, 24 hours a day, 365 days a year—to prevent misconduct and facilitate rapid resolutions to a wide range of compliance issues, including ethical issues, prevention of corruption, and harassment. The Code of Ethics & Compliance includes information on the Hotline along with the responsibility for reporting. We raise awareness of the system through various compliance training sessions and posters at domestic and overseas workplaces and business sites and post information to the Company intranet—including reporting statistics, case studies where reporting led to problem resolution, instructions on how to use the reporting system, flowcharts outlining the process from initial whistleblower report to final investigation report, FAQs on reporting, and appreciative feedback from whistleblowers—to ensure transparency on the reporting system's operations and encourage employees to use it. In addition, we ask our business partners to inform their employees about our reporting system in our CSR Promotion Guidelines for Suppliers and provide a link to the reporting site URL on our supplier communication website to promote their use of the system. These efforts have resulted in the actual receipt of reports from our business partners.

The Global Hotline website clearly states the necessary procedures for reporting issues, how personal data and other information collected is managed, and where responsibility lies. The website additionally allows whistleblowers to check the progress of each case at any time using a reporting key and password assigned to their submission.

Moreover, employees have other methods for reporting or making grievances. We have an Equal Partnership Consultation Office in Japan that provides consultation on fair treatment in the workplace, sexual harassment, and power harassment, as well as an Auditor Reporting System for assessing the legality of duty execution and investigating fraud perpetrated by directors and executive officers. Establishing the above hotlines and contact points does not preclude employees from using other reporting and grievance mechanisms.

The Code of Ethics & Compliance stipulates that "Panasonic does not tolerate any retaliation or other action that discriminates against or disadvantages anyone who acts in good faith to raise a compliance concern." Retaliation against whistleblowers is strictly forbidden, and their confidentiality is assured through anonymous reporting. To clarify our stance, Panasonic Group has adopted Rules on the Prohibition of Retaliatory Behavior Against Whistleblowers and Others. The Rules prohibit retaliation against internal/external whistleblowers, employees, those participating in investigations, and investigation teams, ensuring proper operations in our whistleblowing systems.

In addition, we have established systems for Groupwide reporting and investigations, including the Internal Reporting and Investigation Rules—which stipulate and administer a system for compliance issue reporting and notification—as well as the frameworks necessary for appropriately receiving, investigating, addressing, and reporting such issues to management. These regulations clarify the cases subject to internal reporting, the obligation for determining the departments and managers in charge of internal reporting at operating companies and subsidiaries, and the investigation methods. We immediately conduct internal investigations when potential violations are identified through hotline reporting, audits, and the like. If these internal investigations conclude that illegal activities have taken place, Panasonic immediately addresses the violations while analyzing their root causes, implementing measures to prevent recurrences, and taking disciplinary actions against relevant parties as necessary.

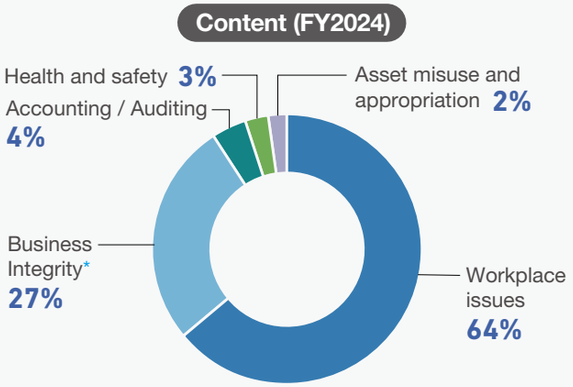
In fiscal 2024, we conducted whistleblower investigation training for all operating companies to raise and standardize the investigative skills of employees engaged in whistleblower investigations. We will continue to review the reporting system appropriately in light of the internal and external environment and issues.

In fiscal 2024, we received approximately 1,100 reports and requests for consultation, with roughly 76% of those coming through the abovementioned global hotline. Of all the reports and requests received, roughly 64% were related to issues in workplaces (refer to the chart below). Of all the reports and requests received in fiscal 2024, approximately 29% were substantiated (excludes anything still under investigation as of March 18, 2024). Furthermore, all reports and consultations we receive are investigated in cooperation with the relevant departments in accordance with internal rules, and we

Business Ethics

address issues, prevent recurrence, handle confirmed cases as necessary, and we notify whistleblowers of this fact.

WEB Global Hotline EARS
https://secure.ethicspoint.eu/domain/media/en/gui/104773/index.html



* Ethical behavior includes concerns related to violation of internal regulations, conflict of interest, bribery, violation of laws, vendor/customer issues, fraud, etc.

Performance Evaluation

We check the status of observance and implementation of the Code of Ethics & Compliance annually, including appointing an officer responsible for observance of the Code at each Group company, providing education and training on the Code, and obtaining written pledges regarding the observance of the Code. The results of these checks are subject to external audits by an auditing firm as part of Groupwide control audits, thereby confirming their effectiveness regularly.

Serious Violations and Corrective Measures

If Panasonic becomes aware of any serious violation of laws or corporate regulations, we will cease the violation immediately and, after sufficiently investigating facts and causes, consider countermeasures. We report on such matters to the Board of Directors as necessary and consider countermeasures of the violation swiftly and across the entire Group.

In fiscal 2024, Panasonic Industry Co., Ltd. (hereinafter "PID") has identified instances of irregularities in the process of the US-based third-party certification by UL Solutions (hereinafter "UL") for electronic materials products manufactured and sold by PID. In response to this, PID has established an external investigation committee comprised of external experts on 12 January 2024 to conduct thorough investigations, analyze the root causes, and formulate measures to prevent re-occurrence. PID communicates directly with customers who have purchased the identified products, discusses future actions, and fully cooperates with investigations possible to uncover all the irregularities in the process.

Moreover, the entire Panasonic Group, in cooperation with an outside law firm, conducts thorough self-assessments targeting inappropriate actions related to quality compliance, aiming to clean up all quality compliance-related issues and eradicate quality fraud.

In the past three years, there were no cases of sanctions by the authorities for corruption.

Initiatives to Address Significant Compliance Risks

Preventing Cartels

Panasonic Group takes extremely seriously the fact that our company has been implicated in multiple international cartel incidents. We are working to prevent any further association with cartelization activities. We take thorough and detailed care to prevent any such involvement, as it would have a variety of negative impacts on our business. If Panasonic were to become involved in the creation of a cartel, we would not only lose the trust of our customers but also be required to pay huge amounts of penalties and compensation for damages, and we could lose our designation in public procurement.

In fiscal 2024, the enforcement authorities took no legal action against the Group for anti-competitive behavior. We will continue to pursue thorough anti-cartel efforts.

Basic Policies

We have established the following basic policies to prevent cartels, collusive bidding, and other such violations:

- Contact with competitors is allowed only in cases in which it is absolutely necessary, and it is subject to prior approval.
- Agreements and exchanges of information with competitors regarding prices, quantities, and other competition-related matters are strictly prohibited.
- Anyone who encounters behaviors that may give rise to suspicions of cartels must make an objection, leave the room, and file an internal report.
- We have established a whistleblowing system and an internal leniency system to improve our ability to self-regulate and conduct appropriate monitoring based on risk assessment, thereby maintaining an effective anti-cartel system.

Rules Concerning Activity and Relationship with Competitors

In 2008, we established the Rules Concerning Activity and Relationship with Competitors, which apply to all Group employees, for the purpose of preventing behaviors that could lead to cartels or bid rigging, or raise suspicion of such activities. These rules include items such as the following:

- Prohibition of agreements or exchanges of information regarding product pricing, quantities, performance, or specifications that may raise suspicions of cartels or bid rigging
- Prior approval system under which contact with competitors requires the prior approval of the head of the business group and the person in charge of legal affairs
- Responses to inappropriate activities
- Duty of reporting possible violations
- Measures taken in response to violations
- Internal leniency system

Business Ethics

Preventing Bribery and Corruption

Basic Policy

In addition to preventing the bribery of public officials, Panasonic Group, has prohibited offering benefits of any kind—regardless of whether they occur as entertainment, gifts, or in any other form—or receiving any personal benefits in any situation in which these would be in violation of laws or social ethics. To strengthen the global prevention of bribery and corruption, on July 1, 2019, Panasonic adopted the following four global regulations that now apply to all Panasonic Group employees and executives.

Regulations

Global Anti-Bribery / Anti-Corruption Policy

Adopted to effectively prevent, discover, investigate, and correct acts of actual corruption or acts deemed to be corrupt with regard to the bribery of public officials and corruption related to business partners.

Specifically, the Policy defines and prohibits facilitation payments and acts considered to be bribery or corruption in connection with political contributions, donations, or sponsorships; lobbying; hiring and recruitment; and mergers, acquisitions, and joint ventures. The Policy also specifies procedures for preventing bribery and corruption, such as due diligence.

Rules on Third-Party Intermediary Risk Management for Anti-Bribery / Anti- Corruption

These rules are meant to mitigate the risks of bribery and other forms of corruption regarding sales intermediaries or administrative service providers, and to prevent, discover, investigate, and correct actual or potential problems related to these risks. They define the basic rules for screening these business partners.

Rules on Gift and Hospitality for Anti-Bribery / Anti-Corruption

These rules describe prohibited conduct and specific procedures to prevent the risks of bribery and corruption. These risks involve the provision or receipt of gifts or entertainment, including meals, hospitality, and travel costs, in relation to public officials or business partners.

Rules on Conflicts of Interest

Any situation in which directors' or employees' personal interests or outside activities interfere or appear to interfere, directly or indirectly, with the interests of Panasonic Group, or influence or appear to influence, in any way, the directors' or employees' business decisions, actions, objectivity, loyalty, or ability to perform their jobs are defined as "conflicts of interest" in these rules. In addition to the rules regarding prevention, identification, management, and correction, the rules also offer specific examples of actual or potential conduct that may create conflicts of interest.

Promotion Efforts

To reduce the risk of indirect bribery and corrupt practices, we have introduced a risk due diligence tool and risk screening process we use for transactions with sales intermediaries and outsourcing partners in accordance with Rules on Third-Party Intermediary Risk Management for Anti-Bribery/Anti-Corruption. Specifically, we conduct risk assessment and risk mitigation for new transactions while also conducting periodic risk assessments and reviewing risk mitigation measures for existing business partners using a risk-level-based cycle.

A Clean Procurement Declaration was also released in 2004 in procurement divisions. Its aim is to build healthy relationships with business partners to make sure transactions are fair. Panasonic then conducts its procurement following its Declaration. For more details, refer to the chapter "Responsible Supply Chain" (page 109).
Panasonic Group has established the "Guidelines for Anti-bribery and Anti-Corruption (For Business Partners)" that Panasonic Group's business partners are required to follow, with regard to compliance with anti-corruption laws, which prevent bribery, corruption, or other improprieties in connection with Panasonic Group business.

For Business Partners <Regarding Anti-Bribery and Anti-Corruption>

Panasonic Group is committed to preventing bribery and corruption in its global operations. (For details, refer to "Preventing Bribery and Corruption" above.)

Panasonic Group has established the "Guidelines for Anti-Bribery and Anti-Corruption (For Business Partners)," which explain Panasonic Group's expectation that business partners will comply with all anti-corruption laws and will not engage in bribery, corruption, or other improprieties in connection with Panasonic Group's business.

The cooperation of Panasonic Group's business partners is essential to the success of Panasonic's compliance with anti-corruption laws. We ask that all our business partners take the time to thoroughly understand these Guidelines and put them into practice.

PDF **"Guidelines for Anti-Bribery and Anti-Corruption (For Business Partners)" – JAPANESE (PDF file)**
https://holdings.panasonic/jp/corporate/sustainability/pdf/Guideline%20of%20Anti-bribery%20and%20Anti-Corruption_jp.pdf

PDF **"Guidelines for Anti-Bribery and Anti-Corruption (For Business Partners)" – ENGLISH (PDF file)**
https://holdings.panasonic/jp/corporate/sustainability/pdf/Guideline%20of%20Anti-bribery%20and%20Anti-Corruption_en.pdf

PDF **"Guidelines for Anti-Bribery and Anti-Corruption (For Business Partners)" – CHINESE (PDF file)**
https://holdings.panasonic/jp/corporate/sustainability/pdf/Guideline%20of%20Anti-bribery%20and%20Anti-Corruption_cn.pdf

Business Ethics

Audit

The Panasonic Group annually selects some of its business sites for compliance audits based on bribery and corruption risks. For any business sites where we anticipate having higher risks, such as those doing business in countries or regions where the Corruption Perceptions Index—published annually by Transparency International, an international NGO—is low, our Compliance Auditing divisions conduct audits on a rotating basis, reviewing their maintenance and operation of Groupwide compliance rules and regulations.

Trade Compliance

The Group has also stipulated global trade compliance rules in the Code of Ethics & Compliance. We also have Rules on Global Trade Restrictions & Sanction Law Compliance to ensure compliance with each country's trade-related regulations, including security export controls and sanctions laws. Moreover, we set standards meant to help us maintain and improve corporate value through the fulfillment of our social responsibility by respecting and following not only laws but also business ethics in our execution of logistics work in the Logistics Operating Standards and Customs Law Compliance Standards. Through these efforts, we ensure trade compliance, including adherence to import/export regulations and trade-related laws and regulations in all countries.

In Japan, the Authorized Economic Operator (AEO) system provides simpler, expedited customs procedures for business operators that have established cargo security management and legal compliance frameworks. We have received customs administration certification as "Authorized Exporter" in the AEO system. We strive to ensure the safety of our international logistics by selecting companies that provide physical, personnel, and information security, not only for our own operations but also for those of our contractors.

At a global level, we promote our participation in AEO frameworks in all regions. For instance, our US subsidiary Panasonic North America takes part in the Customs-Trade Partnership Against Terrorism (C-TPAT), while we actively promote participation in the AEO framework in China.

Ensuring Transparency of Political Contribution Funds

Panasonic Group makes political donations as a part of its corporate social responsibilities. It abides by the Japan Business Federation's policy which states that: "Costs commensurate with the task are essential to properly maintaining democratic politics. Political donations by companies are a crucial part of companies' social responsibilities." When making donations, we comply with the Political Funds Control Act and all other relevant legislation, as well as strict internal rules including the abovementioned global Groupwide rules for preventing bribery and corruption and prohibits any conduct that could lead to suspicion of bribery on the part of public employees or that amount to corrupt practices. We also have regulations in place concerning political contributions, including the reporting and confirming by multiple responsible executives, such as the executive officers in charge of Government and External Relations, Accounting (CFO), and HR & GA (CHRO) of PHD, and obtaining agreement and approval.

Political donations in FY2023: JPY 28.5 million (one donation in Japan)

* The amount of the one FY2024 political donation in Japan will be disclosed by the Ministry of Internal Affairs and Communications (Japan) in November 2024.

As a general rule, we encourage the development of public policy through industry associations. For lobbying in connection with policy recommendations, our Global Anti-Bribery / Anti-Corruption Policy defines lobbying and requires compliance with relevant laws and regulations, and ensures fairness and transparency by requiring that specific lobbying activities must not be reasonably perceived as inappropriate, unethical, or corrupt.

Tax Policy

The Group contributes to the development of society and the resolution of issues through its business activities by paying its fair share of taxes in communities where we operate and in accordance with the tax laws of each country and other tax guidelines published by international organizations such as the OECD. See below for details.

WEB Panasonic Group Tax Policy
https://holdings.panasonic/global/corporate/sustainability/governance/fair-practices/tax_policy.html

Cyber Security and Data Protection

Sustainability Data Book 2024

Cyber Security

Recently, cyberattacks have become increasingly sophisticated and creative, raising the risk of large-scale incidents and damage, including targeting our business partners and supply chains. Simultaneously, companies must deploy enterprise cyber security measures, as society demands responsibility for addressing security incidents.

Policy

Panasonic Group promotes Groupwide cyber security measures to protect data and personal information entrusted to us by clients from cyberattacks and ensure stable operations in our information systems, facilities, and the products and services we provide to customers. Specifically, we established the Panasonic Group Cyber Security Operational Rules that apply across the Group alongside other guidelines all employees must follow involving information security, factory system security, and product security. We also regularly evaluate and review these initiatives.

Responsible Executive and Framework

The executive officer responsible for cyber security is the Group Chief Information Officer (Group CIO). The Group Chief Technology Officer (Group CTO) is responsible for manufacturing system and product security. (as of August 2024)

Panasonic Holdings Corporation (“PHD”) established the Cyber Security Supervisory Office, headed by the Group CIO, to oversee the three aspects of information, factory system, and product security, accelerate and focus cyberattack countermeasures, and promote cyber hygiene (prevention under normal conditions) and cyber resilience (response and recovery during incidents). Furthermore, PHD and our Group companies appoint managers in charge of information security, factory system security, and product security. All Group companies promote security strategies for all functions based on PHD’s basic policy and Groupwide regulations.

Cyber Security and Data Protection

Major Initiatives

Information Security

To mitigate stoppages, unauthorized operation, content falsification, and other damage to the Group's internal systems, internal and external web services, and other IT systems, Panasonic takes a multifaceted approach to ensure that our IT systems maintain stable operations. We build and update systems following our security policies, conduct periodic vulnerability assessments, and use periodic committee meetings and other means to ensure that IT system managers at Group companies thoroughly implement our strategies.

Factory System Security

Panasonic established guidelines for breach prevention, anomaly detection, and incident response covering defense against cyberattacks on its factories. We review these guidelines on an ongoing basis. All of Panasonic's sites worldwide defend against cyberattack risks following these guidelines. We also conduct response training for plant personnel on the assumption that security incidents will occur to help raise awareness.

Product Security

As consumers conveniently use various products equipped with software and connected with network, we must ensure product security to prevent harm from attacks initiated by malicious third parties who aim to leak or alter data or cause device malfunction. Panasonic establishes internal structure and rules, including guidelines for promoting security-conscious development, and regularly reviews these structure and rules to ensure customer peace of mind when using products. We also promote research and development in AI-based anomaly detection technology to prevent harm from cyberattacks. Moreover, there are training to provide employees skills necessary to ensure product security such as, risk analysis and secure coding, etc.

Joint Initiative

To jointly tackle the above 3 initiatives, we have a dedicated team that regularly collects and monitors information about threats and vulnerabilities and implements countermeasures as necessary, while another team is dedicated to conducting drills in response to an assumed cyberattack.

Data Protection

In the course of business, companies may handle their business partners' data assets and customers' personal information. Improper management of such data may harm stakeholders, including information theft, leakage, and falsification. Panasonic Group is well aware of the importance of protecting personal information and other data entrusted by its business partners and customers through joint research, customer service, and marketing. Thus, we strive to ensure information security Groupwide to prevent data leaks and data tampering.

Policy

In order to gain customer satisfaction and trust through our products and services, the Group believes it is important to recognize various information including personal information entrusted to us by stakeholders such as business partners and customers as important assets for these stakeholders and valuable management resources for the Group. We believe it is important to protect and handle such information appropriately. Furthermore, since the enactment of the EU General Data Protection Regulation (GDPR), personal information protection legislation has been enacted and/or revised in various countries, and its importance is growing as our Group's data utilization business expands.

Therefore, based on the Panasonic Group Code of Ethics & Compliance, which includes information security policies, management rules and guidelines related to information security, and the Basic Information Security Policy and Personal Information Protection Policy established by each Group company, we strive to ensure security and protect personal information. By implementing organizational, technical, and physical security management measures, we accurately record information; properly manage, use, and dispose of it; and prevent its theft, leakage, and falsification. Additionally, we periodically conduct awareness building activities as part of our employee training, and evaluate how we handle information, review it, and implement improvement through internal audits.

We also take necessary and appropriate measures, including thorough management and contract execution, to ensure that contractors properly manage security for the information we provide to them.

WEB **Panasonic Group Code of Ethics & Compliance**
"Protecting and using our company assets (Information Security)", "Respecting individuals' privacy"
https://holdings.panasonic/global/corporate/about/code-of-conduct.html

WEB **Basic Information Security Policy (an example of PHD)**
https://holdings.panasonic/global/security-policy.html

Cyber Security and Data Protection

Responsible Executive and Framework

The executive officer in charge of information security and protection of personal information is Group Chief Information Officer (Group CIO) (as of August 2024). Panasonic Group has established responsible person in charge of information security and personal information protection in PHD and each operating company, and each operating company promotes information security initiatives in line with the Basic Information Security Policy and Global Rules, established by PHD.

List of ISO27001 certified companies in Panasonic Group in Japan
https://holdings.panasonic/global/corporate/sustainability/governance/security/iso27001.html

Personal Information Protection and Compliance

In recent years, many countries have enacted or revised personal information protection laws and regulations. We recognize the importance of thorough compliance with personal information protection.

As our IoT business grows, its employees are increasingly likely to handle customer lifelogs and other personal information worldwide. Therefore, Panasonic is striving to improve its data management to provide a higher level of privacy protection. Additionally, to comply with the EU General Data Protection Regulation (GDPR), and other laws in various countries, we have prepared response manuals and are strengthening our efforts to ensure compliance and accountability to society through employee education and other measures. Panasonic Group strives to protect personal information based on the Personal Information Protection Policy established by each Group company, which mirrors PHD's policies.

In addition, we are responding to risks by classifying personal information according to its sensitivity and the impact of its disclosure, and then implementing organizational, technical, and physical security control measures depending on that classification. We have mechanisms in place to check how the Panasonic Group is actually handling personal information, and regularly assess risks related to personal information (privacy).

Ex.) PHD

Panasonic Information Protection Policy
https://holdings.panasonic/global/privacy-policy.html

Public information and requests for disclosure of personal information based on the "Personal Information Protection Law". (Japanese only)
https://holdings.panasonic/jp/privacy-policy/public-announcement.html

Responding to Incidents

Panasonic has established reporting and response systems in its incident response rules and thoroughly trains employees to minimize harm during an incident. In the unlikely event of an incident, we also work to uncover the cause and prevent recurrence.

Training

Each year, Panasonic provides all employees with the necessary training to increase their security awareness and promote changes in behavior. Using content tailored to each employee's needs (level-specific for newly hired or promoted employees, or company-wide training), we carry out training on appropriate information management and cyber security along with drills to respond to targeted attacks.

FY2024 Groupwide training achievements

Information Security:

■Training content: Enforcing information security and personal information protection
■Target trainees: All employees of Panasonic Group subsidiary and affiliated companies

Cyber Security:

■Training content: Cyber security training and drills
■Target trainees: All employees of Panasonic Group subsidiary and affiliated companies

Sustainability Data Book 2024

External Recognition

Evaluation and certification by major certifying organizations

Indices marked with an asterisk (*) were adopted by the Government Pension Investment Fund (GPIF) to promote ESG investment.

FTSE

Panasonic Holdings Corporation is a constituent of the FTSE4Good Index Series, the FTSE Blossom Japan Index* and the FTSE Blossom Japan Sector Relative Index*.

WEB FTSE4Good https://www.lseg.com/en/ftse-russell/indices/ftse4good

WEB FTSE Blossom Japan Index Series https://www.lseg.com/en/ftse-russell/indices/blossom-japan

FTSE4Good

FTSE Russell (the trading name of FTSE International Limited and Frank Russell Company) confirms that Panasonic Holdings Corporation has been independently assessed according to the FTSE4Good criteria, and has satisfied the requirements to become a constituent of the FTSE4Good Index Series. Created by the global index provider FTSE Russell, the FTSE4Good Index Series is designed to measure the performance of companies demonstrating strong Environmental, Social and Governance (ESG) practices. The FTSE4Good indices are used by a wide variety of market participants to create and assess responsible investment funds and other products.

FTSE Blossom Japan Index

FTSE Russell confirms that Panasonic Holdings Corporation has been independently assessed according to the index criteria, and has satisfied the requirements to become a constituent of the FTSE Blossom Japan Index. Created by the global index and data provider FTSE Russell, the FTSE Blossom Japan Index is designed to measure the performance of companies demonstrating strong Environmental, Social and Governance (ESG) practices. The FTSE Blossom Japan Index is used by a wide variety of market participants to create and assess responsible investment funds and other products.

FTSE Blossom Japan Sector Relative Index

FTSE Russell confirms that Panasonic Holdings Corporation has been independently assessed according to the index criteria, and has satisfied the requirements to become a constituent of the FTSE Blossom Japan Sector Relative Index. The FTSE Blossom Japan Sector Relative Index is used by a wide variety of market participants to create and assess responsible investment funds and other products.

MSCI

In 2023, Panasonic Holdings Corporation received a rating of AA (on a scale of AAA-CCC) in the MSCI ESG Ratings assessment. The company is a constituent of the MSCI ESG Leaders Indexes, the MSCI Japan ESG Select Leaders Index and the MSCI NIHONKABU ESG Select Leaders Index*.

WEB MSCI website https://www.msci.com/esg-integration

MSCI ESG RATINGS AA

CCC | B | BB | BBB | A | AA | AAA

THE USE BY PANASONIC HOLINDGS CORPORATION OF ANY MSCI ESG RESEARCH LLC OR ITS AFFILIATES ("MSCI") DATA, AND THE USE OF MSCI LOGOS, TRADEMARKS, SERVICE MARKS OR INDEX NAMES HEREIN, DO NOT CONSTITUTE A SPONSORSHIP, ENDORSEMENT, RECOMMENDATION, OR PROMOTION OF PANASONIC HOLINDGS CORPORATION BY MSCI. MSCI SERVICES AND DATA ARE THE PROPERTY OF MSCI OR ITS INFORMATION PROVIDERS, AND ARE PROVIDED 'AS-IS' AND WITHOUT WARRANTY. MSCI NAMES AND LOGOS ARE TRADEMARKS OR SERVICE MARKS OF MSCI.

2024 MSCI ESG Leaders Indexes Constituent

2024 CONSTITUENT MSCI JAPAN ESG SELECT LEADERS INDEX

2024 CONSTITUENT MSCI NIHONKABU ESG SELECT LEADERS INDEX

THE INCLUSION OF PANASONIC HOLDINGS CORPORATION IN ANY MSCI INDEX, AND THE USE OF MSCI LOGOS, TRADEMARKS, SERVICE MARKS OR INDEX NAMES HEREIN, DO NOT CONSTITUTE A SPONSORSHIP, ENDORSEMENT OR PROMOTION OF PANASONIC HOLDINGS CORPORATION BY MSCI OR ANY OF ITS AFFILIATES. THE MSCI INDEXES ARE THE EXCLUSIVE PROPERTY OF MSCI. MSCI AND THE MSCI INDEX NAMES AND LOGOS ARE TRADEMARKS OR SERVICE MARKS OF MSCI OR ITS AFFILIATES.

S&P/JPX Carbon Efficient Index*

Panasonic Holdings Corporation has been a constituent of S&P/JPX Carbon Efficient Index, one of the environmental stock indices of the world's largest pension fund, the Government Pension Group Investment Fund (GPIF) since 2018.

CDP 2023

"CDP Climate Change Report 2023 (Japan)" was published in March 2024. It covers the results of the survey by the U.K.-based non-profit organization CDP (formerly the Carbon Disclosure Project), which evaluates companies around the world in regard to measures against climate change and specific greenhouse gas emissions.

Panasonic Holdings Corporation received an "A," the highest of eight ratings, for two consecutive years in recognition of its efforts for climate change—such as reducing CO_2 emissions and setting medium- to long-term targets— and its information disclosure.

CDP DISCLOSURE INSIGHT ACTION A LIST 2023 CLIMATE

EcoVadis

EcoVadis provides a global platform for supplier sustainability assessment and is used in over 180 countries. EcoVadis evaluates sustainability based on 21 indicators in four areas: Environment, Labor and Human Rights, Ethics, and Sustainable Procurement. Panasonic Holdings Corporation receives a rating from EcoVadis every year. In the scorecard issued in December 2023, the overall score was 68 out of 100 and the percentile ranking was 90th (top 10%).

Fiscal 2024 External Awards in the Environmental Field

The Panasonic Group received various awards as results of environmental activities implemented by whole Panasonic group in Fiscal 2024, following the previous year.

Major External Awards in Environmental Fields (Fiscal 2024)

Category	Presenters and awards	Award title	Recipient companies and details	URL
Products & services	Japan: Energy Conservation Center Japan (ECCJ) Energy Conservation Grand Prize 2023	METI Minister's Award, Product and Business Model category	Panasonic Corporation Living Appliances and Solutions Company Energy Conservation Category: Cloud-controlled GX-compatible Refrigerator 9X Series.	WEB https://news.panasonic.com/jp/press/jn240201-1?_gl=1*vvp74j*_ga*MzcxNTQ0Nzc1LjE3MTM0Mjg2MjY.*_ga_
		ECCJ Chairperson's Award, Product & Business Model category	Panasonic Corporation Heating and Ventilation A/C Company Development of individual Hybrid air conditioning system 'Hybrid GHP' to maximize use of renewable energy usage.	
		ECCJ Chairperson's Award, Product & Business Model category	Panasonic Corporation Heating & Ventilation A/C Company Eolia 24XS/HX Series air conditioners that pursue both energy conservation and user comfort.	
	Japan: Japan Electrical Manufacturers' Association (JEMA) The 72nd (2023) Electrical Industry Technical Achievement Awards	Heavy Electrical Machinery category Excellence Award	Panasonic Corporation Electric Works Company Making an ultrasonic flow and concentration meter for hydrogen into product that promotes fuel cell development.	PDF https://holdings.panasonic/jp/corporate/technology/awards/pdf/winners_2023.pdf
		Heavy Electrical Machinery category Superior Award	Panasonic Switchgear Systems Co., Ltd. and Panasonic Corporation Electric Works Company Development of power distribution box for an EV charging facility (for outdoor use).	
		Home Electrical Appliances category Superior Award	Panasonic Corporation Heating & Ventilation A/C Company Development of air conditioner with humidification/ ventilation function that provides no necessity of water supply and high energy efficiency at the same time.	
		Home Electrical Appliances category Superior Award	Panasonic Ecology Systems Co., Ltd. Wall-mounted heat exchanger for residential use that has achieved compact size, low noise, high energy efficiency, and high effective ventilation rate.	
	Japan: Japan Society for Bioscience, Biotechnology, and Agrochemistry (JSBBA) JSBBA Award for Young Scientists 2023	JSBBA Award for Young Scientists	Panasonic Holdings Corporation Elucidation of structural and functional evolution of surface membrane during the formation of primitive chloroplasts, and its application.	PDF https://holdings.panasonic/jp/corporate/technology/awards/pdf/winners_2023.pdf
	Japan: Japan Institute of Design Promotion 2023 Good Design Award	Good Design Award, Good Design Best 100, etc.	Panasonic Corporation Electric Shaver: Lamdash Palm-in ES-PV6A Dish washer/dryer: Personal dish washer/dryer SOLOTA NP-TML1, etc.	WEB https://news.panasonic.com/jp/topics/205383
	Japan: Ichimura Foundation for New Technology 56th Ichimura Industrial Awards	Contribution Prize	Panasonic Production Engineering Co., Ltd. Industrial inkjet device that features low-cost and high-precision display/	WEB https://holdings.panasonic/jp/corporate/technology/awards/list/2024/56th_ichimura.html
Production activities	Japan: New Energy Foundation New Energy Award 2023	METI Minister's Award, New Energy Introduction category	Panasonic Holdings Corporation and Panasonic Energy Co., Ltd. (Co-recipient with other organizations) Introduction of solar power system to a special high voltage power reception factory using a new method that significantly reduced construction costs.	WEB https://holdings.panasonic/jp/corporate/technology/awards/list/2024/r05_nea.html
	Japan: Energy Conservation Center Japan (ECCJ) Energy Conservation Grand Prize 2023	METI Minister's Award, Energy Conservation Best Practices category	Panasonic Corporation Electric Works Company, Net Zero Energy Building (ZEB) and (Net Zero Energy Housing) ZEH category: Renovation of Kyoto Building with energy efficient ZEB-ready.	WEB https://news.panasonic.com/jp/press/jn240201-1?_gl=1*vvp74j*_ga*MzcxNTQ0Nzc1LjE3MTM0Mjg2MjY.*_ga_
		Agency for Natural Resources and Energy Commissioner's Award Energy Conservation Best Practices category	Panasonic Electric Works Engineering Co., Ltd. (Co-recipient with other organizations) Business category: Activities for energy-saving buildings, using low-temperature heat discharged from a factory.	
		ECCJ Chairperson's Award, Energy Conservation Best Practices category	Panasonic Corporation Living Appliances and Solutions Company Development of low-temperature flow soldering methods towards achieving carbon neutrality.	
		Jury's Special Award, Energy Conservation Best Practices category	Panasonic Electric Works Engineering Co., Ltd. Activities to realize a net zero CO_2 factory by operating 3 batteries in conjunction with each other through utilization of hydrogen energy that is the first in the world.	
	Japan: Japan Electrical Manufacturers' Association (JEMA) The 72nd (2023) Electrical Industry Technical Achievement Awards	Excellence Prize Manufacturing category	Panasonic Holdings Corporation Manufacturing Innovation Division Development of laser stripping method to separate refrigerator door glass	PDF https://holdings.panasonic/jp/corporate/technology/awards/pdf/winners_2023.pdf

Sustainability Data Book 2024

Sustainability Data Book 2024

Independent Assurance Statement by LRQA Limited

LRQA Independent Assurance Statement

Relating to Panasonic Group's Environmental Data within its Sustainability Data Book 2024 for the fiscal year 2023

This Assurance Statement has been prepared for Panasonic Holdings Corporation in accordance with our contract.

Terms of Engagement

LRQA Limited ("LRQA") was commissioned by Panasonic Holdings Corporation ("the Company") to provide independent assurance on its environmental data within its Sustainability Data Book 2024 ("the report") for the fiscal year 2023 (from 1 April 2023 to 31 March 2024) against the assurance criteria below to a limited level of assurance and materiality of the professional judgement of the verifier using ISAE 3000 (Revised) and ISO 14064-3:2019 for greenhouse gas (GHG) emissions.

Our assurance engagement covered the Company's operations and activities relating the Company and its consolidated subsidiaries in Japan and overseas [1], and specifically the following requirements:

- Verifying conformance with the Company's reporting methodologies for the selected datasets:
- Evaluating the accuracy and reliability of data for only the selected indicators listed below: [2] [3]
  - CO_2 emissions in Business activities (tCO_2e)
  - GHG emissions other than CO_2 from energy use (tCO_2e)
  - Scope 1 GHG emissions (including the breakdown of the GHGs) (tCO_2e)
  - Scope 2 GHG emissions (including the breakdown of the GHGs) (tCO_2e)
  - CO_2 emissions for logistics (tCO_2e) [4]
  - Scope 3 GHG emissions Category.11 (Use of sold products) (tCO_2e)
  - Amount of renewable energy consumption in Business activities (MWh) [5]
  - Energy consumption in Business activity (MWh)
  - Amount of Total Wastes and revenue-generating waste (kiloTonnes)
  - Water consumption (m^3)
  - Release / Transfer of Substances Requiring Management (Total) (Tonnes) [6]
  - Zeroization of CO_2 emissions (44 factories) [7]
  - Avoided CO_2 emissions to Society (tCO_2e)

LRQA's responsibility is only to the Company. LRQA disclaims any liability or responsibility to others as explained in the end footnote. The Company's responsibility is for collecting, aggregating, analysing and presenting all the data and information within the report and for maintaining effective internal controls over the systems from which the report is derived. Ultimately, the report has been approved by, and remains the responsibility of the Company.

LRQA's Opinion

Based on LRQA's approach nothing has come to our attention that would cause us to believe that the Company has not, in all material respects:

[1] *Energy consumption in Business activities, Energy-oriented CO2 emissions among Scope 1 GHG emissions, Scope 2 GHG emissions cover 222manufacturing sites and 75 non-manufacturing sites, and GHG emissions other than CO2 from energy use, Amount of Total Wastes and revenue-generating waste, Water consumption, Release / Transfer of Substances Requiring Management (Total) cover 222 manufacturing sites in the Company and its consolidated subsidiaries in Japan and overseas. CO_2 emissions in Business activities means the sum of Scope1 and Scope2 GHG emissions.*

[2] *LRQA undertook a limited assurance engagement of the environmental data marked with "✓" within Sustainability Data Book 2024.*

[3] *GHG quantification is subject to inherent uncertainty.*

[4] *Only the logistics in Japan is covered.*

[5] *These are the results for the entire Panasonic Group, including non-manufacturing sites.*

[6] *Some consolidated subsidiaries that don't have data collection and aggregation systems in place are not in the scope.*

[7] *The scope is 44 factories at 42 location which are shown in the Annex.*

- Met the requirements of the criteria listed above
- Disclosed accurate and reliable environmental data

The opinion expressed is formed on the basis of a limited level of assurance[8] and at the materiality of the professional judgement of the verifier.

LRQA's Approach

LRQA's assurance engagements are carried out in accordance with ISAE 3000 (Revised) and ISO 14064-3:2019 for GHG emissions. The following tasks were undertaken as part of the evidence gathering process for this assurance engagement:

- Auditing the Company's data management systems to confirm that there were no significant errors, omissions or misstatements in the report. We did this by reviewing the effectiveness of data handling procedures, instructions and systems, including those for internal verification.
- Interviewing with those key people responsible for compiling the data and drafting the report.
- Sampling datasets and traced activity data back to aggregated levels;
- Verifying the historical environmental data and records for the fiscal year 2023; and
- Visiting Panasonic Industry Co., Ltd. Device Solutions Business Division Uji and Panasonic Wanbao Appliances Compressor (Guangzhou) Co., Ltd. to confirm the data collection processes, record management practices, and to physically check the main facilities in the scope of the site.
- In order to achieve practically zero CO_2 emissions, verified that each site has achieved full renewable energy use through the use of renewable energy contracts or non-fossil certificates for electricity, and each site has achieved carbon neutrality by using available carbon credits for carbon offset. [9]

Observations

In order to ensure completeness in the extraction of activities for environmental data aggregation, it is effective to be reflected it in the procedure manual and make it known to the sites.

LRQA's Standards, Competence and Independence

LRQA implements and maintains a comprehensive management system that meets accreditation requirements for ISO 14065 *Greenhouse gases – Requirements for greenhouse gas validation and verification bodies for use in accreditation or other forms of recognition* and ISO/IEC 17021-1 *Conformity assessment – Requirements for bodies providing audit and certification of management systems – Part1: Requirements* that are at least as demanding as the requirements of the International Standard on Quality Control 1 and comply with the *Code of Ethics for Professional Accountants* issued by the International Ethics Standards Board for Accountants.

LRQA ensures the selection of appropriately qualified individuals based on their qualifications, training and experience. The outcome of all verification and certification assessments is then internally reviewed by senior management to ensure that the approach applied is rigorous and transparent.

LRQA is the Company's certification body for ISO 9001, ISO14001, IATF16949 and AS9100. These certification services do not compromise LRQA's independence or impartiality with respect to the assurance services that LRQA provides to the Company.

Signed Dated: 21 July 2024

[8] *The extent of evidence-gathering for a limited assurance engagement is less than for a reasonable assurance engagement. Limited assurance engagements focus on aggregated data rather than physically checking source data at sites. Consequently, the level of assurance obtained in a limited assurance engagement is lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.*

[9] *The Company's total GHG emissions are offset by the carbon credit. While LRQA confirmed that these offset credits have been obtained by the Company and offset appropriately, but LRQA has not taken any action against the provider of these carbon credits and expresses no opinion as to whether the offset credits will result in a reduction in CO_2.*

Sustainability Data Book 2024

Ichiro Ueno
LRQA Lead Verifier
On behalf of LRQA Limited
10th Floor, Queen's Tower A, 2-3-1 Minatomirai, Nishi-ku, Yokohama, JAPAN

LRQA reference: YKA00001141

Annex

Zeroization of CO2 emissions (44 factories)

PANASONIC ECO TECHNOLOGY CENTER CO.,LTD. (PETEC), PANASONIC ENERGY (WUXI) CO.,LTD. (PECW), PANASONIC ENERGY (SUZHOU) CO.,LTD. (PECSZ), PANASONIC MANUFACTURING(BEIJING) CO.,LTD. (PMFBJ), PANASONIC ENERGY (THAILAND) CO.,LTD. (PECTH), PANASONIC DO BRASIL LTD (PANABRAS) (includes 3 factories (San Jose, Manaus, Extrema)), PANASONIC CENTROAMERICANA S.A. (PCA), PANASONIC CENTER TOKYO (PC TOKYO), PANASONIC AUTOMOTIVE SYSTEMS CO.,LTD. (MATSUMOTO REGION) (PAS MATSUMOTO), PANASONIC AUTOMOTIVE SYSTEMS CO.,LTD (TSURUGA REGION) (PAS TSURUGA), PANASONIC AUTOMOTIVE SYSTEMS CO.,LTD (SHIRAKAWA REGION) (PAS SHIRAKAWA), PANASONIC AUTOMOTIVE SYSTEMS CO.,LTD (YOKOHAMA BUILDING) (PAS YOKOHAMA), PANASONIC ENERGY CO.,LTD. (SUMOTO) (PEC SUMOTO), PANASONIC ENERGY HIGASHIURA CO.,LTD. (PEC HIGASHIURA), PANASONIC ENERGY NANDAN CO.,LTD. (PEC NANDAN), PANASONIC ELECTRONIC DEVICES(JIANGMEN)CO., LTD. (PEDJM), PANASONIC INDUSTRIAL DEVICES (TIANJIN) CO.,LTD. (PIDTJ), PANASONIC INDUSTRIAL DEVICES MATERIALS (GUANGZHOU) CO.,LTD. (PIDMGZ), PANASONIC INDUSTRIAL DEVICES SUNX (SUZHOU) CO., LTD. (PIDSXSZ), PANASONIC AUTOMOTIVE SYSTEMS DALIAN CO.,LTD. (PASDL), PANASONIC AUTOMOTIVE SYSTEMS (SUZHOU) CO.,LTD. (PASSZ), PANASONIC AUTOMOTIVE SYSTEMS ASIA PACIFIC (THAILAND) CO.,LTD. (PASAP), PANASONIC AUTOMOTIVE SYSTEMS MALAYSIA SDN.BHD. (PASMY), PANASONIC ENERGY INDIA CO.,LTD. (PECIN), PANASONIC AUTOMOTIVE SYSTEMS MONTERREY MEXICO S.A. DE C.V. (PASMT), PANASONIC AUTOMOTIVE SYSTEMS DE MEXICO S.A.DE C.V. (PASMX), PANASONIC AUTOMOTIVE SYSTEMS REYNOSA MEXICO S.A. DE C.V. (PASRY), PANASONIC ENERGY MEXICO,S.A. DE. C.V. (PEMX), PANASONIC AUTOMOTIVE SYSTEMS CZECH,S.R.O. (PASCZ), PANASONIC INDUSTRY CO., LTD. (MOTOMIYA) (PID MOTOMIYA), PANASONIC ENERGY CO.,LTD. (SUMINOE FACTORY) (PEC SUMINOE), PANASONIC ENERGY CO.,LTD. (TOKUSHIMA FACTORY) (PEC TOKUSHIMA), PANASONIC ENERGY CO.,LTD. (NISHIKINOHAMA FACTORY) (PEC NISHIKINOHAMA), PANASONIC MOTOR (ZHUHAI) CO., LTD. (PMRZ), PANASONIC MOTOR (HANGZHOU) CO.,LTD. (PMRHZ), PANASONIC INDUSTRIAL DEVICES TAIKO (SHENZHEN) CO., LTD. (PIDTASZN), PANASONIC INDUSTRIAL DEVICES (QINGDAO) CO., LTD. (PIDQD), PANASONIC MANUFACTURING (XIAMEN) CO., LTD. (PMX-MR), PANASONIC INDUSTRIAL DEVICES MATERIALS (SUZHOU) CO., LTD. (PIDMSZ), PANASONIC INDUSTRIAL DEVICES MATERIALS (SHANGHAI) CO., LTD. (PIDMSH), PANASONIC INDUSTRIAL DEVICES SINGAPORE PTE. LTD. (PIDSG), PANASONIC CARBON INDIA CO., LTD.（PCIN）

Sustainability Data Book 2024

GRI Standard Contents Index

Statement of use	Panasonic Holdings Corporation has reported the information cited in this GRI content index for the period from April 1, 2023 to March 31, 2024 with reference to the GRI Standards.
GRI 1 used	GRI 1: Foundation 2021

DISCLOSURE		LOCATION
GRI 2: General Disclosures 2021		
1. The organization and its reporting practices		
2-1	Organizational details	Corporate Profile WEB https://holdings.panasonic/global/corporate/about/group-companies/phd.html Sustainability Data Book> Corporate Profile
2-2	Entities included in the organization's sustainability reporting	Sustainability Data Book> About the Sustainability Data Book 2024
2-3	Reporting period, frequency and contact point	Sustainability Data Book> About the Sustainability Data Book 2024 Sustainability Data Book> Back cover
2-4	Restatements of information	—
2-5	External assurance	Sustainability Data Book> Independent Assurance Statement by LRQA Limited
2. Activities and workers		
2-6	Activities, value chain and other business relationships	Sustainability Data Book> Corporate Profile Sustainability Data Book> Responsible Supply Chain
2-7	Employees	Sustainability Data Book> Employee Well-being> Human Resources Data
2-8	Workers who are not employees	—
3. Governance		
2-9	Governance structure and composition	Corporate Governance WEB https://holdings.panasonic/global/corporate/about/group-companies/phd/corporate-governance.html Corporate Governance Report PDF https://holdings.panasonic/global/corporate/investors/pdf/cgr.pdf Annual Securities Report (the 117th Business Term)> 4. Corporate Governance, etc. PDF https://holdings.panasonic/global/corporate/investors/pdf/AnnualSecuritiesReport2024.pdf
2-10	Nomination and selection of the highest governance body	Corporate Governance WEB https://holdings.panasonic/global/corporate/about/group-companies/phd/corporate-governance.html Corporate Governance Report PDF https://holdings.panasonic/global/corporate/investors/pdf/cgr.pdf Annual Securities Report (the 117th Business Term)> 4. Corporate Governance, etc. PDF https://holdings.panasonic/global/corporate/investors/pdf/AnnualSecuritiesReport2024.pdf
2-11	Chair of the highest governance body	Corporate Governance WEB https://holdings.panasonic/global/corporate/about/group-companies/phd/corporate-governance.html Corporate Governance Report PDF https://holdings.panasonic/global/corporate/investors/pdf/cgr.pdf Annual Securities Report (the 117th Business Term)> 4. Corporate Governance, etc. PDF https://holdings.panasonic/global/corporate/investors/pdf/AnnualSecuritiesReport2024.pdf
2-12	Role of the highest governance body in overseeing the management of impacts	Sustainability Data Book> The Promotion of Sustainability Management
2-13	Delegation of responsibility for managing impacts	Sustainability Data Book> The Promotion of Sustainability Management Sustainability Data Book> Each Chapter "Environmental Governance", "Responsible Executive and Framework", "Promoting Organization"

DISCLOSURE		LOCATION
2-14	Role of the highest governance body in sustainability reporting	Sustainability Data Book> The Promotion of Sustainability Management
2-15	Conflicts of interest	Corporate Governance Report PDF https://holdings.panasonic/global/corporate/investors/pdf/cgr.pdf
2-16	Communication of critical concerns	Sustainability Data Book> Risk Management Sustainability Data Book> Business Ethics
2-17	Collective knowledge of the highest governance body	Sustainability Data Book> The Promotion of Sustainability Management Annual Securities Report (the 117th Business Term)> 2. Disclosure of Sustainability-related Undertakings PDF https://holdings.panasonic/global/corporate/investors/pdf/AnnualSecuritiesReport2024.pdf
2-18	Evaluation of the performance of the highest governance body	Corporate Governance WEB https://holdings.panasonic/global/corporate/about/group-companies/phd/corporate-governance.html Corporate Governance Report PDF https://holdings.panasonic/global/corporate/investors/pdf/cgr.pdf Annual Securities Report (the 117th Business Term)> 4. Corporate Governance, etc. PDF https://holdings.panasonic/global/corporate/investors/pdf/AnnualSecuritiesReport2024.pdf
2-19	Remuneration policies	Annual Securities Report (the 117th Business Term)> 4. Corporate Governance, etc. PDF https://holdings.panasonic/global/corporate/investors/pdf/AnnualSecuritiesReport2024.pdf Sustainability Data Book> Employee Well-being> Work with a sense of fulfillment> Development of Management Executives> PHD Compensation System for Directors (excluding Outside Directors) and Executive Officers (P.94)
2-20	Process to determine remuneration	Annual Securities Report (the 117th Business Term)> 4. Corporate Governance, etc. PDF https://holdings.panasonic/global/corporate/investors/pdf/AnnualSecuritiesReport2024.pdf Sustainability Data Book> Employee Well-being> Work with a sense of fulfillment> Development of Management Executives> PHD Compensation System for Directors (excluding Outside Directors) and Executive Officers (P.94)
2-21	Annual total compensation ratio	—
4. Strategy, policies and practices		
2-22	Statement on sustainable development strategy	Group CEO's Message WEB https://holdings.panasonic/global/corporate/about/message.html Sustainability Data Book> Basic Approach to Sustainability
2-23	Policy commitments	Sustainability Data Book> The Promotion of Sustainability Management (P.8) Sustainability Data Book> Policies on each theme in each chapter Panasonic Group Human Rights and Labour Policy WEB https://holdings.panasonic/global/corporate/sustainability/social/human-rights/policy.html Panasonic Group Code of Ethics & Compliance Chapter 5. Our Social Responsibilities 1. Respecting Human Rights WEB https://holdings.panasonic/global/corporate/about/code-of-conduct/chapter-5.html#Sec_01
2-24	Embedding policy commitments	Sustainability Data Book> The Promotion of Sustainability Management Sustainability Data Book> Policies on each theme in each chapter
2-25	Processes to remediate negative impacts	Sustainability Data Book> Business Ethics> Whistleblowing System Sustainability Data Book> Respect for Human Rights> Grievance Mechanism Sustainability Data Book> Responsible Supply Chain> Systems for Whistleblowing and Seeking Consultation Sustainability Data Book> Employee Well-being> Contacts for Whistleblowing and Seeking Consultation
2-26	Mechanisms for seeking advice and raising concerns	Sustainability Data Book> Business Ethics> Whistleblowing System Sustainability Data Book> Respect for Human Rights> Grievance Mechanism Sustainability Data Book> Responsible Supply Chain> Systems for Whistleblowing and Seeking Consultation Sustainability Data Book> Employee Well-being> Contacts for Whistleblowing and Seeking Consultation

Sustainability Data Book 2024

DISCLOSURE		LOCATION
2-27	Compliance with laws and regulations	Sustainability Data Book> Environment> Environmental Risk Management (P.25) Sustainability Data Book> Raising Product Quality Levels and Ensuring Product Safety> Internal Company Rules Concerning Product Labeling Sustainability Data Book> Responsible Publicity and Advertising> Promoting Fair and Honest Publicity and Advertising Sustainability Data Book> Business Ethics> Performance Evaluation
2-28	Membership associations	Sustainability Data Book> The Promotion of Sustainability Management (P.8) Sustainability Data Book> Environment> Activities to raise awareness of and valorize Avoided CO_2 Emissions (P.21) Sustainability Data Book> Respect for Human Rights> Participation in International and Industrial Partnerships Sustainability Data Book> Responsible Supply Chain> Industry Collaboration Initiatives (P.112)
5. Stakeholder engagement		
2-29	Approach to stakeholder engagement	Sustainability Data Book> The Promotion of Sustainability Management> Stakeholder Engagement (P.8)
2-30	Collective bargaining agreements	Sustainability Data Book> Respect for Human Rights> Addressing Key Human Rights Risks> Respect for the Freedom of Association and the Right to Collective Bargaining (P.80)
GRI 3: Material Topics 2021		
3-1	Process to determine material topics	Sustainability Data Book> The Promotion of Sustainability Management> Materiality (P.6-7)
3-2	List of material topics	Sustainability Data Book> The Promotion of Sustainability Management> Materiality (P.6-7)
3-3	Management of material topics	Sustainability Data Book> The Promotion of Sustainability Management> Materiality (P.6-7)

Topic Standards

DISCLOSURE		LOCATION
GRI 201: Economic Performance 2016		
201-1	Direct economic value generated and distributed	Annual Securities Report (the 117th Business Term)> Overview of Panasonic Group> Key Financial Data (Consolidated) PDF https://holdings.panasonic/global/corporate/investors/pdf/AnnualSecuritiesReport2024.pdf Sustainability Data Book> Community Relations> Spending on Corporate Citizenship Activities in fiscal 2024
201-2	Financial implications and other risks and opportunities due to climate change	Sustainability Data Book> Risk Management> Basic Framework> PHD Major Strategic Risks in Fiscal 2025> Climate change & Environmental regulations/Development of a circular economy (P.143-144) Strategic Resilience through Scenario Analysis WEB https://holdings.panasonic/global/corporate/sustainability/environment/tcfd/resilience.html
201-3	Defined benefit plan obligations and other retirement plans	Annual Securities Report (the 117th Business Term)> Consolidated Financial Statement PDF https://holdings.panasonic/global/corporate/investors/pdf/AnnualSecuritiesReport2024.pdf
201-4	Financial assistance received from government	—
GRI 202: Market Presence 2016		
202-1	Ratios of standard entry level wage by gender compared to local minimum wage	—
202-2	Proportion of senior management hired from the local community	—
GRI 203: Indirect Economic Impacts 2016		
203-1	Infrastructure investments and services supported	Sustainability Data Book> Community Relations
203-2	Significant indirect economic impacts	Sustainability Data Book> Community Relations> Performance Evaluation of Corporate Citizenship Activities
GRI 204: Procurement Practices 2016		
204-1	Proportion of spending on local suppliers	—
GRI 205: Anti-corruption 2016		
205-1	Operations assessed for risks related to corruption	Sustainability Data Book> Business Ethics> Performance Evaluation
205-2	Communication and training about anti-corruption policies and procedures	Sustainability Data Book> Business Ethics> Internal Communication and Training Sustainability Data Book> Business Ethics> Initiatives to Address Significant Compliance Risks
205-3	Confirmed incidents of corruption and actions taken	Sustainability Data Book> Business Ethics> Performance Evaluation
GRI 206: Anti-competitive Behavior 2016		
206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	Sustainability Data Book> Business Ethics> Initiatives to Address Significant Compliance Risks
GRI 207: Tax 2019		
207-1	Approach to tax	Sustainability Data Book> Business Ethics> Tax policy Panasonic Group Tax Policy WEB https://holdings.panasonic/global/corporate/sustainability/governance/fair-practices/tax_policy.html
207-2	Tax governance, control, and risk management	Panasonic Group Tax Policy WEB https://holdings.panasonic/global/corporate/sustainability/governance/fair-practices/tax_policy.html
207-3	Stakeholder engagement and management of concerns related to tax	Panasonic Group Tax Policy WEB https://holdings.panasonic/global/corporate/sustainability/governance/fair-practices/tax_policy.html
207-4	Country-by-country reporting	—
GRI 301: Materials 2016		
301-1	Materials used by weight or volume	—
301-2	Recycled input materials used	This information is not calculated given the difficulty in defining main products due to the diversity of business operations. See Evolution of Recycling-Oriented Manufacturing for specific initiatives.
301-3	Reclaimed products and their packaging materials	—
GRI 302: Energy 2016		
302-1	Energy consumption within the organization	Overview of Environmental Impact WEB https://holdings.panasonic/global/corporate/sustainability/environment/governance/data.html Standard for Calculating PDF https://holdings.panasonic/global/corporate/sustainability/pdf/review_sfc_2024e.pdf
302-2	Energy consumption outside of the organization	Overview of Environmental Impact WEB https://holdings.panasonic/global/corporate/sustainability/environment/governance/data.html Standard for Calculating PDF https://holdings.panasonic/global/corporate/sustainability/pdf/review_sfc_2024e.pdf
302-3	Energy intensity	—
302-4	Reduction of energy consumption	Mid-term to Long-term Environmental Vision WEB https://holdings.panasonic/global/corporate/sustainability/environment/vision.html
302-5	Reductions in energy requirements of products and services	Mid-term to Long-term Environmental Vision WEB https://holdings.panasonic/global/corporate/sustainability/environment/vision.html

Sustainability Data Book 2024

DISCLOSURE		LOCATION
GRI 303: Water and Effluents 2018		
303-1	Interactions with water as a shared resource	Ways of Thinking about Water Resource Conservation WEB https://holdings.panasonic/global/corporate/sustainability/environment/water.html
303-2	Management of water discharge-related impacts	—
303-3	Water withdrawal	Initiatives for Water Resource Conservation through Production Activities WEB https://holdings.panasonic/global/corporate/sustainability/environment/water.html#factory Standard for Calculating PDF https://holdings.panasonic/global/corporate/sustainability/pdf/review_sfc_2024e.pdf
303-4	Water discharge	Initiatives for Water Resource Conservation through Production Activities WEB https://holdings.panasonic/global/corporate/sustainability/environment/water.html#factory Standard for Calculating PDF https://holdings.panasonic/global/corporate/sustainability/pdf/review_sfc_2024e.pdf
303-5	Water consumption	Initiatives for Water Resource Conservation through Production Activities WEB https://holdings.panasonic/global/corporate/sustainability/environment/water.html#factory Standard for Calculating PDF https://holdings.panasonic/global/corporate/sustainability/pdf/review_sfc_2024e.pdf
GRI 304: Biodiversity 2016		
304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	—
304-2	Significant impacts of activities, products and services on biodiversity	—
304-3	Habitats protected or restored	Biodiversity Conservation WEB https://holdings.panasonic/global/corporate/sustainability/environment/biodiversity.html
304-4	IUCN Red List species and national conservation list species with habitats in areas affected by operations	Forest of Coexistance Monitoring Report (Japanese Version Only) WEB https://www.panasonic.com/jp/about/sustainability/environment/ecology/kusatsu_factory.html
GRI 305: Emissions 2016		
305-1	Direct (Scope 1) GHG emissions	Overview of Environmental Impact and Environmental Accounting WEB https://holdings.panasonic/global/corporate/sustainability/environment/governance/data.html Reducing CO_2 Emissions in Factories WEB https://holdings.panasonic/global/corporate/sustainability/environment/carbon-neutral/site.html Standard for Calculating PDF https://holdings.panasonic/global/corporate/sustainability/pdf/review_sfc_2024e.pdf
305-2	Energy indirect (Scope 2) GHG emissions	Overview of Environmental Impact and Environmental Accounting WEB https://holdings.panasonic/global/corporate/sustainability/environment/governance/data.html Reducing CO_2 Emissions in Factories WEB https://holdings.panasonic/global/corporate/sustainability/environment/carbon-neutral/site.html Standard for Calculating PDF https://holdings.panasonic/global/corporate/sustainability/pdf/review_sfc_2024e.pdf
305-3	Other indirect (Scope 3) GHG emissions	Overview of Environmental Impact and Environmental Accounting WEB https://holdings.panasonic/global/corporate/sustainability/environment/governance/data.html Standard for Calculating PDF https://holdings.panasonic/global/corporate/sustainability/pdf/review_sfc_2024e.pdf
305-4	GHG emissions intensity	Reducing CO_2 Emissions in Factories WEB https://holdings.panasonic/global/corporate/sustainability/environment/carbon-neutral/site.html
305-5	Reduction of GHG emissions	Mid-term to Long-term Environmental Vision WEB https://holdings.panasonic/global/corporate/sustainability/environment/vision.html
305-6	Emissions of ozone-depleting substances (ODS)	Managed as a substance whose use must be suspended immediately in case it is currently used.
305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	Management of Chemical Substances at Factories WEB https://holdings.panasonic/global/corporate/sustainability/environment/chemical.html#factory
GRI 306: Waste 2020		
306-1	Waste generation and significant waste-related impacts	Evolution of Recycling-Oriented Manufacturing WEB https://holdings.panasonic/global/corporate/sustainability/environment/resources/recycling_oriented_manufacturing.html
306-2	Management of significant waste-related impacts	Overview of Environmental Impact and Environmental Accounting WEB https://holdings.panasonic/global/corporate/sustainability/environment/governance/data.html Evolution of Recycling-Oriented Manufacturing WEB https://holdings.panasonic/global/corporate/sustainability/environment/resources/recycling_oriented_manufacturing.html
306-3	Waste generated	Evolution of Recycling-Oriented Manufacturing WEB https://holdings.panasonic/global/corporate/sustainability/environment/resources/recycling_oriented_manufacturing.html
306-4	Waste diverted from disposal	Evolution of Recycling-Oriented Manufacturing WEB https://holdings.panasonic/global/corporate/sustainability/environment/resources/recycling_oriented_manufacturing.html Standard for Calculating PDF https://holdings.panasonic/global/corporate/sustainability/pdf/review_sfc_2024e.pdf
306-5	Waste directed to disposal	Overview of Environmental Impact and Environmental Accounting WEB https://holdings.panasonic/global/corporate/sustainability/environment/governance/data.html Evolution of Recycling-Oriented Manufacturing WEB https://holdings.panasonic/global/corporate/sustainability/environment/resources/recycling_oriented_manufacturing.html
GRI 308: Supplier Environmental Assessment 2016		
308-1	New suppliers that were screened using environmental criteria	—
308-2	Negative environmental impacts in the supply chain and actions taken	Though comprehensive aggregation is not currently conducted, scope of the CSR self-assessment checklist has been expanded to cover Asian countries from fiscal 2017 in an effort to understand environment burden.
GRI 401: Employment 2016		
401-1	New employee hires and employee turnover	Sustainability Data Book> Employee Well-being> Human Resources Data
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	—
401-3	Parental leave	Sustainability Data Book> Employee Well-being> Support for Employees During Pregnancy and Childcare (P.103)
GRI 402: Labor/Management Relations 2016		
402-1	Minimum notice periods regarding operational changes	—
GRI 403: Occupational Health and Safety 2018		
403-1	Occupational health and safety management system	Sustainability Data Book> Employee Well-being> Work in safe, secure and healthy state
403-2	Hazard identification, risk assessment, and incident investigation	Sustainability Data Book> Employee Well-being> Work in safe, secure and healthy state> Creating a safe and secure workplace (P.86-90)
403-3	Occupational health services	Sustainability Data Book> Employee Well-being> Work in safe, secure and healthy state
403-4	Worker participation, consultation, and communication on occupational health and safety	Sustainability Data Book> Employee Well-being> Work in safe, secure and healthy state> Creating a safe and secure workplace (P.86-90)
403-5	Worker training on occupational health and safety	Sustainability Data Book> Employee Well-being> Work in safe, secure and healthy state> Creating a safe and secure workplace (P.86-90)

DISCLOSURE		LOCATION
403-6	Promotion of worker health	Sustainability Data Book> Employee Well-being>Work in safe, secure and healthy state> Promoting Health Management (P.90-92)
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	Sustainability Data Book> Employee Well-being> Work in safe, secure and healthy state
403-8	Workers covered by an occupational health and safety management system	Sustainability Data Book> Employee Well-being> Work in safe, secure and healthy state
403-9	Work-related injuries	Sustainability Data Book> Employee Well-being> Work in safe, secure and healthy state> Creating a safe and secure workplace (P.86-90)
403-10	Work-related ill health	—
GRI 404: Training and Education 2016		
404-1	Average hours of training per year per employee	Sustainability Data Book> Employee Well-being> Work with a sense of fulfillment> Organizational Development: Building an Organization and Culture Through Dialogue (Japan) (P.97)
404-2	Programs for upgrading employee skills and transition assistance programs	Sustainability Data Book> Employee Well-being> Work with a sense of fulfillment Sustainability Data Book> Employee Well-being> Work together by giving full play to all individuality> Creating an Inclusive Work Environment (Japan)> Creating an Environment Where Post-retirement Age Workers Can Take an Active Part (P.105)
404-3	Percentage of employees receiving regular performance and career development reviews	Sustainability Data Book>Employee Well-being>Work with a sense of fulfillment> Evaluation and Rewards (P.98)
GRI 405: Diversity and Equal Opportunity 2016		
405-1	Diversity of governance bodies and employees	Sustainability Data Book> Employee Well-being> Human Resources Data Corporate Governance WEB https://holdings.panasonic/global/corporate/about/group-companies/phd/corporate-governance.html
405-2	Ratio of basic salary and remuneration of women to men	Sustainability Data Book> Employee Well-being> Promoting Gender Equality (P.104)
GRI 406: Non-discrimination 2016		
406-1	Incidents of discrimination and corrective actions taken	—
GRI 407: Freedom of Association and Collective Bargaining 2016		
407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	Sustainability Data Book> Respect for Human Rights> Addressing Key Human Rights Risks> Respect for the Freedom of Association and the Right to Collective Bargaining (P.80-81) Sustainability Data Book> Responsible Supply Chain> Supply Chain Due Diligence
GRI 408: Child Labor 2016		
408-1	Operations and suppliers at significant risk for incidents of child labor	Sustainability Data Book> Respect for Human Rights> Addressing Key Human Rights Risks> Prohibiting Child Labour and Protecting Young Workers (P.79) Sustainability Data Book> Responsible Supply Chain> Supply Chain Due Diligence
GRI 409: Forced or Compulsory Labor 2016		
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	Sustainability Data Book> Respect for Human Rights> Addressing Key Human Rights Risks> Prohibiting Forced Labour (P.79-80) Sustainability Data Book> Responsible Supply Chain> Supply Chain Due Diligence
GRI 410: Security Practices 2016		
410-1	Security personnel trained in human rights policies or procedures	—

DISCLOSURE		LOCATION
GRI 411: Rights of Indigenous Peoples 2016		
411-1	Incidents of violations involving rights of indigenous peoples	—
GRI 413: Local Communities 2016		
413-1	Operations with local community engagement, impact assessments, and development programs	—
413-2	Operations with significant actual and potential negative impacts on local communities	—
GRI 414: Supplier Social Assessment 2016		
414-1	New suppliers that were screened using social criteria	Sustainability Data Book> Responsible Supply Chain> Supply Chain Due Diligence
414-2	Negative social impacts in the supply chain and actions taken	Sustainability Data Book> Responsible Supply Chain> Supply Chain Due Diligence
GRI 415: Public Policy 2016		
415-1	Political contributions	Sustainability Data Book> Business Ethics> Ensuring Transparency of Political Contribution Funds
GRI 416: Customer Health and Safety 2016		
416-1	Assessment of the health and safety impacts of product and service categories	—
416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	Sustainability Data Book> Raising Product Quality Levels and Ensuring Product Safety> Major Accidents and Responses
GRI 417: Marketing and Labeling 2016		
417-1	Requirements for product and service information and labeling	Sustainability Data Book> Raising Product Quality Levels and Ensuring Product Safety> Internal Company Rules Concerning Product Labeling
417-2	Incidents of non-compliance concerning product and service information and labeling	No incidents of non-compliance
417-3	Incidents of non-compliance concerning marketing communications	Sustainability Data Book> Responsible Publicity and Advertising> Promoting Fair and Honest Publicity and Advertising
GRI 418: Customer Privacy 2016		
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	—
GRI 306: Effluents and Waste 2016		
306-3	Significant spills	—

Sustainability Data Book 2024

Panasonic Group

Contact

Sustainability Management Project, Corporate Strategy Division, Panasonic Holdings Corporation

Quality & Environment Division, Panasonic Operational Excellence Co., Ltd.

TOKYO MIDTOWN HIBIYA 14F, 1-1-2, Yurakucho, Chiyoda-ku, Tokyo, Japan

August 2024